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Obsah+Contents

MODELS OF CONSUMER'S CHOICE

Karel Šrédl, Alexandr Soukup, Lucie Severová

Introduction

In the modern market economy where the supply exceeds demand, the importance of the "consumer's behaviour in the market analysis" continuously increases. Consumer's preferences are viewed as exogenous variables in a neoclassical theory. They are not explained in a framework of the concept but are viewed as given ones. Methodological individualism, rational behaviour, equilibrium and perfect information of a consumer are next features of this concept. Simple precautions are a necessary condition for the model application.

Methodological individualism means that principles of individual subjects behaviour are the most important determining factors of model functioning. These subjects abide by the principle of total utility maximizing in given conditions. The concept of equilibrium is static. Perfect information precautions need not be necessarily fulfilled because contemporary concepts of consumer's behaviour function in the conditions of risk and uncertainty.

Institutional concepts of consumption are derived from T. Veblen's theory of leisure class consumption [8]. Preferences are influenced by the position of a consumer subject in the social hierarchy. Not only preferences, resources and individual behaviour but also social institutions are important factors of consumption in institutionalist concepts. Consumption is also viewed as social behaviour. Psychological aspects of consumer subjects behaviour are also important.

In this article, we use a mathematical model of consumer's behaviour optimization with a utility function that analyzes mutual relations between two kinds of goods and also allows the differentiation of consumer's price demand elasticity. This utility function is beneficial while investigating the consumers demand.

1. Materials and Methods

Models resulting from Pareto's equilibrium concept are a basic part of the neoclassical theory of consumer's behaviour. The article is concerned with their application and uses indifference curves, the budget line of consumers and other tools of the marginal analysis. These models are deterministic.

Some of contemporary theories of consumer's behaviour are models of expected utility, which means total utility functions in the conditions of risk and uncertainty based on O. Morgenstern. Von Neumann-Morgenstern models are probabilistic. Models based on the cumulative prospect theory of D. Kahneman and A. Tversky use important psychological knowledge as a new dimension of a consumer's behaviour analysis.

2. Results and Discussion

2.1 Basic Models of Consumer's Behaviour

Finding models

Finding models analyze subject's behaviour in the situation in which he/she has a basic idea about possible alternatives but he/she does not know exactly the results of given alternatives. Finding is viewed as the analysis of limited alternatives of choice. The goal of a finder is to find out what result he/she can expect, after the choice is made. In models with a full return, a consumer can choose each of reachable alternatives and decide about the optimal number of alternative's supervisions in given conditions.

Returns of next visit must be higher than costs of it. If returns are not higher than costs, finding will be stopped and choice will be realized according to the reached knowledge. From mathematical point of view the function of net returns is maximizing.

Expectations creation models

Models of expectation creation analyze consumer's behaviour if he/she does not know at least one of the important data influencing his/her decision-making process, but he/she can predict this missing parameter. This idea is the basis of the term expectation. These models can be classified according to the concept of unknown magnitude:

- pure expectations mean that this magnitude can reach one of two values 0 or 1,
- combined expectations mean that more levels could exist (for example 0, 0.5, 1),
- expectations according to the framework (the variables and data of which influence consumer's decision-making) – static, adaptive or rational expectations.

Sufficient models

Sufficient models are a specific kind of consumer's behaviour models, for instance H. Simon's model of limited rationality. Sufficient models analyze consumer's behaviour not only from the point of view of the following final situation (result) but also from the point of view of finding steps.

The main idea of these models is that the subject chooses alternatives, which are for him/her sufficient. These alternatives are better than a given level (for example a minimal total utility level) but worse than maximal utility in given conditions. This minimal acceptable level of utility expresses consumer's idea about his/her possibilities in a given situation and about his/her rational idea about the reachable result of choice.

A characteristic feature of these models is the precaution of imperfect information and limited rationality. A consumer does not have 100% knowledge about the situation but he makes his choice in a simple situation which he/she determines according to his/her abilities.

The main representative of this attitude is H. Simon. His concept can be characterized as a sufficient model without expectations and with adaptation. The subject makes his choice according to a sufficient level of an aspect and a sufficient activity. If he/she finds this alternative, he/she will take it. If he/she does not find it he/she will decrease in minimal level of utility. That means he will decrease the level of an aspect by one grade, which is more insufficiently fulfilled. If he/she finds this alternative very quickly, he/she will increase the minimum level at least for one aspect, the results of which were most of the time sufficient. Various subjects will invest different levels of time and effort to this finding.

People do not act as rational subjects according to standard models of rational behaviour but they often make their choices with using a random spectrum of information and after reaching a minimal level of them. They do not find maximal satisfaction but a sufficient one. These attitudes are summarized in Hawking's work [4].

Consumption can also be viewed in wider circumstances, for instance environmental impacts of consumer's activity can be studied [2]. Carter and other authors analyze consumer's behaviour from the point of view of uncertainty [1].

Deterministic models (neocardinal or ordinal) of consumer's equilibrium with using marginalistic methods are not the only ones explaining consumer's behaviour but they are a very important part of the analysis.

2.2 Consumer's Optimal Choice – Deterministic Models

Now we will concentrate on deterministic models. A consumer with specific preferences decides about the consumption of quantity of two kinds of goods and he/she is limited by his/her income level and prices. His/her goal is to reach a maximal level of the total utility.

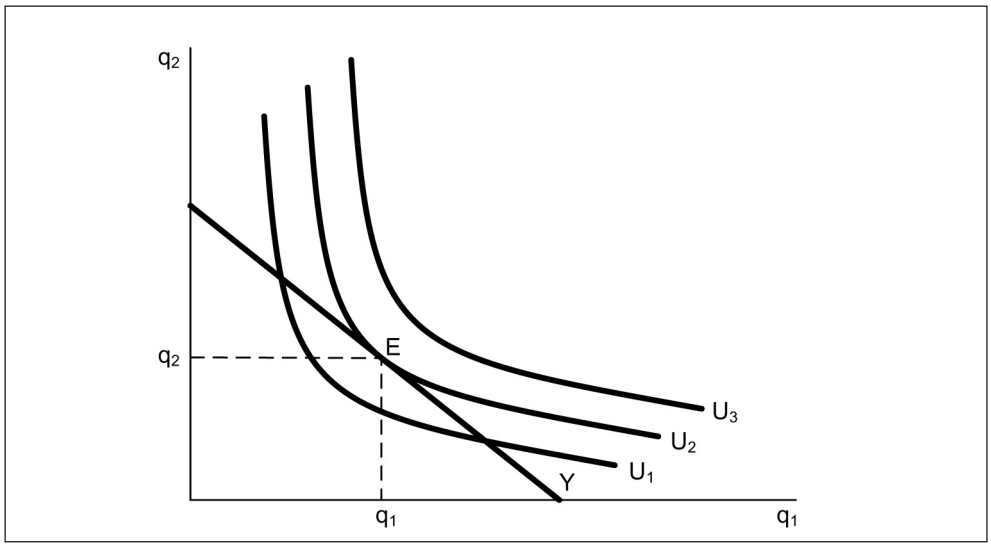
A basic model of an optimal combination in the simple choice of a consumer is known. We can use it as a basis for a mathematical model with wider possibilities of a consumer's choice analysis.

Indifference curves express consumer's preferences of two kinds of goods. The indifference curve which lies far from 0 expresses a higher level of utility. The consumer prefers combination on U_3, not U_2, combination on U_2, not U_1. His/her budget limit is given by the line Y. If he/she uses his/her income he/she will choose the combination on this line. Point E is optimal for him/her because he/she reaches the highest utility level which is achievable.

2.3 Choice of a Consumer with Complicated Preferences

In simple models, preference coefficients in utility functions are constant. But we can use

Fig. 1: Indifference Curves and an Optimal Point in the Model of Two Kinds of Goods



Source: [9]

one of the more complicated coefficients of these functions.

U is total utility; q_1, q_2 are quantities of consumed goods, P_1, P_2 are prices of goods respectively.

$$U = (a + eq_1)q_1 + bq_2 + q_1q_2, \quad a > 0, b > 0 \tag{1}$$

$$U = aq_1 + eq_1^2 + bq_2 + q_1q_2 \tag{2}$$

U – total utility U > 0,
q_1 – quantity of the good 1 $q_1 > 0$,
q_2 – quantity of the good 2 $q_2 > 0$,
a, b, e are coefficients which express preferences of a consumer a > 0, b > 0,
e can be higher, lower or equal to zero e > 0, e < 0, e = 0.

If e = 0, preference coefficients are constant but if e ≠ 0, we get the situation in which one preference coefficient depends on a used quantity of consumed goods.

Now we will use the comparison of marginal utilities and prices and the equation of budget limits.

MU_1 – marginal utility of the good 1,
MU_2 – marginal utility of the good 2,
P_1 – price of the good 1,
P_2 – price of the good 2,
Y – consumer's income.

Constant e can be higher, lower or equal to 0. If e = 0, marginal utilities depend only on the quantity of the opposite good ($MU_1 = a + q_2$, $MU_2 = b + q_1$) but if e ≠ 0, we get the situation in which the first marginal utility also depends on a used quantity of the consumed good 1 ($MU_1 = a + 2e\,q_1 + q_2$).

Now we will use the comparison of marginal utilities and prices and the budget equation $Y = P_1 \cdot q_1 + P_2 \cdot q_2$.

$$MU_1 = a + 2eq_1 + q_2 \tag{3}$$

$$MU_2 = b + q_1 \tag{4}$$

A specific feature of this asymmetric total utility function is the fact that the marginal utility of the good 1 depends on the consumption level of the good 1 even of the good 2 and the marginal utility of the good 2 depends only on the consumption of the good 1 (e ≠ 0). Constant

e can be higher, lower or equal to 0. If e = 0, marginal utilities depend only on the quantity of the opposite good ($MU_1 = a + q_2$, $MU_2 = b + q_1$).

Equation (6) expresses the budget line of a consumer. The following equations express the deriving of a demand function for the good 1 from two relations:

$$\frac{P_1}{P_2} = \frac{MU_1}{MU_2} \tag{5}$$

$$Y = P_1 \cdot q_1 + P_2 \cdot q_2 \tag{6}$$

$$q_2 = \frac{Y}{P_2} - \frac{P_1}{P_2} \cdot q_1 \tag{7}$$

$$\frac{a + 2eq_1 + q_2}{b + q_1} = \frac{P_1}{P_2} = \frac{a + 2eq_1 + \frac{Y}{P_2} - \frac{P_1}{P_2} q_1}{b + q_1} = \frac{a + \frac{Y}{P_2} + (2e - \frac{P_1}{P_2})q_1}{b + q_1} \tag{8}$$

$$bP_1 + P_1 q_1 = aP_2 + Y + 2eP_2 q_1 - P_1 q_1 \tag{9}$$

$$bP_1 + 2P_1 q_1 = aP_2 + Y + 2eP_2 q_1 \tag{10}$$

$$q_1 = \frac{Y + aP_2 - bP_1}{2(P_1 - eP_2)} \tag{11}$$

$$q_2 = \frac{(P_1 - 2eP_2)Y + (bP_1 - aP_2)P_1}{2(P_1 - e)P_2} \tag{12}$$

In the next part we will be interested in the price elasticity for the good 1 which we compute from the equation (11) according to the formula $E = dq_1/dP_1 \times P_1/q_1$. The following equation is for the price elasticity of the good 1 in the absolute value:

$$|E| = \frac{1 + \frac{b}{2q_1}}{1 - e\frac{P_2}{P_1}} \tag{13}$$

If consumer's preferences are simple (e = 0) a utility function can lead to a demand function with a low price elasticity (b < 0, 0 < /E/ < 1), to a demand function with a high price elasticity (b > 0, /E/ > 1) or to a demand function with the price elasticity equal to 1 (b = 0, /E/ = 1), possibilities are wider now.

Conclusions

The analysis of consumer's behaviour has more varieties. Deterministic models have the advantage of exact results and the using of a mathematical apparatus. Precautions must be determined and next determinants must be eliminated.

According to Woll and other authors (for example P. Samuelson, G. Stigler), a marginalist theory of consumer's behaviour is too abstract concept especially in its deterministic form. They come with the following arguments.

Scarcity is a relative term and has another importance for various consumers. Impacts of consumer's mutual relations, interdependence of preferences or specific kinds of consumption are eliminated in this concept. Stability of preferences is questionable. Supposed perfect information and rational expectations of consumer's subjects are both the advantage and the limitation of deterministic models. The difficult deriving of indifference curves and difficult testing of utility functions are also characteristic features of this concept.

These methodological aspects are changed. H. Simon has not the precaution of perfect information but of limited rationality. Expectation creation models and sufficient models are again important in the consumer's behaviour analysis. Problems of uncertainty in consumer's behaviour are analyzed by Carter [1]. Neoclassical and institutionalist attitudes have their importance in the analysis of consumer's behaviour.

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Abstract

MODELS OF CONSUMER'S CHOICE

Karel Šrédl, Alexandr Soukup, Lucie Severová

The article is concerned with the consumer's choice models and with the determining factors of his/her behaviour particularly according to the attitudes of a neoclassical theory and its modern modifications, which are compared with the concepts of other authors. It contents a short summary of important concepts of a consumer's choice analysis. The goal of the article is to give a basic survey of attitudes to the analysis of consumer's behaviour. However, it is especially concerned with the possibilities of the marginalist analytical apparatus use in a consumer's choice.

Consumer's preferences are viewed as exogenous variables in a neoclassical theory. They are not explained in a framework of the concept but are viewed as given ones. Methodological individualism, rational behaviour, equilibrium and perfect information of a consumer are next features of this concept. Simple precautions are a necessary condition for the model application.

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Key Words: *cardinalism, ordinalism, neoclassical theory, institutionalism, equilibrium, marginalist analysis.*

JEL Classification: *D11.*

VAZBY LIDSKÉHO ROZVOJE NA EKONOMICKOU, SOCIÁLNÍ A POLITICKOU DIMENZI GLOBALIZACE

Aleš Kocourek, Pavla Bednářová, Šárka Laboutková

Úvod

Prohlubující se globální ekonomická integrace, globální formy vládnutí a globální, vzájemně propojený sociální a environmentální rozvoj bývají často souhrnně označovány pojmem „globalizace“. V závislosti na individuálních preferencích žurnalistů nebo výzkumných pracovníků může být pojem „globalizace“ rozšířen o další významy, mezi něž patří zejména rostoucí vzájemné propojení trhů, omezování národní suverenity transnacionálními hráči, transformace národních ekonomik, rozšiřování nerovností a disparit, vyšší úroveň zapojení tzv. „vynořujících se“ trhů do mezinárodních finančních toků apod. Čadil, Pavelka, Kaňoková a Vorlíček [7] ukazují těsnou propojenost trhů na příkladu nedávné světové recese, jež postupně zasáhla většinu států. České republice, coby malé otevřené ekonomice, v této souvislosti vznikly značné náklady, které sama o sobě nemohla v podstatě výrazně ovlivnit. Mezi tyto náklady patří i náklady spojené s cyklickou nezaměstnaností z pohledu veřejných rozpočtů. Také Tvrdoň, Tuleja a Verner [23] v této souvislosti upozorňují, že globalizace napomáhá šíření a umocňování negativních socio-ekonomických efektů, a dokumentují tuto skutečnost analýzou dopadů nedávné hospodářské krize na ekonomickou výkonnost a fungování trhu práce. Během posledních dvou desetiletí ostatně docházelo ke stále masivnějšímu budování mezinárodních politických vztahů a sociálních sítí, k intenzifikaci pohybu pracovní síly a k realizaci dalekosáhlých institucionálních změn. Nástroje měření globalizace jsou proto čím dál častěji využívány k hlubšímu porozumění determinantám investičního klimatu, změnám ve vývoji ekonomického růstu a mezinárodního podnikatelského prostředí a poskytují rovněž globální perspektivu, v níž jsou uskutečňována opatření hospodářské politiky [15].

Autoři tohoto článku se zaměřují na jeden z potenciálních faktorů vyššího tempa globalizace – institucionální kvalitu reprezentovanou lidským rozvojem. Hlavní rolí institucí je vytváření (a udržování) předvídatelného prostředí pro ekonomickou aktivitu, čímž jsou snižovány transakční náklady i riziko spojené s hledáním nových informací [24]. Ačkoli dosud nebyla úspěšně empiricky prokázána, zdá se vazba mezi úrovní globalizace a institucionální kvalitou země zřejmá: státy s nízkou kvalitou institucí, která brzdí ekonomický růst a podporuje chudobu (např. Rwanda nebo Zimbabwe), země s vůbec nejpomalejším rozvojem, jsou rovněž nejméně globalizovanými ekonomikami na světě. Zároveň se však ukazuje, že podpora ekonomického růstu a boj s chudobou nemohou být v zemích s nízkou úrovní institucionální kvality realizovány jednoduše prostřednictvím globalizování jejich národních ekonomik.

Základní hypotézou tohoto článku je, že vyšší úroveň lidského rozvoje v dané zemi znamená také více globalizovanou ekonomiku. Následující odstavce představují empirickou studii zaměřenou na vztahy mezi ekonomickou globalizací, sociální globalizací, politickou globalizací a lidským rozvojem.

Autoři nejprve stručně představí metodiku měření globalizace a lidského rozvoje. Páteřní částí celé studie bude testování a ověřování síly vzájemných vazeb mezi uvedenými třemi dimenzemi globalizace (ekonomickou, sociální a politickou) a lidským rozvojem. Výsledky na zvoleném vzorku zemí (o rozsahu 121 států) potvrdí, resp. vyvrátí hypotézu o intenzitě vztahů mezi globalizací a institucionálními faktory.

1. Metodika

Pro účely tohoto článku byly vybrány dva indexy: KOF index globalizace (*KOF Globalization Index*; KOF) a index nerovnoměrného lidského rozvoje (*Inequality-adjusted Human Development Index*; IHDI).

KOF index globalizace sestavuje KOF Swiss Economic Institute. Poprvé byly hodnoty KOF indexu globalizace zveřejněny v roce 2002 [9]. Globalizace je v tomto pojetí chápána jako proces vytváření vazeb a jejich sítí propojujících aktéry na transkontinentálních vzdálenostech, proces zprostředkovávaný nejrůznějšími toky, včetně pohybu lidí, informací, myšlenek, kapitálu, zboží a služeb. KOF index globalizace je založen na proměnných používaných při sestavování indexu ATK/FP (*A. T. Kearny / Foreign Policy Globalization Index*), pokrývá však mnohem větší počet zemí a má delší časové rozpětí. Index globalizace jako celek zahrnuje ekonomickou, sociální a politickou dimenzi globalizace [10]:

- **ekonomická globalizace** (váha 36 % v celkovém KOF indexu globalizace) sleduje toky zboží, služeb a kapitálu v globálním měřítku a má dva základní rozměry: 1) skutečné zahraničně-obchodní toky a 2) překážky mezinárodního obchodu a omezení toků zahraničních investic.
- **sociální globalizace** (váha 38 % v celkovém KOF indexu globalizace) byla v rámci celkového KOF indexu globalizace klasifikována do tří dílčích kategorií: 1) osobní kontakty, 2) toky informací a 3) kulturní podobnost.
- **politická globalizace** (váha 26 % v celkovém KOF indexu globalizace) je chápána jako stupeň pronikání vládních politik do mezinárodního prostoru.

Při konstruování indexů globalizace je každá proměnná „normalizována" tak, aby nabývala hodnot od nuly do deseti. Vyšší hodnota indexu je interpretována jako vyšší úroveň globalizace. Rok 2000 je přitom považován za základní.

V roce 2007 byla představena vyspělejší verze KOF indexu globalizace, který se od původní verze (z roku 2002) odlišuje řadou metodologických vylepšení. Hodnoty dílčích indexů jsou pro snadnější možnost interpretace navíc „normalizovány" na interval od nuly do sta, stále ovšem platí, že vyšší hodnoty KOF indexu globalizace reprezentují vyšší úroveň globalizovanosti dané země. KOF index globalizace 2011 sestavený na základě dat z roku 2008 seřadil podle celkové úrovně globalizace (i podle jejích tří složek: ekonomické, sociální a politické) již 208 zemí [19].

Belgie, Rakousko, Nizozemí a Švédsko zaujaly v roce 2011 první čtyři místa v KOF indexu globalizace. Švýcarsko a Dánsko páté a šesté místo v pořadí. Naproti tomu například Německo na místě šestnáctém již nepatří mezi 15 nejvíce globalizovaných zemí světa. První místo v žebříčku ekonomické globalizace zaujímá Singapur následovaný Lucemburskem, Irskem, Maltou a Belgií. Jedná se ve všech případech o malé otevřené ekonomiky. Velké ekonomiky obsadily nižší příčky, konkrétně: Německo 28. místo, USA 50. místo, Japonsko je aktuálně 92. v celkovém pořadí. Poslední místa žebříčku patří Burundi, Nigérii, Iránu a Etiopii. Švýcarsko, Rakousko, Belgie a Kanada drží přední pozice v případě měření sociální dimenze globalizace, Německo je 12. Číně patří 130. místo, Indii 150. místo. Nejnižší stupeň sociální globalizace byl naměřen v Demokratické republice Kongo a na Timoru. V dimenzi politické globalizaci zůstávají na předních místech evropské země, Francie, Itálie, Belgie, Rakousko a Španělsko. Patnácté místo patří USA, 34. místo zaujímá Japonsko, Velká Británie je 90. v pořadí. Nejvýraznější meziroční propad indexu globalizace byl změřen v případě Německa, pokles úrovně globalizace postihl i Finsko, Portugalsko nebo Dánsko. Naopak nejvýraznější pozitivní posun v oblasti globalizace vykázaly Švýcarsko, Maďarsko a Slovenská republika [19].

Index lidského rozvoje *(Human Development Index;* HDI*)* byl poprvé zveřejněn v roce 1975 a od roku 1990 jsou jeho hodnoty pravidelně aktualizovány v rámci tzv. Zpráv o lidském rozvoji *(Human Development Reports;* HDR*)* vydávaných Rozvojovým programem Organizace spojených národů *(United Nations Development Program;* UNDP*)*. Dostupné statistiky z listopadu 2011 srovnávají 187 z celkového počtu 194 členských států Organizace spojených národů (pro zbývajících sedm zemí nebo nezávislých území chybí alespoň jeden z dílčích indikátorů nezbytných pro vyčíslení celkové hodnoty HDI) [16]. V listopadu 2010 navíc pravidelná HDR představila také novou metodiku výpočtu indexu lidského rozvoje a změnila některé parametry celkového indexu:

- **index vzdělání** byl modifikován na kompozitní index složený ze dvou dílčích faktorů:

očekávané délky školní docházky (očekávaný počet let, které dnes pětileté dítě stráví ve škole) a průměrný počet let školní docházky mezi dospělým obyvatelstvem (délka vzdělání v letech u obyvatel ve věku 25 let);
- ukazatele hodnotící průměrnou délku života a úroveň zdravotní péče byly upraveny a zpřesněny do podoby **indexu očekávané délky života**;
- pro odhad životní úrovně obyvatel byl zvolen hrubý národní důchod (*Gross National Income*; GNI) na obyvatele přepočtený na americké dolary podle parity kupní síly, jež představuje klíčový indikátor při výpočtu **příjmového indexu**.

Klasifikace zemí podle HDI je relativní, neboť je založena na kvartilech rozdělení hodnot HDI napříč zeměmi, přičemž první (nejvyšší) kvartil zahrnuje země s velmi vysokým HDI (47 zemí), druhý (vyšší střední) kvartil země s vysokým HDI (47 zemí), třetí (nižší střední) kvartil země se středním HDI (47 zemí), a čtvrtý (nejnižší) kvartil pak státy s nízkou úrovní lidského rozvoje (46 zemí).

Doprovodným indikátorem lidského rozvoje je nový multidimenzionální **index nerovnoměrného lidského rozvoje** (někdy též „narovnaný index lidského rozvoje“, *Inequality-adjusted Human Development Index*; IHDI). Tento ukazatel je založen na stejných principech jako HDI (tzn., že sleduje očekávanou délku života, délku vzdělání a příjmovou úroveň obyvatelstva), ale odráží také nerovnoměrné rozdělení každého z těchto subindexů napříč populací (sleduje tedy de facto nerovnoměrný přístup k dostupným zdrojům). IHDI je vykazován pro 130 zemí jako geometrický průměr jednotlivých subindexů (nerovnost v rozdělování důchodů, v přístupu ke vzdělání a v přístupu ke zdravotní péči) pro celou populaci dané země. Index IHDI je možné chápat jako skutečný ukazatel úrovně lidského rozvoje, zatímco HDI může být interpretován jako potenciální nebo maximální hodnota IHDI, jíž by bylo dosaženo v případě naprosto rovného rozdělování bohatství a zdrojů dané země. „Ztráta“ způsobená nerovnoměrným lidským rozvojem je příčinou rozdílu mezi IHDI a HDI a lze ji vyjádřit jako procentuální díl z hodnoty HDI. Průměrná velikost této „ztráty“ napříč sledovanými zeměmi je zhruba 23 %, což znamená, že upravením celosvětového HDI z roku 2011 o nerovnoměrnost v rozdělování dojde k propadu jeho hodnoty z 0,682 na 0,525. Zároveň lze konstatovat, že země s nižší úrovní lidského rozvoje vykazují silnější tendenci k větší nerovnoměrnosti v rozdělování, a proto zaznamenávají větší „ztráty“ v lidském rozvoji [18].

Norsko, Austrálie a Nizozemí vedou v roce 2011 světový žebříček zemí podle HDI, zatímco Demokratická republika Kongo, Niger a Burundi stojí na posledních místech každoročního hodnocení úrovně lidského rozvoje prováděného UNDP. Spojené státy americké, Nový Zéland, Kanada, Irsko, Lichtenštejnsko, Německo a Švédsko doplňují první desítku zemí s nejvyšším lidským rozvojem, avšak je-li HDI upraven o vnitřní nerovnosti v přístupu ke zdravotní péči a vzdělávání a o nerovnosti při rozdělování důchodů, pak se například Spojené státy americké propadnou ze 4. na 23. místo, Jižní Korea z 15. na 32. nebo Izrael ze 17. na 25. místo. Spojené státy a Izrael se v žebříčku IHDI propadají zejména z důvodu nerovnoměrného rozdělování příjmů, ačkoli rozdílný přístup ke zdravotní péči je zejména v USA rovněž významnou příčinou ztráty IHDI, zatímco značné rozdíly v přístupu ke vzdělání mezi jednotlivými generacemi mají na svědomí propad jihokorejského IHDI. Existují přirozeně i země, které se v žebříčku IHDI umístily výš než ve srovnání HDI: Švédsko poskočilo z 10. na 5. místo, Dánsko se vyšplhalo z 16. na 12. místo a Slovinsko z 21. na 14. místo [16].

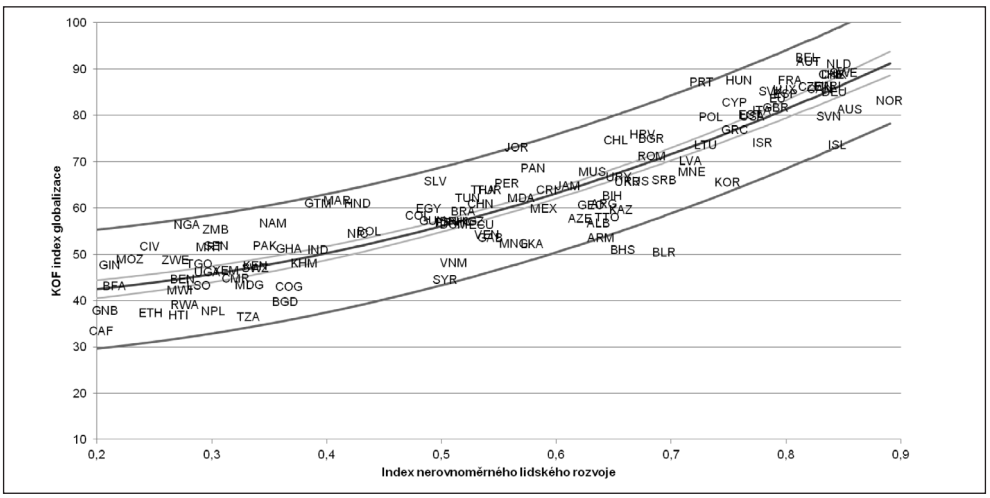
2. Výsledky

Ekonomických a ekonometrických studií zkoumajících dopady globalizace na národní ekonomiky byly publikovány stovky. Ke kvantifikaci stupně globalizace na národní úrovni však používají KOF index globalizace jen některé a z nich jen pár dává tento indikátor do vztahu s lidským rozvojem nebo šířeji do vztahu s celkovou institucionální kvalitou v zemi. Amavilah ve svém článku [1] dokazuje na vzorku 88 zemí pozitivní statisticky významné dopady globalizace na lidský rozvoj. Jenže v době, kdy publikoval své výsledky, byl k dispozici jen standardní index lidského rozvoje (HDI). V současnosti je koncept původního HDI rozšířen o otázku nerovnoměrného přístupu ke zdrojům a bohatství, což autorům tohoto článku umožňuje přezkoumat a rozšířit závěry formulované Amavilahem.

K analýze byla jak pro IHDI, tak i pro KOF index globalizace použita dostupná data za rok

2011. Pro následující studii bylo vybráno 121 zemí, přičemž základním kritériem byla dostupnost kompletních dat pro oba indikátory a jejich komponenty. Analýza vazeb mezi uvedenými dvěma indexy přinesla důkaz o jejich vzájemném velmi silném a statisticky významném vztahu (viz obr. 1, pro podrobnosti viz přílohu).

Obr. 1: Vztah mezi indexem nerovnoměrného lidského rozvoje a KOF indexem globalizace



Pozn.: Silná tmavá funkce ilustruje nejúspěšnější regresní model, intervaly pro střední hodnoty předpovědí jsou znázorněny užším světlým pásem, intervaly pro předpovědi pak širším tmavým pásem. Vše na 5% hladině významnosti.

Zdroj: vlastní, zpracováno na základě dat [18] a [19]

Autoři při testování vhodných regresních modelů pro odhad funkční závislosti mezi hodnotami IHDI a úrovní KOF indexu globalizaci zvolili model (1). Koeficient determinace upravený podle stupňů volnosti naznačuje, že zvolený model vysvětluje 83,5 % variability KOF indexu globalizace. Analýza rozptylu pak ukazuje, že tato závislost popsaná rovnicí (1) je na 5% hladině významnosti signifikantní.

$$KOF = 39{,}9051 + 64{,}6963 \cdot IHDI^2 \qquad (1)$$

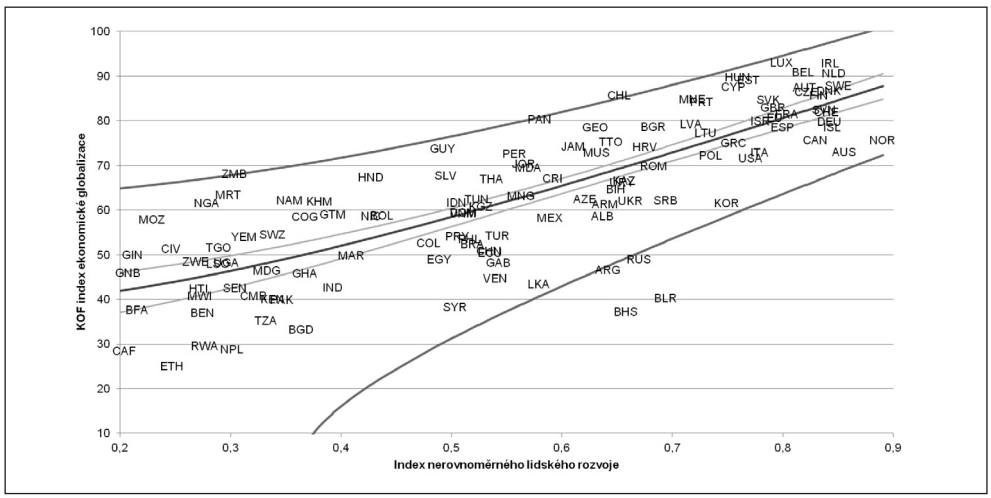
Regresní model (1) ukazuje na pozoruhodnou skutečnost: čím vyšších hodnot *IHDI* daná země dosahuje, tím vyšší lze předpokládat také hodnoty indexu *KOF*, přičemž s růstem *IHDI* se úroveň globalizovanosti zvyšuje progresivně rychleji. Z obr. 1 je zřejmé, že v podstatě jen dvě z hodnocených zemí neleží v předpokládaném intervalu pro předpovědi. Jedná se o Bělorusko (BLR) a Bahamy (BHS). Obě tyto ekonomiky zaznamenaly nižší hodnoty KOF, než by bylo možné předpokládat s ohledem na jejich úroveň lidského rozvoje. Podrobnějšímu vysvětlení této skutečnosti bude věnována pozornost později.

Vzhledem k tomu, že jsou oba analyzované indexy kompozitní, je přirozené pokusit se nahlédnout hlouběji pod povrch celkových (agregovaných) hodnot obou ukazatelů. Pro účely tohoto článku byla zvolena dekompozice KOF indexu globalizace a ověřování intenzity vazeb mezi jeho složkami (KOF index ekonomické, sociální a politické globalizace) a celkovou úrovní lidského rozvoje.

Analýza vztahu mezi IHDI a úrovní ekonomické globalizace *EG_KOF* přinesla výsledky velmi podobné s funkčním předpisem (1), jen formální typ nejpřiléhavější regresní funkce je poněkud odlišný (viz obr. 2, pro podrobnosti viz přílohu). Rovnice (2) charakterizuje vazbu mezi ekonomickou globalizací a indexem nerovnoměrného lidského rozvoje, přičemž koeficient determinace s hodnotou 67,4 % naznačuje, že tento konkrétní regresní model je schopen vysvětlit více než dvě třetiny variability v ekonomické globalizaci

pomocí nerovnoměrného lidského rozvoje. Vztah obou indexů (*IHDI* a *EG_KOF*) je statisticky signifikantní na 5% hladině významnosti, neboť mez významnosti určená analýzou rozptylu je nižší než 5 %.

Obr. 2: Vztah mezi indexem nerovnoměrného lidského rozvoje a KOF indexem ekonomické globalizace



Pozn.: Silná tmavá funkce ilustruje nejúspěšnější regresní model, intervaly pro střední hodnoty předpovědí jsou znázorněny užším světlým pásem, intervaly pro předpovědi pak širším tmavým pásem. Vše na 5% hladině významnosti.

Zdroj: vlastní, zpracováno na základě dat [18] a [19]

$$EG_{KOF} = \sqrt{1437{,}63 + 7902{,}19 \cdot IHDI^2} \quad (2)$$

$$SG_{KOF} = 21{,}2687 + 89{,}8635 \cdot IHDI^2 \quad (3)$$

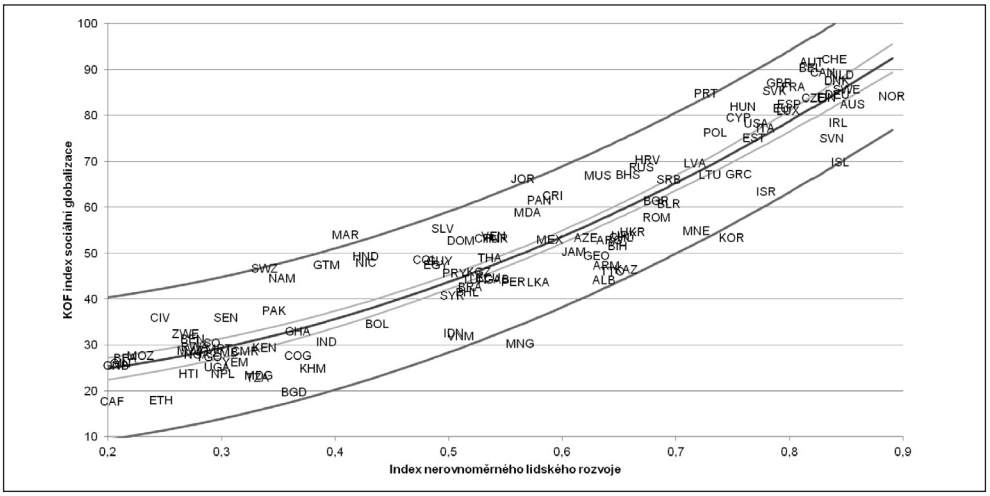
Vedle Běloruska a Baham, které se ani na obr. 2 nevešly do intervalu pro předpovědi, v případě ekonomické globalizace a jejího vztahu s nerovnoměrným lidským rozvojem vybočuje z 95 % hranic pro předpovědi dané regresním modelem (2) také Rusko. Zatímco celková úroveň globalizace měřená agregátním KOF indexem je v případě Běloruska a Baham tažena dolů právě nízkými hodnotami ekonomické globalizovanosti těchto dvou zemí (viz obr. 3 a obr. 4), ruská ekonomika představuje právě opačnou situaci, kdy je nízká úroveň ekonomické globalizace v celkovém KOF indexu kompenzována vysokou sociální a politickou propojeností Ruské federace se světem (viz obr. 3 a obr. 4).

Následující obrázek ilustruje vazbu mezi sociální globalizací *(SG_KOF)* a nerovnoměrným indexem lidského rozvoje IHDI. Nejlépe vystihuje tento vztah regresní model (3), který je formálně stejného typu, jako model charakterizovaný rovnicí (1).

Koeficient determinace v případě závislosti sociální globalizace na úrovni lidského rozvoje naznačuje, že 87,0 % variability v KOF indexu sociální globalizace (*SG_KOF*) je vysvětleno právě změnami v IHDI, přičemž rovnice (3) představuje statisticky signifikantní předpis vazby mezi *SG_KOF* a *IHDI* na 5% hladině významnosti, jak vyplývá z analýzy rozptylu (pro podrobnosti viz přílohu).

V případě vztahu mezi úrovní sociální globalizace a nerovnoměrného lidského rozvoje vybočují z hranic pro předpovědi stanovených na 5% hladině významnosti jen Mongolsko a Jižní Korea. Vzhledem k tomu, že úroveň celkové globalizovanosti těchto dvou ekonomik je redukována pozoruhodně nízkou úrovní sociální globalizace, musí být politická a především ekonomická propojenost těchto zemí se světovou ekonomikou nadprůměrná (pro potvrzení této teze viz obr. 1 a obr 4).

Obr. 3: Vztah mezi indexem nerovnoměrného lidského rozvoje a KOF indexem sociální globalizace



Pozn.: Silná tmavá funkce ilustruje nejúspěšnější regresní model, intervaly pro střední hodnoty předpovědí jsou znázorněny užším světlým pásem, intervaly pro předpovědi pak širším tmavým pásem. Vše na 5% hladině významnosti.

Zdroj: vlastní, zpracováno na základě dat [18] a [19]

Souvislost mezi úrovní lidského rozvoje vyjádřenou indexem *IHDI* a úrovní politické globalizace jednotlivých národních ekonomik je nejslabší ze všech vazeb zkoumaných v tomto článku (viz obr. 4, pro podrobnosti viz přílohu). To je ostatně také důvod, proč jsou intervaly pro střední hodnoty předpovědí i pro předpovědi odhadované na základě regresního modelu (4) nejširší. Uvedený model opět představuje takový formální funkční vztah a jeho číselnou kalibraci, které nejlépe vystihují variabilitu v úrovni *PG_KOF*.

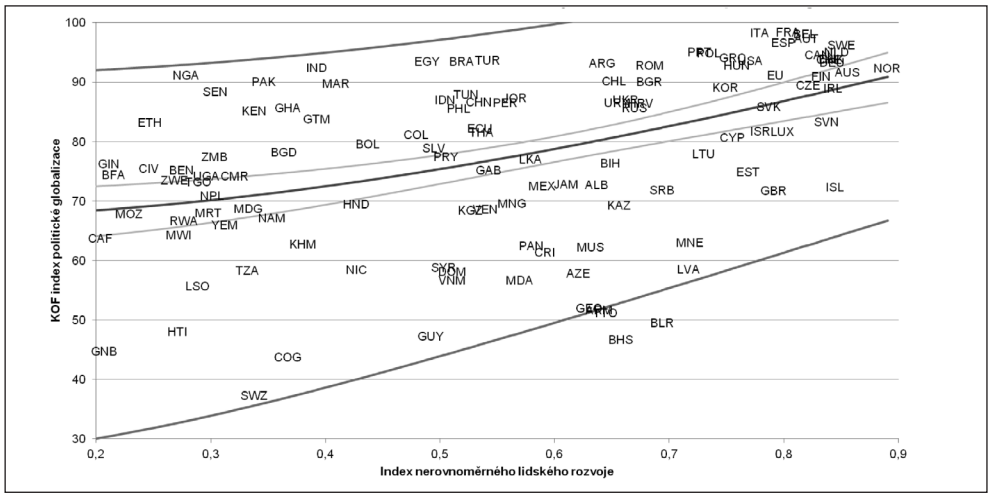
$$PG_{KOF} = \sqrt{4492{,}26 + 4754{,}68 \cdot IHDI^2} \quad (4)$$

Podle hodnoty indexu determinace lze usuzovat, že model (4) dokáže vysvětlit jen 24,0 % variability politické globalizace pomocí změn v úrovni nerovnoměrného lidského rozvoje, což naznačuje skutečně poměrně slabý vztah mezi oběma proměnnými (*PG_KOF* a *IHDI*). I přes nízkou intenzitu vzájemné závislosti je model (4) na 5% hladině významnosti statisticky signifikantní, jak naznačuje analýza rozptylu v příloze. Formálně je model (4) stejného typu jako regresní funkce (2).

Obr. 4 ukazuje zřetelně na relativní politickou izolaci jak Běloruska, tak také Bahamských ostrovů, která společně s nízkou ekonomickou globalizovaností obou zemí vytěsňuje celkové hodnoty jejich KOF indexů globalizace mimo interval pro předpovědi (viz obr. 1). Příčiny nízké politické globalizace prokázané v Bělorusku budou ale jistě zásadně odlišné od těch, které způsobují určitou politickou izolovanost Baham. O odlišném společenském klimatu svědčí nadprůměrně vysoký index sociální globalizace Baham a naopak mírně podprůměrná hodnota sociální globalizace vykazovaná Běloruskem (viz obr. 2). Malá ekonomická a politická angažovanost Baham souvisí pravděpodobně s jejich ostrovní polohou a postavením daňového ráje, zatímco v případě Běloruska se jistě jedná o otázku odlišné „státní ideologie“.

Globalizace měřená KOF indexem globalizace a institucionální kvalita reprezentovaná indexem nerovnoměrného lidského rozvoje jsou bez pochyby komplexní a mnohačetnými vazbami vzájemně propojené fenomény. Právě tato mnohovrstevnatost a složitost obou jevů představuje zásadní problém při identifikování příčin a jejich následků. Výsledky uvedených analýz prokázaly silnou vazbu mezi lidským rozvojem a ekonomickou i sociální globalizací, zatímco mezi politickou dimenzí globalizace a úrovní lidského rozvoje byla identifikována jen docela slabá závislost.

Obr. 4: Vztah mezi indexem nerovnoměrného lidského rozvoje a KOF indexem politické globalizace



Pozn.: Silná tmavá funkce ilustruje nejúspěšnější regresní model, intervaly pro střední hodnoty předpovědí jsou znázorněny užším světlým pásem, intervaly pro předpovědi pak širším tmavým pásem. Vše na 5% hladině významnosti.

Zdroj: vlastní, zpracováno na základě dat [18] a [19]

Souhrnný KOF index globalizace a index nerovnoměrného lidského rozvoje jsou vzájemně propojeny velmi těsně, ovšem provedené analýzy a použité nástroje neumožňují jednoznačně konstatovat, jakým směrem toto propojení funguje: zda vyšší úroveň globalizace umožňuje ekonomikám dosahovat vyšších úrovní institucionální kvality a lidského rozvoje, nebo zda intenzivnější lidský rozvoj spojený s lepší institucionální kvalitou přispívají k vyššímu zapojení národních států do hospodářských, sociálních a politických struktur světové ekonomiky. I přesto však provedený výzkum přinesl jeden klíčový závěr: Je nezbytné hledat a odhalovat interdisciplinární pojítka mezi nejrůznějšími oblastmi lidského rozvoje, protože právě tyto vazby mohou představovat zásadní katalyzátor úspěšnosti a konkurenceschopnosti národních ekonomik v systému mezinárodních vztahů.

Diskuze a závěry

Z výsledků popsaných v předchozí části je možné formulovat jasný závěr, že globalizace i nadále zůstává v prvé řadě velmi silným a mocným ekonomickým fenoménem. Ostatně dopady globalizace na hospodářský růst byly již mnohokrát testovány. Studie, které se touto problematikou zabývají, lze rozdělit do dvou skupin: **1) první** a početnější skupinu představují průřezové odhady (např. Chanda [17], Rodrik [20], Garret [13]) nebo práce zabývající se minuciózní analýzou jednotlivých subdimenzí globalizace (např. Dollar a kol. [8], Greenaway a kol. [14], Borensztien [6]), žádné z nich ale podrobněji nehodnotí dopady globalizace na ekonomický růst [11]; **2) druhá** skupina sestává ze studií věnovaných otázce měření globalizace; G-index byl vyvinut ve World Markets Research Centre [25], spolupráce mezi skupinou A. T. Kearney Consulting a časopisem Foreign Policy přinesla ATK/FP index globalizace [2], Ernst & Young vykazují vlastní globální index, KOF index globalizace je výsledkem práce vědců ze Swiss Economic Institute v Curychu, publikován je i Maastrichtský index globalizace (MGI) a další. V návaznosti na tyto rozdílné přístupy v měření úrovně globalizace jsou pak analyzovány dopady globalizace na hospodářský růst jako takový. Podle ATK/FP [2] i podle Drehera [9] lze konstatovat, že ekonomiky s vyšší intenzitou zapojení do světového hospodářství mají – z agregátního, obecného úhlu pohledu – tendenci vykazovat také vyšší tempa hospodářského růstu.

Jedním z prvních, kdo použil KOF index globalizace v empirických analýzách byl Ekman [12], jemuž se podařilo prokázat pozitivní, nelineární vztah mezi KOF indexem globalizace a zdravím obyvatelstva aproximovaným do indikátoru střední délky života při narození. V dalších pracích pak prokázal Sameti [21], že globalizace zvyšuje význam a velikost národní vlády, zatímco Tsai [22] ukázal, že globalizace přispívá ke zvyšování lidského blahobytu. Bjørnskov [5] analyzoval tři dimenze globalizace obsažené v KOF indexu a podal důkaz o tom, že ekonomická a sociální globalizace ovlivňují hospodářskou svobodu, zatímco politická globalizace nikoli.

Tato studie se zaměřila na otázku vazeb mezi lidským rozvojem (nebo šířeji institucionální kvalitou) a nejen ekonomickou, ale také sociální a politickou rovinou globalizace měřenými jednotlivými složkami celkového kompozitního KOF indexu globalizace. Jak uvádí Bednářová a kol., sociální globalizace coby „spontánní a mnohem méně politizovaná úroveň globalizace je mimořádně efektivní při zvyšování kvality života lidí po celém světě, při zlepšování zdravotních podmínek, v nichž žijí, a při zdokonalování jejich přístupu ke vzdělání“ [3, s. 69].

Zdá se být rovněž celkem zřejmé, že index vzdělání a index střední délky života, dvě klíčové komponenty indexu nerovnoměrného lidského rozvoje, budou citlivěji reagovat na faktory vykazované jako součást sociální nebo politické globalizace, než na faktory utvářející ekonomickou dimenzi globalizace. Např. Amavilah [1] ukázal, že sociální aspekty globalizace mají nejintenzivnější dopady na lidský rozvoj, zatímco Bergh a Nilsson [4] potvrdili pozitivní efekty globalizace (měřené KOF indexem globalizace) na střední délku života obyvatel.

Řada autorů se zabývala i otázkou dopadů globalizace na demokracii [10], na zvyšování vládních výdajů a míru zdanění [12] i na vládní spotřební výdaje [13]. „Nepodařilo se jednoznačně prokázat, že by politická stránka globalizace podporovala a stimulovala institucionální nebo sociální rozvoj. Důvodů je pravděpodobně celá řada: od nedostatku zájmu na straně rozvinutých ekonomik, přes hluboké, komplexní a obtížně řešitelné problémy rozvojových zemí, přes dysfunkční hospodářské nebo strategické aliance napříč Třetím světem, až po nízkou nebo nulovou akceschopnost mezinárodních organizací typu Spojených národů a jejich agencií“ [3, s. 69].

Dosažené závěry tedy představují zejména významnou základnu pro další výzkum. Jednou z možných výzev, před nimiž odborníci v této oblasti stojí, je identifikace směru a průběhu kauzálních vztahů mezi lidským rozvojem a globalizací (jinými slovy hledání odpovědi na otázku, zda proces globalizace stimuluje lidský rozvoj a institucionální kvalitu, nebo je tomu spíše naopak). Dalším potenciálním prostorem pro výzkum pak může být klastrová analýza skupin zemí, jež vykazují podobné úrovně intenzity závislosti mezi globalizací a lidským rozvojem.

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Abstract

THE LINKAGES BETWEEN HUMAN DEVELOPMENT AND ECONOMIC, SOCIAL, AND POLITICAL DIMENSION OF GLOBALIZATION

Aleš Kocourek, Pavla Bednářová, Šárka Laboutková

Increased global economic integration, global forms of governance, globally inter-linked social and environmental developments are often referred to as "globalization". The requirements of life standards and qualities, such as the right to an adequate/healthy environment, the importance of integrating the social equity into environmental policies, and the critical importance of public participation and official accountability are stressed with increasing frequency and pressure. It seems obvious now, the urgent global challenges of sustainability and equity must be addressed together. The target of this article is to prove the dependency between globalization and human development. The first part provides the methodology of measuring overall globalization with emphasis on the KOF Index of Globalization 2007. The Index of Globalization includes economic, social, and political contexts. The second part introduces one of the parameters of institutional quality – HDI (or rather IHDI as the real indicator of the level of human development) and its methodology. The Inequality-adjusted Human Development Index combines three dimensions: A long and healthy life, access to knowledge, and a decent standard of living. The third part compares indices and scores together, analyzes them, and confirms or refutes the empirical relationships between the Index of Globalization and its parts and the Inequality-adjusted Human Development Index. It is possible to conclude from the results achieved in the study that globalization remains primarily, a very strong and powerful economic phenomenon. But spurring growth rates and reducing poverty in countries with poor institutions cannot be done simply by globalizing their economies. The research provides data and conclusions with a potential to identify such policies at national and global level that could satisfactorily solve some of the most poignant problems of globalization and human development.

Key Words: *developed countries, developing countries, Inequality-adjusted Human Development Index, institutional quality, KOF Globalization Index.*

JEL Classification: *O11, E02, O15.*

Příloha

Následující příloha shrnuje výsledky regresních analýz generované v softwarovém balíku Statgraphics Centurion XVI.

Rovnice (1): $KOF = 39{,}9051 + 64{,}6963 \cdot IHDI^2$

Koeficienty modelu					Analýza rozptylu					
Parametry	*Odhad parametru*	*Střední chyba*	*T statistika*	*Mez význam.*	*Zdroj*	*Součet čtverců*	*Stup. vol.*	*Střední čtverec*	*F-test*	*Mez význ.*
β_0	39,9051	1,07393	37,1581	0,0000	Model	25004,5	1	25004,5	607,43	0,0000
					Reziduum	4939,77	120	41,1648		
β_1	64,6963	2,62502	24,646	0,0000	Celkem	29944,3	121			

Koeficient korelace = 0,913802
Koeficient determinace = 83,5035 %
Koef. deter. upr. podle st. vol. = 83,366 %
Střední chyba odhadu = 6,41598
Střední absolutní chyba = 5,07704
Durbin-Watsonův test = 1,8448 (mez význ. 0,1968)
Reziduální autokorelace = 0,0663885

Rovnice (2): $EG_{KOF} = \sqrt{1437{,}63 + 7902{,}19 \cdot IHDI^2}$

Koeficienty modelu					Analýza rozptylu					
Parametry	*Odhad parametru*	*Střední chyba*	*T statistika*	*Mez význam.*	*Zdroj*	*Součet čtverců*	*Stup. vol.*	*Střední čtverec*	*F-test*	*Mez význ.*
β_0	1437,63	205,174	7,0069	0,0000	Model	3,73039E8	1	3,73039E8	248,28	0,0000
					Reziduum	1,80302E8	120	1,50252E6		
β_1	7902,19	501,511	15,7568	0,0000	Celkem	5,53341E8	121			

Koeficient korelace = 0,821071
Koeficient determinace = 67,4157 %
Koef. deter. upr. podle st. vol. = 67,1442 %
Střední chyba odhadu = 1225,77
Střední absolutní chyba = 982,551
Durbin-Watsonův test = 2,11279 (mez význ. = 0,7322)
Reziduální autokorelace = – 0,0699248

Rovnice (3): $SG_{KOF} = 21{,}2687 + 89{,}8635 \cdot IHDI^2$

Koeficienty modelu					Analýza rozptylu					
Parametry	*Odhad parametru*	*Střední chyba*	*T statistika*	*Mez význam.*	*Zdroj*	*Součet čtverců*	*Stup. vol.*	*Střední čtverec*	*F-test*	*Mez význ.*
β_0	21,2687	1,295	16,4237	0,0000	Model	48242,1	1	48242,1	805,95	0,0000
					Reziduum	7182,89	120	59,8574		
β_1		89,8635	3,1654	28,3893	0,0000	Celkem	55425,0	121		

Koeficient korelace = 0,932954
Koeficient determinace = 87,0403 %
Koef. deter. upr. podle st. vol. = 86,9323 %
Střední chyba odhadu = 7,73676
Střední absolutní chyba = 6,2407
Durbin-Watsonův test = 1,97046 (mez význ. = 0,4356)
Reziduální autokorelace = 0,00667892

Rovnice (4): $PG_{KOF} = \sqrt{4492{,}26 + 4754{,}68 \cdot IHDI^2}$

Koeficienty modelu					Analýza rozptylu					
Parametry	*Odhad parametru*	*Střední chyba*	*T statistika*	*Mez význam.*	*Zdroj*	*Součet čtverců*	*Stup. vol.*	*Střední čtverec*	*F-test*	*Mez význ.*
β_0	4492,26	315,924	14,2195	0,0000	Model	1,35052E8	1	1,35052E8	37,91	0,0000
					Reziduum	4,27485E8	120	3,56238E6		
β_1	4754,68	772,218	6,15717	0,0000	Celkem	5,62537E8	121			

Koeficient korelace = 0,489976
Koeficient determinace = 24,0077 %
Koef. deter. upr. podle st. vol. = 23,3744 %
Střední chyba odhadu = 1887,43
Střední absolutní chyba = 1560,71
Durbin-Watsonův test = 1,95711 (mez význ. = 0,4069)
Reziduální autokorelace = 0,020802

THE REGIONAL RELATIONSHIP BETWEEN QUALITY OF BUSINESS AND SOCIAL ENVIRONMENT: HARMONY OR DISHARMONY?

Milan Viturka, René Wokoun, Nikola Krejčová, Petr Tonev, Vladimír Žítek

Introduction

The relationship between the economic and social development, including its political consequences, is undoubtedly one of the most important matters to be examined by social science studies. The concept of economic development is, however, often confused with a different concept of economic growth. While the economic growth is an increase in production of goods and services, the economic development, together with social development, represents a multidimensional integral part of the broader concept of the civilization development whose main purpose is the overall improvement of the quality of human life [17]. Interactions between the economic and social development are, however, significantly rendered more complicated because the links between cause and the subsequent consequence thereof within the main components of human society development, vary by virtue of an emerging retro-action [20]. In general, the economic growth represents the basic condition to reach a higher quality of life in a long term. The main aim of this paper is to present results of a research, a spatial dimension of the relationship between business and social environment in terms of its quality. This relationship assessment results from a research based on implementation of the original methodology constructed in order to evaluate interactions between the quality of business environment (BEQ) and the quality of social environment (SEQ) while focusing on sustainable development. The BEQ component represents the aggregate result of the long-term influence of various territorially bound factors determining (while interacting with the SEQ) initial conditions of the economic development of individual regions [21] and SEQ component is considered to be the aggregate result of various territorially bound factors forming (in interaction with the BEQ) the basic conditions for the social development of regions.

1. Research Methodology

In light of the aforementioned, the concept of the assessment of the quality of life, which emerged (especially in Anglo-Saxon literature) in the second half of the 20th century, must be designated as inspiring: the quality-of-life concept is generally considered the connection of economic and social development. Three basic approaches to the quality of life evaluation have been consecutively developed. The first of them can be considered normative. The core of this sociological approach is the application of the so-called objective social indicators (objective well-being embodying idealized notions of a desired social development). The second approach, which defines the quality of life as the level of satisfaction arising from the consumer preferences of the inhabitants, could be considered economical. This course emphasizes competitiveness to some degree, because services and products that meet the consumers' preferences the most, are obviously best suited for competition. On the other hand, it is important to point out that this course is vehemently reductionist because the quality of life is undoubtedly strongly influenced

by factors outside of the economic realm (e.g. demographic factors, interpersonal relationships or civil liberties). This last approach can be considered psychological for it defines the quality of life arising out of subjective attitudes and the thinking of the inhabitants which stem from their own general level of contentment and it takes into consideration the possible emergence of both pleasant and unpleasant factors that can influence their quality of life (e.g. their subjective well-being). These attitudes and ideas might not naturally correspond with the objective social and economic indicators. In general, it is important to point out that, at the present time, there is no universal agreement when it comes to the definition of, nor a methodology for the assessment of a quality of life evaluation.

A great many authors have contributed to the conception of the quality of life, e.g. Diener, Findlay, Morris, Rogerson, Smith, Veenhoven, Andráško and Ira [1], [4], [7], [12], [14], [16], [19]. Out of the large collection of essays focusing on the quality of life evaluation, the most popular are as follows: Human Development Index (HDI), published annually since 1990 by the UNDP; the Economist Intelligence Unit's Index and Mercer's quality of life report (combining research on the subjective contentment of the inhabitants with some objective determinants for the quality of life, e.g. safety and social infrastructure); also ladders pertaining to the quality of life as created by cities or metropolitan areas whose propagator is the well-known Fortune magazine. Notable institutions that concern themselves with the quality of life evaluation are the OECD (Better life initiative), The European Union (Eurobarometer), The World Bank (World development indicators) and The World Resources Institute (World resources). Some notable Czech authors are namely Kreidl, Nováček and Mederly, who have all participated in the creation of the Quality of Life Index as an alternative to HDI (the Index is based on approx. 100 indicators covering various spheres of human development at the national level). The latter two authors have also examined the quality of life at the regional level for the Center of Social and Economic Strategies of the Charles University [11]. The problem has also been examined with regard to the so-called factor-ecology by for example Matějů [10], Vystoupil [24], Toušek [18], Kladivo [8] and Živělová [29]. It is also important to mention Wokoun who, together with his team (Damborský, Kouřilová, Krejčová et al.), lead a number of annual MasterCard surveys. The aim of those surveys was among other things, the evaluation of the economic and social state of towns and regions within the Czech Republic. For example, a part of the survey was the evaluation of the social state of the 63 most important Czech and Moravian cities based on 12 indicators covering 5 spheres – the job market, the cost of accommodation, the quality of social and medical services, the crime rate and the level of the inhabitants' income [26]. In another year of the survey, the socio-economic level of regions were compared by means of evaluating the number of interventions on the part of the public sector, the existence of economic stability as a key prerequisite for business development, together with the financial flows and the presence of demand stimuli in business. The existing level of the knowledge-based society and the subsequent quality of life of its inhabitants as well as the attractiveness of certain regions were also analysed [25]. While the previous years of the survey predominantly focused on some specific values relating to the indicators, that from the past year analyses the development of some specifically chosen and available socio-economic indicators [27]. According to the findings, it is possible to maintain that the quality of life in less developed regions of the Czech Republic has been increasing faster than in the more developed areas.

The ever-increasing popularity of the quality of life evaluation is significantly linked to the long-debated dominant role of the GDP as the main indicator of the social development as a whole. One of the main reasons for this are, undoubtedly, the problems relating to the application of such with respect to the development of the GDP, in order to predict the long-term future development of individual countries. This often harmful practice, has resulted in a number of initiatives emerging out of the concept of pure economic welfare – Net Economic Welfare (proposing such a change in the GDP estimation that would only reflect forces that increase the economic welfare per se, i.e. other forces such as damage to the environment would lower the value) which is in

particular worth noting. Another notable initiative is the UN initiative aimed at supplementing the flow variable of the GDP with a state variable which would measure the general wealth of nations (revealing more general factors for the future development). Another reason is the actual reduction of the social development in general to its economic component only (an often cited example of the willingness to use a more complex representation of social development is the so-called Gross National Happiness Index used in Bhutan). The aforementioned activities can undoubtedly be seen as a significant contribution to the process of creating the necessary prerequisites for a more effective application of sustainable development, which is generally defined as a type of development which satisfies the needs of the present generations without damaging the opportunities for the satisfaction of needs for future generations [3].

The primary concept of our survey is based on a multi-dimensional normative approach encompassing social, economic and other (mainly environmental) indicators. These indicators are primarily oriented towards the evaluation of the social and economic quality of the regional environment from the viewpoint of the individual participants in the regional development (citizens, entrepreneurs, public service) – who can be characterized as exogenous. In the process of choosing possible indicators, much attention has been paid to the key spheres of evaluation which were identified by means of analysing previous surveys as well as defined by relevant available indicators. An important interconnecting element between the socio and economic evaluation is the regional ability to compete, which can be defined as the ability of regions to generate relatively high income and employment rates when confronted with outside competition [5]. From the long-term point of view, while interpreting this definition we find that the basis of competitiveness is the degree of the level of attractiveness for regional business opportunities and residential purposes. This can hypothetically mean that regional competitiveness is influenced not only by the BEQ but also by the SEQ. The long-term sustainability of competitiveness is then contingent upon the degree of harmony between both components. Such a hypothesis is supported by recent studies in the field of regional competitiveness according to which the level of competitiveness of a region is determined by a specific optimal combination between universal and region-specific factors. These combined factors influence the given region on a long-term basis, as has been demonstrated by for example the work of Wokoun et al. [28]. From the philosophical point of view, it actually answers one of the basic existentialist questions – the question relating to where and how to live. Supporting the SEQ (management of favourable dynamic relations between the BEQ and SEQ) should therefore be adequately reflected in the economic policies as well as in the development strategies of individual regions.

2. The Principal Results of the Survey

The main administrative units chosen for the regional evaluation of the BEQ and SEQ in the Czech Republic were the micro-regions of municipal body with extended competence (MEC). MEC, those regions falling under the jurisdiction of a third level There are 205 units altogether + Prague, which can be matched to nodal regions which were established based on relations between the centre and its premises [6]. The meso-regional level then consists of 14 NUTS-3 regions (regions). This level in the Czech Republic (together with 8 statistical NUTS-2 regions created for the implementation of the EU's cohesion policy) represents the main framework for regional policies in the Czech Republic. The actual method for evaluation is based on a comparison between some chosen indicators (factors) which can be predominantly characterized as state variables. The total values of BEQ and SEQ at the MEC level represent the sum of some values of individual factors obtained by the following procedure: ranking regions in accordance with primary indicators included in the individual factors with the use of statistical groups established by analysis of distribution, the final ranking of regions in accordance with the given factor based on the aggregation of results obtained within the first step and the subsequent transformation of the results of partial evaluations provided within the second step into generalized categories used for final evaluation (from 1 – the best, to 5 – the worst). Regional values were then obtained by

aggregating the calculated micro-regional weighted values with regards to the numbers of inhabitants. We believe that the fundamental result of the survey was the evaluation of the mutual relations between BEQ and SEQ which may help to construct relevant practical implementations.

2.1 The BEQ Component

The regionally oriented evaluation of the business environment is based on region-specific factors that reflect the development (investment) preferences of companies that are active in the processing industry and the higher level of market services (in economically developed countries, these levels have a decisive influence on the cumulative economic output). Altogether, 16 significant factors have been identified (described in detail in Tab.1) which may be divided into 6 categories. Information required for the correct choice of factors as well as the estimation of their weights of significance were obtained from international surveys by significant, mainly foreign, investors and a number of consecutive statistical and other analyses which focused on the Czech Republic ([9], [13], [23], [28] + others, esp. those available on www.bakbasel.ch). In this context, more than 20 thousand primary resources were collected within the period from 2006–2008 (periodically in 2009, and exceptionally even in 2010). In accordance with the main strategic aim of the development of the Czech economy, which was the gradual transition to a knowledge-based economy, weights of significance values were assigned to some chosen factors. These values were set in accordance with the anticipated conditions of economic development pulled-out by innovations. This approach employed thus increases the timeless significance of the BEQ evaluation.

The regional evaluation of BEQ provides the business sector as well as the public service sector with information concerning some elementary prerequisites of individual regions for the development of business activities (as activated namely by virtue of new or additional investments) and for potential external reserve savings. The main advantage of the applied method of BEQ evaluation, in comparison to the (in specialized literature) predominating method of regional economic output evaluation based on disaggregation of general macroeconomic indicators (significantly limited by low accessibility of this data at a lower than meso-regional level), is its higher explanatory power, especially from the long-term point of view. This in turn enhances direct links to the identification and formulation of programme aims for regional policies.

The results of the evaluation carried out in the MEC regions indicate that the regions of all centres possess a higher-than-average BEQ, i.e. their aggregate values are lower than 2.5. This value is considered to be the basic criterion for a definition of development poles at national level (the most important criterion is the system performance of higher management positions). The approach applied dismisses the vagueness surrounding the significance of a development pole definition which is characteristic for theories of polarized development. Development poles that have their BEQ value lower than 1.5 and that have a high significance even from the international point of view, are thus considered poles of supra-national significance – in our case it is Prague (considered to be one of the main poles of supra-national significance) and Brno (considered as a secondary pole of supra-national significance which manifests itself in specific fields only – in the given case in the fields of science, research and exposition business). Eight additional MEC regions bear higher-than-average values of BEQ. These, however, do not possess higher public management functions. These regions are situated almost solely in Central Bohemia and together with Prague they constitute a metropolitan region of European significance. Regions of concerned development centres, i.e. MECs (apart from Mladá Boleslav which is considered to be a pole of supra-national significance because of its exceptional economic value) are categorized amongst the second group and possess a highly favourable BEQ value.

Tab. 1: Business Environment Quality Factors – part 1

Factor	Definition	Main Indicators
Business Factors		
Proximity to markets `	Regional information concerning the accessibility of foreign and domestic markets evaluated by regional GDP in PPP per capita (application of gravity model within the limits of the so-called effective distance).	Aggregation of road distances in accordance with chosen groups of base and target regional centres (related, in case of domestic markets, to the average distance between regional centres) – data from 2009.
Concentration of Significant Businesses	Regional information about the presence of large companies with a significant role within the regional division of labour (companies in excess of annual revenue of 50 thousand Euros).	Localization of large businesses – verified data from 2006.
Support Services	Regional information about the presence of companies providing production services (companies in sections L, M and N in the NACE system).	Number of companies providing support services per 1000 economically active inhabitants – data from 2008.
Presence of Foreign Businesses	Regional information concerning the presence of foreign companies encouraging the Czech republic's involvement in the global economy.	The share of foreign businesses in the sum total of all economic subjects (apart from governmental organisations, non-governmental organisations and Individual entrepreneurs) – data from 2008.
Work Factors		
Labour Force accessibility	Regional information surrounding the overall supply of the labour force	Number of economically active inhabitants – interpolated data from 2006.
Labour Force Quality	Regional information about the general level of industrial worker education (both manual and non-manual components) and of the tertiary sphere workers (non-manual component).	Percentage of people of more than 15 years of age with an elementary education who have successfully graduated from at least one of the following educational institutions: high schools/apprentice training centres, college/university; Percentage of people of more than 15 years of age and tertiary education who have successfully graduated from at least one of the following educational institutions: university – data from 2001 population census updated by data from 2006.
Labour Force Flexibility	Regional information surrounding the entrepreneurship of inhabitants (qualitatively the highest level of flexibility).	Number of individual entrepreneurs–per 1000 inhabitants over 15 years of age – data from 2006.
Infrastructural Factors		
The quality of Roads and Railways	Regional information on MECs' connection to selected categories of roads (highways/motorways/1st class roads) and railways (apart from the category of secondary railroads that do not connect MECs).	Position on MECs within individual categories of roads and railroads (evaluated by their technical and operational characteristics) – data from 2009.

Tab. 1: Business Environment Quality Factors – part 2

Factor	Definition	Main Indicators
Infrastructural Factors		
Information and Communication Technology	Regional information concerning the average inhabitants' ICT equipment (including dynamic changes).	Percentage of homes equipped with PCs – data from 2006 (with interpolation of data from the Czech Statistics Bureau).
Proximity to International Airports	Regional information dealing with the location and accessibility of international airports.	Accessibility of international airports within given limits of maximum distance – data from 2009.
Local Factors		
Entrepreneur and Knowledge base	Regional information on industrial zones, scientific-technological parks, business incubators, universities, colleges and high schools and research centres distribution.	Number and quality of entrepreneurial facilities including R&D and basic knowledge infrastructure (evaluated by chosen criteria of significance) – data from 2009/2010.
Assistance of Public Administration	Regional information about the quality of public regional administration in terms of its potential for support of entrepreneurial activities.	Chosen data from the „City for business" project – data from 2009.
Price Factors		
Labour Costs	Regional information concerning the level of salaries in selected sectors of the economy.	Average gross wages in industry and market services – data from 2005.
Price of Real-estate	Regional information about the average housing prices and rents for office structures.	Average real estate prices in industrial zones and the average annual rent costs – data from 2009.
Environmental Factors		
Urban and Nature Attractiveness	Regional information concerning the attractiveness of regions evaluated with respect to their significance for tourism.	Appearance of unique elements of natural and human origin (protected areas of nature and architectural monuments) – data from 2007.
Quality of the Environment	Regional information about negative impacts of economic development on the environment.	Aggregated indicator of emission limits adherence (chosen pollutants) – data from 2004–2006.

Source: original calculations, CSB, CHMI, Factum Invenio.

The remaining regions have been classified into groups with a favourable (101 regions), a less favourable (82) and an un-favourable (2) level of BEQ. In light of this, it can be maintained that with a decrease in the level of the BEQ, the economic development of the MEC regions is increasingly influenced by their comparative levels of individual factors. Generally speaking, a confirmation of the hypothesis of BEQ level per capita of regions represents a basic characteristic of their mutual position (and thus the political urgency of solving their development problems) and constitutes a significant outcome of the conducted research. The validity of the hypothesis has been statistically confirmed by means of an exponential regressive function which was considered optimal mainly from the viewpoint of the larger cities with the highest potential for the accumulation of external savings reserves. The real values of BEQ can naturally significantly differ from the theoretical levels calculated by means of the exponential curve (the most significant deviations can be observed in Central Bohemia, the Plzeň region and South Bohemia; the most significant negative deviations can be observed in Moravia-Silesia and the Olomouc regions). The above mentioned results have been effectively employed for purposes of the identification of development axes of national and regional significance.

Based on the results obtained by aggregating the micro-regional values by regions (see

Tab. 2), it is possible to accept the strategically significant conclusion, that the disparities or imbalances in problems surrounding the economic development in the Czech Republic relate mainly to the relationship of Prague (or Prague together with Central Bohemia) to the remaining regions. It is important to point out, that their BEQ values are in close proximity to the range of +12 to -10 % approximately the average for these regions (counting Prague, the level is within the range of +20 to -58 %). In this context, some of the differences in BEQ values between development poles that have a decisive influence on the overall investment attractiveness of concerned regions can be considered the most significant. Other analyses seem to suggest, that a convergence tendency in the economic output of regions has not yet been shown to exist. The fact that the hypothesis suggesting that the BEQ is strongly connected to the GDP value (as a primary indicator of development differentiation among social systems) has been confirmed at the regional level and may be considered crucial. The average correlative coefficient discovered within the evaluated period from 2006–2008 is 0.97. A logical and dynamic connection between the business environment and its success has also been statistically substantiated. The aforementioned proves that the original BEQ evaluation model has a very high factual value, which makes it an extremely effective tool for regional politics.

Tab. 2: Overall BEQ Values in Regions

Region	BEQ	BEQ centres	GDP per capita in thousands CZK(2007)
Prague	1.16	x	760
Central Bohemia	2.65	2.03	331
South Bohemia	2.86	1.98	307
Plzeň	2.77	1.68	329
Carlsbad	2.90	2.19	263
Ústí nad Labem	3.05	2.35	286
Liberec	2.79	2.02	274
Hradec Králové	2.86	1.88	302
Pardubice	2.94	1.81	297
Vysočina	3.02	2.16	298
South Moravia	2.78	1.54	325
Olomouc	3.19	2.37	262
Zlín	3.29	2.43	288
Moravia-Silesia	3.27	2.33	297
Czech republic	**2.74**	**1.16**	**354**

Note: In the case of Central Bohemia region, the BEQ centres value is related to the Mladá Boleslav region.

Source: original research, CSB.

The following and most significant regularities or tendencies have been found in the composition of aggregate BEQ levels:

- Meso-regional level – a decrease in micro-regional BEQ levels with increasing distance from the regional centres which is in direct accordance with the core-periphery group theories (selectively modified by the historical development of the urbanization process);
- macro-regional and meso-regional level – creation of spatial systems of development poles and development axes of national and regional significance (identified by positive deviations of the real from the theoretical BEQ values) representing some

primary sources of positive economic effects spreading from development poles;
- macro-regional level – a decrease in the regional BEQ values when approaching the east (corresponding to a similar trend of decreasing meso-regional GDP per capita values when getting away from the EU core, which can be observed in all countries of the so-called Visegrád Group: Czech Republic, Slovakia, Poland, Hungaria).

We consider the above described regularities and tendencies to be the specific result of laws of development and hierarchal differentiation between social systems that have created a basic spatial framework for the economy. The most significant result of their influence is the spatial differentiation in accordance with both the BEQ and GDP values which determines its optimal functional use [21], [22], [23] via production factors prices.

2.2 The SEQ Component

The evaluation of the SEQ is complicated in itself because of the diversity of approaches to the quality of life concept (see above). From our point of view, the application of the so-called objective social indicators appears to be the most appropriate. In that spirit, it is, however, necessary to point to the absence of universally accepted methods for selecting indicators or factors. Selecting these is therefore to a significant degree, a subjective matter reflecting not only the specialized knowledge and preferences of the researcher but also the accessibility of relevant indicators. A problem which is commonly discussed is related to weights of selected factors. Here we believe that their introduction to the research would not be justifiable because the "ideal" social development should reflect the preferences of all groups of inhabitants without favouring some over others (for example: employment rates are only significant to people during the span of their employment age). Another reason is the absence of universally accepted indicators comparable to the GDP. Introducing indicator weights would also increase the risk of inadvertently altering the evaluation results – for example we can cite some American research [2] where indicator weights were applied. As a result of this, some 20 % of evaluated metropolitan areas in the USA were placed into the best or the worst category. After undertaking some analyses, the equal number of factors has been implemented for the SEQ evaluation as for the BEQ evaluation (the fresh air quality is unlike its BEQ evaluation counterpart oriented towards a more long-term evaluation of the most significant ever-present pollutant – airborne dust). The fact that the vast majority of them have already undergone a thorough statistical analysis is also important [10]. These undifferentiated factors have been placed into five elementary groups (see Tab. 3).

Tab. 3: SEQ Factors – part 1

Factor	Definition	Main Indicators
Social Factors		
Life Expectancy	Regional information on life expectancy (reflecting the quality of health care, social services and the environment).	Life expectancy of a new-born child – data from 2006–2010.
Education	Regional information concerning the overall level of education.	Educational index: graduates of Apprentice Training Centres of both types (k = 1.3) + graduates of colleges (k = 1.55) + graduates of universities (k = 2.25) / inhabitants of more than 15 years of age – data from 2011 population census.[1]
Unemployment	Regional information regarding the unemployment rate (indication of imbalances in the labour market).	Average rate of registered unemployed – data from 2006–2010.

Tab. 3: SEQ Factors – part 2

Factor	Definition	Main Indicators
Social Factors		
Divorce rate	Regional information on divorce rates.	The divorce-marriage ratio – data from 2006–2010.
Miscarriage rate	Regional information on the rate of miscarriages and abortions.	The miscarriage of new-born babies ratio – data from 2006–2010.
Crime rate	Regional information on crime rates.	Number of reported crimes per 1000 inhabitants – data from 2006–2010 (original interpolation of data from the CSB and PCR).
Demographic Factors		
Natural population changes	Regional information on the effects of natural population reproduction.	Natural increase/decrease per 1000 inhabitants (middle class) – data from 2006–2010.
Migration	Regional information on the effects of migration.	Migratory increase/decrease per 1000 inhabitants (middle class) data from 2006–2010.
Population Age	Regional information on the age structure of the population (perception of productive group development).	Age Index (percentage of 65+ and 14- years of age) – data from 2006–2010.
Urban Related Factors		
Urbanization	Regional information on the level of urbanization (minimum population level of the cities – 3 thousand).	Percentage of cities related to the entire population – data from 2011 population census.
Urban development	Regional information on the intensity of residential construction.	Percentage of new buildings in the overall number of inhabited buildings – data from the time period between the 2001 and 2011 population census.
Urban environment (genius loci)	Regional information on the architectural uniqueness of mansions (hierarchal line: UNESCO monuments, city monument reservations, supra-national significant spas, national cultural heritage).	Appearance of protected monuments and spas with special consideration for the specific position of Prague (localization outside of MECs has been accounted by means of meso-sections) – up-to-date information.
Infrastructural Factors		
Healthcare infrastructure	Regional information on the healthcare provided.	Number of MDs per 1000 inhabitants – data from 2010.[1]
Social Infrastructure	Regional information on social security provided.	Capacity of social service institutions per 1000 inhabitants – data from 2010.[2]
Environmental Factors		
Landscape	Regional information on the presence of landscape elements that result in a positive psycho-somatic effect on people.	Percentage of forested areas and water within in the entire territory – up-to-date information.
Quality of fresh air	Regional information on atmospheric pollution by airborne dust as an ever-present pollutant with the most serious consequences for the health of the population (including synergistic effects).	Average annual concentration of PM_{10} (borderline values at 10, 20, 30 a 40 $\mu g/m^{-3}$ = health-protective emissions limit) – data from 2006–2010 (original and interpolated data).

1 Coefficients (k) have been determined by the application of the average salary median.
2 Without specialized healthcare institutions.
3 Without housing for the physically impaired.

Source: CSB, MLSA, HSII, MCCR, CHMI, PCR, original calculations.

The SEQ evaluation provides the business sphere, public service sphere and other potential users with regionally and factually structured information about some relevant issues influencing the quality of life in the Czech Republic. These factors have a considerable impact not only on the social environment but also on the long-term sustainability of the current model of economic development (a long-term decrease in the quality of life caused by for example by an increase in environmental damage or by a significant increase in the crime rate undoubtedly supports the increase of "non-productive" financial output on the part of the public as well as the private sector).

Based on the aforementioned set of indicators, the first to have their SEQ evaluated were the MEC regions. It is possible to divide these regions according to the overall quality of life into categories of: progressive (regions with a high, above-average SEQ level, i.e. lower than 2.5 – because of other advantages such as for example the level of cultural activities possible, whereby even county seat regions with an SEQ slightly higher than the aforementioned cap have been placed into this category), standard (regions with average SEQ) and regressive (regions with strongly below-average SEQ, i.e. higher than 3.5). The results indicate that when compared to the BEQ, the SEQ's characteristic in terms of regional layout is at a visibly lower level of differentiation (both extreme classification groups are not represented and approx. 3/4 of regions, i.e. approximately 50 % or more regions fall into the average group unlike the comparison of the BEQ). Another significant difference is the fact, that not all poles of development have an above – average SEQ – exceptions to this are the K. Vary, Ústí n. L. and Ostrava regions, which as development poles of the structurally most affected regions possess only an average SEQ. This can be interpreted as the empirical confirmation of Myrdal's theory of circular cumulative causality [12]. Apart from most development poles (the best SEQ is, however, not in Prague but in České Budějovice and Pardubice), another eight regions have a higher-than-average SEQ. These regions are situated in Central Bohemia and South Moravia (hinterlands of Prague and Brno) and in Pardubice, Vysočina and South Bohemia regions. Other regions have then been placed into average (156 regions) or below-average (31 regions) groups. More detailed information as to their territorial distribution is provided by Fig. 1. Average SEQ values in accordance with statistically optimized size groups of regions with border values of 180, 90, 45 and 18 thousand inhabitants are 2.78; 2.87; 3.03; 3.12 and 3.19 respectively – and are therefore in a much narrower sector than in the case of the BEQ with the corresponding values of 1.68; 2.51; 2.97; 3.51 and 3.84. The dependency of SEQ on the population of MEC regions is much lower than in the case of BEQ and also has different characteristics that can best be described as a linear regressive function. From the development point of view, factors determining strengths and weaknesses of regional SEQ are the most important. Within the size group 1 (regions of the largest cities, i.e. Prague, Brno, Plzeň and Ostrava) their strengths are factors of urbanization, healthcare infrastructure, life expectancy and education. Their weaknesses are mainly crime rates, the average age of the population, the landscape structures and the quality of fresh air. The size group 2 (18 regions altogether) has very similar features. This group's only difference from the previous one are two more factors among the strengths – the unemployment rate and urban development (this difference is, however, dependent on a specific territorial definition of the most important urban regions as well as on the inclusion of Ostrava into the first group). The following two size groups have a higher degree of heterogeneity than the first two groups. Within the scope of the group 3 (47 regions) the strengths were thus identified only as education and healthcare infrastructure factors. The weaknesses were crime rates. In the largest group 4 (101 regions), the only significant factor was the urban environment which represented the weaknesses of these regions. In the group 5 (36 regions), there is a repeated increase of homogeneity where the strengths of these regions is (somewhat surprisingly) the unemployment rate and the quality of fresh air. The weaknesses are logically then all urbanization factors as well as education, healthcare and social infrastructures. The aforementioned suggests, that at the level of the MEC regions, the least significant differentiation aspect results from the divorce rate, the rate of miscarriage and factors

surrounding natural population changes and migration. The development differentiation of these factors is thus determined by processes at higher hierarchal levels (e.g. general changes of popular lifestyle or liberalization of concerned national legislature). In this context, within the scope of defined groups, 56 regions possessing favourable levels of basic demographic factors were identified; thee factors have a significant influence on the development perspectives of the identified regions (marked in Figure 1 as regions with demographic advantage).

The second step involved the aggregations of micro-regional SEQ levels according to regions (see Tab.4). These aggregations show, that the evaluated regional SEQ values stay within the range of +18 to -15 % (or from +15 to -12 % without Prague) in relation to weighted average concerned. In two structurally affected regions, the SEQ of the regional centre is even worse than the aggregated value of the whole region – it serves as an apparent evidence of serious degradation to the social environment there. In the case of the interaction at the regional SEQ and BEQ values, no definite statistical dependence (correlation coefficient 0.56) has been demonstrated. In the case of the SEQ to GDP relationship, only weak dependence was ascertained (it is important to point out, that the GDP does not take into account any values originating outside the economics realm. e.g. landscape structure). The general origins of this arise from the individual differences in the long-term dynamics of social and economic reproduction processes, namely the gradual prolonging of reproduction cycles (population regeneration) on the one hand and the gradual shortening of re-production cycles (regeneration of products and technologies) on the other. This in turn has a substantial influence on the development of the social and business environment as well as on the mutual interaction between the two. A specific cause is the contradictory influence of a number of factors in the case of SEQ that can best be demonstrated by the example of a group of environmental (the best values are from rural regions) and a group of urban factors (the best values are from urban regions).

Tab. 4: Overall SEQ Values of Regions

Region	SEQ	SEQ centres	Population in thousands (census 2011)
Prague	2.50	x	1,273
Central Bohemia	2.90	2.44	1,275
South Bohemia	2.64	2.31	637
Plzeň	2.91	2.56	575
Karlovy Vary	3.31	3.38	310
Ústí nad Labem	3.47	3.09	830
Liberec	2.93	2.53	439
Hradec Králové	2.87	2.56	556
Pardubice	2.74	2.31	518
Vysočina	2.73	2.44	513
South Moravia	2.93	2.56	1,170
Olomouc	3.03	2.50	640
Zlín	2.89	2.50	590
Moravia-Silesia	3.40	3.50	1,236
Czech Republic	**2.95**	**2.50**	**10,562**

Note: In the case of Central Bohemia region, the SEQ value is related to Mladá Boleslav.

Source: original research, CSB.

The following regularities or tendencies were found in the territorial distribution of SEQ values:

- meso-regional level – a tendency to decrease the micro-regional SEQ values when reaching the outskirt regions is predominant (selectively modified by their current social development and the development of concerned regional centres);
- macro-regional level – no clearly dominant tendency as in the case of the BEQ has been identified. This level is, however, closely connected to the significant negative anomalies of the SEQ (induced by the excessive preference of strategically significant branches such as mining industry, energy and heavy industry during the period of the centrally-planned economy).

The aforementioned data confirm the basic significance of lower hierarchal levels in the process of creating the social environment as well as the considerable persistence of negative regional development trends introduced during more recent times. From the viewpoint of the overall social development, it is necessary to point out the economically often overlooked fact which is that the SEQ influences the long-term competitiveness of individual countries and their regions in a significant way. This logical conclusion corresponds to the fact that regions with a lower-than-average level of SEQ have suffered stagnation or loss of population (the highest decrease in population (2.5 %) was discovered in Moravia-Silesia – the overall data for the Czech Republic show a 3.2% increase) during the period of 2001 to 2011. This was connected to a higher-than-average migration concentrated namely within the younger and higher educated groups, which logically leads to a lower level of the future competitiveness of these regions.

2.3 Mutual Connection of BEQ and SEQ

In the final part, a lot of attention was paid to regional analyses of the relations between the BEQ and SEQ levels and their synthesis from the viewpoint of the achieved level of their equilibrium and from the viewpoint of some idealized notions of their harmony. A balanced development is generally regarded as a development that does not disrupt the balance between its economic and social components. If we paraphrase the ancient ideal surrounding harmony, and that is that human society should endeavour to achieve not only economic progress (welfare) but also ensure the physical and psychological health of the people (contentment) and satisfaction of their natural need of beauty (happiness). From the political point of view, it is thus essential to point out, that supporting harmonic development was referred to in the Treaty of Rome from 1992. When fulfilling this aim, the regional level plays an important role. The majority of economic, social and territorial cohesion policies are aimed at this level.

In the first part, an analysis of the MEC regions positions in terms of BEQ and SEQ was carried out. The main result of this was their division into three types in accordance with the level of balance in their various positions, which were measured by means of the SEQ to BEQ ratio (in accordance with their statistical layout, the borderline average values were set at 0.9 and 1.2; the related average values in the MEC regions being 3.3 and 3.1). In order to ensure the best possible interpretations of the results, four specific sub-types have been established. Altogether, the following types and sub-types have been defined (for more detailed info, see Figure 1):

- Type A: business-like regions characterized by visibly higher levels of BEQ than SEQ with specific sub-type A-, encompassing regions with lower-than-average SEQ (aggregate values of 3.2 and higher);
- Type B: all-round regions characterized by a balance between BEQ and SEQ, with the specific subtype B+ encompassing regions with higher-than-average BEQ and SEQ (aggregate values lower than 3.1 or 2.9) and B- encompassing regions with lower-than-average BEQ and SEQ (aggregate values higher than 3.5 or 3.2);
- Type C: socially more highly developed regions, characterized by a significantly higher SEQ than BEQ with the specific subtype C- encompassing regions with lower-than-average BEQ (aggregate values of 3.5 and higher).

There are 19 regions under Type A, i.e. 9 % of all regions but only a third of the Czech population.

This type encompasses 10 poles of development, that are supplemented by 9 subordinate

regions situated mainly in the Ústí nad Labem region and Central Bohemia (if we consider the specific nature of the urban regions of Prague, Brno, Plzeň and Ostrava in terms of their enlargement of adjacent MEC regions, it would significantly concern only the Plzeň region, whose aggregate values would become close to the borderline between types A and B). All subordinate regions apart from Kolín are then connected to the development poles regions in Ostrava and K. Vary by virtue of their categorization into the specific subtype A- with an unfavourable SEQ value. This is especially typical for former mining and industrial regions with lower-than-average education, high unemployment and a damaged environment (these regions significantly influence the socio-economic development of concerned regions). The instrumental question relating to the regional categorization into types is, whether the regional imbalance between BEQ and SEQ is the result of a dynamic development or whether it is more the result of an erroneous development strategy. The answer to this question can be ascertained mainly by observing the individual regions' SEQ to determine whether or not it has a progressive tendency. This is the case in seven development poles with Prague at the forefront. Because many of them have highly negative levels with respect to some SEQ factors (for example Prague with the highest regional crime rate), it is necessary to include relevant measures aimed at improving the SEQ in their development strategies. In light of this, it is important to point out that in the World Quality of Life List by City (from 2010) from the American advisory group Mercer, Prague was placed 69th and thus was significantly lower than other West-European metropolises. The aforementioned condition has not therefore been met by A- regions. As the long-term support for their economic development (including privileging regions with high unemployment rates within the system of investment incentives) has not led to an anticipated improvement in their positions, it is crucial to make some necessary steps in order to ensure a serious change in their contemporary development strategy (this applies mainly to the structurally damaged regions of Karlovy Vary, Ústí nad Labem and Moravia-Silesia).

There are 102 B type regions (i.e. almost 50 % of all regions including the remaining poles of development – Č. Budějovice, Jihlava, Olomouc and Zlín) with approx. 47 % of the entire population. This type is characteristic namely for the third and second group size in the MEC regions. A quarter of them (26 regions) have been placed into the B+ subtype which is prevalent in South Bohemia and Central Bohemia. Type B- has only one more region than type B+. Most B- regions are situated in Moravia-Silesia, Ústí nad Labem and South Moravian regions. It can be assumed that balanced levels of BEQ and SEQ have a positive impact on the overall attractiveness of the regions whose significant characteristic is mainly long-term in the form of positive immigration. If we evaluate these regions from this viewpoint (while to a varying degree omitting the development-wise dominant poles whose immigration is largely influenced by suburbanization processes) this fact has been absolutely or to a lesser degree confirmed in 10 out of 13 non-Prague regions. The Plzeň and South Moravian regions have recorded comparatively better than average levels in regions of type C. This difference is due to the fact that concerned regional centres are enveloped in rural regions of the given type that were used primarily as a workforce source during the era of centrally-planned economies, and hence were able to maintain their rural nature origins. However post 1989 year, this situation has massively changed due to suburbanization processes that have been encouraging the integration of these regions into the newly-forming metropolitan regions. A somewhat different situation can be observed in the case of Ostrava's industrial agglomeration where there has been a massive disruption of social environment and the concerned MEC regions are thus displaying lower migratory activity than the other Moravia-Silesian rural Type C regions with a favourable geographic position. To complement the aforementioned information, in the case of B+ regions, a negative migration component was discovered only in two cases. From the strategic point of view, the instrumental question is the confirmation of the hypothesis of a positive influence of the balance between BEQ and SEQ on the long-term sustainability of regional development. This question obviously cannot be answered with any degree of certainty due to the permanently indeterminable nature of future

development. However, the aforementioned facts substantiate the validity of this hypothesis.

Type C encompasses 85 MEC regions, i.e. approximately 41 % of them but with only one fifth of the entire population. This type, that is not present in the strongly urbanized Ústí nad Labem region, can mainly be characteristic for the smallest size group of regions. Almost 60 % of these regions then fall into the C- subtype (the strongly integrated regions adjacent to Brno and Plzeň have not been included) which is mainly present in Moravia-Silesia as well as in Olomouc, Zlín and Southern Bohemian regions. Their overall attractiveness is strongly limited by the low level of BEQ. The matter concerning the increase of the BEQ is therefore logically the most important of all when it comes to their future development. An advantageous factor is the existence of positive migration which is evidently the case in 9 out of the 12 here evaluated regions (the remote regions of the C- type are then especially prone to emigration). A satisfactory solution to the question of the appropriate development of these regions is, however, a very difficult task due to their relatively low level of development resources. It is apparent that a relatively favourable SEQ could be used for developing accommodative functions or tourism. The first of these two options is practically applicable only in regions situated within the suburban areas of the largest cities and thus we believe the best option is the second one where 15 regions (situated mainly in the attractive Šumava and Beskydy areas) possess a significant potential in that regard. Those regions situated along the development axes which merit national or regional significance also have broad options of development [28]. Apart from regions that are adjacent to the development poles, this applies to at least a dozen other regions that are interesting for investors by virtue of their favourable land prices and the availability of labour force. Approximately 40 % of regions of the given type have at least one of the aforementioned options (by way of comparison, the positive deviations from the theoretical BEQ level proving their relatively successful development up until now has been demonstrated by approximately 1/4 of them). A successful development of the remaining regions will then be dependent on economic cooperation with stronger regions. The other, unfavourable alternative is their economic and then even social marginalization, which could be partially dampened by specific measures oriented towards the maintenance of the current services or by providing new services within the public sector (namely schools, healthcare and social services).

Tab. 5 shows the main result of the regionally-aggregated typology. The chart shows that type A is relatively mostly present in the Ústí nad Labem region (almost all regions, however, fall into A- subtype), type B in Karlovy Vary and Central Bohemia regions and Type C in the Zlín region. According to this typology, the most heterogeneous regions are the Plzeň region and Central Bohemia – therefore it is reasonable to expect that a consensus on the matter of future development policy will be harder to achieve in these regions. If we focus on the original question posed in the title of the paper, it is clear, that at the level of the MEC regions, an imbalance is slightly more prevalent in the matter of BEQ and SEQ – according to the numbers and proportion of the Czech population, the so-called complex MEC regions of type B are roughly half. This fact is reflected in results of the regional evaluations where regions of this type, i.e. according to population, are prevalent in several regions (namely Olomouc, South Bohemia, Central Bohemia, Karlovy Vary, Vysočina, Liberec and Zlín regions). In that spirit it is useful to point out that the thereby resulting level of statistical dependence of both components only slightly exceeds 50 %. The term balance, however, is not quite equivalent to the term harmony. Harmony represents a qualitatively higher level of balance which suppresses systemic negative deviations from social standards that are derived from idealized notions of a socially desirable development. When evaluating the achieved level of harmony between business and the social environment, it is possible to apply only a relative approach, whereby these deviations are evaluated in accordance with the BEQ and SEQ factor groups. Into the group of harmonic or more precisely quasi-harmonic regions, the following regions can be placed: type B regions (apart from B- and due to serious devastation by surface coal-mining also the Chomutov and Sokolov regions), type A regions (apart from A- and Ústí n.L. and Kolín that do not meet the SEQ level requirements of

the progressive group). Altogether this makes 80 regions, i.e. 39 % of their overall number but possessing 60 % of the entire population. Based on the aforementioned facts, we can reach the general conclusion that none of the evaluated relations of BEQ and SEQ (i.e. harmony and disharmony) can be considered dominant (from the territorial point of view, disharmony prevails but from the population point of view, harmony does).

Tab. 5: MEC Regional Typology According to the Balance between BEQ and SEQ

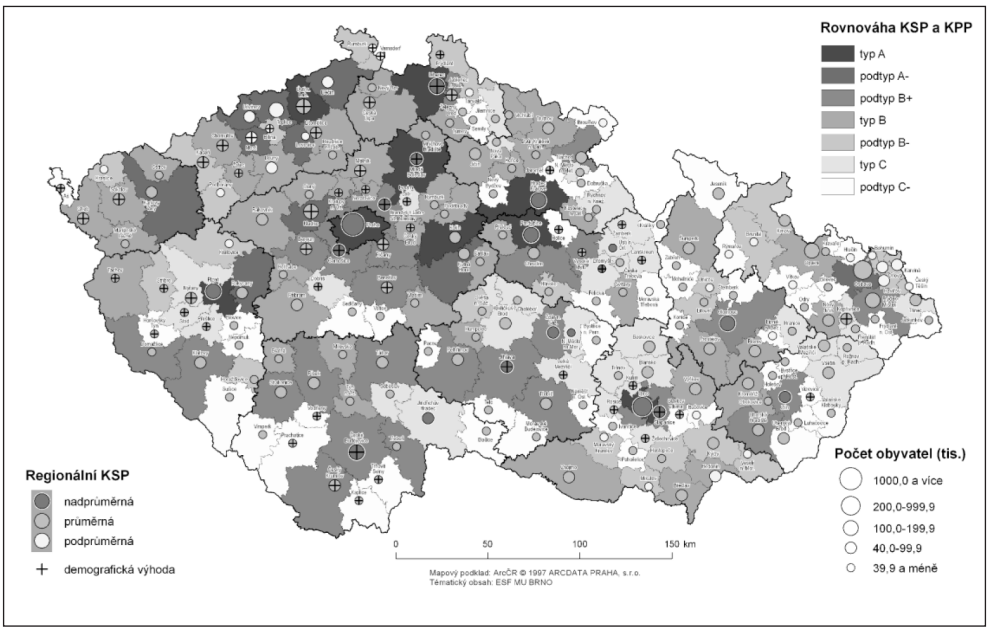
Region	Type A	Type B	Type C	Number of regions
Prague	1	-	-	1
Central Bohemia	4	18	4	26
South Bohemia	-	9	8	17
Plzeň	2	6	7	15
Karlovy Vary	1	5	1	7
Ústí nad Labem	6	10	-	16
Liberec	1	6	3	10
Hradec Králové	1	7	7	15
Pardubice	1	5	9	15
Vysočina	-	6	9	15
South Moravia	1	10	10	21
Olomouc	-	6	7	13
Zlín	-	4	9	13
Mora	1	10	11	22
Czech Republic	**19**	**102**	**85**	**206**

Source: original research

From a broader perspective it is clear, that low SEQ, generated mainly by a higher-than-average rate of socially-pathological phenomena or severely damaged environments, not only increases the expenses for both the public and private sectors, but also lowers the investment and residential attractiveness of concerned regions. Therefore, the overall BEQ and to a lesser extent even SEQ are, apart from other factors, significantly influenced by macroeconomic and global factors the future development of which are, however, hardly predictable. Logically, regions with a higher-than-average BEQ possess also the highest level of competitiveness. The BEQ links to the SEQ might not be in equilibrium in such regions. If the main characteristic for these regions is a progressive SEQ, a positive deviation in the BEQ can be regarded as positive; in our case, it is mainly regions of the following development poles: Prague, Brno, Plzeň, Liberec, H. Králové, Pardubice and M. Boleslav. The aforementioned conclusions reflect the present hypothesis with respect to the positive influence of a balanced BEQ to SEQ relationship on the sustainability of social development in general. This equilibrium reflects the natural tendency to gradually balance both components in the long-term; that is encouraged by a more favourable development of positive (for example improvement of education levels as well as the healthcare level) rather than the negative factors (atmospheric pollution and crime rate). The existence of a consistent regional policy featuring the increase in SEQ at all hierarchal levels (in our case with a special emphasis on the structurally most affected regions of Moravia-Silesia, Ústí nad Labem and Karlovy Vary) as one of its main priorities is crucial. Other prerequisites are namely forsaking the

contemporary one-sided approaches to effectiveness of public services distribution (the so-called optimization of healthcare and education is connected to significant impacts on the development of rural areas) and the replacement thereof with more conceptual approaches.

Fig. 1: SEQ in MEC Regions and their Typology with Respect to the Balance between SEQ and BEQ



Source: original research

Conclusion

This paper provides theoretical and practical information of significance with regard to the regional quality and mutual links between the business and social environment in some micro-regions and meso-regions of the Czech Republic. It thereby integrates regional, economic and sociological approaches into the quality of life evaluation. The results of the research indicate that economic development has not only a positive but also a negative impact on the quality of life and therefore it is not possible to agree with the relatively widespread belief that "growth solves all". The conclusions represent a useful generalization of a complex issue that contributes to the ongoing scientific discourse (in this context it is predominantly an evaluation of the BEQ to SEQ relationship in terms of the development and hierarchal differentiation of the cultural landscape) but also to the practical solution for basic problems connected to the effectiveness and sustainability of social development (via conceptualization of the information obtained from within regional policies in systemic connection with the optimization of strategic priorities of economic and social policies). In this context the logical question automatically arises: is equilibrium within the business and social environments (as has been suggested by this research) a fundamental prerequisite for the long-term sustainability of the social development? The answer to this question is somewhat complicated by a number of problems connected with the definition, the non-existing conceptual theory and practical application of sustainable development concept (including its relations to the also insufficiently clarified concept of regional competitiveness and the quality of life). An understanding of the aforementioned terms is also necessarily

determined by the overall value orientation of the society which in our case is evaluated within the so-called Europe-Atlantic cultural circle. In this context we embrace the idea that the notion of a universal hierarchy of needs has not been appropriately substantiated [15]. We therefore maintain that the creation of an indisputable and universal theory of sustainable development in the spirit of the critical rationalism of K. Popper is highly improbable (at least in the foreseeable future). These doubts should, however, not serve as a justification for disputing the practical need for research on the problem in the broad context of an economic, social and environmental context in terms of the aforementioned analysis. It is highly likely that significant contributions will be made in the future by regional approaches whose notable advantage (apart from their direct ties to the application of the subsidiarity principle) is the option of some abstraction from the hierarchically superior problem of value orientation.

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Abstract

THE REGIONAL RELATIONSHIP BETWEEN QUALITY OF BUSINESS AND SOCIAL ENVIRONMENT: HARMONY OR DISHARMONY?

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The paper assesses the relationships between the quality of business and social environments on the example of micro-regions (districts of municipalities with extended powers) and meso-regions (NUTS 3) of the Czech Republic. The applied approach develops the concept of the quality of life including the identification of system links to regional competitiveness and sustainability of development. In this context, the assessment of the business component of the regional environment that has been already carried out was supplemented with the assessment of the social component, when the regions were divided into progressive, standard and regressive. In both cases, it has been proved (in correspondence with core-periphery theories) that there is a tendency towards a decrease in the environment quality in the direction to regional borders. Subsequently, we evaluated the balance of the classification of regions (districts) within the individual components and based on this, the districts of municipalities with extended powers were divided into three types: business-oriented (type A), complex (B) and socially oriented (C). The proportion of the "balanced" type B is slightly lower than that of the two remaining "unbalanced" types. Naturally, the results of NUTS 3 evaluation correspond with this. A similar result was obtained in the case of the evaluation of regional harmony, which is understood as a qualitatively higher level of balance meeting socially desirable development standards. In correspondence, its level is defined by the proportion of type B regions (excluding the regions with business as well as social environment quality below average and also regions that are environmentally devastated) and type A regions (excluding the regions with social environment quality below average). The results show that from the perspective of the distribution of inhabitants, relatively harmonic relationship prevails, while from the purely territorial perspective, the prevailing relationship is disharmonic. The obtained knowledge corresponds with the hypothesis about a positive effect of the regional harmony of the business and social environments on the long-term sustainability of development (a bad quality of social environment significantly reduces not only residential but also investment attractiveness of regions).

Key Words: *regional development, business environment, social environment, harmony, sustainability.*

JEL Classification: *R11, O18.*

MERANIE EKONOMICKÉHO A FINANČNÉHO VPLYVU MAJSTROVSTIEV SVETA V HOKEJI 2011 NA MESTO KOŠICE

Miriam Šebová, Peter Džupka

Úvod

Pri posudzovaní významu a účinkov ekonomických aktivít v ohraničenom priestore ponúkajú ekonomické vedy aparát vybraných nástrojov. Pre prax je zaujímavé skúmať ekonomický vplyv veľkých infraštruktúrnych projektov (napr. výstavby letísk, prístavov, diaľnic, priemyselných parkov) alebo vplyvy lokalizácie podnikov a inštitúcií. Výber vhodnej metódy skúmania závisí od typu posudzovanej aktivity a cieľa analýzy, pričom najčastejšie sa využívajú finančná analýza, cost-benefit analýza, štúdie uskutočniteľnosti, analýzy vplyvov na životné prostredie a tzv. štúdie ekonomických vplyvov (angl. economic impacts), ktoré umožňujú kvantifikovať dodatočné príjmy, ktoré prinesie analyzovaná aktivita pre lokálnu, regionálnu alebo národnú ekonomiku.

Jedným z najrýchlejšie rastúcich segmentov priemyslu cestovného ruchu je organizovanie veľkých športových alebo kultúrnych podujatí celosvetového významu (napr. Majstrovstvá sveta, Olympijské hry, hudobné festivaly), o ktoré súperia hostiteľské mestá vzhľadom na potenciál zvýšiť ich atraktívnosť na celosvetovej mape turizmu. Organizovanie týchto podujatí sprevádzajú zväčša veľké investície z verejných zdrojov plynúce do výstavby technickej a turistickej infraštruktúry. V tejto súvislosti sa v zahraničí pravidelne realizujú štúdie ekonomických vplyvov tohto typu podujatí, ktoré majú za cieľ zhodnotiť jeho ekonomické prínosy a slúžia ako argumentačný nástroj pri rozhodovaní o verejnej podpore.

Príspevok je rozdelený do dvoch častí. V prvej časti sú rozpracované teoretické aspekty problematiky vyhodnocovania dopadov veľkých udalostí a merania ich ekonomického vplyvu na lokálnu ekonomiku. V druhej časti príspevku sú prezentované výsledky analýzy ekonomického vplyvu Majstrovstiev sveta (MS) v ľadovom hokeji na mesto Košice, ktoré sa uskutočnili v roku 2011. Cieľom výskumu bolo vyhodnotiť priame ekonomické vplyvy veľkého športového podujatia, ktoré sa viazali na zvýšený dopyt v regióne spôsobený prílevom turistov. Vstupy do kvantitatívnej analýzy boli zbierané prostredníctvom rozsiahleho terénneho výskumu, ktorý prebiehal formou dotazníkového prieskumu počas celého priebehu trvania MS.

1. Teoretické súvislosti hodnotenia ekonomických vplyvov

Na Slovensku máme málo skúseností s usporiadaním veľkých podujatí celosvetového významu, preto aj metodika pre hodnotenie ich ekonomického vplyvu nie je rozpracovaná. V slovenskej odbornej a vedeckej literatúre absentujú štúdie vplyvov veľkých športových a kultúrnych podujatí na lokálnu ekonomiku a iné štúdie ekonomických vplyvov sa vyskytujú len sporadicky.

Najčastejšie sú spracovávané štúdie, ktoré sa zaoberajú ekonomickým vplyvom lokalizácie veľkých zahraničných podnikov (priamych zahraničných investícií) na celú ekonomiku SR napr. vplyv spoločnosti Siemens v ekonomike SR analyzovali [29], ďalej [35], [36] . V menšej miere sú dostupné štúdie, ktoré sa zaoberajú vplyvom lokalizovania podnikov na regionálnu ekonomiku napr. [34] alebo [24] analyzovali vplyv podniku Embraco Slovakia na priemysel Dolného Spiša. V Čechách sa vplyvmi lokalizácie malých a stredných podnikov na ekonomiku zaoberali [6]. Na Slovensku, z teoretického pohľadu, popisuje význam malých a stredných podnikov a ich vplyv na lokálny ekonomický

rozvoj napr. [31], [32], [33]. Metódu multiplikátora využila pri analýze ekonomického vplyvu rekreačného aquaparku Tatralandia na segment malých a stredných podnikov v regióne Liptov [20]. Niektoré štúdie sa zaoberajú vplyvom a významom univerzít napr. [15].

Spomínané štúdie nevyužívajú metodiku hodnotenia ekonomických vplyvov na základe merania dodatočných výdavkov v lokálnej ekonomike, ktorú sme použili v prípadovej štúdii k MS. Podobná metodika, o ktorú sa opierame v príspevku, bola použitá v len pri meraní vplyvu Ekonomickej univerzity v Bratislave na mesto Bratislava [28], [23]. Z tohto hľadiska bolo meranie ekonomického vplyvu veľkého športového podujatia MS 2011 v hokeji na Slovensku unikátne. V zahraničí je spracovanie podobných štúdii pri realizácii veľkých športových udalostí typu Olympijské hry alebo Majstrovstvá sveta bežné.

Špeciálne udalosti alebo tzv. „big events" môžu byť definované ako „jednorazové alebo opakujúce sa udalosti s ohraničeným trvaním, ktoré boli realizované primárne s cieľom zvýšiť povedomie, príťažlivosť a ziskovosť turistickej destinácie v krátkodobom alebo dlhodobom časovom vymedzení" [30]. Veľké udalosti majú v súčasnosti dve hlavné črty, po prvé majú významné dôsledky pre hostiteľské mesto, región alebo štát, v ktorom sa uskutočňujú a po druhé sú schopné pritiahnuť značné pokrytie médiami [10]. [12] sumarizovali rôzne indikátory vplyvov špeciálnych udalostí na lokalitu, v ktorej sa uskutočňovali, a to v ekonomickej, sociálnej, kultúrnej a environmentálnej oblasti. [2] uvádzajú efekty hosťovania veľkých udalostí na vybrané mestá. Veľké udalosti sú významným prínosom pre marketing hostiteľských miest [26], [13], [25].

Rovnako veľké športové udalosti prinášajú okrem ekonomických efektov aj sociálne benefity pre hostiteľskú komunitu. [9] využili pri hodnotení dodatočných vplyvov športových podujatí prístup tzv. Balanced Scoreboard, ktorý bol vyvinutý na Harvardskej univerzite.

Šport je považovaný za generátor národného a lokálneho ekonomického a sociálneho rozvoja. Z pohľadu ekonomiky je sledovaný ako odvetvie, ktoré podporuje stratégie na regeneráciu miest. Z hľadiska sociálneho je vnímaný ako nástroj na rozvoj mestských komunít a na znižovanie sociálneho vylúčenia a kriminality. Veľké športové podujatia majú multiplikačný efekt na mnohé sektory ekonomiky, umožňujú propagovať lokálne produkty globálnemu publiku, rozširujú investičné a exportné príležitosti miestnych podnikateľov, rozvíjajú cestovný ruch v hostiteľskej krajine a zvyšujú morálku a hrdosť obyvateľov, čo sú faktory, ktoré motivujú zapojenie spoločnosti a verejnú podporu [17].

Organizovanie veľkých športových udalostí vyžaduje značné verejné investície, ktoré musí znášať hostiteľské mesto alebo krajina najmä pri budovaní podpornej infraštruktúry (napr. športových hál, ubytovacích kapacít, dopravnej infraštruktúry). Medzinárodné federácie konkrétneho športu sa podieľajú len na organizačných nákladoch. Preto jedným z najčastejších cieľov ekonomických analýz je určenie legitímnosti týchto verejných výdavkov.

Pri hodnotení veľkých udalostí sa výber vhodnej metodológie posudzuje podľa sledovanej geografickej oblasti vplyvu (lokálne, regionálne a národne analýzy), podľa obdobia uskutočnenia analýzy a podľa cieľa hodnotenia. Podľa obdobia rozdeľujeme štúdie na ex ante (napr. štúdie uskutočniteľnosti) a ex post. Podľa cieľov hodnotenia sa v zahraničnej vedeckej literatúre pri hodnotení veľkých športových podujatí vyskytujú najčastejšie dva prístupy:

1. *Aplikácia klasických metód finančnej analýzy.* Tieto sledujú napr. cieľ hľadania najlepšej možnej alternatívy, ktorá prinesie v budúcnosti najvyššie čisté príjmy (cost – benefit analýza) alebo porovnáva náklady a výnosy podujatia (finančná analýza).
2. *Analýza ekonomických vplyvov.* Cieľom tejto analýzy je vyčísliť, aké dodatočné peniaze prinieslo športové podujatie do ekonomiky. Výsledkom týchto analýz sú vždy kvalifikované odhady počtu a štruktúry návštevníkov, ktorí prišli do sledovanej oblasti len za účelom zúčastnenia sa športovej udalosti a tiež kvalifikované odhady ich priemerných a celkových výdavkov. Po tejto základnej analýze sú vypočítavané ďalšie vplyvy na ekonomiku použitím rôznych metód. Napr. zahraničné štúdie, ktoré sledujú vplyv veľkých športových podujatí na národnej úrovní aplikujú do výpočtov output-input model napr. [17]. Štúdie, ktoré sledujú lokálne vplyvy podujatia, väčšinou používajú výpočet pomocou lokálneho multiplikátora napr. [8].

To, že analýzy ekonomických vplyvov patria medzi štandardné metódy hodnotenia veľkých športových podujatí, dokazuje počet štúdii,

ktoré sa týmto spôsobom na svete realizovali. [19] uvádza prehľad 12 ex ante štúdií a 16 ex post štúdii ekonomických vplyvov veľkých športových podujatí realizovaných na americkom kontinente od roku 1973 do roku 2006. Štúdie analyzujú napr. vplyvy Olympijských hier (v Atlante v roku 1996), tradičné majstrovstvá v americkom futbale (Super Bowl) a pravidelné série zápasov zámorskej hokejovej ligy NHL.

[17] kriticky hodnotili ekonomické vplyvy Majstrovstiev sveta vo futbale FIFA World Cup organizovanom v Južnej Kórei v roku 2002. Podľa ich výskumu 57,7 % všetkých turistov, ktorí sa zúčastnili MS, bol hlavný dôvod návštevy účasť na MS. Ďalej vypočítali, že MS priniesli dodatočné výdavky vo výške 1,35 mld. USD v tržbách, 307 mil. USD v príjmoch a 713 mil. USD v pridanej hodnote pre Južnú Kóreu. [4] merali výdavky návštevníkov univerzitných športových hier (Nothern Conference University Games) v Lismore v Austrálii v roku 1995, pričom porovnávali rôzne techniky zberu údajov od návštevníkov.

Z európskeho prostredia sú známe britské štúdie. [8] odhadol, že ekonomický vplyv realizácie tenisového turnaja British Open v roku 1999 predstavoval dodatočné príjmy 20,8 mil. USD na lokálnu ekonomiku. [9] porovnávali vo svojej štúdii ekonomický vplyv 10 najväčších športových udalostí realizovaných vo Veľkej Británii počas rokov 1997–2002.

Medzi ex ante štúdie patrí štúdia hodnotenia predpokladaných nákladov a príjmov Majstrovstiev Európy vo futbale UEFA 2012, ktoré sa uskutočnili v Poľsku a na Ukrajine [11]. K Letným olympijským hrám v Londýne v roku 2012 bolo vypracovaných niekoľko ex ante štúdii hodnotenia vplyvov na mesto napr. [3], [21].

1.1 Metodika merania ekonomických vplyvov veľkých športových podujatí

Metodika využívaná pri meraní ekonomických vplyvov je síce jedinečná pre každý typ podujatia, ale opiera sa o nasledovné štandardné postupy.

Efekty vplyvu nových ekonomických aktivít sa najčastejšie delia na tri skupiny: priame, nepriame a indukované vplyvy. Priame vplyvy sa viažu na príjmy zo zvýšeného dopytu v regióne. Nepriame vplyvy sú výsledkom zvýšeného príjmu odvetví, ktoré dodávajú svoje vstupy do hodnoteného odvetvia. Indukované vplyvy predstavujú generované dodatočné vplyvy výdavkov zamestnancov a vyvolané investície, ktoré sa prejavia takmer vo všetkých odvetviach (bývanie, stravovanie, doprava, služby...). [28]

Metodiku merania ekonomických vplyvov sumárne popísal [5]. Uvádza, že základným východiskom pre odhadnutie ekonomického vplyvu je vzorec:

*počet návštevníkov * priemerné výdavky návštevníka * multiplikátor*

Aby bolo možné vypočítať tento vzorec, je potrebné naplniť štyri kroky:

1. Vymedziť kategóriu „návštevník".
2. Odhadnúť počet návštevníkov, ktorí sa zúčastnili sledovanej udalosti.
3. Odhadnúť priemerné výdavky návštevníkov v definovanej ohraničenej geografickej oblasti vplyvu (mesto, región).
4. Vypočítať multiplikačný efekt nových peňazí v lokálnej ekonomike použitím vhodného multiplikátora.

Vymedzenie kategórie „návštevník" obsahuje viacero problémov. Návštevníci podujatí sa najjednoduchšie delia na dve hlavné kategórie: lokálni rezidenti a nerezidenti. Ďalšie delenie vychádza z rôznych pohnútok návštevy daného podujatia, ktoré je potrebné sledovať, aby sme mohli ohodnotiť skutočný prínos podujatia. Tu môžeme sledovať nasledujúce štyri kategórie:

a) Rezidenti, ktorí by v prípade, že by sa akcia neuskutočnila, ostali v lokalite a svoje výdavky by realizovali iným spôsobom ale stále v lokálnej ekonomike (napr. by nešli na zápas, ale do kina). Výdavky týchto rezidentov sú pre výskum irelevantné, pretože nesúvisia s realizáciou daného podujatia. Výdavky týchto rezidentov je preto potrebné z výskumu vylúčiť, keďže predstavujú len substitúciu iných výdavkov v lokálnej ekonomike (substitučný efekt).
b) Rezidenti, ktorí by v prípade, že by sa akcia neuskutočnila, neostali v lokalite a svoje výdavky by realizovali iným spôsobom v externej ekonomike (napr. by išli na výlet do iného regiónu). Výdavky týchto rezidentov sa môžu započítavať do výskumu, ale väčšinou ide o malý objem výdavkov bez výrazného ekonomického vplyvu.
c) Nerezidenti, ktorí by v prípade, že by sa akcia neuskutočnila, neprišli do danej

ekonomiky. Výdavky týchto návštevníkov sú hlavným bodom záujmu štúdií ekonomických vplyvov, pretože pri týchto výdavkoch ide jednoznačne o nové príspevky do lokálnej ekonomiky.

d) Nerezidenti, ktorí by aj v prípade, že by sa akcia neuskutočnila, prišli do danej ekonomiky, ale v inom časovom období (napr. aj tak chceli navštíviť dané mesto, ale vzhľadom na zápas návštevu odložili alebo uskutočnili skôr). Výdavky týchto návštevníkov je tiež potrebné z výskumu vylúčiť, pretože predstavujú pre lokálnu ekonomiku len presun výdavkov v čase (angl. time switching).

Jedným z hlavných prínosov štúdií ekonomických vplyvov je získanie kvalifikovaného odhadu návštevnosti podujatia. Pri niekoľkodňových podujatiach (napr. zápasy na športových majstrovstvách), ktoré vyžadujú vstupné, majú organizátori prehľad o počte predaných vstupeniek. Tieto čísla sa však v praxi nikdy nezhodujú s počtom unikátnych návštevníkov, pretože väčšina návštevníkov si zakúpi vstupenky na viac zápasov. Ešte problematickejšie je odhadnúť počet návštevníkov pri podujatiach, ktoré nevyžadujú vstupné (napr. maratón). Na základe skúseností z praxe dopadových štúdií sú kvalifikované odhady návštevnosti pri správnom dodržaní metodiky a dostatočne reprezentatívnom prieskume veľmi blízko reálnej skutočnosti. Pokiaľ sa výskum neuskutočňuje, dochádza spravidla k nadhodnocovaniu návštevnosti (tzv. attendance hyperbole) a tým aj k nadhodnocovaniu ekonomického vplyvu daného podujatia. V štúdii britského Výskumného centra pre športové odvetvia (Sport Industry Research Centre, Sheffield Hallam University) sa uvádza, že pri každoročnom Londýnskom maratóne bol v médiách odhadovaný počet divákov okolo 1 000 000. Mestská polícia v Londýne tento odhad redukovala na 500 000 návštevníkov a uskutočnený výskum ukázal, že v realite sa maratónu zúčastnilo len 300 000 návštevníkov [18].

Podobná situácia nastala aj pri realizovaní MS v SR, kedy boli v médiách prezentované odhady, že na zápasy príde 300 000 návštevníkov.

Počet návštevníkov a ich priemerné výdavky sa zisťujú vo výskume použitím štandardizovaných dotazníkov, ktoré sa zbierajú rôznymi metódami (dopytovaním v teréne alebo sa určitej vzorke návštevníkov rozdávajú dotazníky, kde si zaznamenávajú denné výdavky, ktoré potom odovzdajú osobne alebo elektronicky organizátorom). Sledované sú výdavky, ktoré súvisia s účasťou na danom podujatí v presne špecifikovaných výdavkových kategóriách napr. ubytovanie, stravovanie, cena vstupenky, dopravné náklady. Zaznamenávané sú výdavky, ktoré respondenti minú v sledovanej lokalite (v meste, v regióne).

Po určení priemerných výdavkov návštevníkov v sledovanej lokalite je možné vypočítať priamy ekonomický vplyv na danú lokalitu. Výpočet nepriamych a indukovaných ekonomických vplyvov predpokladá použitie vhodného multiplikátora, s čím prichádza väčšina metodických problémov, ktoré popísal [5].

1.2 Kritika metodiky merania ekonomických vplyvov

Ako uvádzame v predchádzajúcej časti príspevku hlavným prínosom dopadových štúdií je kvalifikovaný odhad návštevnosti analyzovaného podujatia a odhad objemu finančných prostriedkov, ktoré získa lokálna ekonomika organizovaním daného podujatia.

Kritika uvedenej metodiky merania ekonomických vplyvov súvisí napr. s charakterom výdavkov, ktoré sa koncentrujú len do vybraných odvetví cestovného ruchu lokálnej ekonomiky. [7] poukázali v tomto smere na limity použitia input-output modelov pri dopadových štúdiách, ktoré dostatočne neodhaľujú distribučné efekty výdavkov medzi rôznymi sektormi lokálnej ekonomiky. Na prekonanie týchto limitov používajú niektorí autori rozšírený input-output model skonštruovaný na základe tzv. „social accounting matrix“ (SAM). Ďalšie ekonometrické modely využívané v tejto súvislosti v americkom prostredí sú RIMS II, REMI a IMPLAN [5].

[14] konfrontoval metódu merania ekonomických vplyvov s tradičnou cost – benefit analýzou. Výpočet nových príjmov do ekonomiky umožňuje určiť len tzv. hrubý ekonomický vplyv (angl. gross economic impact). Pri vyjadrení čistého ekonomického vplyvu (angl. net economic impact) sa zohľadňujú aj náklady, ktoré organizovanie veľkých podujatí so sebou prináša a uskutočňuje sa cost-benefit analýza. Vo všeobecnosti sa v literatúre spomínajú v tejto súvislosti štyri typy nákladov:

- náklady na organizovanie podujatia,
- infraštruktúrne náklady – náklady na výstavbu potrebnej infraštruktúry (napr.

výstavba štadióna, parkovacích miest, ubytovacích zariadení),
- vytlačené náklady (angl. displacement costs alebo crowding out effect) náklady, ktoré boli plánované v lokálnej ekonomike, ale vzhľadom na investície do podujatia nemohli byť zrealizované,
- náklady obetovaných príležitostí, náklady ktoré by mohli byť v lokálnej ekonomike zrealizované a mohli by mať vyšší ekonomický a spoločenský prínos pre danú komunitu.

Problémami analýz nákladov na veľké športové podujatia a špeciálne olympijské hry sa zaoberá [1].

Ďalšia kritika sa objavuje v súvislosti s nepresným používaním lokálnych multiplikátorov napr. [5], [19]. Veľkosť multiplikátora je podstatne ovplyvnený štruktúrou ekonomiky. Závisí od „otvorenosti" lokálnej ekonomiky, teda od miery, v akej lokálni podnikatelia vstupujú pri nákupoch do interakcií s podnikateľmi s externých ekonomík. V tejto súvislosti [5] používa pojem priesaky tovarov a služieb (angl. leakages) medzi lokálnou ekonomikou a externými ekonomikami. Vo všeobecnosti sa priesaky znižujú a multiplikátor rastie s veľkosťou analyzovanej ekonomiky. Štandardne sa používajú tri typy multiplikátorov – multiplikátor tržieb, multiplikátor osobných príjmov a multiplikátor zamestnanosti.

Skutočne kvalifikované určenie veľkosti lokálneho multiplikátora vyžaduje precízny výskum zameraný na zistenie hraničného sklonu k spotrebe v lokálnej ekonomike. Na Slovensku sme sa nestretli s kvalifikovaným výpočtom multiplikátora na lokálnej úrovni. Práve z týchto dôvodov sme lokálny multiplikátor nezahrnuli do našej analýzy. Spôsob výpočtu lokálneho multiplikátora LM3, ktorý vyvinul britský New Economics Foundation popisuje [16].

2. Ex post analýza ekonomického vplyvu Majstrovstiev sveta v ľadovom hokeji 2011 na mesto Košice

V roku 2011 sa uskutočnili na Slovensku 75. Majstrovstvá sveta v ľadovom hokeji v dvoch mestách (Bratislava, Košice) a trvali od 29. 4. do 15. 5. 2011. V Košiciach bolo odohraných 24 zápasov MS od 29. apríla do 9. mája 2011. V Bratislave bolo odohraných 32 zápasov počas celého trvania MS. V súvislosti s MS sme uskutočnili kvantitatívny výskum s cieľom kvantifikovať priamy ekonomický vplyv Majstrovstiev sveta v ľadovom hokeji na mesto Košice. Podobný výskum bol uskutočnený aj na Ekonomickej univerzite v Bratislave použitím rovnakej metodiky [22]. V príspevku sú uvedené vybrané výsledky analýzy v meste Košice.

2.1 Metodika výskumu

Kvantitatívny výskum sme realizovali na základe vyššie popísanej metodiky hodnotenia ekonomických vplyvov športových podujatí. Primárne údaje sme zbierali prostredníctvom dotazníkového prieskumu, ktorý bol realizovaný osobným dotazovaním návštevníkov zápasov MS 2011 pred štadiónom Steel Arény v Košiciach. Terénny prieskum prebiehal od 29. apríla do 9. mája 2011. Respondentmi boli návštevníci všetkých 24 zápasov MS v hokeji, ktoré sa uskutočnili v Košiciach. Sledovali sme tých návštevníkov, ktorí sa zúčastnili zápasu z nie profesionálnych dôvodov (do výskumu neboli zahrnuté hrajúce tímy, ich rodinní príslušníci, novinári, hokejoví funkcionári a organizátori).

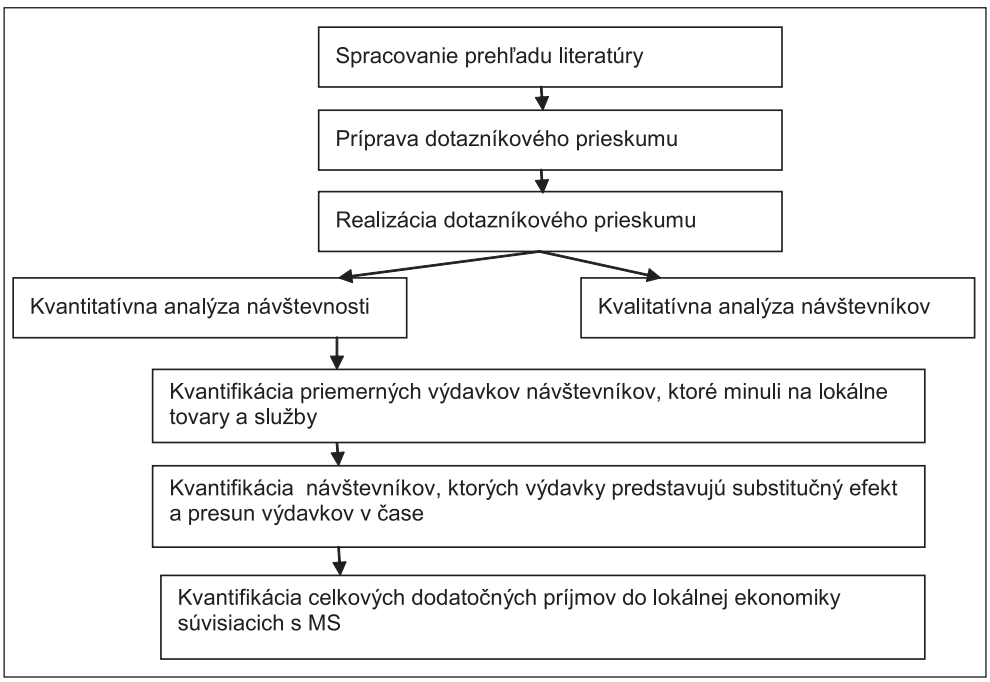
Respondenti boli oslovovaní anketármi na každom zápase pred vstupom do štadiónu v bezpečnostnej zóne na základe náhodného výberu. V dotazníkovom prieskume boli použité dva typy dotazníkov. Prvý krátky záznamový dotazník bol zameraný na zistenie základných charakteristík respondentov – pohlavie, lokalita odkiaľ pochádzajú, v akej veľkej skupine prišli na zápas a koľko zápasov navštívili. Druhý širší dotazník obsahoval podrobnejšie otázky o ubytovaní respondentov, o dĺžke ich pobytu, o spôsobe dopravy, o tom, akú úlohu pre respondenta zohrala účasť na MS pri návšteve mesta a otázky k detailnej sume a štruktúre výdavkov, ktoré respondenti minuli v súvislosti s príchodom na MS v meste Košice.

Počas prieskumu bolo zozbieraných 3501 záznamových a 1214 širších výdavkových dotazníkov. Pri vyhodnotení dotazníkového prieskumu sme použili matematicko-štatistické metódy v štatistickom programe Excel.

V súvislosti s hlavným cieľom výskumu, kvantifikovať priamy ekonomický vplyv MS na mesto Košice, sme riešili nasledujúce čiastkové ciele:
- Kvantifikovať počet návštevníkov a určiť, koľkí boli rezidenti a nerezidenti.
- Popísať základné charakteristiky návštevníkov MS (vek, pohlavie, veľkosť skupiny, v akej sa zúčastnili zápasu).

- Popísať geografický pôvod návštevníkov. Návštevníkov sme rozdelili do troch základných skupín:
  - Rezidenti – návštevníci s trvalým pobytom v Košiciach (túto skupinu označujeme ako Košičania).
  - Nerezidenti – návštevníci s trvalým pobytom v SR (túto skupinu označujeme ako Slováci).
  - Nerezidenti – zahraniční návštevníci s trvalým pobytom mimo SR (túto skupinu označujeme ako zahraniční).
- Určiť, pre koľko nerezidentov boli MS hlavným motívom príchodu do mesta a bez MS by do Košíc neprišli.
- Kvantifikovať počet návštevníkov, ktorí prespali v Košiciach.
- Kvantifikovať priemerný počet nocí, ktoré strávili v Košiciach.
- Kvantifikovať priemerné výdavky návštevníkov vo vybraných výdavkových kategóriách.

Obr. 1: Metodika výskumu



Zdroj: vlastné spracovanie

2.2 Charakteristika návštevníkov MS 2011 v Košiciach

Pri hodnotení návštevnosti sú k dispozícii údaje o počte predaných lístkov a o návštevnosti zápasov. Podľa záznamov Medzinárodnej hokejovej federácie 24 zápasov v Košiciach sledovalo 115 477 divákov. Priemerná návštevnosť na zápase v Košiciach bola na úrovni 4812 divákov.

Skutočný počet návštevníkov bol podstatne nižší, keďže diváci navštívili väčšinou viac ako jeden zápas. Podľa výsledkov prieskumu sa návštevníci MS 2011 zúčastňovali v priemere na 2 až 3 zápasoch (priemer na zápasoch bol 2,55 zápasu na návštevníka). Zahraniční návštevníci sa v Košiciach zúčastňovali v priemere na 4,21 zápasoch, Slováci v priemere na 1,94, Košičania v priemere na 2,36 zápasoch. Najvyšší priemerný počet zápasov bol vypočítaný pri návštevníkov zo Švajčiarska, Rakúska, Nórska, Švédska, USA a z Kanady.

Na základe údajov z dotazníkového prieskumu sme osobitne projektovali návštevnosť

na každom z 24 zápasov, ktorá sa výrazne líšila podľa hrajúcich tímov. Na základe výpočtov sme dospeli ku kvalifikovanému odhadu, že MS sa zúčastnilo 49 968 unikátnych návštevníkov. Z návštevníkov tvorili najväčšiu skupinu návštevníci Slováci a to 27 743 návštevníkov a Košičania, z ktorých sa na zápas prišlo pozrieť 15 370 obyvateľov. Zahraničných hostí prišlo výrazne menej, na základe výskumu odhadujeme ich počet na 6 856. Tento údaj sa týka zahraničných návštevníkov bez prepojenia na hrajúce tímy (nie sú tam zahrnutí hráči, novinári a pod.).

Tab. 1: Počet divákov a kvalifikovaný odhad počtu návštevníkov MS v Košiciach

Počet divákov	Celkový počet unikátnych návštevníkov	Návštevníci Košičania	Návštevníci Slováci	Návštevníci Zahraniční
115 477	49 968	15 370	27 743	6 856

Zdroj: vlastné spracovanie

V prieskume sme sledovali geografickú skladbu návštevníkov MS. Najväčšie skupiny zahraničných fanúšikov pochádzali z Rakúska 1065 návštevníkov (2,13 % návštevníkov), z Čiech 880 (1,76 %), z Maďarska 734 (1,47 %) a zo Švajčiarska 680 (1,36 %). Návštevníci zo Švédska, Nórska a z Kanady, ktorých národné tímy hrali v Košiciach v základnej skupine, tvorili po 1 % návštevníkov, ale zároveň sa zúčastňovali väčšieho počtu zápasov. Výsledky prieskumu poukazujú na to, že väčšinu zahraničných návštevníkov sa koncentrovalo na MS v Bratislave, kde sa odohrávali finálové zápasy. Návštevnosť v Bratislave výrazne ovplyvnili zahraniční návštevníci (50,2 % všetkých divákov), pričom návštevnosť výrazne zvýšili fanúšikovia z Českej republiky, ktorý tvorili 28,9 % z celkového počtu divákov (takmer 69 000 divákov) [22]. V Košiciach nenastal podobný prípad masového príchodu fanúšikov pri žiadnej národnej skupine návštevníkov.

Prieskum umožnil kvalitatívnu analýzu a vyhodnotili sme získané demografické údaje o návštevníkoch zápasov MS v ľadovom hokeji. V našej skupine respondentov tvorili muži 77 %, podiel žien bol 23 %. Veková štruktúra návštevníkov ukazuje, že hokejové zápasy najviac navštevujú mladí ľudia od 20 do 40 rokov (62,5 % respondentov). Pomerne veľkou skupinou boli ľudia v strednom veku od 40 do 50 rokov (20,9 %) a návštevníci nad 50 rokov tvorili 13,6 % celkových návštevníkov. Ďalšou charakteristikou je veľkosť skupiny návštevníkov, teda respondentov sme sa pýtali na to, v akej veľkej skupine prišli na zápas. Priemerná veľkosť skupiny bola 3,47.

Demografické údaje respondentov a získanú veľkosť skupiny v Košiciach sme porovnávali s údajmi zistenými v prieskume v Bratislave. Získané údaje v oboch mestách sú takmer totožné, čo nás vedie k záveru, že ide o všeobecné charakteristiky návštevníkov tohto typu podujatia, ktoré sú nezávislé od miesta konania zápasov.

2.3 Výdavky návštevníkov MS

Celkové výdavky návštevníkov MS 2011 sme zisťovali v troch krokoch.

Na základe dotazníkového prieskumu sme vyčíslili priemerné výdavky každej z troch skupín návštevníkov (Košičania, Slováci, Zahraniční) v hlavných výdavkových kategóriách. Respondenti prieskumu uvádzali svoje výdavky, ktoré realizovali v meste Košice, v nasledujúcich výdavkových kategóriách:

- výdavky na vstupenky,
- výdavky na dopravu (pohonné hmoty, požičanie vozidla, parkovanie, taxíky, hromadná doprava),
- stravovanie (reštaurácie a fast food, potraviny a občerstvenie na štadióne),
- ubytovanie,
- zábava (výdavky v baroch a kluboch, zábava),
- suveníry,
- iné nákupy (odevy, iné nákupy).

Výdavky na vstupenky neboli zahrnuté do ďalšej analýzy, pretože príjem zo vstupeniek bol prerozdeľovaný Slovenským zväzom ľadového hokeja a nepodarilo sa nám zistiť, aká časť tržieb zo vstupného ostala v meste Košice.

Pri výpočtoch sme brali do úvahy správanie sa návštevníkov (formu ubytovania, počet nocí, koľko prespali v Košiciach, spôsob prepravy a pod.). Priemerné výdavky zahraničného návštevníka v Košiciach boli počas MS na úrovni 486 eur. Slováci minuli v priemere, ak sa ubytovali v Košiciach, 99 eur, pokiaľ Slováci neboli v Košiciach ubytovaní, minuli v priemere na iné výdavkové kategórie 65 eur. Domáci Košičania minuli v súvislosti s návštevou zápasu 31 eur.

Analýza výdavkov poukazuje na to, že najviac minuli návštevníci zápasov na ubytovanie (25 % celkových výdavkov), čo predstavovalo spolu sumu 1,16 mil. eur. Z celkového počtu návštevníkov MS len 32 % prespalo noc mimo domova, pričom väčšina návštevníkov, ktorí potrebovali ubytovanie sa ubytovalo v Košiciach a v okolí Košíc (28 % všetkých ubytovaných návštevníkov). Malá časť návštevníkov sa ubytovala v Prešove (1,24 %). Väčšina návštevníkov si ako formu ubytovania vybrala hotel (až 55 %), pričom išlo najmä o zahraničných návštevníkoch. Ďalšou preferovanou formou ubytovania bola možnosť iného plateného ubytovania 19 % (napr. internáty, ubytovne) a tiež neplatené ubytovanie, teda prespanie u známych alebo rodiny, ktoré tvorilo 18 % ubytovaní.

V priemere strávili zahraniční turisti v Košiciach 4,8 nocí. Slovenskí návštevníci, ktorí prespali v Košiciach, strávili v meste v priemere 2 noci. V meste Košice a v blízkom okolí Košíc sa počas MS 2011 ubytovalo podľa nášho prieskumu 14 232 osôb. Slovenskí návštevníci však vo veľkej miere prespávali u rodiny a známych, teda využili neplatenú formu ubytovania a to až 61 % z nich. Celkovo odhadujeme počet návštevníkov, ktorí prespali v hoteloch a penziónoch v Košiciach na 8943. V meste Košice sa nachádzajú ubytovacie kapacity na úrovni približne 4 500 lôžok a realita ako aj náš prieskum ukázali, že napriek obavám organizátorov, tieto ubytovacie kapacity v Košiciach boli pre potreby organizácie MS dostačujúce.

V ďalšom kroku sme identifikovali tých nerezidentov v rámci návštevníkov, ktorí by boli prišli do Košíc aj v prípade, že by sa MS neuskutočnili. Taktiež sme sledovali substitučný efekt pri rezidentoch, teda do celkových výdavkov sme započítavali len výdavky tých Košičanov, ktorí by v prípade nerealizácie MS odišli z Košíc a realizovali svoje výdavky mimo lokálnej ekonomiky.

V treťom kroku sme kvantifikovali celkové výdavky návštevníkov podľa jednotlivých výdavkových kategórií, pričom tieto výdavky tvoria dodatočné príjmy lokálnej ekonomiky, ktoré ekonomika získala realizáciou MS. Ich sčítaním sme zistili priamy ekonomický vplyv MS na mesto Košice.

Celkovo odhadujeme výdavky návštevníkov MS 2011, ktoré minuli počas svojho pobytu v Košiciach na sumu 4 753 560 Eur. Celkovo výdavky zahraničných návštevníkov predstavovali 2,6 mil. eur a výdavky Slovákov 1,7 mil. eur. Výdavky domácich Košičanov očistené o substitučný efekt predstavovali 384 tis. Eur.

Mesto Košice nám poskytlo približné údaje o nákladoch, ktoré malo s realizáciou MS. Organizačné a propagačné náklady boli vo výške približne 100 tis. Eur, keďže na mnohých výdavkoch sa podieľali sponzori. Mesto zároveň získalo príjem vo výške cca. 50 tis. Eur z dane za prenájom verejného priestranstva. Infraštruktúrne náklady (výstavba parkovacieho domu pri štadióne Steel Aréne) boli vo výške 2 791 768 Eur, pričom parkovací dom je ďalej využívaný návštevníkmi štadióna. Na základe týchto informácii konštatujeme, že realizácia MS bola pre mesto Košice prínosná z hľadiska ekonomických efektov. V rámci výskumu sme skúmali aj neekonomické efekty MS (napr. spokojnosť návštevníkov s podujatím), ktoré boli pozitívne. Vo výskume až 85 % respondentov uviedlo, že boli s organizáciou MS 2011 úplne spokojní alebo spokojní.

Tab. 2: Prehľad celkových výdavkov podľa skupín návštevníkov

	Priemerné výdavky na návštevníka počas MS (v Eur)	Celkové výdavky za skupinu (v Eur)
Zahraničný návštevník	485,6	2 595 569,2
Slovenský návštevník (s ubytovaním)	99,0	1 773 414,9
Návštevník z Košíc	31,2	384 575,7
SPOLU		**4 753 559,8**

Zdroj: vlastné spracovanie

Bližší pohľad na štruktúru výdavkov poskytuje tabuľka č. 3. Najväčšie výdavky návštevníci minuli na ubytovanie. Výrazný rozdiel v priemerných výdavkoch predstavovali výdavky na ubytovanie u slovenských návštevníkoch. Kým priemerné výdavky slovenského návštevníka, ktorý sa v Košiciach ubytoval, boli 99 eur, priemerné výdavky slovenského návštevníka bez ubytovania (ktorých bolo 61 %) boli 65,4 eur. Pri výpočte celkových výdavkoch za skupinu slovenskí návštevníci sme zohľadnili počet ubytovaných. Ďalšími významnými výdavkovými kategóriami boli výdavky na zábavu a výdavky na stravovanie. Veľmi nízke výdavky boli zaznamenané v segmente požičanie vozidla (0,09 %), keď si zahraniční návštevníci len ojedinele požičiavali auto. Tento fakt sme overovali aj vo vybraných autopožičovniach v Košiciach, čo potvrdilo jeho súlad s realitou. Pri uvedených výdavkoch ide prevažne o služby (ubytovanie, bary a zábava, reštaurácie, požičanie vozidla, taxíky, parkovanie), ktoré ostávajú v lokálnej ekonomike. Výdavkové kategórie suveníry, pohonné hmoty, odevy a iné nákupy vykazujú priesaky do externej ekonomiky, ktoré sme v prieskume nekvantifikovali.

Tab. 3: Celkové výdavky podľa výdavkových kategórií

	Celkové výdavky návštevníkov v tis. eur	Podiel výdavkovej kategórie na celkových výdavkoch v %
Ubytovanie	1165,7	24,5 %
Bary a zábava	958,9	20,2 %
Reštaurácie, potraviny, občerstvenie	877,3	18,5 %
Suveníry	688,2	14,5 %
Nákup pohonných hmôt	387,8	8,2 %
Požičanie vozidla	4,4	0,1 %
Taxíky	82,4	1,7 %
Mestská hromadná doprava	79,0	1,7 %
Odevy a iné nákupy	447,1	9,4 %
Parkovanie	62,7	1,3 %
Spolu	4753,5	100,0 %

Zdroj: vlastné spracovanie

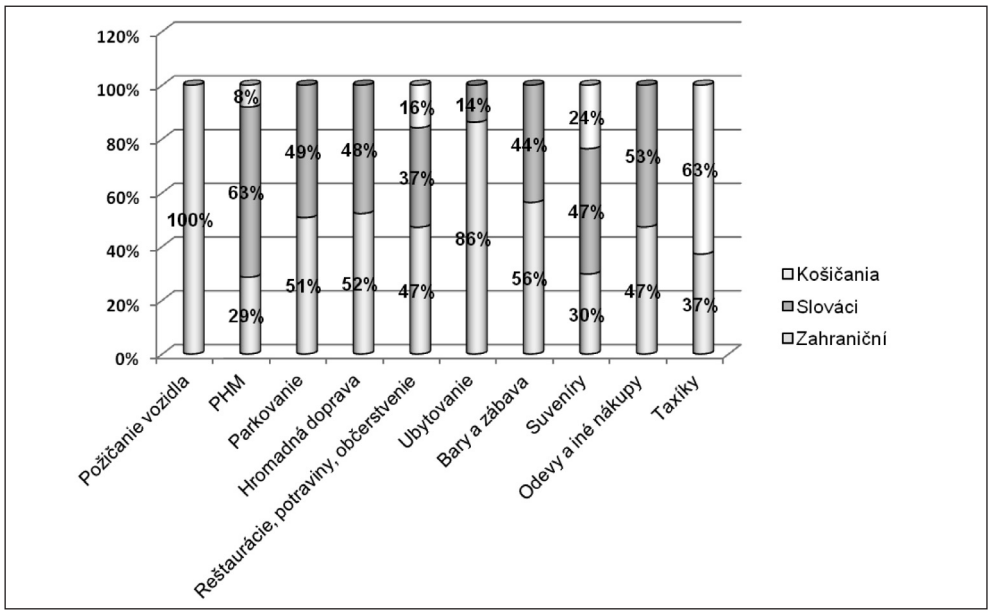
Z pohľadu štruktúry výdavkov podľa jednotlivých skupín návštevníkov je možné sledovať niekoľko skutočností. Z výdavkov na pohonné hmoty najväčšiu časť zaplatili Slováci (63 %), zahraniční turisti len 29 %, čo súvisí so spôsobom dopravy návštevníkov. Podľa výsledkov prieskumu 70 % slovenských návštevníkov prišlo autom, kým zahraničných 40 % (u zahraničných turistov prevažoval iný spôsob prepravy napr. lietadlo, vlak).

Väčšinu z výdavkov na ubytovanie zaplatili zahraniční turisti a to až 86 %. Výdavky na suveníry sa odvíjali od priemerných výdavkov návštevníkov na zakúpenie suveníra. Pri zahraničnom návštevníkovi išlo o sumu 30 eur, pri Slovákov 11,6 eur a pri Košičanoch 13,2 eur. Taxíkmi cestovali počas MS najmä domáci Košičania (63 %), takmer vôbec ich nevyužili Slováci. Priemerné výdavky na občerstvenie zahraničného návštevníka boli vo výške 60 eur, Slovák minul v reštaurácii v priemere 12 eur. Celkovo z výdavkov na reštaurácie zaplatili zahraniční návštevníci 47 %, Slováci 37 % a domáci Košičania (ako občerstvenie na štadióne) 16 %.

Záver

Primárnym cieľom analýzy uvedenej v príspevku bolo kvantifikovať priame ekonomické vplyvy Majstrovstiev sveta v ľadovom hokeji 2011 na mesto Košice. Tento cieľ sme dosiahli použitím štandardnej metodiky merania ekonomických vplyvov, ktorá je používaná pri tomto type podujatí. Metodiku sme aplikovali v našej prípadovej štúdii pri zbere relevantných údajov a pri

Obr. 2: Štruktúra výdavkov podľa skupín návštevníkov



Zdroj: vlastné spracovanie

výpočte počtu návštevníkov ako objemu a štruktúry výdavkov návštevníkov. Hlavným prínosom výskumu je kvalifikovaný odhad návštevnosti MS, ktorú by iným spôsobom nebolo možné zistiť. Na základe rozsiahleho prieskumu sme odhadli priamy ekonomický vplyv MS 2011 na mesto Košice na sumu 4 753 560 Eur.

Ďalším cieľom príspevku bolo zosumarizovanie základných východísk uvedenej metodiky merania ekonomických vplyvov vrátane jej nedostatkov. S uvedenou metodikou nie sú na Slovensku skúsenosti, z čoho vyplývajú aj limity našej analýzy. Dlhodobá tradícia vo vypracovaní dopadových štúdií a v zbere údajov umožňuje v zahraničí efektívnu kvantifikáciu nepriamych a indukovaných vplyvov napr. využitím input-output modelov alebo lokálneho multiplikátora. V našom príspevku z týchto dôvodov ukončujeme analýzu pri priamych vplyvoch, vzhľadom na nedostatok údajov potrebných na ďalšiu analýzu.

Metodika merania ekonomických vplyvov umožňuje zhodnotiť potenciál sledovanej ekonomickej aktivity z hľadiska vytvárania nových príjmov pre lokálnu ekonomiku. Aby získané údaje mohli byť efektívne interpretované, je potrebné doplniť ich aj o ďalšie analýzy (napr. cost-benefit analýzu), čo pre nás predstavuje do budúcnosti ďalší smer výskumu.

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Abstract

MEASUREMENT OF ECONOMIC AND FINANCIAL IMPACTS OF ICE HOCKEY WORLD CHAMPIONSHIP ON KOŠICE CITY

Miriam Šebová, Peter Džupka

The paper deals with big sports events economic impact measuring. Impact studies of the big events are frequently used for evaluation of its economy efficiency or social acceptability.

In the first part of the paper theoretical issues of evaluation of big events are presented. Different methodological elements in the literature are brought together to establish an analytical framework. There is provided an overview of the economics of sports mega-events as well as review of the existing literature in the field. The aim of impact analyses is to quantify additional incomes of big events on local economy, using traditional impact measuring methods. The result of these analyses is estimation of number and structure of visitors of event and also of theirs average and total expenditures. This estimation allows quantifying gross direct, indirect and induced impacts of the event. The level of economic impact could easily have been overestimated if a carefully structured working methodology had not been used.

In the second part of the of the paper we use described methodology in the case study of Wold Ice Hockey Championship, which took place in Košice 2011. The aim of the research was to evaluate gross direct economic effects of the Ice Hockey World Championship based on increased demand in the city caused by the tourists and theirs expenditures in the tourism sector. Inputs to quantitative analysis were collected by the questionnaire survey. These data were statistically processed and used for quantification of the economic impact of the event on Košice city.

Key Words: *big events, sport tourism, impact analysis.*

JEL Classification: *R11, L83.*

ANALÝZA PRÍJMOVEJ DIFERENCIÁCIE MUŽOV A ŽIEN NA SLOVENSKU

Alena Tartaľová, Tatiana Sovičová

Úvod

V súčasnej dobe sa nie len v rozvinutých ale aj rozvojových krajinách kladie veľký dôraz na to, aby všetky ľudské bytosti mali právo slobodne rozvíjať svoje schopnosti a vyberať si z možností bez obmedzení rodovými rolami. No aj napriek tejto snahe existujú v jednotlivých krajinách vo väčšej či menšej miere rôzne druhy rodovej nerovnosti. Rodová nerovnosť je viazaná na rozdiely medzi ženami a mužmi, ktoré sú spôsobené ich reálnymi možnosťami, konkrétnou mierou zapojenia, či aktívnej účasti na spoločenskom a verejnom živote. Rodové rozdiely sa týkajú najmä participácie žien a mužov na rozhodovaní v spoločenskej, hospodárskej, verejnej a politickej sfére, ako aj segregáciou žien na trhu práce, ktorá sa odráža ich príjmovou nerovnosťou. Cieľom našej práce bude venovať sa konkrétnym rodové nerovnosti v Európskej únii a na Slovensku. Dôraz pritom kladieme na analýzu príjmovej nerovnosti medzi mužmi a ženami, ktorá tvorí významný podiel v rámci celkových rodových nerovností.

O rozdielnom odmeňovaní mužov a žien sa hovorí v zásade pri akejkoľvek príležitosti, keď je reč o rozdieloch medzi mužmi a ženami. Často počúvame, že mzdy mužov sú o „x“ percent vyššie než mzdy žien. Menej sa však hovorí o príčinách mzdových rozdielov, respektíve za jedinú príčinu býva považovaná diskriminácia žien. Celá Európa totiž čelí paradoxu, že ženy majú vyššie zastúpenie v počte absolventov univerzít, sú lepšie jazykovo vybavené, stíhajú popri práci aj mnoho iných povinností, no aj napriek tomu zarábajú menej a majú nižšie dôchodky ako muži. Ženy sú tak vystavené väčšiemu riziku chudoby ako muži. Problematika rodového mzdového, či príjmového rozdielu je veľmi starostlivo sledovaná rôznymi orgánmi Európskej únie, ktoré prostredníctvom neho monitorujú sociálnu situáciu obyvateľov a následne, prostredníctvom tvorby politík, aktívne zasahujú do diania na trhu práce jednotlivých krajín. Hlavným orgánom v tejto problematike je Európska komisia, ktorej cieľom je zvýšiť povedomie o rozdieloch v odmeňovaní a upozorniť na to, že rozdiel v mzdách je v jednotlivých krajinách neustále vysoký [1]. Táto problematika je predmetom skúmania mnohých ekonómov vo všetkých vyspelých krajinách sveta. U nás sa týmito otázkami zaoberajú hlavne Oľga Pietruchová, Viera Pacáková, Ľubica Sipková a Margita Barošová (pozri napr. [8], [10], [14], [16], [17]). V Čechách sa tejto problematike venuje hlavne Bartošová [2], či Jurajda a v zahraničí Jenkins, Blau či Albrecht.

1. Rodová nerovnosť v EÚ a na Slovensku

V EÚ – 27 sú v dnešnej dobe mzdy žien v priemere o 18 % nižšie ako mzdy mužov. Na úrovni jednotlivých krajín dosahuje tento ukazovateľ hodnoty od 4 do 30 %. Porovnávanie tohto ukazovateľa medzi jednotlivými krajinami však nie je ľahké, pretože zahŕňa mnoho problematických aspektov, taktiež nie je zjednotený zdroj dát a ani spôsob jeho výpočtu. V ďalšej časti našej práce si teda popíšeme rôzne metodické postupy, ktoré slúžia na výpočet a porovnanie príjmového rozdielu. Zameriame sa aj na porovnanie príjmov mužov a žien pomocou porovnania hustoty ich rozdelenia, ktorý poskytuje lepší a ucelenejší pohľad na príjmové nerovnosti.

Analýzy z ostatných rokov naznačujú, že v Slovenskej republike existujú medzi mužmi a ženami mnohé sociálne rozdiely, okrem iného aj výrazná príjmová nerovnosť. Hoci sa o zrovnoprávnení žien na Slovensku hovorí celé roky, v reálnom živote sa ich postavenie vôbec nezlepšuje. Ako opakovane potvrdzujú rôzne

štúdie, ženy majú čoraz horšie šance zamestnať sa, v rovnakých pracovných pozíciách zarábajú oveľa menej ako muži, v menšine sú aj vo vedúcich funkciách vrátane politických. Na starobu musia vystačiť s nižšími dôchodkami a viac sú ohrozené aj chudobou [12].

Tento trend potvrdzuje aj posledná Správa o sociálnej situácii obyvateľstva za rok 2010 [15]. Zo šestnástich sledovaných ukazovateľov sú ženy na tom v porovnaní s mužmi lepšie len vo dvoch, a to v čerpaní rodičovskej dovolenky, kde majú takmer 100-percentný podiel, a tiež v podiele počtu absolventov vysokých škôl, kde tvoria zhruba dve tretiny všetkých absolventov. Čo sa však už týka počtu profesorov, v tomto už výrazne zaostávajú. Tieto údaje predurčujú obvyklý vývoj pracovnej kariéry žien. Ide o takzvaný efekt skleného stropu, akejsi neviditeľnej bariéry, ktorá ženám bráni stúpať na spoločenskom rebríčku rovnako rýchlo ako mužom. Podľa prieskumov je žien absolventiek síce viac, no ich kariérny postup zväčša do 10 rokov prerušia materské povinnosti, aj preto je už medzi doktorandmi viac mužov, medzi docentmi ešte viac a z celkového počtu vysokoškolských profesorov tvoria ženy už iba pätinu. Rovnakú paralelu možno sledovať aj pri obsadzovaní vedúcich a manažérskych funkcií, na ktoré prerazí len tretina žien. [11]

Nerovnosť na Slovensku sa prejavuje aj v nižšom mzdovom ohodnotení. Rozdiel v odmeňovaní žien a mužov (priemerný rozdiel v hrubej hodinovej mzde medzi ženami a mužmi vo všetkých hospodárskych odvetviach) predstavuje v súčasnosti 20,9 %, čo je o 2,9 percentuálnych bodov viac ako je priemer EÚ27 (18 %), no medzi jednotlivými regiónmi a odvetviami existujú významné odlišnosti. Tento stav je odzrkadlením pretrvávajúcej rodovej nerovnosti na trhu práce, a preto je dôležité, aby sa vzhľadom na jeho rôzne príčiny prijali opatrenia na viacerých úrovniach, ktoré budú slúžiť k zníženiu tohto rozdielu. Táto rodová priepasť v odmeňovaní je odrazom znevýhodneného postavenia žien v spoločnosti a poukazuje na mieru porušovania ich ekonomických a ľudských práv. Zároveň má závažné ekonomické a sociálne dôsledky pre život jednotlivých žien i celej spoločnosti – je jednou z hlavných príčin feminizácie chudoby na Slovensku a sociálneho vylúčenia žien.

Jedným z predpokladov rodovej nerovnosti je ten, že medzi zamestnávateľmi stále vládne mýtus o menšej spoľahlivosti či citovej labilnosti žien a ich častejšom vypadávaní z pracovného procesu. Z tohto dôvodu vzniká tzv. „skrytá diskriminácia“, keď si zamestnávateľ vymyslí sto iných dôvodov na to, aby utajil, že mu prekáža pohlavie uchádzača, s ktorou sa dá len veľmi ťažko bojovať, keďže otvorená diskriminácia v podobe požiadavok v inzerátoch, že firmy chcú radšej zamestnať muža ako ženu, je trestná.

Slovenské ženy, aj napriek tomu, že veľkú časť svojho života popri ozajstnej práci pracujú aj v *„druhej zmene“* (starostlivosť o domácnosť), čaká často nelichotivá staroba. Priemerne dlhšie žijú, teda väčšinou aj stihnú doopatrovať svojich mužských partnerov, no o ne sa už často nemá kto postarať. To má za následok aj to, že v domovoch dôchodcov či geriatrických zariadeniach počtom prevažujú ženy. *„Nízke mzdy a z nich plynúce nízke odvody generujú aj nízke penzie. Vo vekovej skupine 60-ročných a viacročných je takmer trikrát viac žien ako mužov odkázaných na dávky v hmotnej núdzi.“* [6]

Príčinou znevýhodneného ekonomického a sociálneho postavenia žien v našej spoločnosti je *„rodová segregácia povolaní, založená na rodovej deľbe práce a stereotypnom chápaní určitých typov povolaní ako typicky „mužských“ a „ženských“* [6]. Tzv. ženská práca má nižší spoločenský status a aj nižšie finančné ohodnotenie. Slovensko je charakterizované vysokým stupňom rodovej nerovnováhy v určitých povolaniach, napr. textilný priemysel, školstvo, zdravotné sestry vs. IT špecialisti. Na Slovensku stále malo žien využíva flexibilne nástroje ako čiastočný pracovný úväzok (5,4 % žien v SR v porovnaní s 31 % v EÚ), flexibilný pracovný čas alebo prácu z domu – tzv. teleworking. Nízka miera využitia týchto nástrojov spôsobuje, že priestor pre zladenie pracovných a rodinných povinností je na Slovensku dosť obmedzený. [11]

Zlepšiť postavenie žien v zamestnaní sa pokúša štát rôznymi úpravami zákonov, jedným z nich je aj úprava Zákonníka práce, ktorá uľahčuje návrat žien do práce po materskej dovolenke. V praxi sa táto úprava však zatiaľ masívne neprejavila, podobne ako ani ďalšie opatrenia bývalej či súčasnej vlády.

Slovensko, čo sa týka rovnosti pohlaví, neobstálo minulý rok dobre ani v medzinárodnom porovnaní. Podľa vlaňajšej správy Svetového ekonomického fóra sa nachádza až na 71. mieste, šesť miest za Českom. Najlepšie zo 134 krajín dopadli Island, Nórsko, Fínsko

a Švédsko. Podľa Eurobarometra z roku 2012 vnímalo až 44 % slovenskej populácie nerovnosti medzi mužmi a ženami na Slovensku ako celkovo rozšírené. Slováci za najdôležitejšie prejavy rodovej nerovnosti považujú rozdiely v odmeňovaní žien a mužov (47 %), násilie páchané na ženách (43 %) a malý podiel žien v zodpovedných pozíciách v politike (32 %). Za najúčinnejšie opatrenia v boji proti rodovej nerovnosti Slováci označili transparentné platové tarify vo firmách (29 %), uľahčenie prístupu žien a mužov ku všetkým typom zamestnania (27 %) a uvalenie finančných sankcií na firmy, ktoré nerešpektujú rodovú rovnosť (26 %).

Na záver by sa dalo zhrnúť, že *„Slovensko je v celoeurópskom porovnaní krajinou s výraznou rodovou deľbou práce v rodinách aj na trhu práce, s pretrvávajúcou vertikálnou aj horizontálnou rodovou segregáciou v ekonomických sektoroch a triedach povolaní, z mimoriadne nízkym zastúpením žien na všetkých úrovniach riadenia a s nedostatočne reflektovanými dôsledkami rodových nerovností."* [5]

2. Meranie príjmových nerovností

Na meranie príjmových nerovností sa v ekonomickej teórii a praxi používa viacero metód. Analýza pracovných príjmov mužov a žien sa všeobecne môže opierať o dva základné metodologické prístupy:

1. Porovnanie rovnakej práce na rovnakom pracovnom mieste. Ide o porovnanie v prípade, keď muž a žena vykonávajú rovnakú prácu na rovnakom pracovnom mieste v rovnakej firme. Za týchto podmienok sa potom zisťuje, či sú ich platy rovnaké alebo nie. Je to najvýstižnejšie porovnanie, avšak vyžaduje veľmi detailné informácie o každom zamestnancovi v podniku, ktoré však zvyčajne nie sú dostupné. Viac-menej ani situácia, keď žena a muž pracujú na rovnakom mieste a vykonávajú rovnakú prácu, nevyžaduje, aby boli obaja platený rovnako. Rozdiel môže byť spôsobený rôznymi dôvodmi (napr. zvyšovaním platového stupňa podľa odpracovaných rokov,…). Dôvod rozdielu však nesmie v žiadnom prípade súvisieť s pohlavím zamestnanca. [5]
2. Porovnania medzi príjmami všetkých zamestnancov v celom hospodárstve. Keďže dochádza k nedostatku informácií, ktoré by dokumentovali rozdiely medzi mzdou mužov a žien v úzko definovaných profesií v jednom podniku, porovnáva väčšina štúdií priemernú mzdu skupiny mužov voči priemernej mzde skupiny žien.

V rámci tohto prístupu potom môžeme rovnako rozlišovať dve odlišné metódy.

- Prvá metóda vychádza z porovnania priemerných alebo mediánových príjmov mužov a žien pracujúcich na plný úväzok. Výhodou tejto metódy je pomerná dostupnosť informácií, prostredníctvom ktorých je možné si vytvoriť predstavu o mzdovej nerovnosti v národnom hospodárstve. Nevýhodou je však relatívne hrubý agregujúci prístup, ktorý nie je schopný zachytiť rozdiely v produktivite práce a neporovnáva mzdy mužov a žien vykonávajúcich rovnakú alebo porovnateľnú prácu. [5]
- Druhá metóda sa snaží vysvetliť rozdiely pomocou výberu takých charakteristík, ktoré môžu produktivitu alebo konečný produkt ovplyvniť – teda počet rokov vzdelania, počet rokov odbornej praxe,… Takéto údaje sa zahrnú do regresných analýz údajov vzťahujúcich sa k práci a zároveň vhodných k takémuto testovaniu. Nemení sa tak zmeraný mzdový rozdiel, ale podáva sa vysvetlenie rozdielu alebo jeho zmien v čase.

Rodový príjmový rozdiel

Rodový príjmový rozdiel je dôsledkom pretrvávajúcej diskriminácie a nerovnosti na trhu práce. Súvisí s množstvom legislatívnych, sociálnych a ekonomických faktorov, ktorá presahujú princíp rovnosti odmeňovania za rovnakú prácu a prácu rovnakej hodnoty. K dispozícii sú viaceré ukazovatele rodových mzdových rozdielov. Výpočet rozdielu je totižto citlivý na viaceré parametre, napr. či sa ráta z priemernej hodinovej alebo mesačnej mzdy, či sa do úvahy berú sektory, pracovná pozícia, celková alebo tarifná mzda, či je základom pre percentá mzda muža alebo ženy a pod. [5]

Základný ukazovateľ, pomocou ktorého môžeme vypočítať rodový príjmový rozdiel má tvar:

$$RPR = \frac{W_M - W_F}{W_M} \; x \; 100 \; [\%] \qquad (1)$$

kde: RPR – rodový príjmový rozdiel, W_M – príjmy mužov, W_F – príjmy žien.

Rozdiel v ukazovateľoch teda vyjadruje rozdiel príjmu muža a ženy vzťahujúci sa na príjem

muža vyjadrený v percentuálnom tvare. Tento rozdiel sa začal u nás v poslednom období niektorými odborníkmi pomenovávať ako rodový príjmový rozdiel (niekedy aj ako rodová príjmová priepasť). Pre odlíšenie od absolútneho RPR (rozdielu medzi priemernou mzdou mužov a žien) je vhodnejšie ho pomenovať ako relatívny RPR (vyjadrený v percentách).

Rodový príjmový rozdiel je ukazovateľom (indikátorom) bežne používaným aj v medzinárodných porovnaniach (anglicky ako *gender pay gap* alebo *gender wage gap* alebo niekedy aj ako *female-male pay gap*).

Rodový mzdový rozdiel vyjadrený pomocou hustoty rozdelenia

Ďalšou formou zobrazenia rozdielu medzi príjmami mužov a žien je nájdenie a porovnanie hustoty ich pravdepodobnostného rozdelenia. K tomuto názoru sa prikláňajú aj viacerí odborníci z oblasti analýzy rozdelenia príjmov, ktorých reprezentuje názor, že: *„V súčasnej heterogénnej populácii je nemožné dostatočne charakterizovať príjmové rozdiely len použitím niekoľkých súhrnných charakteristík rozdelenia. Z pohľadu ekonomickej aj štatistickej teórie vystupuje do popredia potreba poznať tvar rozdelenia príjmov pre celú populáciu, ako aj pre jednotlivé štruktúry populácie. Ak sú k dispozícii informácie o tvaroch rozdelení, možno jednak získať lepšie odhady ich charakteristík, ale hlavne komplexnejšie popísať a porovnávať rozdelenia príjmov“*. [14]

Aj v našej práci využijeme na porovnávanie príjmov mužov a žien práve tento postup, a teda budeme porovnávať pravdepodobnostné rozdelenia príjmov a mužov a žien. Na porovnanie pravdepodobnostných rozdelení dvoch pozorovaných súborov využívame viaceré analýzy:

- analýza na základe popisných charakteristík (charakteristík polohy, variability a tvaru),
- grafická analýza,
- testovanie zhody dvoch pravdepodobnostných rozdelení. Ak poznáme tvar rozdelenia pravdepodobnosti základného súboru, využívame na testovanie jednoduché parametrické testy. Ak však o rozdelení nemáme žiadne informácie, používame neparametrické testy, ktoré nie sú závislé od tvaru rozdelenia základného súboru a nevyžadujú výpočet parametrov distribučnej funkcie. Takýmto testom je aj Dvojvýberový Kolmogorov-Smirnovov test.

3. Štatistická analýza príjmov mužov a žien na Slovensku

Vo výskumnej praxi sa využívajú štatistické údaje z rôznych typov zisťovaní. Medzi základné zdroje dát na úrovni štatistického vykazovania sa zaraďuje:

- Európsky panelový prieskum domácností (prebiehal vo viacerých krajinách EÚ v období rokov 1994–2001, od roku 2004 ho nahradil EU SILC; išlo o výber domácností – pomerne malý súbor, ktorý však pokrýval všetky ekonomické sektory, vrátane verejného);
- EU SILC (štatistiky o príjme a životných podmienkach, prebieha od roku 2004 – aj v SR; predstavuje dobrý zdroj na meranie rozdielu v odmeňovaní;
- Výberové zisťovanie o štruktúre miezd (založené na výbere zamestnávateľských organizácií; zo zisťovania vypadávajú samozamestnaní a zamestnávatelia s menej ako 10 zamestnancami);
- Výberové zisťovanie pracovných síl (založené na výbere jednotlivcov; zachytáva individuálne i pracovné charakteristiky – vrátane mzdy).

V našej práci budeme analyzovať príjmy mužov a žien na Slovensku počas obdobia 5 rokov (2005–2009). Najväčší dôraz u zisťovania EU SILC je venovaný príjmovým premenným, ktoré sa zisťujú na úrovni domácnosti a jednotlivcov. Aj v našej práci budeme najväčšiu pozornosť venovať práve príjmovým premenným na úrovni jednotlivca, a konkrétne ročným hodnotám z P – súboru pod názvom PY010G, a teda peňažnému príjmu zo zamestnania alebo jemu blízky príjem (v ďalších častiach označovaný len pojmom – „príjem“).

Jednotlivé analýzy budeme robiť pomocou štatistického programového balíka STATGRAPHICS Centurion XVI, ktorý nám umožní urobiť jednotlivé kroky analýzy jednoducho a rýchlo.

Prvým krokom pri analýze príjmov mužov a žien je výpočet základných charakteristík výberového súboru. Vo všetkých sledovaných obdobiach možno vidieť veľké variačné rozpätie u mužov aj žien, t.j. rozdiel medzi maximálnou a minimálnou hodnotou je veľký, čo potvrdzuje aj hodnota variačného koeficientu. U oboch rodov väčšina osôb mala príjem nižší ako priemerný. To vyplýva z vysokých hodnôt koeficientov šikmosti, ktoré naznačujú, že vo všetkých sledovaných obdobiach je rozdelenie

pravostranne zošikmené. Značný rozdiel v príjmoch mužov a žien je charakterizovaný aj hodnotami kvartilového rozpätia (rozdiel medzi dolným a horným kvartilom).V roku 2009 došlo na Slovensku k zmene meny, a teda došlo aj k zmene menovej jednotky pri našich empirických údajoch. Konkrétne sa slovenská koruna zmenila na euro, čiže aj nami použité údaje sú v eurách, a preto v prípade prepočtu dát na slovenskú korunu využijeme konverzný kurz 30,126 Sk/€.

Tab. 1: Popisné charakteristiky príjmov mužov a žien rok 2005 až 2009

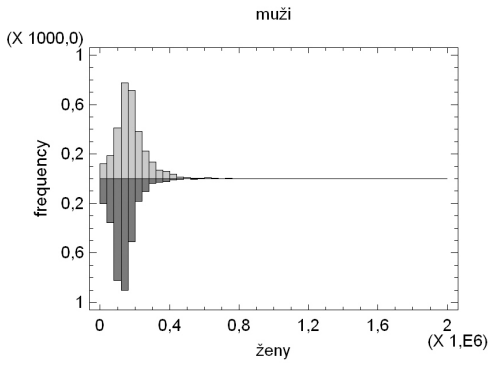
	rok 2005 (v SK)		rok 2006 (v SK)		rok 2007 (v SK)		rok 2008 (v SK)		rok 2009 (v €)	
	muži	ženy	muži	ženy	muži	ženy	muži	ženy	muži	ženy
Počet	3 201	3 196	3 301	3 208	3 419	3 266	3 812	3 736	3 713	3 733
Priemer	185 223	139 823	180 183	138 676	197 114	149 166	217 696	160 026	7 698	5 809
Medián	168 000	126 558	162 000	130 000	186 000	150 000	210 000	153 243	7 011	5 560
Modus	180 001	144 001	150 000	150 000	150 000	150 000	210 000	150 000	6 971	4 979
Sm. odchýlka	139 275	113 372	141 714	109 746	127 512	92 169	142 011	93 034	4 483	3 548
Var. koeficient	75,19 %	81,08 %	78,65 %	79,14 %	64,69 %	61,79 %	65,23 %	58,14 %	58,24 %	61,09 %
Minimum	3 745	1 375	600	800	300	300	216	400	20	7
Maximum	3,20E+06	3,57E+06	3,75E+06	3,23E+06	1,40E+06	1,37E+06	2,58E+06	1,01E+06	5,47E+04	5,77E+04
Rozpätia	3,19E+06	3,57E+06	3,75E+06	3,22E+06	1,40E+06	1,37E+06	2,58E+06	1,01E+06	5,47E+04	5,77E+04
Dolný kvartil	120 002	94 572	112 000	90 000	130 000	100 000	150 000	100 000	4 979	3 704
Horný kvartil	216 251	168 001	216 000	176 400	242 400	193 400	270 000	210 000	9 294	7 279
Kvartilové rozpätie	96 249	73 429	104 000	86 400	112 400	93 400	120 000	110 000	4 315	3 575
Šikmosť	8,8637	13,0188	8,11232	9,58795	2,24688	2,53616	3,76836	1,31625	1,80368	2,64707
Špicatosť	147,63	312,732	153,305	216,035	12,2214	22,6436	39,9834	6,42623	9,4494	24,329

Zdroj: vlastné spracovanie na základe údajov z EU SILC

Grafická analýza hustoty (Obr. 1 – Obr. 5) rozdelenia príjmov na prvý pohľad zobrazuje situáciu menej priaznivú pre ženy. Rozdelenie príjmov žien je špicatejšie ako rozdelenie príjmov mužov, a taktiež vrchol rozdelenie príjmov žien je posunutý viac vľavo ako vrchol rozdelenia príjmov mužov. Je teda evidentné, že modus príjmov žien dosahuje hodnotu nižšiu ako modus u mužov. Keďže vysoké príjmy (v histograme na Obr. 1 nad 1 mil. Sk nad 500 000 Sk) nie sú kvôli lepšej názornosti zobrazené v predchádzajúcich grafoch, na ich zobrazenie sú vhodnejšie škatuľkové grafy, ktoré vhodne znázorňujú postavenie kvartilových mier, ako aj extrémnych hodnôt príjmov mužov a žien. Taktiež je možné vidieť rozdiel medzi proporciami empirických rozdelení mužov a žien v strednej časti. Je očividná aj vyššia úroveň príjmov mužov nielen pri mediánoch a priemeroch, ale aj vzhľadom na celkové posunutie dolného kvartilu u mužov blízko k mediánu u žien a mediánu u mužov tesne ku hornému kvartilu u žien. Znamená to, že napr. v roku 2005 až polovica žien mala príjem pod úrovňou 126 tis. Sk, pod ktorú malo príjem len niečo cez 25 % mužov a 75 % žien malo príjem nižší ako bol zistený mediánový príjem u mužov. Podobné vlastnosti týkajúce sa rozdelenia príjmov mužov a žien možno vyčítať aj z Obr. 2 – Obr. 5 pre roky 2006 až 2009.

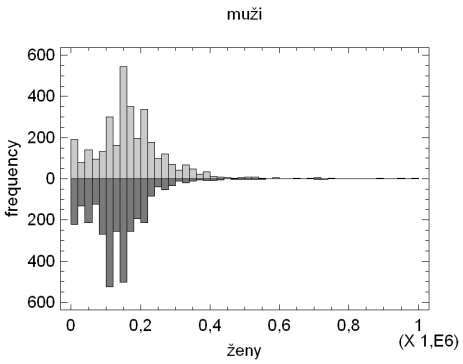
Po dôkladnej analýze všetkých dostupných empirických údajov, sme teda dospeli k záveru, že príjmy mužov a žien na Slovensku počas obdobia rokov 2005 až 2009 sú veľmi rozličné a v jednotlivých rokoch sa hustoty rozdelení príjmov mužov a žien nerovnajú. Tým pádom nemôžeme potvrdiť hlavnú nami stanovenú hypotézu, že príjmy mužov a žien pochádzajú z rovnakých pravdepodobnostných rozdelení, ale naopak môžeme tvrdiť, že príjmy mužov a žien sú veľmi rozdielne. Môžeme to tvrdiť, či už na základe popisných charakteristík, ktorých

Obr. 1: Porovnanie histogramov príjmov mužov a žien rok 2005



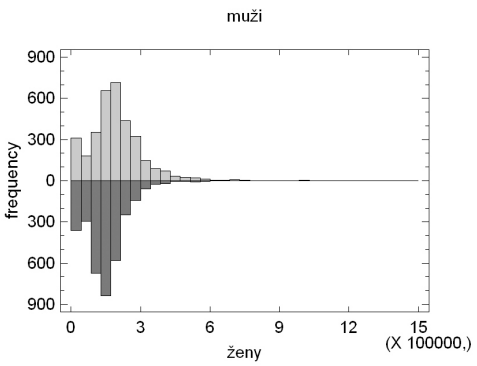
Zdroj: vlastné spracovanie

Obr. 2: Porovnanie histogramov príjmov mužov a žien rok 2006



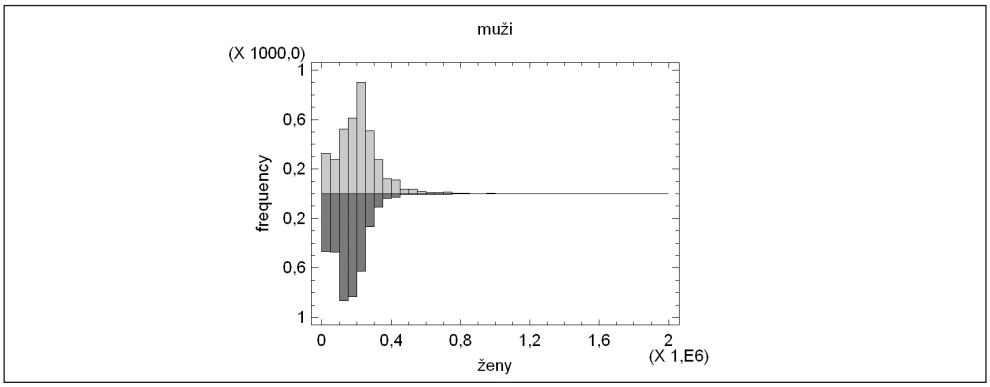
Zdroj: vlastné spracovanie

Obr. 3: Porovnanie histogramov príjmov mužov a žien rok 2007



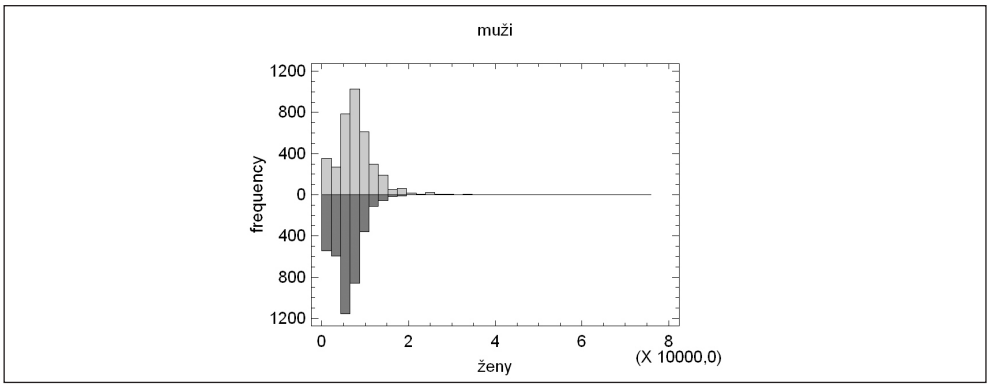
Zdroj: vlastné spracovanie

Obr. 4: Porovnanie histogramov príjmov mužov a žien rok 2008



Zdroj: vlastné spracovanie

Obr. 5: Porovnanie histogramov príjmov mužov a žien rok 2009



Zdroj: vlastné spracovanie

hodnoty v jednotlivých vypočítaných ukazovateľoch boli výrazne v neprospech žien, či už na základe grafických znázornení, konkrétne histogramu, grafu distribučnej funkcie a box plotu, ktoré nám jasne naznačovali nerovnaké rozdelenie príjmov mužov a žien a v neposlednom rade aj na základe výsledkov Kolmogorovovho-Smirnovovhodvojvýberového testu, ktorý nám, pomocou vypočítanej p-value, naše predpoklady na 5% (dalo by sa tvrdiť, že až na 1%) hladine významnosti potvrdil (pozri výsledky v Tab. 2).

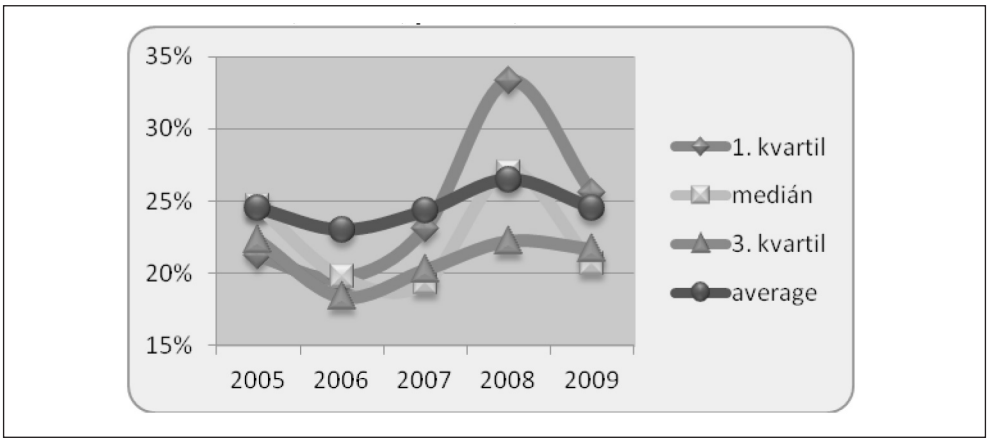
Tab. 2: Výsledky Kolmogorovho-Smirnovovho testu dobrej zhody pre porovnanie rozdelenia príjmov mužov a žien

Kolmogorov-Smirnov Test	2005	2006	2007	2008	2009
Estimated overall statistic	DN = 0,261521	DN = 0,258743	DN = 0,248733	0,289236	0,301307
Two-sided large sample K-S statistic	10,4584	10,4364	10,1658	12,5636	12,9999
Approximate P-value	0	0	0	0	0

Zdroj: vlastné spracovanie na základe údajov z EU SILC

Pre lepšie znázornenie a prezentáciu získaných výsledkov o vývoji príjmových rozdielov mužov a žien za sledované obdobie si hodnoty rodových rozdielov zhrnieme v spoločnom grafe. Pre grafické zjednodušenie si zobrazíme len hodnoty rozdielov v hornom a dolnom kvartile, v mediáne, a taktiež aj v priemere, ktorý sme však v predchádzajúcich kapitolách neuvádzali, keďže sme sa zaoberali len príjmovým rodovým rozdielom v základných kvantiloch, ale ktorý má takisto veľký význam, keďže vo väčšine štatistických analýz, ktoré sú zamerané na výpočet rodového rozdielu v príjmoch, sa pracuje práve s priemernými hodnotami. V tomto zhrnutí si ho teda uvedieme aj preto, aby sme poukázali na to, ako sa mení hodnota rodového príjmového rozdielu v závislosti od ukazovateľa, na základe ktorého ho vypočítavame.

Obr. 6: Vývoj RPR – 1. kvartil, medián, priemer, 3. kvartil



Zdroj: vlastné spracovanie na základe údajov z EU SILC

Na Obr. 6 teda môžeme vidieť vývoj príjmových rodových rozdielov od roku 2005 až po rok 2009. Vidíme, že jeho hodnota sa celkovo nachádzala v rozmedzí 15 % až 35 %, v závislosti od konkrétneho ukazovateľa. Najmenšie vychýlenia za sledované obdobie mal RPR vypočítaný na základe priemeru. Jeho hodnota bola po celý čas, teda až na rok 2008 kedy vystúpila na úroveň 26,50 %, tesne pod úrovňou 25 %. Táto hodnota hovorí o tom, že ročný príjem žien je skoro o 25 % nižší ako ročný príjem mužov. Nami vypočítaná hodnota je o niečo vyššia ako hodnota uvedená v práci [4], je to však z dôvodu použitia iných empirických hodnôt na jeho výpočet, keďže my sme pracovali s celkovými ročnými príjmami mužov a žien a v práci [4] využívali na jeho výpočet hrubú hodinovú mzdu mužov a žien. V oboch prípadoch je to však percento dosť vysoké.

V niektorých prípadoch sa pri výpočte RPR využíva namiesto aritmetického priemeru medián, a teda stredná hodnota daného súboru. Ako však vidíme na grafe, rozdiel, medzi RPR vypočítaným na základe priemeru a na druhej strane na základe mediánu, je v rokoch 2006, 2007 a 2009 dosť významný, a teda pri skúmaní výsledkov a tvorbe záverov, treba brať veľký ohľad na to, z akého ukazovateľa bol príjmový rozdiel vypočítaný.

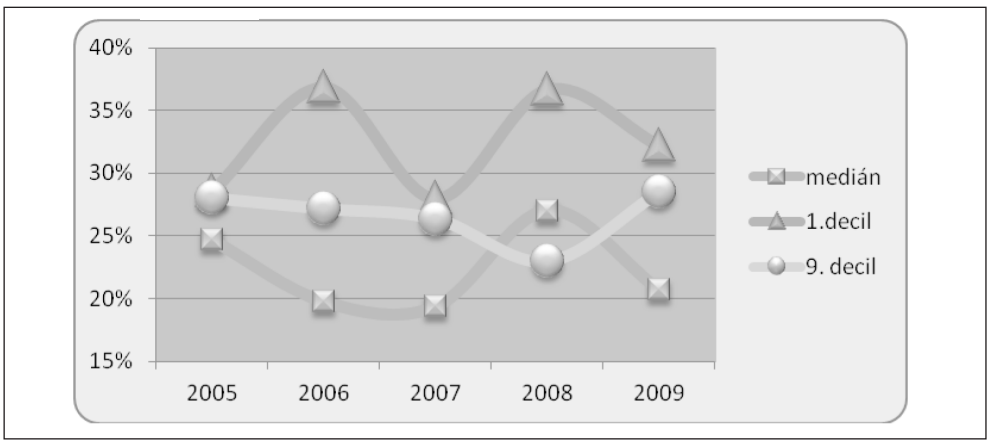
Na tomto grafe ďalej vidíme, že vývoj RPR v 3. kvartile kopíruje vývoj RPR v priemere. Tento jav vzniká v dôsledku toho, že aritmetický priemer je ukazovateľ, ktorý je veľmi citlivý na extrémne hodnoty, a keďže väčšie extrémy nastávajú viac vpravo ako vľavo (doľava sa dá ísť len po minimálnu mzdu, ale doprava do státisícov až miliónov), nastáva nám zhoda vývoja RPR v mediáne s vývojom RPR v 3. kvartile a nie s vývojom v 1. kvartile. Ako však môžeme vidieť, zhoda nastáva len vo vývoji rodového rozdielu, ale nie v hladine, keďže vývoj RPR v 3. kvartile sa nachádza na nižšej hladine, z čoho vyplýva, že rodový rozdiel vo vyšších príjmových triedach, je menší ako rodový rozdi-

el počítaný z priemerných hodnôt. Ďalej si môžeme všimnúť, že najvyššie hodnoty rodových príjmových rozdielov v jednotlivých rokoch sú dosahované v 1. kvartile, teda až na rok 2005, kde bola jeho hodnota najnižšia.

Na základe tohto pozorovania by sa nám mohlo zdať, že so stúpajúcou hladinou percentilov klesá relatívna hodnota rodového príjmového rozdielu. To však nie je pravda, pretože ak sa pozrieme na Obr. 7, ktorý nám zobrazuje RPR v 1. decile, mediáne a v 9. decile, môžeme vidieť, že hodnoty RPR u 10 % najlepšie zarábajúcich sú vyššie ako hodnoty v mediáne a v niektorých rokoch dokonca podobné ako hodnoty 10 % najhoršie zarábajúcich obyvateľov.

Tým pádom sa dostávame k záveru, že najväčšie rozdiely medzi mužmi a ženami vznikajú v najnižších a najvyšších príjmoch a smerom k stredným hodnotám príjmom sa tento rozdiel znižuje. Aj napriek tomuto klesaniu RMR je však nami vypočítaný rozdiel v zárobkoch mužov a žien stále vysoký, a aj napriek veľkej snahe rôznych inštitúcií, ktoré sa zaoberajú problematikou rovnakého odmeňovania, nedochádza, podľa našich zistení, na Slovensku k poklesu celkového priemerného rozdielu v príjmoch medzi mužmi a ženami.

Obr. 7: Vývoj RPR – 1. decil, medián, 9. decil



Zdroj: vlastné spracovanie na základe údajov z EU SILC

Záver

V predloženom príspevku sme sa venovali problému rodovej nerovnosti. Zistili sme, že rodová nerovnosť je stále súčasťou každodennosti, napriek veľkej a neustálej snahe rôznych orgánov a inštitúcií o jej odstránenie. Boj s rodovou nerovnosťou je totiž dlhodobou úlohou pre jednotlivé krajiny, spoločenstvá, ako aj jednotlivcov, ktorá vyžaduje zredukovanie zakorenených modelov správania. Tieto vychádzajú z tradičných rodových rovníc a teda vyžadujú zmenu myslenia, správania, ako aj zmenu vymedzenia úloh žien a mužov. Pri napredovaní v oblasti rodovej rovnosti však prijala väčšina členských štátov aj Európska komisia dvojakú stratégiu. Na jednej strane uplatňujú rodovú rovnosť vo všetkých oblastiach politiky, pri všetkých stratégiách a všetkej činnosti a na druhej strane financujú opatrenia, ktoré sú priamo zamerané na posilnenie postavenia žien.

V našej práci sme sa venovali najväčšej oblasti v rámci rodovej nerovnosti, a teda príjmovej nerovnosti, ktorá spadá pod oblasť trhu práce. Pri spracovávaní tejto problematiky, sme došli k záveru že aj napriek porovnateľnej úrovni dosiahnutého vzdelania u mužov a žien, stále dochádza na trhu práce k rodovým nerovnostiam, pričom sa táto nerovnosť najviac odráža v procese odmeňovania, obsadzovania funkcií a zverovania kompetencií. Ženy prevažujú na nižších pozíciách v rámci jednotlivých profesií a v sektoroch hospodárstva s nižšími priemernými mzdami. Paradoxom zostáva, že napriek verejnej diskusii a uplatňovaní politík rodovej rovnosti v posledných rokoch dochádza

k výraznejšiemu narastaniu mzdového rozdielu medzi mužmi a ženami.

Pri analýze týchto príjmov z EU SILC za rok 2005–2009, sme dospeli k záveru, že existujú medzi nimi významné rozdiely. K tomuto záveru sme sa dostali na základe dvoch štatisticko–analytických častí. Prvou z nich bolo porovnávanie a overovanie zhody pravdepodobnostných rozdelení príjmov mužov a žien pomocou popisných charakteristík, grafických znázornení a overením na základe Kolmogorovovho-Smirnovovho testu. Všetky tieto ukazovatele nám po dôkladnom preštudovaní naznačili to, že príjmy mužov a žien počas sledovaných piatich rokov nepochádzajú z rovnakého pravdepodobnostného rozdelenia, a že rozdelenie príjmov žien bolo v každom roku oproti rozdeleniu príjmov mužov posunuté viac vľavo, čo znamená že celkové príjmy žien boli vždy v nižšej peňažnej hladine. Po zistení týchto nerovností sme prešli k druhej štatisticko-analytickej časti, ktorá zahŕňala výpočet príjmových rodových rozdielov v nami určených základných kvantiloch a v priemere. Po vypočítaní všetkých hodnôt v každom jednom roku sme dospeli k záveru, že tento rozdiel sa nachádzal v intervale 15 % až 35 %, pričom najväčšie rozdiely medzi mužmi a ženami vznikali v najnižších a najvyšších príjmoch a smerom k stredným hodnotám príjmom sa tento rozdiel znižoval. Pri porovnaní nami vypočítaného a z iných zdrojov zisteného rozdielu v príjmoch sme dospeli k menšej nerovnosti, táto však vznikla z dôvodu použitia iných empirických hodnôt na jeho výpočet. Je však veľmi dôležité dbať nato s akými dátami pracujeme a aké výsledky prezentujeme, pretože rozdiely v zárobkoch mužov a žien sú veľmi citlivo vnímané celou spoločnosťou a nesprávne či neuvážené závery by mohli viesť k vyvolaniu vážnych sociálnych problémov. Aj napriek tejto nezhode si však myslíme, že príjmový rozdiel medzi mužmi a ženami na Slovensku je stále veľmi vysoký a je potrebné ho znižovať.

V našej práci sme využívali údaje z databázy EU SILC, ktorá predstavuje primeraný zdroj údajov pre meranie príjmových rozdielov, umožňuje analýzu príjmov podľa ukončeného veku, odpracovaných rokov a tiež podľa najvyššieho ukončeného vzdelania. V čase spracovávania príspevku, sme mali k dispozícii údaje EU SILC po rok 2009. Námetom k ďalšiemu výskumu je teda aktualizácia údajov spolu s rozšírením analýzy príjmy vzhľadom na rôzne faktory, podobne ako v práci [8]. Taktiež by bolo významné zamerať sa aj na rozloženie zisteného príjmového rozdielu, a tým pádom definovať príčiny rodových disparít na Slovensku. Takýmto rozkladom sa zaoberajú hlavne Oaxaca a Blinder ([3], [7]), ktorí navrhli rozklad príjmového rozdielu tak, aby rozlíšili efekt rôznych faktorov, ktoré tieto rozdiely ovplyvňujú.

Za významnú analýzu, ktorá by nám ešte viac dopomohla k porovnaniu príjmov mužov a žien, môžeme považovať aj nájdenie pravdepodobnostného rozdelenia sledovanej premennej. Ak sú k dispozícii informácie o tvaroch rozdelení, možno jednak získať lepšie odhady ich charakteristík, ale hlavne komplexnejšie popísať a porovnávať rozdelenia príjmov. Pri špecifikovaní vhodného tvaru pravdepodobnostného rozdelenia príjmov však často nie je možné nájsť známy tvar rozdelenia pravdepodobnosti a je potrebné využiť zložitejšie metódy ako napr., modelovanie kompozíciou normálnych, alebo lognormálnych rozdelení, či metódou kvantilového pravdepodobnostného modelovania, ktoré nám poskytujú námet na ďalší výskum. Na záver by sme ešte chceli dodať, že pri analýzach za roky 2005 až 2008 sme používali údaje v slovenských korunách a pre rok 2009 sme použili menu euro, ktorá v tomto roku začala v SR platiť. Problém je, že ak by sme chceli údaje porovnávať v eurách, aký kurz by bolo vhodné zvoliť.

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Abstract

ANALYSIS OF INCOME DIFFERENTIATION BETWEEN MEN AND WOMEN

Alena Tartaľová, Tatiana Sovičová

Gender inequality, especially gender inequality of incomes is at present times very monitored and discussed problem. The recognition of gender inequality degree has big social, as well as economic importance. The theoretical and the methodological part of this work provides an overview of gender inequality, current problems of gender inequality in Slovakia and the European Union. It also defines the term and the causes of gender income gap and describes methods for its measurement. In analyzing the income from EU SILC data from the years 2005–2009, we concluded that there are significant difference sbetween them. The conclusion we have reached on the basis of statistical procedure. The first one was the comparison and verification of the probability distribution of income between men and women with descriptive characteristics and graphical tools, and another verification is based on the Kolmogorov-Smirnov test. All of these indicators indicated that income distribution of income for men and women not followed the same probabilitydistribution in all analyzed years 2005–2009, and the distribution of income of the women were in each year over income distribution between men shifted more to the left, which means that the total income of women has always been in lower levels. In this arcticle also the calculation and development description of the particular values of the relative income gap between men and women in basic quantiles can be found.

Key Words: *gender inequality, gender income gap, empirical data, probability, distribution.*

JEL Classification: *C46, D31, J16.*

EFFECT OF MANAGEMENT SYSTEMS ISO 9000 AND ISO 14000 ON ENTERPRISES' AWARENESS OF SUSTAINABILITY PRIORITIES

Adam Pawliczek, Radomír Piszczur

Introduction

Reinforcement of sustainable (long term focused) behavior of enterprises is often connected with investment into and implementation of management standards leading to improvement of organization performance. Implementation of ISO 9000 and ISO 14000 management systems brings about questions that need to be answered in order to tune up enterprise performance concerning quality and environmental activities possibly measured by indicator parameters. Increasing of management awareness of specific questions of sustainability will necessarily bring apparent positive results that authors describe in work parallel to this paper.

Primary goal of this study is to discover if application of ISO 9000 and/or ISO 14000 management systems as sophisticated modern management methodic complexes has positive effect on awareness of an owner or top management of enterprise's sustainability/CSR (corporate social responsibility) priorities. The paper also characterizes morphologically which companies are more engaged into ISO implementation and which are less engaged.

1. Theory and Hypotheses

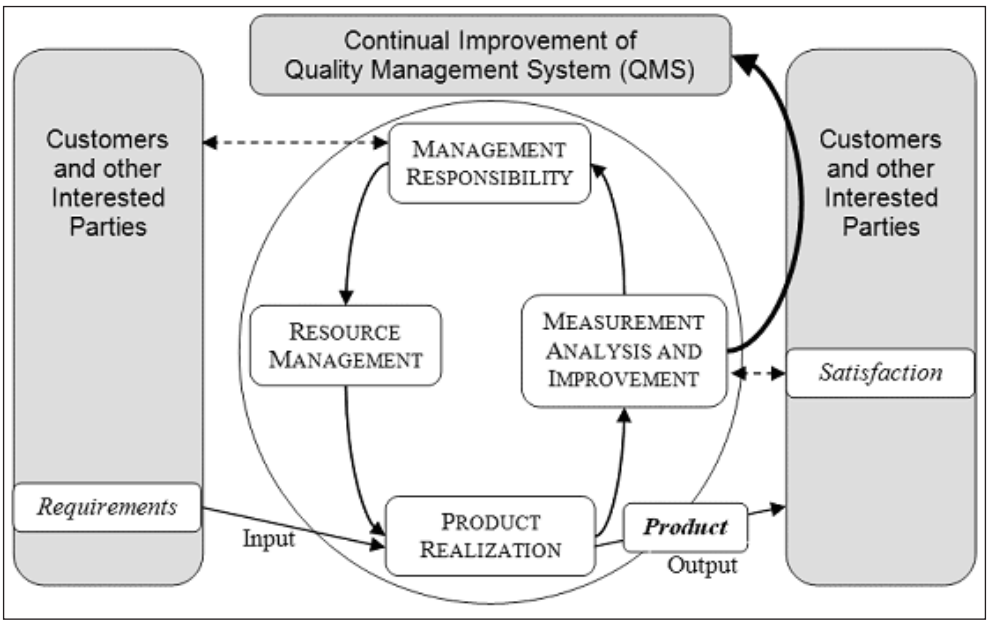
1.1 ISO 9000 Quality Management System Standard

The ISO 9000 family of international quality management standards and guidelines has earned a global reputation as a basis for establishing effective and efficient quality management systems. Figure 1 describes ISO 9000 process approach. Since their initial publication in 1987, the ISO 9000 standards have undergone three revision cycles and have had a great impact on the implementation of international trade and quality management systems by organizations throughout the world. It is widely acknowledged that proper quality management improves business, often having a positive effect on investment, market share, sales growth, sales margins, competitive advantage, and avoidance of litigation. The quality principles in ISO 9000:2000 are also sound, according to Wade [27] and also to Barnes [1], who says that "ISO 9000 guidelines provide a comprehensive model for quality management systems that can make any company competitive." Implementing ISO often gives the following advantages [17], [9]:

- Creates a more efficient, effective operation.
- Increases customer satisfaction and retention.
- Reduces audits.
- Enhances marketing.
- Improves employee's motivation, awareness, and morale.
- Promotes international trade.
- Increases profit.
- Reduces waste and increases productivity.
- Represents the common tool for standardization.

Aims of ISO 9000 are quite basic – to give confidence in the organization's ability in order to provide consistently conforming products to its customers. The way in which the enterprise manages its business activities in order to achieve this objective differs apparently and depends very much on its nature and type (most of all economic sector, size, legal form,

Fig. 1: The ISO 9000 Process Approach



Source: own based on www.iso.org

and others) and ISO provides systematic activity setting to meet company goals and requirements.

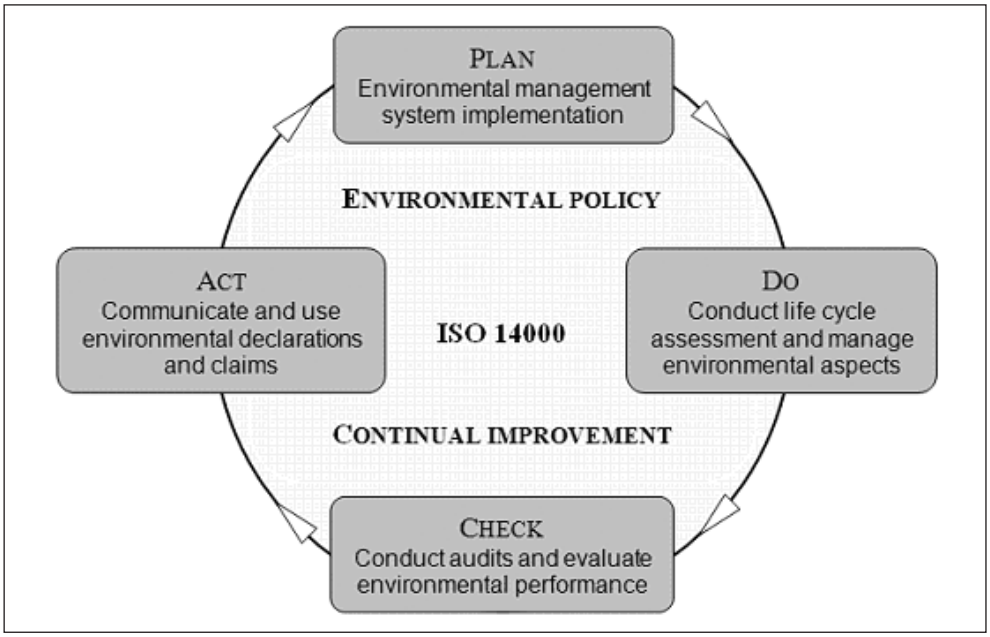
1.2 ISO 14000 Environmental Management System Standard

Organizations of all kinds are increasingly concerned with achieving and demonstrating sound environmental performance by controlling the impacts of their activities, products and services on the environment, consistent with their environmental policy and objectives. They do so in the context of increasingly stringent legislation, the development of economic policies, norms and other measures that foster environmental protection, and increased concern expressed by interested parties about environmental matters and sustainable development. The most representative EMS ISO 14000 International Standard is based on the methodology known as Plan-Do-Check-Act (PDCA). PDCA can be briefly described as follows [17], [10].

- Plan: establish the objectives and processes necessary to deliver results in accordance with the organization's environmental policy.
- Do: implement the processes.
- Check: monitor and measure processes towards environmental policy, objectives, targets, legal and other requirements, and report the results.
- Act: take actions to improve continually performance of the environmental management system.

International Standards covering environmental management are intended to provide organizations with the elements of an effective environmental management system (EMS) that can be integrated with other management requirements and systems and help organizations achieve environmental and economic goals. The basis of the approach is shown in figure 2. The success of the system depends on commitment from all levels and functions of the organization, and especially from top management.

Fig. 2: Environmental Management System Model by ISO 14000



Source: own based on www.iso.org

1.3 Elasticity, Adaptability and Enterprise Performance in Sustainability Context

Elasticity of management, entrepreneurship adaptability and stability are closely interconnected concepts. Elasticity of management is described in literature in four dimensions as: (1) reactive, (2) adaptive, (3) defensive, and (4) creative attributes of the strategy of an observed firm [25]. Elasticity of enterprise management, as ability to react adequately at emerging conditions, is reflection and root of adaptability as enterprise's ability to survive consistently changing conditions. Progressive stability is understood as adaptability so strong, that it enables the enterprise not only to survive, but thank to continuous improvement of processes it also becomes more robust and achieve better sustainable results that can be observed on selected criteria. Kovaľová concludes that entrepreneurship performance and effectiveness is directly connected with establishing its sustainable competitiveness [13].

Sustainability concept with the accent on small and medium businesses (SMEs) should be examined in five important aspects [23], [19]:

- Economic aspects (E).
- Social aspect (S).
- Environmental aspect (N).
- Technological aspect (T).
- Legislative and political (L).

1.4 Sustainability Priorities of Entrepreneurships

European foundation for management development (EFMD) recommends enterprises to pursue four groups of priorities (research questions H1-H7) of sustainable development [23]:

- Priority focused on employees and social aspect.
- Priority focused on environment.
- Priority focused on natural resources and their costs – economical aspect.
- Priority focused on product quality and technological aspect.

Observing these priorities, four hypotheses were formulated. First two hypotheses are descriptive and next two concern sustainability

priorities and influence of ISO management systems on them.

- HYP1: Most enterprises that implemented ISO 14000 implemented also ISO 9000.
- HYP2: Bigger enterprises pay more attention to implementation of ISO 9000 and/or ISO 14000 than the smaller ones.
- HYP3: Businesses priorities are primary focused on quality.
- HYP4: Application of ISO 9000 and/or ISO 14000 management systems has positive enhancing and balancing effect on sustainability priorities of entrepreneurships.

2. Original Research and Its Methodology

Methodic used during creation of this paper is described in this chapter. After preliminary research and inspiration from relevant scientific literature there were hypotheses formulated. Hypothesis was subsequently evaluated by data analysis of the questionnaire research characterized below.

2.1 Questionnaire Research

Questionnaire research was realized during spring semester 2012 by students of Business Entrepreneurship Faculty in Karvina, Silesian University in Opava (Czech Republic). 722 companies active in Czech and Slovak Republic in time period 2009–2011 were subjects of interest (SMEs are creating 89 % of sample group in accordance with number of employees' criterion). Interview protocol included controlled dialogue of a student with an enterprise owner, an executive manager or a top manager, so the collected data have the character of expert guess opinion. Company identification (10 questions) and identification of a student and his opinion on questionnaire relevance (5 questions) was necessary part of each form. Initial sample size 722 companies were filtered and reduced to 677 credible items. The questionnaire form also includes nondisclosure statement to provide business and privacy protection. Moreover data were analyzed anonymously and published as only no-name data.

Data reliability is assured (1) by authorization (contact person, signature, stamp), (2) by subjective student relevance evaluation, partially (3) by internet verification and (4) by statistical validity (standard deviation and Pearson correlation index).

Questionnaire was focused on seven areas of interest (11 of 61 questions evaluated):

- Enterprise identification (4 of 10 questions evaluated).
- Enterprise's strategic management (6 questions).
- Economic and financial trends of business, risk management (11 questions).
- Personal politics of company (7 questions).
- Production, services and innovations (8 questions).
- Grants and subsidies (4 questions).
- Energetic and material savings and application of renewable sources (8 questions).
- Sustainability priorities of enterprises (7 of 7 questions evaluated).

2.2 Selected and Evaluated Questions (Criteria)

There were evaluated following questions/ /criteria. Numbering of questions correspond the one used in the questionnaire. Each part had space for possible comment or further narrative information about questions asked.

Enterprise identification:

- A2: Legal form of enterprise (self-employed entrepreneur, liability limited company, public liability company, other);
- A5: Major branch of economic activity according NACE classification (A – U codes);
- A7: Average number of employees (0, 1–10, 11–50, 51–100, 101–250, more than 250);
- A8: Average annual turnover – sales in CZK (less than 1 mil., 1 mil.–10 mil., 10 mil.–100 mil., 100 mil.–1 bill., over 1 bill.)

Sustainability priorities of enterprises – with respect to EFMD methodic (part H):

Scale: 0–10 (0… no priority, 10… highest priority)

- H1: Basic Human Need Fulfillment (job creation, employee pride, meeting customer demands...);
- H2: Environmental harmonization;
- H3: Performance Optimization (people, products, and processes do what they're designed to do);
- H4: Loss and Waste Prevention (reducing present and future costs);
- H5: Product Quality Improvement;
- H6: Resource Use Optimization (including raw materials and labor);

- H7: Product-Life Enhancement (increasing profit potential).

2.3 Data Structure and Analysis

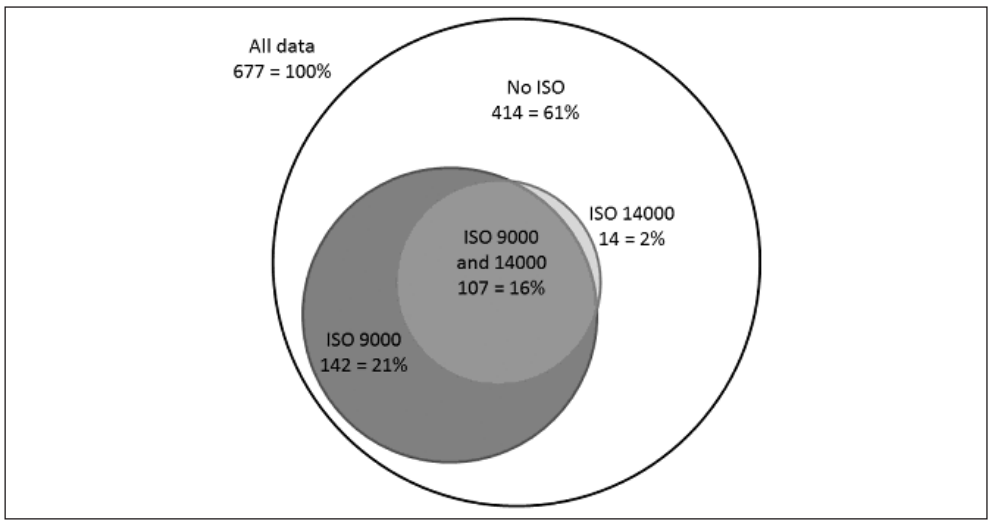
Data were processed by Microsoft Excel® and IBM SPSS® software. Charts and tables are presented and commented in the next part of article. Discussion with other published related scientific results is presented later.

For the reason of comparison analysis data were structured into four data evaluation groups (except for all data group):

- Enterprises with neither ISO 9000 nor ISO 14000 implemented – expected to be less stable (414 enterprises).
- Enterprises with ISO 9000 implemented (249 enterprises). 42 % of companies with ISO 9000 have also ISO 14000.
- Enterprises with ISO 14000 implemented (121 enterprises). 88 % of companies with ISO 14000 have also ISO 9000.
- Enterprises with both ISO 9000 and ISO 14000 implemented – expected to be most stable and synergic (107 enterprises).

Economic activity statistical evaluation (NACE) shows, that most researched companies (24 %) is active in section C – Manufacturing. Next very strong group (23 %) belong into section G – Wholesale and retail trade; repair of motor vehicles and motorcycles. Third strong section is C – Construction (13 %). Other two sections overreached 5 % of 'all data' group of companies: section I – Accommodation and food service activities (6 %) and M – Professional, scientific and technical activities (6 %). All other sections are covered fewer than by 5 % of researched enterprises. Deeper analyses of economic activity type and enterprises' ISO attitude will be subjected to further research.

Fig. 3: Interconnected ISO Implementation Groups of Interest in Absolute Numbers of Respondents and Percent



Source: authors

The prior figure 3 clearly describes the structure of examined companies regarding ISO 9000 and/or 14000 implementation. There is well visible, that 61 % companies did implement neither ISO 9000 nor ISO 14000 management system. More popular is ISO 9000 QMS, implemented by 37 % of enterprises and less popular is ISO 14000 EMS implemented by 18 % of examined enterprises. Moreover 16 % of all data group creates enterprises with both ISO 9000 and 14000 implemented so only 2 % of enterprises

implemented ISO 14000 without ISO 9000. This induces idea that ISO 14000 is some kind of 'upgrade' or 'second round 'after ISO 9000 on the way towards sustainability.

3. Findings and Results

Following paragraphs and figures describe research results concerning:

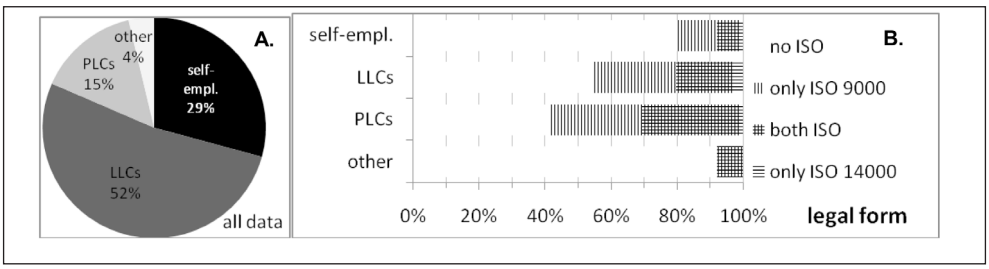
1. Identification a categorization (A) of examined companies and their attitude (B) to ISO management systems. The charts 'A' (on left side) are presented to show percent rate of evaluated criterion on all data group.
2. Impact of ISO 9000 and/or ISO 14000 on selected criteria of sustainability priorities comparing performances of groups of interest. The "all data" group is presented as average value to show well apparent difference between the "non ISO" group and 'ISO implemented groups' performance.

3.1 Identification a Categorization of Examined Companies and Their Attitude to ISO Management Systems

Figure 4 A shows rates of different legal forms of enterprises on all data group. Approximately a half of examined enterprises are limited liability companies (LLCs), and one third is self-employed entrepreneurs. Figure 4 B displays attitude of different legal forms of enterprises towards ISO implementation. Most engaged group is public liability companies (PLCs) and 60 % of them have implemented ISO 9000 or 14000. On the other side group of self-employed entrepreneurs indicate only 20 % of ISO 9000 or 14000 active respondents. Group of LLCs lies in between with 45 % of ISO active respondents.

Figure 5 A shows percent of number of employees groups of enterprises on all data group. Approximately a half of examined

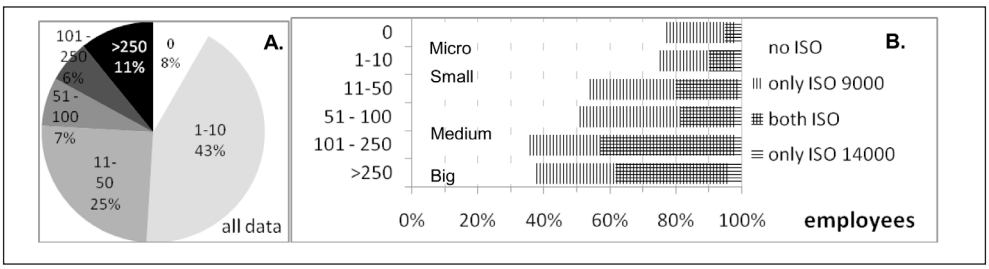
Fig. 4: Legal Form of Examined Enterprises (Question A2) and Their Approach to ISO 9000 and 14000



Note: A. shows percentage of legal forms characteristic for all data. B. shows percentage of engagement in ISO implementation according to legal form groups.

Source: authors

Fig. 5: Size of Examined Enterprises Regarding Number of Employees (Question A7) and Their Approach to ISO 9000 and 14000

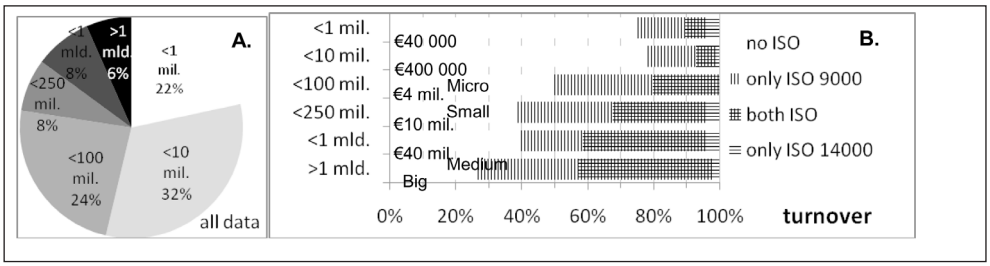


Note: A. shows percentage of number of employees' groups characteristic for all data. Figure B. shows percentage of engagement in ISO implementation according to number of employees.

Source: authors

enterprises are micro companies with less than 10 employees and one quarter are small entrepreneurs with 11 to 50 employees. Only 13 % of investigated enterprises are classified as medium and 11 % as big (with respect to methodic: EC, 2003). Figure 5 B displays attitude of different size groups of enterprises regarding number of employees towards ISO implementation. Most engaged are medium and big companies with 62 % to 65 % of them having implemented ISO 9000 or 14000. On the other side group without employees indicate 21 % and group of micro entrepreneurs 26 % of ISO 9000 or 14000 active respondents, what are surprisingly high number with consideration of tiny organization structure of these enterprises. Group of small enterprises is in between with 47 % to 50 % of ISO active respondents. This strengthens the fact that mentioned management systems are also suitable for little companies.

Fig. 6: Size of Examined Enterprises Regarding Annual Turnover (Question A8) and Their Approach to ISO 9000 and 14000



Note: A. shows percentage of turnover groups' characteristic for all data. Figure B. shows percentage of engagement in ISO implementation according to annual turnover.

Source: authors

Figure 6 A shows rates of annual turnover groups of enterprises on all data group. More than a half (54 %) of examined enterprises are micro companies with less than €400 000 annual turnover and only 6 % of investigated data are big companies. So SMEs (€400 000 to €40 mil.) makes approximately 40 % of all data group (no fully conform to methodic: EC, 2003).

Figure 6 B displays the attitude of different size groups of enterprises regarding annual turnover towards ISO implementation. Most engaged are big companies with 74 % of them having implemented ISO 9000 or 14000 (40 % both ISO). On the other side group of micro companies indicate 22 % to 24 % of ISO 9000 or 14000 active respondents, what matches well with the number of employees size criterion. Group of small and medium enterprises is in between with 51 % to 61 % of ISO active respondents.

Pearson correlation index between criteria A7 and A8 shows very high value: 0.806, which indicates close correlation.

3.2 ISO 9000 and 14000 Management Systems and Sustainability Priorities of Enterprises

Seven criteria concerning sustainable development priorities recommended enterprises to pursue by European foundation for management development (EFMD) are evaluated below [23]. Complex strategic approach to these sustainability aspects should cover reactive, adaptive, defensive, and creative attitude [25]. Meaning of priority criteria is:

- H1: Basic Human Need Fulfillment (job creation, employee pride, meeting customer demands...);
- H2: Environmental harmonization;
- H3: Performance Optimization (people, products, and processes do what they're designed to do);
- H4: Loss and Waste Prevention (reducing present and future costs);
- H5: Product Quality Improvement;
- H6: Resource Use Optimization (including raw materials and labor);
- H7: Product-Life Enhancement (increasing profit potential).

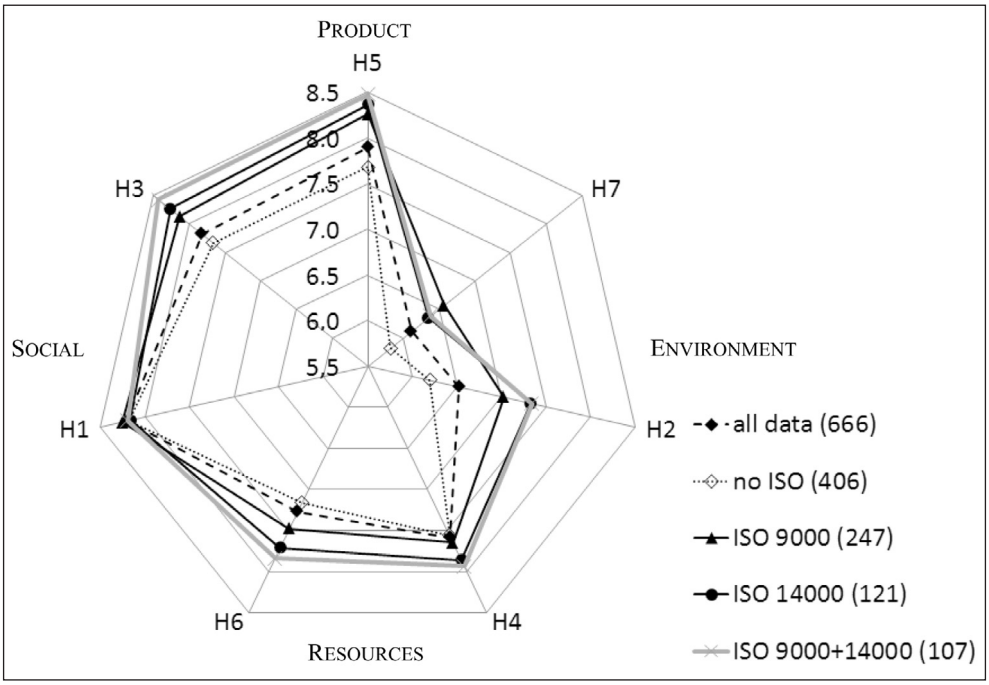
Tab. 1: Evaluation of the Criteria H1 to H7 – Sustainability Priorities of Entrepreneurships According to EFMD and Standard Deviation

Average mean	H5	H7	H2	H4	H6	H1	H3	σ
all data (666)	7.9	6.1	6.5	*7.6*	7.3	*8.2*	7.8	0.71
non ISO (406)	*7.7*	*5.8*	*6.2*	*7.6*	*7.2*	*8.2*	*7.7*	**0.80**
ISO 9000 (247)	8.3	**6.6**	7.0	*7.6*	7.5	**8.3**	8.1	*0.60*
ISO 14000 (121)	8.4	6.4	**7.3**	**7.9**	7.7	*8.2*	8.3	0.65
ISO 9000+14000 (107)	**8.5**	6.4	**7.3**	**7.9**	**7.8**	*8.2*	**8.4**	0.68
max. – min.	0.8	0.7	**1.2**	0.3	0.7	*0.1*	0.8	

Note: Highest values are highlighted by bold font and smallest values are written in italics.

Source: authors

Fig. 7: Evaluation of the Criteria H1 to H7 – Sustainability Priorities of Entrepreneurships in Heptagonal Spider Web Chart



Source: authors

Optional evaluation scale is 0 to 10 points, when 0 means no priority and 10 means highest priority.

Most aimed priorities (see point score in table 1 and figure 7) are H5 (max. 8.5 points – improvement of product quality), H3 (max. 8.4 points – performance optimization) and H1 (max. 8.3 points – basic human need fulfillment). Less aimed (most ignored) priorities are H7 (max. 6.6 points – product life enhancement), H2 (max. 7.3 points – environmental harmonization) and H6 (max. 7.8 points – optimization of resources utilization). Most visible imbalance and weakest awareness are seen in the "product-environment" quadrant (H7 and H2 criteria).

Implementation of ISO 9000 and ISO 14000 indicates highest enhancement of criterion H2 awareness (see tables 1 and 3) – environmental harmonization (H2: max. – min. difference is 1.2 points) and also H5 – product quality (Δ=0.8 points) and H3 – performance optimization (Δ=0.8 points). Implementation of ISO management systems less influence criteria H1 – basic human needs fulfillment (max. – min. difference is 0.1 points) and H4 – loss and waste prevention (max. – min. difference is 0.3 points).

In the figure 7 there is well apparent positive enhancing influence of ISO management systems implementation on awareness of sustainable priorities as the points connected by line characterizing ISO implementation groups are in all cases more distant from the midpoint (higher point score) than "non ISO" group (the surface of shape is bigger). Exception makes point H1, which does not change (or grows insignificantly) due ISO influence. The extent of expansion (Δ) for criteria H1 to H7 is stated in the table 3.

The balancing effect is characterized by standard deviation (σ) coefficients found in the table 1. Balance is understood as closest values of all criteria as possible and corresponds to the lowest value of standard deviation. Most balanced is heptagon characteristic for ISO 9000 group (0.60), ISO 14000 group (0.65) and both ISO group (0.68) with comparison to 0.80 characteristic for "non ISO" group. This is possible to interpret that 'non ISO' enterprises have priorities of sustainable entrepreneurship most scattered.

Tab. 2: Pearson Correlation Table of Examined Criteria (Symmetric Matrix)

	Legal form	Emplo-yees	Annual turnover	Human needs	Environ. harmon.	Perform. optimis.	Waste prevent.	Quality improv.	Sources optimis.	Lifespan extent.

Correlations

		A2	A7	A8	H1	H2	H3	H4	H5	H6	H7
A2	Pearson Correlation	1	,558**	,513**	-,027	,076*	,103**	,020	,045	,062	,024
	Sig. (2-tailed)		,000	,000	,479	,049	,008	,609	,245	,112	,537
	N	677	677	639	666	665	665	664	656	657	649
A7	Pearson Correlation	,558**	1	,806**	,009	,162**	,155**	,082*	,080*	,149**	,055
	Sig. (2-tailed)	,000		,000	,814	,000	,000	,036	,042	,000	,158
	N	677	677	639	666	665	665	664	656	657	649
A8	Pearson Correlation	,513**	,806**	1	,017	,136**	,203**	,127**	,088*	,123**	,027
	Sig. (2-tailed)	,000	,000		,679	,001	,000	,001	,029	,002	,497
	N	639	639	639	629	629	628	628	621	622	616
H1	Pearson Correlation	-,027	,009	,017	1	,208**	,329**	,298**	,255**	,204**	,175**
	Sig. (2-tailed)	,479	,814	,679		,000	,000	,000	,000	,000	,000
	N	666	666	629	666	662	662	661	653	654	647
H2	Pearson Correlation	,076*	,162**	,136**	,208**	1	,361**	,414**	,348**	,396**	,364**
	Sig. (2-tailed)	,049	,000	,001	,000		,000	,000	,000	,000	,000
	N	665	665	629	662	665	663	662	655	655	647
H3	Pearson Correlation	,103**	,155**	,203**	,329**	,361**	1	,522**	,484**	,519**	,359**
	Sig. (2-tailed)	,008	,000	,000	,000	,000		,000	,000	,000	,000
	N	665	665	628	662	663	665	664	656	656	648
H4	Pearson Correlation	,020	,082*	,127**	,298**	,414**	,522**	1	,527**	,535**	,337**
	Sig. (2-tailed)	,609	,036	,001	,000	,000	,000		,000	,000	,000
	N	664	664	628	661	662	664	664	656	656	648
H5	Pearson Correlation	,045	,080*	,088*	,255**	,348**	,484**	,527**	1	,515**	,497**
	Sig. (2-tailed)	,245	,042	,029	,000	,000	,000	,000		,000	,000
	N	656	656	621	653	655	656	656	656	653	646
H6	Pearson Correlation	,062	,149**	,123**	,204**	,396**	,519**	,535**	,515**	1	,473**
	Sig. (2-tailed)	,112	,000	,002	,000	,000	,000	,000	,000		,000
	N	657	657	622	654	655	656	656	653	657	648
H7	Pearson Correlation	,024	,055	,027	,175**	,364**	,359**	,337**	,497**	,473**	1
	Sig. (2-tailed)	,537	,158	,497	,000	,000	,000	,000	,000	,000	
	N	649	649	616	647	647	648	648	646	648	649

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: Circled Numbers Show Highest Values of Correlation Coefficient.

Source: authors

Upper table 2 characterizes correlation closeness according Pearson correlation indices. Light grey boxes in table 2 show highly significant correlation. It is possible to say, that all criteria correlates each to other except these:

- Basic human needs fulfillment (H1) is not influenced by size (A7, A8) and legal status (A2) and as well product lifespan extension (H7) and quality improvement (H5) is weakly influenced by (A2, A7, A8). We can deduct that quality improvement and basic human needs fulfillment is observed and product lifespan extension is disregarded no matter what the size of enterprise is.

In other hand highest induces of correlation show:

- Enterprise size criterion regarding number of employees (A7) and regarding annual turnover (A8). This is logical as both are size parameters and represent human and financial potential of an enterprise. Further closely correlating criterion next these two is the legal status of enterprise (A2), regarding PLCs as most employee numerous, LLCs in between and self-employed as less employee numerous or no employee enterprises.
- These criteria of sustainability priorities show close correlation: resource use optimization (H6), product quality improvement (H5), loss and waste prevention (H4) and performance optimization (H3) as they all have high point value and are moderately influenced by ISO implementation.

4. Discussion

4.1 Validation or Dismissing of Hypotheses

- HYP1: There is well apparent in the figure 3 and chapter 2.3, that most enterprises (88 %) that implemented ISO 14000 implemented also ISO 9000 – hypothesis confirmed.
- HYP2: Chapter 3.1 and figures 5 and 6 make light in question if bigger enterprises pay more attention to implementation of ISO 9000 and/or ISO 14000 than smaller. Most engaged are medium and big companies (regarding number of employees) with 62 % to 65 % of them having implemented ISO 9000 or 14000. On the other side group without employees indicate 21 % and group of micro entrepreneurs 26 % of ISO 9000 or 14000 active respondents. Regarding annual turnover are most engaged big companies with 74 % of them having implemented ISO 9000 or 14000 (40 % both ISO). On the other side group of micro companies indicate 22 % to 24 % of ISO 9000 or 14000 active respondents. Group of small and medium enterprises is in between with 51 % to 61 % of ISO active respondents. – Hypothesis confirmed. We can induce, that almost three quarters of important business players, who turns most money on the market have implemented ISO management systems.
- HYP3: Highest point score in evaluation of enterprises sustainability priorities obtained in all groups of interest (all data, non ISO, ISO 9000, ISO 14000 and both ISO) product quality improvement priority (see table 1 – H5: all data: 7.9; non ISO: 7.7 together with priority H3; ISO 9000: 8.3 together with priority H1; ISO 14000: 8.4 and both ISO: 8.5) – Hypothesis confirmed. Quality improvement is priority no matter of ISO, however highest quality awareness indicated both ISO management systems implementation group and the increment of point score is over average.
- HYP4: Following table 3 characterizes points of improvement and difference Δ in points of awareness of sustainability priority H1–H7 due to implementation of ISO management systems. Delta values show positive effect on enhancing selected criterion awareness of interest groups (ISO 9000, ISO 14000 and both ISO) versus the group without ISO. The table is used to validate hypothesis. All criteria are apparently either partially or fully positively influenced by ISO management system implementation.

The balancing effect is characterized by standard deviation (σ) coefficients found in the table 1. Balance is understood as closest values of all criteria as possible and corresponds to lowest value of standard deviation. Most balanced is heptagon characteristic for ISO 9000 group (0.60), ISO 14000 group (0.65) and both ISO group (0.68) with comparison to 0.80 characteristic for “non ISO” group. Application of ISO 9000 and/or ISO 14000

Tab. 3: Table of Enhancing Positive Effect of ISO Implementation on Sustainability Priorities

#		ISO 9000		ISO 14000		ISO 9000 +ISO 14000		Positive/enhancing
			Δ		Δ		Δ	
15	H1	8.2 to 8.3	0.1	no change	0	no change	0	max. 0.1 part. positive
16	H2	6.2 to 7.0	0.8	6.2 to 7.3	1.1	6.2 to 7.3	1.1	max. 1.1 positive
17	H3	7.7 to 8.1	0.4	7.7 to 8.3	0.6	7.7 to 8.4	0.7	max. 0.7 positive
18	H4	no change	0	7.6 to 7.9	0.3	7.6 to 7.9	0.3	max. 0.3 part. positive
19	H5	7.7 to 8.3	0.6	7.7 to 8.4	0.7	7.7 to 8.5	0.8	max. 0.8 positive
20	H6	7.2 to 7.5	0.3	7.2 to 7.7	0.5	7.2 to 7.8	0.6	max. 0.6 positive
21	H7	5.8 to 6.6	0.8	5.8 to 6.4	0.6	5.8 to 6.4	0.6	max. 0.8 positive
		average	0.43	average	0.54	average	0.59	max. 0.59 positive

Source: authors

management systems has positive enhancing and balancing effect on sustainability priorities of entrepreneurships – hypothesis confirmed.

4.2 Opinion of Other Related Research Studies

Focused attention on quality (and its improvement), performance optimization and their positive effect on enterprises is not only partial result of this study, but is also confirmed by professional literature.

Kaynak explains that findings of his study, as well as of other research studies, support the positive effect of TQM practices on firms' performance. A lack of top management commitment to the implementation of TQM has emerged as a possible reason for the failure of TQM systems in some organizations [11]. In Samson's opinion three of the elements of TQM (leadership, people management and customer focus) have a significant positive effect on performance, but the other three categories (strategic quality planning, information and analysis and process management) did not [22]. According to Mizla's research of costs connected with quality, highest operational profit is reached by companies which have higher fix costs on quality than variable costs on quality [16]. This indirectly induces that companies which invested higher amount into quality prevention (QMS), do not have so high direct costs on quality (failures) and their economic performance is higher. Development of small and medium-size enterprises in Czech Republic presume investment in innovations and human resources' development [14]. Němeček presented research results confirming that added value, profit and work productivity are better when enterprises use advanced technologies as TQM (ISO 9000), CNC, JIT, CRM and EAP [18]. Závadská concludes that the most frequently certified management system is usually QMS under the requirements of ISO 9001 [28].

Koc points out that findings of his research suggest a fit between ISO 9000 practices, manufacturing performance, competitive priorities and firm performance [12]. Sharma concludes that results of his study provide evidence about ISO 9000 certification being associated with improvements in financial performance especially in profit margin, growth of sales and earnings [24]. This corresponds well with evaluation of criterion A8.

The environment performance of SMEs and their long-term commitment to management of their environmental impacts must be increased and supported through simple, effective and strategic support systems [3]. Study of Iraldo shows that positive effect of well-implemented EMS on resource productivity, market performance and intangible assets is visible, however not strongly supported by statistical analysis. Our study confirms positive influence on awareness of performance optimization (H3) and resource use (H6), but shows highest positive enhancement of environmental harmonization (H2) priority as

an effect of ISO 14000 implementation. The EMSs, in spite of their application in many years, have not achieved a high degree of "maturity" in their implementation yet [8]. Numerous internal and external benefits are expected from the implementation of EMS. Communication channels, skills, knowledge and attitude are all improved in SMEs adopting EMS. EMS implementations open up new interaction between staff and management and provide intangible benefits like enhanced morale, which is considered as very important [29]. Hillary concludes that extensive benefits accrue to SMEs adopting formal EMSs and this is widely reported in the analyzed studies. Disbenefits also exist, although there are less of them [6]. Ilomäki explains that the environmental management systems in Finland conditions are good tools for SMEs to reach their statutory requirements. However, EMSs do not appear to provide much impetus for SMEs to implement waste minimization [7]. In our study loss and waste optimization does not look so much as underestimated priority in comparison with product-life enhancement, which is generally most underestimated priority. There is well known contemporary high-consumption lifestyle which is characteristic with belief that welfare is closely connected with frequent replacement of goods with a new one and that such approach dynamises wheels of economics. This unfortunate broadly accepted attitude moves priority H7 to low ranks.

MacDonald discusses that corporations need the clear framework to grapple effectively with the challenge of moving toward a sustainable society. Furthermore, tools such as ISO 140001, after the useful start, do not assist themselves in the organization of strategic planning with true sustainability in mind [15]. Gupta states that past research on sustainability has evaluated the role played by the approach of sustainability in driving green initiatives, adopted by firm managers, and the ability of opportunities created from the firm as a result of these initiatives to drive superior performance [5]. Sustainable management of all social, environmental and economic aspects within a company is increasingly becoming the norm and a requirement for SMEs to operate on business. By implementing a sustainability network within real commitment towards improved performance, benefits to bottom line will result, improving the efficiency of operations, communication and interaction with stakeholders, and reduced negative effects on society and the environment. Existing tools and strategies that assist in implementation of ISO 14001 still remain fragmented, trying to solve defects of all SMEs [2].

Many operation management tools, for example total quality management, ISO 9000 standards, excellence models and common assessment framework, reengineering, six sigma, lean systems, based on business process management techniques increase structuring of organizational processes. Over-standardization of organizational processes is the reduced ability of organizational process' members to adjust their behavior according to changes in environment because of formally and informally imposed rules. Accumulation of rules and standards happens because of repetition, imposition and adoption of "structure-intensive" social and physical technologies [26].

Conclusion

Realized research brought interesting results supporting legitimacy of ISO 9000 and 14000 implementation in order to improve awareness of sustainable development priorities. Most focused priority of sustainability is quality improvement and performance optimization and paradoxically most underestimated priority is product-life enhancement, which aims against contemporary high-consumption lifestyle, however it stands fairly close to product quality.

Hypotheses were confirmed. Both ISO systems help to improve awareness and improve balance of enterprise in sustainability priorities. Adopting ISO 14000 is rather second step after implementation of ISO 9000; most enterprises with ISO 14000 adopted earlier ISO 9000 standard. ISO is implemented more often by big or medium enterprises, however also some micro enterprises have found their way to employ these systems.

It is possible to find some quality and environmental systems ex-post evaluation studies in literature, which merely consider these systems as generally beneficial, however likewise burdened by some imperfections. ISO 9000 seems to be more widely accepted and tuned-up system than younger ISO 14000.

Examination of research successfulness can be characterized by:

- Pros: rich sample size, recent data, interesting and coherent results.
- Cons: subjective data – management expert opinion.

Further and future research suggestions:

- Concurrently to this paper authors publish evaluation of ISO 9000 and/or ISO 14000 influence only on awareness of sustainability priorities but on specific measurable performance parameters.
- Further research connected with advanced management system and enterprise performance will be held by authors in near future.

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Abstract

EFFECT OF MANAGEMENT SYSTEMS ISO 9000 AND ISO 14000 ON ENTERPRISES' AWARENESS OF SUSTAINABILITY PRIORITIES

Adam Pawliczek, Radomír Piszczur

Presented paper discusses influence of implemented quality and environmental management systems ISO 9000 and ISO 14000 on enterprise sustainability (CSR) priorities. The paper brings original results and comments on realized and processed questionnaire research concerning approx. 700 companies operating through the Czech and Slovak Republic, called "Adaptability of entrepreneurship", financed by Silesian University in Opava. The paper evaluates difference in enterprise top management sustainability priorities awareness as an effect of implementation of ISO QMSs. The performance of four groups of companies (non ISO implemented, ISO 9000 implemented, ISO 14000 implemented and both ISO 9000 and 14000 implemented) is compared. There were selected seven criteria for evaluation, which can be marked as enterprise sustainability priorities plus three criteria to categorize enterprises. Four hypotheses were tested. The results show visible improvement in awareness of selected priorities at companies with implemented ISO QMS. Problematic and results are discussed and compared with professional literature.

Key Words: *management systems, ISO 9000, ISO 14000, sustainability priorities, questionnaire research, Czech and Slovak enterprises.*

JEL Classification: *M11, O12, Q01.*

UTILIZATION LEVEL OF BUSINESS PROCESS MANAGEMENT IN CZECH ENTERPRISES – OBJECTIVES AND FACTORS

David Tuček, Michaela Hájková, Zuzana Tučková

Introduction

Business Process Management (BPM) is becoming a hot topic for the scientific community solving a variety of research in the field of BPM as well as for the business sector constantly dealing with problems resulting from dynamic changes in the market. A process approach, which is the basis of BPM, is often referred to as a philosophy that is the cornerstone of the work organization in the company and the foundation of all business operations and activities [11]. The process approach allows organizations to eliminate the biggest disadvantages of a traditional functional approach that can not be considered as an approach appropriately flexible for changes in the corporate environment, variety of procedures, or excessive substitution of workers.

The functional approach often leads to the ambiguous assignment of competences with regard to responsibility for the outcome of the process as a whole, because it does not perceive the process as a whole. The process as a whole often runs across all functional organizational structure. Where the process runs over the various departments of the company, this situation may cause problems in the transfer of results between individual activities. The purpose of the process approach [10] is to uncover the processes that are often covered by "non-functional" functional organizational structure, to clean them from activities that do not add value for the customer and bring them into focus. The benefits of business process management [11] are flexibility, the ability to flexibly respond to changing environmental demands and a greater degree of involvement of employees in business performance. Process management primarily provides a new perspective on the importance of the activities and helps to better determine responsibility for their quality. The use of the process approach helps disrupt the traditional departmental structure of the company. Processes built into focus with a greater degree of involvement of employees in company performance and giving maximum attention to processes, which in most cases run across organizational structure, contribute to teamwork and improving corporate culture. Only with effective management of processes, enterprises can effectively manage, modify, improve efficiency, increase performance, identify and resist market risks.

The objective of business process management can be defined as [6] the development and optimization running of the organization to ensure effective, efficient and economical reaction to customer requirements. A process-driven company is focused on the outcome of its activities, or the added value for the customer who paid for them. This company is more flexible and able to respond more quickly to market changes and customer preferences.

BPM principles are applicable in the quaternary sector too [14].

First of all, in this article we should evaluate the reasons which lead enterprises to exploit elements of process management in their working practices. The aim of Process Management is to develop and to optimise the daily running of an enterprise in a way which defines these work-related procedures (i.e. processes) as a unified flow or cascade of activities throughout the enterprise, where for each and every process its inputs are clearly defined as are the outputs or results, and where

the associated responsibilities and personal responsibilities are assigned for each and every process or activity, while establishing a system for the measurement of the performance of these processes and tracking and evaluating each and every process [16].

These activities must be realised (i.e. implemented) such that:

- The quality of production will be maintained through given measurement parameters.
- All available resources shall be optimally exploited.
- All of the performance indices of the enterprise have been improved continuously throughout in line with previously agreed and known and measurable criteria [15].

The market forces of today's business processes development have begun to place an important emphasis on business process quality. Evidently, the quality of a business process model highly influences the deployed business process. This motivated several researchers to propose metrics to evaluate the quality of business process model.

In fact, the concept of quality metrics was initially introduced to examine software quality. According to [1], a quality metric is a quantitative scale and a method that can be used to determine the value taken by a characteristic of a software product. Exploiting the maturity of software quality metrics, several researchers adapted several metrics from the field of software engineering for business process models [3], [5].

The authors conducted extensive research aimed at the utilization level of business process management in Czech manufacturing companies in 2012. The research was focused on several aspects of business process management. In this research, aspects of BPM are understood with the meaning of managers' views and opinions on management of business processes (Business Process Management). The research specialized in the area of goals, factors, components, support, benefits of and barriers to process management. The authors explored the extent to which Czech manufacturing companies use business process management. The utilization level of BPM in Czech companies was determined by self-assessment of managers and according to the actual utilization of BPM components. The research has also clarified the goals and procedures that are important for Czech companies in the use of BPM components and found the extent to which the addressed companies use a software support of process management. Last but not least, the research also focused on identifying the benefits that the company achieved by BPM implementation and also on identifying barriers which the Czech companies faced in the BPM implementation. The results of the research, particularly the first part intent on the objectives and factors of BPM support, are the subject of this article. Part of the paper consists also in comparison of the results of previous research conducted in 2006 [9] and the current research. The comparison of these findings allows identifying trends of business process management in Czech companies for the past 6 years.

1. Objectives and Hypothesis Formulation

The main objective of conducted research and this paper is to provide a comprehensive overview of the utilization level of business process management and its individual components in Czech companies with focus on objectives that managers wish to achieve by BPM implementation and factors that are combined with a process-oriented company. Six hypotheses have been formulated to fulfil the main goal as shown in the following text:

- H1: The concept of Business Process Management is widespread in the Czech Republic.
- H2: The utilization level of business process management has increased in Czech companies since the previous research.
- H3: Managers of Czech companies do not understand interconnection of individual BPM components.
- H4: Managers of Czech companies do not focus on support processes.
- H5: The utilization rate of consulting services is not too high in Czech companies.
- H6: Managers of Czech companies do not perceive the BPM implementation as a strategic change.

2. Methodology of Data Collection and Subsequent Evaluation

The quantitative research was conducted through a questionnaire survey. The sample included manufacturing companies that have

more than 5 employees and their turnover was higher than 0 in 2011. A limit (5) on the minimum number of employees was determined based on the experience of previous survey implementation, which showed that small businesses do not use business process management or any of its components. A sample of size of 320 firms was chosen at random. Return of questionnaires was 45 %. To minimize the risk of acquiring an insufficient number of completed questionnaires, at first, the authors addressed key employees of selected companies by phone and then the questionnaire was sent.

Tab. 1: Distribution of Respondents by Number of Employees

Characteristics of a company		Number of evaluated companies	
	Number of employees	Absolute frequency	Relative frequency
Micro companies	5–15	36	25 %
Small companies	15–50	20	13.89 %
Medium-sized companies	50–250	43	29.86 %
Large companies	250 and more	45	31.25 %
TOTAL		**144**	**100 %**

Source: own analysis based on [2]

The aim of this research was to explore attitudes, opinions and judgments of managers of Czech companies to individual aspects of business process management. A scaling method based on the principle of quantifying qualitative data was used in this research. The reason for this usage is that managers' responses involve subjective statements, which must be subsequently converted using a verbally, numerically or graphically expressed scale. Specifically the Likert scale method was used. Likert scales are used to indicate the degree (level) of agreement or disagreement with the specified statements, on which it is subsequently possible to deduce the attitudes and opinions of respondents [8]. Respondents expressed their agreement or disagreement with the given statements using a 5-point scale, where 1 expresses absolute disagreement and, conversely, 5 represents absolute agreement with the relevant statement. These values were subsequently converted to values 0–100 % or 0–1, where 0 represents absolute disagreement of respondents and 1 stands for absolute agreement. The calculated values of confidence intervals are quantified directly in charts.

In order to organize and arrange the findings obtained using a questionnaire survey and prepare data for statistical evaluation, Excel software was used. The actual statistical evaluation was carried out using JMP 10.

3. Research Results

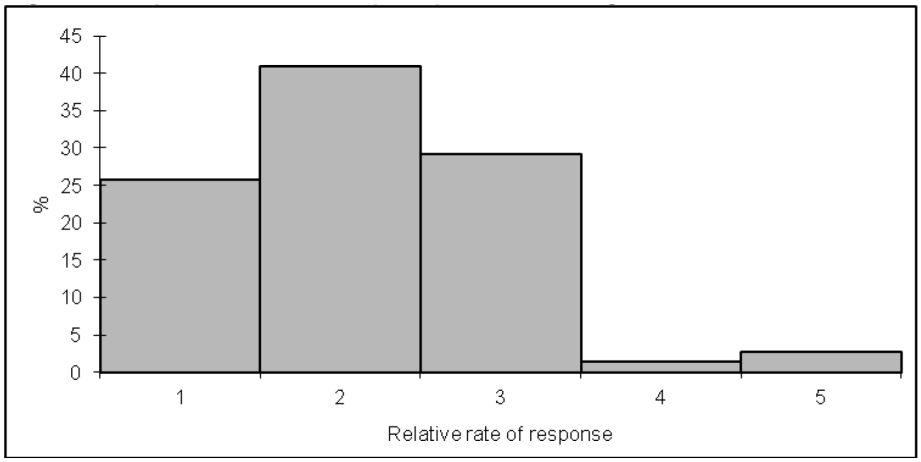
3.1 Utilization Level of Business Process Management in Czech Companies

The following graph (see Fig.1) summarizes the achieved level of usage of process management in Czech enterprises. The table below the graph (see Table 2) contains a legend to the graph with the detailed results. There are also calculated confidence intervals (for reliability estimation of $1-\alpha = 0.95$) in the table. This question evaluates views of the interviewed managers of the importance of BPM to their company.

As has been already mentioned, the outcomes of the first question regarding BPM show utilization rates in our businesses in terms of managers' self-assessment. The results show that almost 41 % of Czech companies use business process management only partially (e.g. for a group of processes or only during activities such as process mapping, or only as a support for the certification of quality management system, etc.). In the context of the full use of process management, 29 % of Czech managers consider their company to be fully process-managed. The results which are presented in the graph (see Fig. 1) show that 26 % of respondents were completely unaware of the term process

management. The group of managers or companies that understand the concept of process management specifically includes only 1.4 % of all respondents. Among the responses there were only answers that managers perceive BPM as part of the implementation of certification according to CSN EN ISO 9001:2009.

Fig. 1: Perception of the Concept of Process Management



Source: own analysis

Tab. 2: Legend to the Previous Graph with Quantified Confidence Intervals

Code	Utilization level	Number	Proportion of respondents	Lower interval	Upper interval
1	Unknown term	37	0.25694	0.192544	0.333976
2	Partial use	59	0.40972	0.332761	0.491375
3	Process-driven organization	42	0.29167	0.223613	0.370547
4	Specific understanding	2	0.01389	0.003817	0.049223
5	Unable to assess	4	0.02778	0.010854	0.069242

Confidence intervals (for reliability estimation of $1 - \alpha = 0.95$) Source: own analysis

As can be seen from the following table (see Table 3), the answers to the question investigating the perception of the term Business Process Management by managers of Czech companies are also influenced to some extent by company size. The largest number of respondents who do not know the term business process management falls to a group of micro (61 %) and small enterprises (25 %). These two groups of enterprises also provide the lowest proportion in a group of subjects that use BPM completely (11 % of micro enterprises and small businesses 0 %). The highest proportions of subjects who use business process management completely contain a group of large companies (51 %), followed by a group of medium-sized enterprises (35 %). In both conducted researches, the influence of company size was reflected in the same way as follows [13]: in the group of small and very small enterprises, there is a significantly higher proportion (34 % and 27 %) of those to whom the term BPM in their company is unknown. Especially the group of

medium-sized and large enterprises shows a higher proportion of subjects who use BPM partially (44 % and 40 %) and completely (53 % medium-sized and large enterprises).

Tab. 3: The Effect of Company Size on the Utilization Level of BPM in Czech Companies

Company category	Unknown term	Partial use	Process-driven organization	Specific understanding	Unable to assess
Micro	61.11 %	22.22 %	11.11 %	55.60 %	0.00 %
Small	25.00 %	65.00 %	0.00 %	0.00 %	10.00 %
Medium-sized	16.28 %	48.84 %	34.88 %	0.00 %	0.00 %
Large	6.67 %	37.78 %	51.11 %	0.00 %	4.44 %
Total	**25.69 %**	**40.97 %**	**29.17 %**	**1.39 %**	**2.78 %**

Source: own analysis

Summary results arising from the previous graph and tables (Fig. 1, Tab. 2, Tab. 3) appear to be deteriorating in comparison with the previous research carried out in 2006 (Fig. 2, [13]). There was an increase in the proportion of respondents to whom the concept of business process management is unknown, and reduction in the proportion of managers who consider their company to be fully process-driven. In connection with the answer *partial use of process management*, the proportion of respondents in both conducted surveys is nearly the same.

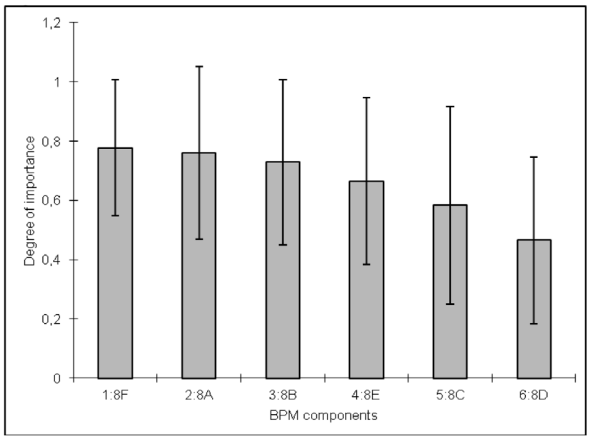
It should be noted that the results of these two questions reflect only opinions and attitudes of managers interviewed. The answers are distorted by their perception of the concept of business process management, which may not be entirely correct in many cases. Actual levels of usage of BPM are pursued in the following question (Fig. 2, Tab. 4, Tab. 5), which examines the utilization level of BPM components based on which the real utilization rate of BPM can be derived.

3.1.1 Real Utilization Level of Business Process Management in Czech Companies

Summary results of the question that examines the utilization level of business process management by evaluating the actual utilization of BPM components are illustrated in the following figure. The graph shows that managers consider continuous process improvement as the most important component at the level of 0.78. The BPM component – definition of core (main) processes is of the same great importance to managers of Czech companies (0.76). Definition of customers and process owners (0.73) can be included among the basic components that are used by our managers and considered as important. The next component is process performance measurement with importance level at 0.67, which can be regarded as a moderately positive result. Regarding creating process maps, managers of Czech companies responded ambiguously (0.58), indicating not too excessive use of this element of process management. Among the group of components, which are used in Czech companies only rarely, can be included the use of process maps to evaluate the cost and time demand factor of all identified processes in companies. This is based on a moderate negative opinion of managers (0.47).

The results indicate that the actual utilization rate in Czech companies is relatively low compared with the results of the first question, where almost 70 % of respondents reported that their company is fully or partially process-driven. Upon these results, it can be concluded that managers of Czech companies perceive the partial use of process management rather as the use of only certain selected BPM components than as the utilization of all BPM components at the same time, however, only in certain areas of the company. Nonetheless, these basic components are closely interlinked and using only some of them can cause the benefits of process management to have little effect.

Fig. 2: Utilization of Individual BPM Components



Source: own analysis

Tab. 4: Legend to the Previous Graph with Quantified Confidence Intervals

Code	BPM components	Average	Standard deviation	Lower interval	Upper interval
1:8F	Continuous process improvement	0.777778	0.229226	0.74002	0.81554
2:8A	Definition of core processes	0.760417	0.291000	0.71248	0.80835
3:8B	Definition of customers and process owners	0.729167	0.279704	0.68309	0.77524
4:8E	Process performance measurement	0.664931	0.282291	0.61843	0.71143
5:8C	Creation of process maps	0.583333	0.333188	0.52845	0.63822
6:8D	Use of process maps	0.465278	0.281435	0.41892	0.51164

Confidence intervals (for reliability estimation of 1 - α = 0.95), multiple answers Source: own analysis

The following table (Table 5) demonstrates a huge size impact on the actual rate of utilization of process management in Czech enterprises. Managers of small companies have expressed strong opposition to the use of process maps (creation of process maps at 0.34 and the use of process maps at 0.3) in any other way. Furthermore, they attached almost no importance to process performance measurement (0.45). Managers of these enterprises attach the greatest significance to the definition of customers and process owners, but the response level at 0.69 indicates an ambiguity in this answer. On the contrary, managers of large businesses expressed almost absolute agreement with continuous process improvement, the definition of core processes and the definition of customers and process owners. Also, a significantly lower number of managers agree with the use of process performance measurement (0.76) and the creation of process maps (0.74). Comprehensively, based on the results (Table 5) can be concluded that the more employees an enterprise has the greater acceptance of the use of the individual components of process management is expressed by its managers. In other words, a growing number of employees cause an increase in significance and the degree of importance that managers assign to individual BPM

components. The results of the effect of company size on the utilization rate of each component of the current survey are comparable with the results of previous research, which also showed that medium-sized and large enterprises make greater use of all BPM components.

Tab. 5: The Effect of Company Size on the Utilization of Individual BPM Components

Code	BPM components/category of companies	Micro	Small	Medium--sized	Large	Total
1:8F	Continuous process improvement	0.618056	0.7125	0.80814	0.905556	**0.777778**
2:8A	Definition of core processes	0.645833	0.575	0.854651	0.844444	**0.760417**
3:8B	Definition of customers and process owners	0.6875	0.575	0.755814	0.805556	**0.729167**
4:8E	Process performance measurement	0.451389	0.625	0.761628	0.761111	**0.664931**
5:8C	Creation of process maps	0.340278	0.4	0.703488	0.744444	**0.583333**
6:8D	Use of process maps	0.305556	0.45	0.494186	0.572222	**0.465278**

Source: own analysis

Results from the previous research conducted in 2006 [13] and compared with the outcomes of the current research clearly show, despite a slight decrease in results of the first question, a moderate (at least 2–3%) increase in the level of all essential components of process management. The most significant shift in the importance of components occurred in the case of continuous process improvement, which on the scale of importance moved from the third place (from 0.68) to the first place (0.78). Almost the same improvement can be seen in process performance measurement, where there was a shift from 0.59 to 0.67. These shifts can be evaluated very positively, because process performance measurement is the basis of and prerequisite for continuous improvement processes that contributes to the fact that the established process management is dynamic and does not involve redrawing of the existing processes into process maps only.

3.2 The Real Focus of Managers

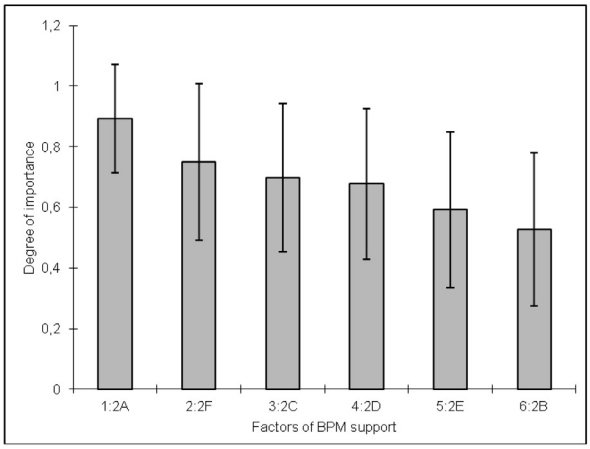
The aim of this question was to determine the objectives and factors of process management support on which are the managers of Czech companies focusing. Managers expressed a degree of agreement, or disagreement, with statements (factors) that are associated with a process-oriented company. The intention of this question is also to determine whether the concerned enterprises have prerequisites for the successful implementation of process management.

As shown in the summary results (Fig. 3, Table 6), managers of Czech companies see the ulmost importance (0.89) in satisfying the needs of external customers. In other words, the respondents consider the outputs (goods and services) of their core processes as the most important. On the scale of importance, the focus on outputs is followed by reducing process costs (0.75) and process performance monitoring (0.69). Managers attach slightly less significance (0.66) to the initiation of process changes to become an incentive for further process improvement. This is followed by an ambiguous expression of importance (0.63) to differentiate processes in terms of their fixed structure, or more precisely, a necessary degree of freedom for selecting an appropriate method of managing these processes. Complete ambiguity (0.53) was reported by the respondents regarding internal customer satisfaction.

From the results it can be inferred that Czech companies clearly focus on external customers only, i.e. on a company's core processes. A small focus on internal customers means that Czech managers attach little emphasis to the management of support processes that provide inputs and operation of core processes. In the case of process management implementation, this fact may cause a certain incompleteness, which can lead to the underutilization of the

potential benefits of process management. Effective management of support processes should reveal the shortcomings of these processes so their improvement would lead to increased efficiency of core processes, which should have a positive effect on the final customer.

Fig. 3: Real Focus of Managers on BPM Support



Source: own analysis

Tab. 6: Legend to the Previous Graph with Quantified Confidence Intervals

Code	Factors of BPM support in companies	Average	Standard deviation	Lower interval	Upper interval
1:2A	Satisfying the needs of external customers	0.892361	0.178995	0.86288	0.92185
2:2F	Reducing process costs	0.750000	0.259437	0.70726	0.79274
3:2C	Process performance monitoring	0.697917	0.243580	0.65779	0.73804
4:2D	Initiation of process changes	0.677083	0.248905	0.63608	0.71808
5:2E	Differentiation of processes: fixed structure vs. processes with degree of freedom	0.592014	0.257317	0.54963	0.6344
6:2B	Satisfying the needs of internal customers	0.527778	0.252801	0.48614	0.56942

Confidence intervals (for reliability estimation of $1 - \alpha = 0.95$), multiple answers Source: own analysis

The following table (Table 7) illustrates the effect of company size on factors of process management support in surveyed companies. Responses to this question are influenced by company size to a small extent only. The results, however, quite clearly show that the importance of individual factors of BPM support grows along with the growing number of employees. Based on this fact, we can suggest that medium-sized and large enterprises have better conditions for applying process management than small and micro companies.

Tab. 7: The Effect of Company Size on Factors of BPM Support in Czech Companies

Code	Factors of BPM support in companies	Micro	Small	Medium--sized	Large	Total
1:2A	Satisfying the needs of external customers	0.847222	0.925	0.901163	0.905556	**0.892361**
2:2F	Reducing process costs	0.631944	0.8125	0.738372	0.827778	**0.750000**
3:2C	Process performance monitoring	0.569444	0.6875	0.686047	0.816667	**0.697917**
4:2D	Initiation of process changes	0.534722	0.625	0.674419	0.816667	**0.677083**
5:2E	Differentiation of processes: fixed structure vs. processes with degree of freedom	0.583333	0.575	0.627907	0.572222	**0.592014**
6:2B	Satisfying the needs of internal customers	0.472222	0.875	0.453488	0.616667	**0.527778**

Source: own analysis

In comparison with the results of previous research, a very slight positive shift occurred only in satisfying the needs of external customers (from 0.88 to 0.89). Other factors show either deterioration, i.e. managers attach lower importance to individual factors of process management support compared to previous research, or there was no change at all.

Despite a slight deterioration in the results of current research in comparison with the previous ones, it can be stated that the companies under consideration have a good prerequisite for the application of process management.

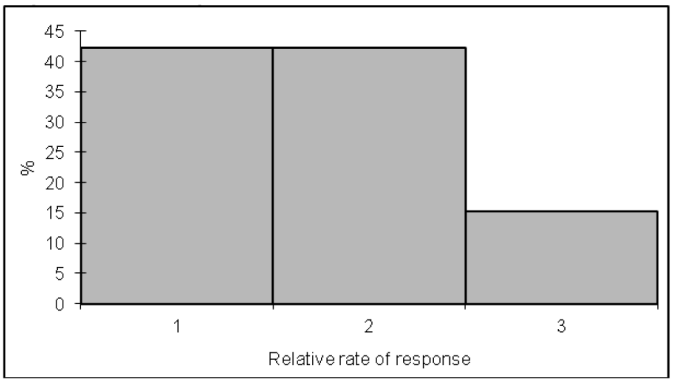
3.3 Who Supports the Use of Techniques and Tools of Business Process Management?

The following question was aimed at finding out how companies implement various tools and techniques of process management. The purpose was to determine the extent to which businesses use during the BPM implementation and BPM components their own employees, BPM training courses and consulting companies. In the case of using consulting companies, managers were asked about the area for which the consulting company services were used. Managers, who had answered in the first question that process management is an unknown term to them, did not respond to this question, i.e. the question was answered by only 75 % of respondents. Respondents had an option of multiple choice answers. The results therefore can not infer the exact number of businesses using the various interest groups.

Summary results of this question are displayed in the following figure and table (Fig. 4 and Tab. 8), from which it is clear that companies implementing BPM tools and techniques use mainly the experience of own employees and knowledge gained in BPM training courses (almost 85 % of all responses). Only 15 % of responses concerned the possibility of using services of consulting companies. Only 8 of the 22 managers who confirmed the use of external companies specified in greater detail the specialization of the consultancy used. Most often it was a consultancy focused on improving production processes, specifically, e.g.:

- Problem-solving methodology,
- QMS,
- Poka – Yoke,
- Logistics,
- Improvement of production processes,
- SMED.

Fig. 4: Interest Group



Source: own analysis

Tab. 8: Legend to the Previous Graph with Quantified Confidence Intervals

Code	Interest group	Number	Proportion of answers	Lower interval	Upper interval
3A	Own employees only	61	42.36 %	0.34592	0.505272
3B	BPM training courses	61	42.36 %	0.34592	0.505272
3C	Consulting company	22	15.28 %	0.103109	0.220491

Confidence intervals (for reliability estimation of $1 - \alpha = 0.95$), multiple answers Source: own analysis

The effect of company size on this question appears to be significant. However, it should be noted that the question was not answered by managers for which the BPM is an unknown term, i.e., managers of mostly micro and small enterprises. Since the use of consulting services can be very expensive, it is not surprising that these services are used almost exclusively by medium-sized and large enterprises. Even more surprising is the fact that micro enterprises make greater use of external consultants in comparison with BPM training courses.

Tab. 9: The Effect of Company Size on the Use of Interest Groups

Code	Interest group	Micro	Small	Medium--sized	Large	Total
3A	Own employees only	16.39 %	14.75 %	37.70 %	31.15 %	1
3B	BPM training courses	4.92 %	11.48 %	26.23 %	57.38 %	1
3C	Consulting company	9.09 %	0.00 %	45.45 %	45.45 %	1

Source: own analysis

In comparison with the results of the previous research, there has not been any significant change.

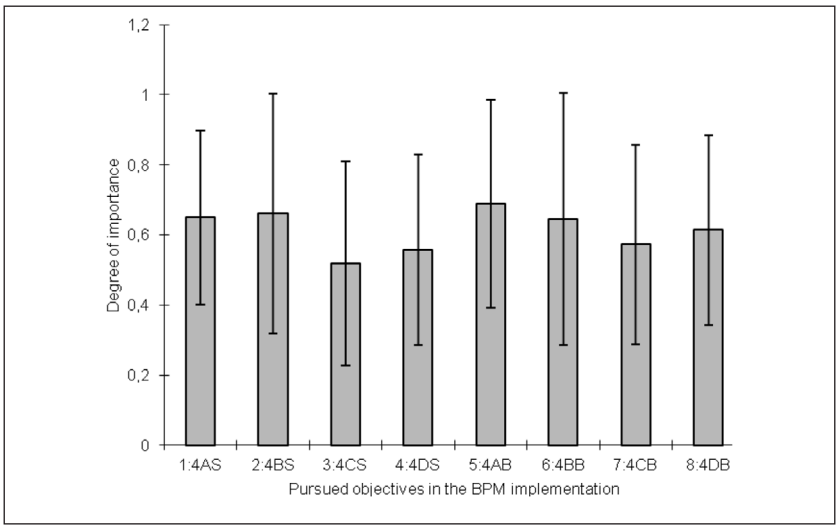
3.4 Priority of Goals in the Implementation of Process Management

The purpose of this question was to identify objectives that managers pursue by process management implementation. In other words, the results of this question show the emphasis which managers attach to secondary objectives that are closely linked to process management implementation. A question pursuing the priority of goals in process management implementation is designed to clarify the opinion of managers of the existence of the synergetic effect regarding the use of process management implementation as an overall strategic change as part of the certification according to ISO 900X, as part of the implementation of a new information system or only as part of the partial improvement of processes. The question examines the current attitude of managers to the issue as well as the expected change in attitudes in the future.

The graph and table below (Fig. 5, Tab. 10) show the summary results of this question. As can be seen from these outcomes, the opinions of managers on this issue in all sub-questions are not clear enough. Currently, managers of Czech companies see the greatest significance (0.66) of using the process management implementation in certification according to ISO 900X. It is followed by, with almost the same degree of importance (0.65), process management implementation as an overall strategic change (i.e. as the need to respond to fundamental changes in the business environment, the need for a change in the corporate organizational architecture, e.g. the transition to horizontal organizational structure, the emergence of autonomous teams within a company, changes in the way of motivation, etc.). Managers expressed only weak consent (0.56) to the statement on the use of BPM as a tool in the implementation of a new IS. The biggest ambiguity in decisions (0.52) was evident in connection with the use of process management for minor changes to improve the selected group of processes.

As already mentioned, the issue also examines a possible shift in priorities of objectives in process management implementation in the future. These results are also displayed in Fig. 5 and Tab. 10. In the future, managers will focus more on both the BPM implementation as an overall strategic change (shift from 0.65 to 0.69) and the use of BPM for minor changes to improve selected processes (shift from 0.51 to

Fig. 5: Priority of Objectives in the BPM Implementation



Source: own analysis

Tab. 10: Legend to the Previous Graph with Quantified Confidence Intervals

Code	Pursued objectives in the BPM implementation	Average	Standard deviation	Lower interval	Upper interval
1:4AS	BPM as an overall strategic change (present)	0.649533	0.247296	0.60213	0.69693
2:4BS	Certification according to ISO 900X (present)	0.661215	0.342115	0.59564	0.72679
3:4CS	Partial improvement of processes (present)	0.518692	0.29078	0.46296	0.57442
4:4DS	IS implementation (present)	0.558411	0.271655	0.50634	0.61048
5:4AB	BPM as an overall strategic change (future)	0.689236	0.297493	0.64023	0.73824
6:4BB	Certification according to ISO 900X (future)	0.645833	0.359073	0.58669	0.70498
7:4CB	Partial improvement of processes (future)	0.572917	0.283391	0.52624	0.6196
8:4DB	IS implementation (future)	0.614583	0.270772	0.56998	0.65919

Confidence intervals (for reliability estimation of $1 - \alpha = 0.95$), multiple answers Source: own analysis

0.57) and, last but not least, the use of BPM in the implementation of a new IS (shift from 0.56 to 0.61). Only the use of BPM for the requirements of certification according to ISO 900X in the future was expressed less clearly by the addressed managers than at present.

The following table (Table 11) illustrates the effect of company size on a priority of secondary objectives that managers of Czech companies pursue by process management implementation. The results imply that company size does not have a significant impact on the priority of secondary objectives in the BPM implementation. As in previous research, even the current research shows large ambiguity mainly on the part of managers of micro as well as small enterprises. The greatest importance for small enterprises consists in the BPM implementation for certification according to ISO 900X. The process management implementation as an overall strategic change is attached the greatest importance by managers of large companies, who also expect an increase in the importance of this objective in the future. From the results it can be concluded that the larger the company the more managers of Czech companies perceive the BPM implementation as an overall strategic change.

3.4.1 Comparison of the Results with the Previous Research

Upon the comparison of the two researches (Fig. 5, Tab. 10), [13] we can claim a greater level of agreement with all the statements specified in the survey conducted in 2012. Questions about future views on priorities of objectives in implementing BPM were asked in a time horizon of 5 years. The time difference in the implementation of both the above researches was 6 years, i.e. the research results from 2006 regarding the future should correspond with the findings of the research focusing on the present situation.

The research shows that managers in the previous period assumed a greater growth in the importance in the future only in the case of the process management implementation as an overall strategic change (up to 0.73). The present results, however, showed an increase to 0.65 only. Therefore, there was a slight increase in the importance of this secondary objective than the last survey anticipated. For all other secondary objectives pursued by the process management implementation in 2006, managers expected only a slight increase in importance. The results of this year's survey, however, showed in almost all cases a much

Tab. 11: The Effect of Company Size on the Priority of Objectives in the BPM Implementation

Code	Pursued objectives in the BPM implementation	Micro	Small	Medium--sized	Large	Total
1:4AS	BPM as an overall strategic change (present)	0.535714	0.566667	0.604167	0.755952	0.649533
2:4BS	Certification according to ISO 900X (present)	0.428571	0.733333	0.694444	0.684524	0.661215
3:4CS	Partial improvement of processes (present)	0.517857	0.533333	0.576389	0.464286	0.518692
4:4DS	IS implementation (present)	0.5	0.7	0.534722	0.547619	0.558411
1:4AB	BPM as an overall strategic change (future)	0.520833	0.5875	0.715116	0.844444	0.689236
2:4BB	Certification according to ISO 900X (future)	0.493056	0.7	0.744186	0.65	0.645833
3:4CB	Partial improvement of processes (future)	0.611111	0.5375	0.651163	0.483333	0.572917
4:4DB	IS implementation (future)	0.618056	0.7125	0.575581	0.605556	0.614583

Source: own analysis

greater degree of agreement than was anticipated by the previous research. Specifically, it involves the following results: a shift from the level 0.54 to 0.66 (the process management implementation for the use of BPM for the requirements of certification according to ISO 900X), a shift from the level 0.43 to 0.51 (the use of BPM for partial changes to improve selected processes), and a shift from the level 0.52 to 0.55 (the use of BPM in the implementation of a new IS).

The previous research pointed out the following priorities of objectives in implementing BPM: BPM as an overall strategic change, certification according to ISO 900X, IS implementation, partial improvement of processes. According to responses of managers regarding the future, there were no changes in priorities of these objectives expected in this research. Nevertheless, the current research shows that some changes have occurred. At present, the priority of the objective associated with certification according to ISO 900X is the highest, followed by the BPM implementation as an overall strategic change. The lowest priority for managers is currently the use the BPM implementation for minor changes to improve the selected processes.

Discussion and Conclusion

The survey carried out in Czech companies was a valuable source of information providing the authors with an opportunity to create and provide a comprehensive overview of the use of process management in the Czech Republic. In connection with the formulated hypotheses, the evaluation of individual questions that were the subject of this paper allowed to establish the following conclusions:

1. The findings of the first question aimed at extending the concept of process management in the Czech Republic showed that almost 26 % of respondents identified this term as unknown, and less than 3 % of respondents were unable to answer this question. Due to the fact that 70 % of respondents consider their company to be fully or partially process-driven, it can be stated that the concept of process management in the Czech Republic is well developed. This conclusion is confirmed by an interview with Professor Wilhelm Scheer [12], who claims that the term process management is indeed wide-spread and in the Central Europe, including the Czech and Slovak Republics, and there is no need

to clarify its importance very much. The creator of the ARIS methodology defines process management as a tool to gain a competitive advantage over other companies and a trend that is gradually spreading through banks, financial institutions, and engineering and energy companies to the entire market.

2. A comparison of the results of the current and the previous research [13] shows a slight (by at least 2–3%) increase in the level of the use of all the essential components of process management, which can be considered as an ambiguous confirmation of H2. The most significant shift in the importance of individual components occurred for the respondents in case of continuous process improvement, which shifted on the scale of importance and significance from the third place (from 0.68) to the first place (0.78). Almost the same improvement is presented by process performance measurement; there was a shift from the level 0.59 to 0.67. These shifts can be evaluated very positively, because process performance measurement is the basis of and prerequisite for continuous process improvement that contributes to the fact that the established process management is dynamic and does not involve only redrawing of the existing processes into process maps.

3. The results of questions aimed at finding out the level of the use of each component of process management can lead to a conclusion that managers of Czech enterprises attach great importance to the use of the following components: continuous process improvement, definition of core processes, definition of customers and process owners and process performance measurement. BPM components related to the creation and use of process maps are not as important to Czech managers. The difference in the degree of importance that managers attach to individual BPM components, which can be derived from different degrees of their use, means that managers of Czech companies do not apply all components during the BPM implementation simultaneously, but only some. This fact confirms the renewed hypothesis that managers do not understand the interconnectedness of individual BPM components. In relation to the first question focused on the full or partial use of BPM and based on the results of this question, conclusion can also be drawn that managers of Czech companies view the partial use of process management as the use of only certain selected BPM components rather than all BPM components at the same time but only in some fields of the company. These basic components, however, are closely interlinked and using only some of them can cause the benefits of process management to have little effect. The investigated interconnection of individual BPM components lies in the fact that creating process maps leads also to defining core processes, their customers and owners. The subsequent use of process maps to assess, e.g. costs or time requirements of defined processes is associated with process performance measurement, because the actual process maps can be a source of information for performance measurement, which is the basis of and prerequisite for continuous process improvement as well.
Regarding of process measurement performance, some authors, such as Rajnoha, Chromjaková recommend e.g. implementation of Activity-Based-Costing (ABC) method in the enterprise.
Additionally, implementation of calculation based on processes and activities brings about also non-quantified effects such as:
- transparency and rationalisation of performed activities and processes,
- more responsible proceeding of enterprise work,
- identification of enterprise's competitive advantages or disadvantages,
- information support for strategic management and goal oriented management,
- assignment of overhead costs to performance on case-by-case basis,
- support of price policy and production-sales program optimisation [7].

Interconnection of the mentioned BPM components is rooted in many definitions of process management. An example can be, e.g. a definition by Závadský, who defines process management as [18] a systematic identification of business processes (definition of core (main) processes and definition of customers and process owners), visualization (creation of process maps), measurement, evaluation, and continuous business process improvement (the use of process maps, performance measurement and continuous process improvement) using the methods and principles, which are based on the process approach. Other authors agree that [6], [9] process management is the driving force for the profitability of the company and they characterize BPM as a discipline of modeling, automating, managing and optimizing business processes. Even in this definition, we can find the individual BPM components incorporated.

4. Upon the results listed in section 3.2, it can be clearly deduced that Czech companies are focused mainly on external customers, i.e. on core processes in the company only. Small internal customer orientation means that Czech managers do not attach importance to the management of support processes that provide inputs and operation of key processes, which confirmed Hypothesis 4. This may in the case of implementation of process management cause incompleteness, which may lead to the insufficient use of all potential benefits of process management. Effective management of support processes should reveal the shortcomings of these processes and their improvement would lead to increased efficiency of core processes, which should have a positive effect on the final customer as well. The fact that supporting processes do not directly make profit and are not intended for external customers does not mean that they should not be given due attention. Even these processes must be, according to [16], defined, evaluated and improved to ensure continuous improvement of the whole company. Nevertheless, they fall into the area of the corporate sector, thus management which can be outsourced or managed using the Facility Management.
5. The results specified in section 3.3 clearly support the hypothesis that the use of consulting services in Czech manufacturing enterprises is not very widespread. In the BPM implementation, enterprises primarily rely on the knowledge of their own workers and information obtained by employees participating in BPM training courses. However, it can be noted that medium-sized and large businesses use the services of external consultants to a greater extent.

6. A question inquiring into managers' focus on secondary objectives related to the implementation of process management (section 3.4) also examines the perception of process management as an overall strategic change. Ambiguity in the opinions of Czech managers can not clearly confirm or disprove the last hypothesis. Currently, managers in the BPM implementation focus more on the requirements of certification according to ISO 900X. In the future, however, it is possible to expect from managers a shift moving towards the understanding of process management as an overall strategic change. On the other hand, it should be noted that the previous research had expected from the current one much higher levels of agreement with the perception of BPM as the overall strategic change than actually shown by the managers.

The issue of BPM vs. IT? It is possible to state, that organizational change using IT can begin with an analysis of existing organizational elements and an identification of ways to change the dependencies among them, especially between processes. Therefore, IT is one of the fundamental elements of Business Process Change (BPC) [4]. Its role is significant throughout the entire duration of process change: before the process is designed (IT as an enabler), while the process is being designed (IT as a facilitator) and after the design is complete (IT as an implementer). Therefore, building a responsive IT infrastructure is the

key factor for successful implementation of BPC. There is considerable anecdotal evidence that even small changes in the use of IT in an organization may require major restructuring of the organization to take full advantage of the efficiencies created by the technology. Conversely, there is also significant evidence that without major restructuring, the introduction of IT may not produce savings needed to justify the investment. Although the evidence for organizational restructuring to accompany technological change is strong, there is much less agreement on exactly what organizational changes are needed to take full advantage of the technology [4].

The utilization of process management in the Czech Republic, according to [17], can be also indicated as a hot topic today. Based on the conducted research, it is evident that the level of the use of BPM has been still, albeit slowly, growing. Managers begin to gradually understand the transition to process management as an overall strategic change. The complexity of individual components of process management is also starting to get into the minds of Czech managers of primarily medium-sized and large enterprises. As a negative result of the research carried out can be identified the fact that Czech managers put hardly any emphasis on the management of supporting processes and internal customer satisfaction.

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Abstract

UTILIZATION LEVEL OF BUSINESS PROCESS MANAGEMENT IN CZECH ENTERPRISES – OBJECTIVES AND FACTORS

David Tuček, Michaela Hájková, Zuzana Tučková

The aim of this article is to provide a comprehensive overview of the utilization rate of Business Process Management (BPM) and its components in Czech factories focused on goals that managers follow by the implementation of process management and the factors that are merged with a process-oriented company. The paper presents a part of current results of the research conducted by a questionnaire survey. The whole research was focused on several aspects of process management. Within this research, aspects of Business Process Management are understood with the meaning of the views or positions on the issues of Business Process Management with a focus on the objectives, factors, components, support, benefits and barriers to BPM implementation. The purpose of the research was to monitor the attitudes, opinions and judgments of managers of Czech firms to individual aspects of BPM. Since this is a subjective expression, which is subsequently necessary to evaluate statistically were used in this study a scaling method, based on a quantification of qualitative data. The meeting the objective of this article was conditioned by confirmation or refutation of the hypotheses aimed at extending the concept of BPM in the Czech Republic and its understanding, the utilization rate of BPM in the Czech manufacturing companies, the complexity of BPM components and the orientation of Czech managers to support management processes. The complete results of the research showed positive development in almost all observed aspects. The largest positive change occurred in the perception of the importance of process performance measurement. This shift can be evaluated very positively, because the performance measurement process is the basis and prerequisite for continuous improvement of processes, which helps to ensure that the established BPM is dynamic and does not involve redrawing of the existing processes into process maps only.

Key Words: *Business Process Management, BPM components, ARIS (Architecture of Integrated Information Systems), utilization rate of business process management.*

JEL Classification: *M11, M15, O31.*

LINKING RETAIL SERVICE QUALITY, SATISFACTION AND PERCEIVED VALUE TO CUSTOMER BEHAVIORAL INTENTIONS: EVIDENCE FROM SERBIA

Tamara Rajic, Jaroslav Dado, Janka Taborecka-Petrovicova

Introduction

In today's highly competitive marketplace companies' survival and growth call for building and maintaining a solid base of loyal customers. True loyalty has been shown to affect profitability, as loyal customers tend to buy more over time, are less sensitive to price, bring in new customers by spreading positive word-of-mouth and therefore lower company's acquisition costs [28]. In increasingly hostile business environment the focus is shifting from merely selling to customers to serving them effectively [24], whereupon service quality and customer satisfaction take on paramount importance as the main drivers of customer behavior. Literature provides evidence of the impact of service quality on customers' favorable behavioral intentions, i.e. willingness to recommend and repurchase [40] and actual customer behavior in the form of store traffic and sales growth [2]. Research has also supported the purported role of customer satisfaction as a precursor to loyalty [4], [5]. In addition to service quality and customer satisfaction perceived value has been highlighted as a means of creating and sustaining competitive advantage [30]. The reason why many businesses fail is that too much of managerial attention is directed toward short-term profit and too little toward value-creation, which is the key to customer loyalty. The notion of perceieved value as an antecedent to customer favorable behavioral intentions has been empirically supported in a number of studies [10], [5], [30]. Although the constructs of service quality, customer satisfaction, perceived value, their interrelatedness and impact on customer behavioral intentions have been extensively studied across service settings, majority of studies have been conducted in U.S. and western country contexts, whereas relationships among these constructs have been largely under-researched in emerging economies. This especially pertains to Serbia and its retail sector. To the best of our knowledge, no previous study has examined the construct of retail service quality in Serbia, and there is a dearth of research on the relationships among service quality, satisfaction and value and their impact on customer behavioral intentions in Serbian retail sector. On the other side, retailing has gained the status of a key driving force of overall economic development in Serbia since the year of 2000, when major democratic changes occured, followed by the redirection of economic system toward market-based economy. Underdeveloped retail structure, in terms of capacity of selling space, structure and number of stores per 1000 inhabitants and revival of living standard of Serbian citizens have pulled foreign retailers that have significantly influenced retail modernization in Serbia. Changes of retail landscape, as described by Simova [33] in case of Czech retailing, have been gradually taking place in Serbian market as well over previous decade. Due to rising competitive pressures there is a need for retail managers to understand how various factors impact customer loyalty. Information of this kind would be particularly relevant for enhancing customer loyalty through initiatives based on the

determinants of loyalty and their relative impact on customer behavior.

Therefore the objective of this paper is twofold: first, to gain deeper insights into the construct of retail service quality in Serbia and second, to examine relationships among service quality, perceived value, customer satisfaction and their impact on customer behavioral intentions in heretofore unstudied context. The remainder of the paper is organized as follows. The issue of service quality and its measurement, with special reference to the context of retailing has been addressed first, followed by the proposal of conceptual model, involving the determinants of customer loyalty and their hypothesized relationships. The next section describes methodology, including sample characteristics, description of measures and data analysis procedure. Results of the study are presented subsequently, followed by theoretical and managerial implications, limitations of the study and directions for further research.

1. Conceptual Background and Hypothesis Development

1.1 Service Quality and Customer Satisfaction

The constructs of service quality and customer satisfaction have been regarded as the key building blocks of marketing theory and practice and as such they have drawn considerable attention among researchers and practitioners alike. According to the most widely accepted conceptualization of service quality, the construct is defined as "the consumer's judgment about an entity's overall excellence or superiority" [25, p. 8]. Due to distinctive characteristics of services, such as intangibility, heterogeneity and inseparability, service quality cannot be measured in an objective manner, like goods quality. Rather, it is measured as the degree and direction of discrepancy between customers' perceptions and expectations. The most widely applied and examined service quality measurement instrument is SERVQUAL, a 22-item scale addressing five service quality dimensions, reliability, responsiveness, assurance, empathy and tangibles. Although this generic scale has been proven to be valid and reliable measurement instrument in a variety of "pure" service settings, such as banking, long-distance telephone service, insurance [25] its replication in retail settings led to the conclusion that much refinement of the scale is needed to capture the essence of the service quality construct in retailing [7], [15], [16]. In addition to adjusting measurement instruments taking into account distinctive characteristics of service industries, a number of authors agree on the necessity of adapting measurement scales to socioeconomic and cultural contexts of service industries [41], [17], [12]. On the grounds of distinctiveness of retail services from pure service settings Dabholkar et al. [11] proposed Retail Service Quality Scale (RSQS), diagnostic tool suitable to the context of U.S. department stores. Later on the scale was validated in a variety of retail settings and socioeconomic environments [23] and also provided a framework in the development of CALSUPER scale, instrument for service quality evaluation in Spanish supermarkets [37]. Based on prior studies in the field, the construct of service quality in Serbian grocery retail context has been examined in this study.

According to Tse and Wilton [36, p. 204] customer satisfaction can best be understood as "consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption". It has been conceptualized as a transaction-specific and cumulative construct. Transaction-specific satisfaction relates to customer satisfaction with a discrete service encounter, whereas cumulative satisfaction is a function of all previous experiences with the service provider [20]. Although transaction-specific satisfaction measure may provide specific diagnostic information about a service encounter, it is the overall satisfaction which functions as a fundamental barometer of company's past, present and future performance. Therefore cumulative satisfaction is adopted in this study as well. Behavioral researchers in marketing have developed a rich body of literature investigating relationships among service quality and satisfaction. As both constructs are based on expectancy-disconfirmation paradigm, early research in the services domain argued in support of interchangeability of the constructs [19]. However, expectations in the service quality context refer to customers' wants or desires whereas in the context of satisfaction expectations relate to predictions of what is

likely to happen. Majority of subsequent studies yielded a conclusion that the constructs are clearly distinct, yet related [14], [34]. Contrary to this perspective, Cronin and Taylor [9] in a multi-industry study provide evidence in support of the mediating effect of customer satisfaction in the relationship between service quality and customer purchase intentions. The direction of causality from service quality to satisfaction and its antecedent role to behavioral intentions have been supported across service settings, including retailing [10], [4], [31]. In addition to mediated effect, literature provides evidence of the direct impact of service quality on customer behavioral intentions [40], [34], [42]. However, studying the impact of service evaluation constructs on customer behavioral intentions in a multinational study involving retail grocery customers Brady et al. [4] report differences regarding the impact of service quality on customer behavioral intentions across socioeconomic settings. On the grounds of previous discussion, the following hypotheses are proposed:

- H1: Retail service quality has a positive effect on customer satisfaction;
- H2: Satisfaction has a positive effect on retail customers' behavioral intentions;
- H3: Retail service quality is positively related to customer behavioral intentions.

1.2 Perceived Value

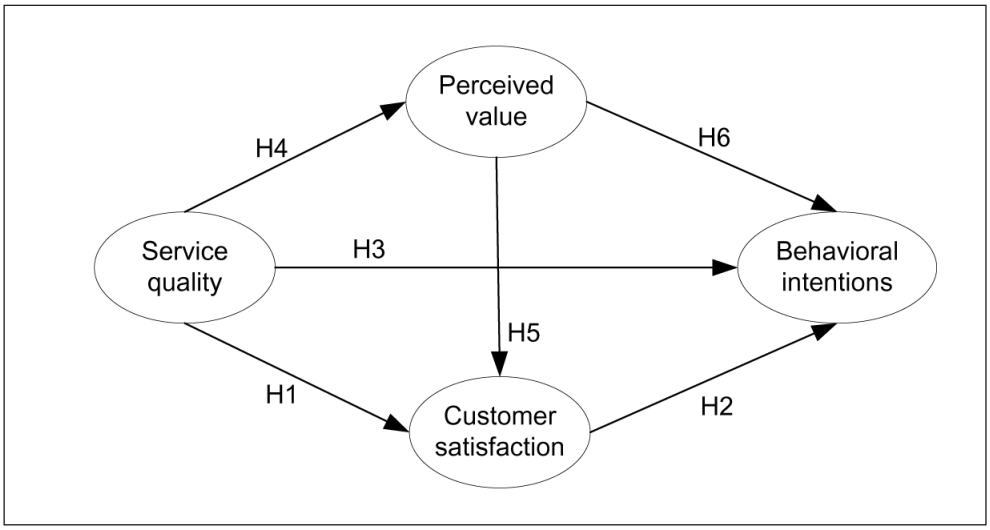
Recent marketing literature pays growing attention to perceived value as it has been regarded as an important determinant of customer behavior and the fundamental basis for all marketing activities [30]. However, the construct of value has been less extensively studied than service quality and satisfaction, as there is a lack of consensus on what constitutes value. According to Grönroos and Voima [18] value is among the most ill-defined and elusive constructs in services marketing theory. Literature provides evidence of the divergent views regarding the definition, measurement and dimensionality of perceived value. It has been modeled as unidimensional [10] and multidimensional construct, including functional values, social and emotional value applicable to the context of shopping for consumer durable goods [35] or value-for-money, emotional value and novelty value in adventure tourism context [38]. Multivariate analysis conducted in the context of the Czech clothing retailing yielded five dimensions composing benefit attributes, related to functional, psychological and conditional components of customer value, and three sacrifice dimensions, related to price, incentives and effort made when shopping [32]. Multidimensional conceptualizations are more applicable to service settings implying higher level of perceived risk. As the context of this study is retail grocery shopping, perceived value has been operationalized as a unidimensional construct. In a myriad of definitions of perceived value, the most universally accepted, and adopted in this study as well, is the one proposed by Zeithaml [39, p. 14] according to which perceived value is "consumers' overall assessment of the utility of a product based on perceptions of what is received and what is given." This trade-off model stems from pricing literature, but takes on a broader perspective of the „give" component, including monetary and nonmonetary costs (e.g. time, effort, energy expended), which might be even more important than monetary sacrifices for time-constrained consumers [30].

There is a significant body of literature to provide evidence of the antecedent role of service quality to perceived value in a variety of service settings, such as banking [27], air transportation [6], tourism industry [26], etc. In instances where the object of the exchange is physical product, superior service rendered by the seller may add to perceived benefits (get component) or reduce nonmonetary costs, thus adding to perceived value of the exchange [24]. Improvements in perceived value have been shown to positively affect customer satisfaction, which further leads to favorable behavioral intentions [10], [4]. In addition to mediated effect, recent studies indicate perceived value as the most significant and direct determinant of customer behavioral intentions [6]. These findings lead to the following hypotheses:

- H4: Retail service quality is positively related to perceived value;
- H5: Perceived value is positively related to customer satisfaction;
- H6: Perceived value has a positive effect on customer behavioral intentions.

Conceptual model, including hypothesized relationships, is presented in Figure 1.

Fig. 1: Conceptual Model



Source: own

2. Methodology

2.1 Sampling and Data Collection

The study was conducted on a convenience sample of grocery retail customers in Serbia. Data collection was administered by personal interviewing which took place from November 2011 till January 2012. As the study aimed at addressing cumulative satisfaction, in-home, rather than in-store, interviewing was chosen for data collection. Rationale of the study had been explained first and respondents were asked to express their opinions having in mind the retail store where they shop for groceries and complementary assortment for household consumption most often. Participation in the study was voluntary and anonymous. Elimination of 38 questionnaires with incomplete or apparently insincere data yielded 453 usable responses. Majority of respondents were females (57 %). The most represented age group was 18–24 (31 %), followed by those within 25–34 age category (22.9 %) and 35–44 years of age (20.5 %). Respondents with high school diploma accounted for 69.8 % of the sample. More than third of all participants (36.6 %) indicated supermarkets owned by Belgian-based company as the most preferred place for grocery shopping, the following category being independently-owned convenience stores.

2.2 Measures

The questionnaire included four sections, in addition to demographic profile of respondents. The first part dealt with service quality measurement. Prior to quantitative research several rounds of group discussions were held with retail customers. Respondents were primarily asked to recall their in-store experience and comment on attributes shaping their perceptions of retail service quality. Attributes of service quality revealed during extensive literature review, but not elicited during initial focus groups, were later on discussed with respondents in terms of their relevance for retail service quality evaluation in Serbian context. This approach yielded a pool of service quality items which were measured on a seven-point Likert-type scale. Respondents were asked only to indicate their perceptions of service quality, in line with Cronin and Taylors's [9] arguments favoring performance-only measurement.

The following section dealt with customer satisfaction. The construct was measured on

the basis of items used in previous studies [10], [4] adapted to the context of retailing. Respondents were asked to indicate on a seven-point Likert-type scale to what extent they thought that the decision to purchase from the chosen retailer was a wise one and to what extent they were satisfied and happy with the services from that retailer.

The third section dealt with perceived value. Respondents were asked to indicate to what extent they agreed that patronizing that retailer was worth the money, effort and time expended [39].

The fourth section consisted of measures of customer behavioral intentions. Items were taken from previous studies [4], [42] and adapted to the context of this study. Respondents' task was to indicate on a seven-point Likert-type scale likelihood of spreading positive word-of-mouth, recommending the retailer to a friend or family member and purchasing from the same retailer again.

2.3 Data Analysis

Exploratory factor analysis and structural equation modeling (SEM) were applied in this study. The dimensionality of heretofore un-studied construct of retail service quality in Serbia was examined using principal axis factoring with oblique rotation. In the following stage two-step procedure, recommended by Anderson and Gerbing [1] was performed, implying estimation of measurement model, followed by estimation of structural relationships. Maximum likelihood, as the method of parameter estimation, was chosen. Data were analyzed using SPSS 18 and LISREL 8.80.

3. Results

3.1 Factor Structure and Measurement Model of Retail Service Quality

The key task in the first stage of the analysis was purification of initial pool of items related to the construct of retail service quality. In pursuit of this goal, an iterative procedure was applied, involving the following steps:

1) Reduction of larger number of items into a smaller set of underlying factors by means of exploratory factor analysis.
2) Deletion of items with high cross-loadings.
3) Calculation of Cronbach's alpha factors and item-to-total correlation and consequent deletion of items with low reliability.
4) Reiteration of steps 1–3 until a clean dimensional structure emanates from the procedure.

Principal axis factoring was performed to determine the underlying dimensionality of retail service quality construct. Oblique factor rotation was chosen as it is best suited to the goal of obtaining several theoretically meaningful constructs and when it is assumed that the factors are correlated, which is mostly the case with social science studies. Suitability of the data for factor analysis was examined using Bartlett's test of sphericity, which tests the null hypothesis that the correlation matrix is an identity matrix, and Kaiser-Meyer-Olkin measure of sampling adequacy (KMO). Significance of Bartlett's test (χ^2=4752.468, df=325, p<.001) and KMO value of .928 indicated good factorability of the correlation matrix. Factor loadings less than .40 were suppressed and Kaiser's criterion of eigenvalues greater than 1 was applied for factor retention. The iterative procedure yielded four-dimensional structure of retail service quality construct, as presented in Table 1.

Measurement properties of newly generated scale have been examined in the following stage by means of confirmatory factor analysis (CFA). Due to number of items explained by the second factor, parcels have been used as indicators of service quality dimensions, as the larger the number of indicators per construct, the less likely the model is to fit well even if the model closely approximates the construct. Parcels were constructed by partial disaggregation, placing more similar items together into the same parcel, where possible. Content of item parcels and results of measurement model analysis are presented in Table 2. Overall fit of the measurement model was deemed unsatisfactory, as CFA yielded significant chi-square statistic (χ^2=87.306, df=29. p<.001). However, due to its sensitivity to sample size a number of other absolute and incremental fit measures have been examined. Their values, higher than the lower threshold or lower than the upper bound indicated acceptable fit of the measurement model.

Tab. 1: Factor Analysis Results

Items	Factor loadings			
	F1	F2	F3	F4
Factor 1 Spatial layout & assortment				
Q1 Layout makes it easy to move around	.625			
Q2 Layout makes it easy to find goods	.534			
Q3 Assortment allows one-stop shopping	.483			
Q4 Appropriate depth and width of the assortment	.459			
Factor 2 Employee factor				
Q5 Employees give prompt service		.722		
Q6 Employees are never to busy to respond		.708		
Q7 Employees are courteous with customers		.633		
Q8 Enough number of employees for prompt and efficient service		.631		
Q9 Employees are willing to do more than asked for to help customers		.626		
Q10 Special treatment of regular customers		.601		
Q11 Employees are trustworthy		.570		
Q12 Employees are well informed		.558		
Q13 The retailer understands customers' needs		.529		
Factor 3 Communication & modernity				
Q14 The retailer informs customers about special offers			.722	
Q15 Visually appealing promotional material			.716	
Q16 Attractive sales promotion activities			.714	
Q17 Modern-looking equipment			.423	
Factor 4 Ambience				
Q18 Pleasant music in the store				.672
Q19 Pleasant combination of colors				.653
Q20 Pleasant lighting in the store				.597
Q21 Pleasant scents				.589
Q22 Pleasant temperature in the store				.415

Source: own

Standardized factor loadings higher than 0.50 and average variance extracted (AVE) above 0.50 indicated good convergent validity of the model. Cronbach's alpha factors exceeding the value of 0.60, deemed the lower limit of acceptability, indicated good internal consistency of the items making up service quality dimensions. All but one AVEs being higher than the squared correlation between each pair of latent variables (variance shared between the factors) provided evidence in support of discriminant validity, as presented in Table 3.

Tab. 2: Measurement Model of Retail Service Quality

Fit indices*	χ^2/df	GFI	AGFI	NFI	NNFI	CFI	RMR	RMSEA
Recommended	<5.00	>0.90	>0.90	>0.90	>0.90	>0.90	<0.08	<0.08
Results	3.01	0.96	0.93	0.96	0.95	0.97	0.05	0.07

Dimension	Item parcel	Factor loading	t-value	Cronbach's alpha
Spatial layout	IP1	0.71	13.12	0.72
& assortment	IP2	0.75	-	
Employee factor	IP3	0.74	16.53	0.88
	IP4	0.86	19.73	
	IP5	0.74	16.55	
	IP6	0.82	-	
Communication	IP7	0.94	14.15	0.81
& modernity	IP8	0.75	-	
Ambience	IP9	0.78	15.42	0.81
	IP10	0.87	-	

Parcel content				
	IP1=(Q3+Q4)/2;	IP2=(Q1+Q2)/2;	IP3=(Q7+Q10)/2;	IP4=(Q9+Q11+Q13)/3;
	IP5=(Q5+Q8)/2;	IP6=(Q6+Q12)/2;	IP7=(Q15+Q17)/2;	IP8=(Q14+Q16)/2;
	IP9=(Q18+Q22)/2;	IP10=(Q19+Q20+Q21)/3		

Note: *Goodness of fit index (GFI); Adjusted goodness of fit index (AGFI); Normed fit index (NFI); Non-normed fit index (NNFI); Comparative fit index (CFI); Root mean square residual (RMR); Root mean square error of approximation (RMSEA)

Source: own

Tab. 3: Average Variance Extracted and Variance Shared between the Factors

	F1	F2	F3	F4
F1	**0.53**			
F2	0.47	**0.62**		
F3	0.45	0.18	**0.72**	
F4	0.55	0.26	0.37	**0.69**

Note: Values on the diagonal represent AVEs and values below the diagonal correspond to shared variance; correlations are significant at the 0.01 level

Source: own

Unidimensionality of service quality dimensions, indicated by measurement analysis, enabled the construction of summated scales, i.e. additive, equally weighted indices, for each quality dimension. These indices were used as indicators of service quality construct in structural analysis. However, prior to estimating patterns of relationships among constructs total measurement model, incorporating all previously discussed latent constructs, was estimated.

3.2 Total Measurement Model

The CFA analysis of the total measurement model including four latent constructs yielded significant χ^2 value (χ^2=135.185; df=59, p<.001), implying considerable difference between the observed and estimated covariance matrix. Consequently, the model would be deemed unacceptable, however due to sensitivity of chi-square value to sample size, additional fit indices were considered. The ratio of chi-square value to corresponding degrees of freedom being lower than the upper bound of

5 indicated reasonable fit of the measurement model. Other absolute fit measures, such as goodness-of-fit statistic (GFI), being higher than 0.90, and RMSEA, a measure of discrepancy per degree of freedom, being lower than 0.08, also provided evidence is support of close fit of the model. Incremental fit measures, such as NFI, NNFI, CFI, which compare hypothesized model to a null or independence model, took values higher than the lower threshold of 0.90, indicating acceptable fit of the measurement model. All standardized factor loadings were statistically significant and higher than 0.50. Cronbach's alpha factors were computed to assess internal consistency of the constructs. Reliability coefficient taking values from 0.78 to 0.88 indicated adequate internal consistency of the constructs, as presented in Table 4.

Tab. 4: Measurement Analysis of the Total Model

Fit indices*	**χ^2/df**	**GFI**	**AGFI**	**NFI**	**NNFI**	**CFI**	**RMR**	**RMSEA**
Recommended	**<5.00**	**>0.90**	**>0.90**	**>0.90**	**>0.90**	**>0.90**	**<0.08**	**<0.08**
Results	**2.29**	**0.96**	**0.94**	**0.96**	**0.97**	**0.98**	**0.05**	**0.05**
Constructs	**Factor loading**		**t-value**		**Cronbach's alpha**		**Composite reliability (CR)**	
Service quality	0.63 – 0.76		11.96 – 12.76		0.78		0.79	
Satisfaction	0.83 – 0.88		21.74 – 23.32		0.88		0.88	
Perceived value	0.74 – 0.84		16.29 – 17.05		0.83		0.84	
Behavioral intentions	0.77 – 0.91		20.99 – 28.47		0.88		0.89	

Note: *Goodness of fit index (GFI); Adjusted goodness of fit index (AGFI); Normed fit index (NFI); Non-normed fit index (NNFI); Comparative fit index (CFI); Root mean square residual (RMR); Root mean square error of approximation (RMSEA)

Source: own

With the exception of average variance accounted for by service quality, amounting to 0.49, all other AVE values were higher than 0.50, providing evidence in support of convergent validity. Construct reliability (CR) is another indicator of convergent validity. CR values from 0.79 to 0.89 exceeded 0.70 rule of thumb thus indicating good convergence among the measures of the same construct. Discriminant validity was also supported as average variance extracted by the constructs was higher than the variance shared between the constructs (squared correlation), as presented in Table 5. Acceptable for of the measurement model allowed for the examination of structural relationships.

Tab. 5: Average Variance Extracted and Variance Shared between the Constructs

	SQ	**SAT**	**PV**	**BI**
SQ	**0.49**			
SAT	0.34	**0.73**		
PV	0.32	0.48	**0.63**	
BI	0.30	0.69	0.49	**0.74**

Note: Values on the diagonal represent AVEs and values below the diagonal correspond to shared variance; correlations are significant at the 0.01 level

Source: own

3.3 Structural Model

Patterns of relationships among latent constructs were examined by means of SEM analysis performed via LISREL 8.80. Maximum likelihood was chosen as the method of parameter estimation. The GFI, CFI, NFI are above the lower bound of 0.90 and both RMR and RMSEA are below 0.08 and therefore indicate acceptable fit of the structural model. Given the satisfactory fit of the model the analysis proceeded with hypothesis testing. Results of the study indicate significant impact of retail service quality on customer satisfaction (γ=0.28, p<.01), therefore providing support for Hypothesis 1. Improvements in service quality positively impact customer perceptions of value (γ=0.68, p<.01). Thus, Hypothesis 4 was supported. However, support was not provided for Hypothesis 3 implying direct impact of service quality on behavioral intentions (γ=0.03, p>.05). Results of the study indicate that both value and satisfaction are directly related to customer behavioral intentions (H6: β=0.18, p<.01; H2: β=0.80, p<.010), providing support for Hypothesis 6 and Hypothesis 2. In addition to direct relatedness, perceived value is also indirectly related to customer behavioral intentions, via satisfaction, which is positivly influenced by value (β=0.60, p<.01). Thus, Hypothesis 5 was supported. Table 6 presents the results of structural model analysis.

Tab. 6: Structural Analysis

Fit indices*	χ^2/df	GFI	AGFI	NFI	NNFI	CFI	RMR	RMSEA
Recommended	<5.00	>0.90	>0.90	>0.90	>0.90	>0.90	<0.08	<0.08
Results	2.29	0.96	0.94	0.96	0.97	0.98	0.05	0.05

Hypothesized relationships	St. estimates	t-value	Test results
H1: service quality → satisfaction	0.28	4.51	Supported
H2: satisfaction → behavioral intentions	0.80	11.72	Supported
H3: service quality → behavioral intentions	0.03	0.65	Not supported
H4: service quality → perceived value	0.68	10.63	Supported
H5: perceived value → customer satisfaction	0.60	9	Supported
H6: perceived value → behavioral intentions	0.18	2.93	Supported

Note: *Goodness of fit index (GFI); Adjusted goodness of fit index (AGFI); Normed fit index (NFI); Non-normed fit index (NNFI); Comparative fit index (CFI); Root mean square residual (RMR); Root mean square error of approximation (RMSEA)

Source: own

Explanatory power of the model was quite satisfactory, indicated by estimated R^2 values of structural equations forming the model: 47 % for value, 68 % for satisfaction and 86 % for behavioral intentions. Therefore results of the study indicate that hypothesized relationships are adequate representations of cause-effect relationships among latent constructs modeled in the study. In terms of total effect, based on standardized structural coefficients, satisfaction is the most significant predictor of behavioral intentions, which influence consists only of the direct effect of 0.80. The following predictor is perceived value, which total effect of 0.66 consists of the direct effect of 0.18 and the indirect effect, mediated via satisfaction, which amounts to 0.48, whereas service quality exerts total effect of 0.65, comprising mediated effects, via perceived value and satisfaction.

4. Discussion

4.1 Implications of the Study

The thrust of this paper was to gain deeper insight into the construct of service quality and examine relationships among the key drivers of consumer intentions and their impact on future behavior in heretofore unstudied context such as retail setting in Serbia. Therefore the review of previous studies in the domain of service quality in general, and retail service quality in particular, formed the baseline for qualitative

study, resulting in the initial pool of service quality items, followed by quantitative examination of the dimensionality of retail service quality construct. Findings of this study point out to the multidimensional nature of retail service quality construct, whereby perceptions of store layout and assortment, employees' behavior, communication and ambient conditions shape service quality evaluation of Serbian grocery retail customers. This is in line with previous studies highlighting the impact of employees' behavior [25], [13], store layout and assortment [23], ambient conditions [3], [29] on quality perceptions. In addition to enriching current knowledge base in retailing, proposal of service quality scale, suitable to the context of retailing in Serbia, is especially relevant for retail management. Instrument of this kind could be used for tracking trends in service delivery and benchmarking purposes, among retail outlets operating within the same chain or comparison with competitors. Implementation of valid and reliable measurement instrument is a critical issue for retail managers as it enables them to identify weak areas in service delivery and properly allocate limited resources on corrective actions.

Results of this study indicate insignificant direct effect of service quality on customer behavioral intentions, when its effect is considered collectively with other determinants of behavioral intentions. By no means does it imply that customer perceptions of service quality should be ignored. Measuring and managing service quality is all the more important as it significantly affects customer satisfaction, as indicated by this study's results. Improvements in service quality are expected to lead to customer satisfaction and higher value perceptions, which also directly impact customer satisfaction, and to a lesser extent behavioral intentions. Improvements in service quality could raise the benefit component of perceived value, or value perceptions could be managed by lowering sacrifice component or by working in both directions simultaneously. However, one possible explanation of insignificant direct impact of service quality on customer behavioral intentions might be the economic downturn which characterized the period of the study. In those circumstances it is highly likely that customers would be willing to tolerate lower level of service quality in favor of lower prices. Results of this study indicate that customer satisfaction is the most important antecedent of behavioral intentions. Therefore in times of intensifying competitive pressures managerial attention should be focused on improving customer satisfaction, which implies working on its antecedents.

4.2 Limitations and Directions for Future Research

In spite of its contributions, this study is not bereft of limitations either. The main drawback of the study is the size and scope of the sample, as a result of time and financial constraints imposed on the study. Analyses were conducted on a convenience sample of grocery retail customers residing in East Serbia region, mostly in Bor district. Moreover, urban population was overrepresented in the study. According to the official data covering the first half of 2012, this region was characterized by 12.89 % lower average salary, compared to the country average, and 30.36 % lower salary in comparison with the most economically advanced region [22]. Therefore, a striking hint emanating from this study is relatively negligible direct effect of perceived value on customer behavioral intentions. One possible explanation would be the structure of the sample, including mostly younger population. Therefore future studies should be performed on more representative customer samples. It should be also noted that the convergence among the items representing the construct of service quality was slightly lower than the cut-off value of 0.50. Thus future research would benefit from more thorough examination of service quality construct. Researchers are also well advised to investigate other prospective antecedents of customer behavioral intentions, such as trust and commitment which have been shown to exert significant impact on customer loyalty, even more stronger than the effect of satisfaction. Literature also provides evidence of significant impact of corporate social responsibility [21] and corporate reputation [8] on customer loyalty. One fruitful area of future research would be an examination of across-group variation in causal relationships using multi-group analysis on the basis of demographic profile of the sample, or preferred retail formats. The scale used in this study, based on literature review and group discussions with grocery

retail customers in Serbia, might be culturally biased and as such should not be directly transposed to different socioeconomic and cultural context. Accordingly, caution is called for in generalizing results of this study. Moreover, researchers are advised to make necessary adaptations of the scale even if it is to be applied in the same socioeconomic context, but distinct retail setting. Therefore another avenue for research would be examination of the strength and direction of causal relationships in diametrical retail contexts, such as shopping for mundane and luxury goods. As the conclusions emanating from this study are based on data collected in one point of time, in order to support external validity of the findings researchers are advised to perform analyses using longitudinal data. Another avenue worthy of further pursuit would be examination of causal relationships across service settings.

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Abstract

LINKING RETAIL SERVICE QUALITY, SATISFACTION AND PERCEIVED VALUE TO CUSTOMER BEHAVIORAL INTENTIONS: EVIDENCE FROM SERBIA

Tamara Rajic, Jaroslav Dado, Janka Taborecka-Petrovicova

In increasingly competitive business environment the issue of service customer loyalty, its determinants and their relative impact on customers' future behavior have been gaining rising prominence among Services Marketing researchers and practitioners. Despite ample empirical evidence pointing out to service quality, customer satisfaction, perceived value as the main drivers of customer loyalty and numerous examinations of their interrelatedness and relative impact on customer behavioral intentions, vast majority of previous studies have been conducted in the U.S. and western country context, whereas developing economies have largely been neglected. This especially pertains to Serbia and its increasingly competitive retailing industry. Therefore the overriding objective of this paper is to examine complex interrelationships among service quality, satisfaction, value and their relative impact on customer behavioral intentions in Serbian grocery retail context. In line with frequently highlighted context and culture-specific nature of service quality construct and due to the dearth of empirical studies of service quality in Serbian retail setting, literature review and group discussions with retail customers were perfomed first. Qualitative research yielded initial pool of service quality items, which was later on refined on the basis of exploratory factor analysis (EFA) and validated applying confirmatory factor analysis (CFA). Quantitative analysis proceeded with the examination of structural relationships among key service evaluation constructs. Data were analyzed using SPSS 18 and LISREL 8.80. According to the study's findings customer satisfaction, influenced by perceptions of service quality and value, exerts the strongest total effect on customer behavioral intentions, followed by perceived value and service quality.Theoretical and managerial implications of the study have been discussed and limitations and directions for future research highlighted.

Key Words: *service quality, satisfaction, perceived value, customer behavioral intentions, retailing.*

JEL Classification: *L81, M30, M31.*

SHRINKING CITIES AND GOVERNANCE OF ECONOMIC REGENERATION: THE CASE OF OSTRAVA

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Introduction

The object of our case study is the old-industrial city of Ostrava, in the Czech Republic, Central Europe, which was hit after 1989 by deindustrialization and other related phenomena. Urban shrinkage is defined as the pathway of urban development characterised by declining numbers of inhabitants. Declining population numbers are a local consequence of macro-processes in the economy, in the social and political systems or even of natural disasters [27]. According to Turok and Mykhnenko [49] about 40 per cent of the large cities in Europe with more than 200,000 inhabitants have lost population for different reasons in the short-, medium- or long term period during the last few decades, many of them in the post-communist Central European countries (see below). Urban shrinkage has become a new normality for a growing number of European cities and urban regions. Theoretically, shrinkage can be explained as a result of different but strongly interconnected processes such as spatially uneven economic development and peripherialisation, second demographic transition and suburbanisation [6], [26]. In practice, cities have to struggle with a decline in labour force, job offers, ageing of population, a decline in investment and underused infrastructure or housing vacancies, as it has been in the case of East German Cities [29], [21] or America's shrinking cities [41], [42]. Our aim is to analyse the trajectory and causes of shrinkage in Ostrava during the period 1990–2010 and to describe the consequences of the process of urban shrinkage for policy-making and governance structures and processes of economic regeneration. The main outcome of this paper is the analysis of governance systems for the adequate policy responses induced explicitly or implicitly by shrinkage. The city of Ostrava has been hit by the shrinkage process since 1990 after the beginning of societal transformation, and of adjustment processes to the (West) European framework conditions. In the period 1990–2010 a lot of policy measures have been taken to tackle the challenges of shrinkage (depopulation, selective out-migration and 'brain drain", ageing, loss of attractiveness, social polarisation and segregation) such as economic regeneration support, which we will focus on.

Shrinkage is a difficult analytical concept to 'sell' politically in countries, indeed in a continent such as Europe, where 'growth' is seen as one of the key measures of political success. There are some options of how to perceive shrinkage. Firstly, shrinkage of a city – if it is slight – can be ignored by politicians. Secondly, shrinkage – if it is very significant – can/must be accepted as a normality (and not the desirable growth) and the policy can be explicitly adjusted to this phenomenon by means of new measures and instruments such as has been the case in East German cities e.g. demolition of vacant blocks of flats in order to gain the balance on the housing market [5], [2]. Thirdly, shrinkage as a phenomenon can be put on the political agenda implicitly through different political discourses on, e.g. economic decline and the necessity to combat unemployment, undesirable drop in birth rates and a surplus of kindergartens and schools, ageing and the necessary pension and health care reforms, unwanted commercial and residential vacancies, emerging unattractive vacant lots and brownfields, social segregation and exclusion etc. [34] We assume

that similar old industrial cities in the Czech Republic such as Ustí nad Labem will have to face the challenge of demographic, economic, social and physical shrinkage as well.

1. Conceptual and Analytical Framework for Urban Governance

Governance has become one of the keywords of Anglophone social science during the 1990s especially in political theory, political science and human geography. Governance is a rapidly expanding field of both theoretical and empirical enquiry [18], [33], [23]. Much work on governance in human geography has focused on the issue of spatial restructuring, including studies of local and urban governance [2]. In our research project 'Shrink Smart', we compare urban politics in different types of shrinking cities using the concept of governance and related concept such as the main concept of modes of urban governance by DiGaetano and Strom [7] and 'institutional thickness" [1], which will be described and assessed partly through political cycles analysis [2]. However, in our research project we work with the definition of urban governance that is provided by the UN-HABITAT: *„Urban governance is the sum of the many ways individuals and institutions, public and private actors, plan and manage the common affairs of the city. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action can be taken. It includes formal institutions as well as informal arrangements and the social capital of citizens"* (UN-HABITAT, www.unhabitat.org). A key issue of the common research project is studying the policy and governance of shrinking cities. After explaining and defining the theoretical concepts of urban shrinkage and urban governance we have concentrated our efforts on operationalisation and practical questions of empirical research. The basic problem here is how to study policies and governance systems and processes. There is inspiring study on urban governance and policies available from DiGaetano and Strom [7].

Bernt et al [2] states that it is impossible to cover in detail all aspects of urban governance and thus we have to focus on some helpful concepts about central dimensions of governance. Those 3 central dimensions, crucial to governance analysis are actors, structural conditions and normative frameworks [17]. Actors have their interests and their patterns of interaction with other actors. Here, it is most important to explain who is responsible for what (e.g. economic development) and who is taking the initiative in defining a policy or a support programme; in other words, the question is not 'who governs?' but rather 'who has the capacity to act and why?' [11, pp. 156]. Thus, the answer on the simple question of which actors are responsible and who does what and why gives a first explanation of a particular policy. Structural conditions are legal frameworks, support programs at different spatial levels such as EU, national state or region, favourable or unfavourable market conditions etc. Structural conditions determine partly the policy of actors and their behaviour. In reality, both private and public actors are everything but free to do what they want. Every policy/strategy is limited by a lack of capacities such as funding, know-how, legal powers or professional personnel. Analysing who has which capacities to launch a particular action is thus a second dimension that helps to understand and explain a policy and governance. Normative frameworks are shared norms, goals, values, beliefs, ideas, persuasions, discourses such as e.g. believes in the only positive impact of neoliberal economic policy, free markets and inflow of foreign direct investment etc. Normative frameworks influence political action by actors (or non-action as well) and in the end lead to political initiatives or on the contrary to passivity. Any policy or action is not only determined by interests and capacities, but also by the way the problem is perceived by the actors with their particular values and norms. The above mentioned dimensions of governance interact. Governance is created by different combinations of actors, in different structural conditions under the influence of different normative frameworks, which are all a place- and time specific.

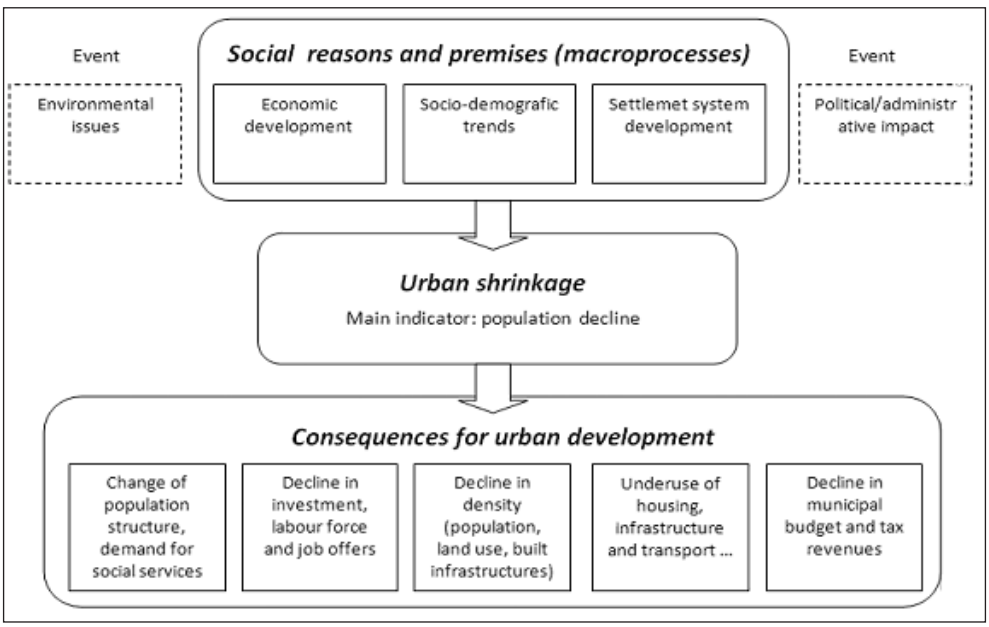
The context of post-communist countries cannot be perceived homogeneously. This fact is evidenced by for instance the absence of private sector or the specific organization of industrial production under communism [13], or different economic transformation strategies [3]. The length of this paper does not allow for an in-depth discussion of these problems at national level, therefore we shall outline the basic (common) features (even if it brings a certain degree of generalization). We believe

these features characterize best the urban governance of post-communist towns. The first common feature is the low power of the public sector which is caused by its immaturity on the one hand and the implications of the preferred laissez faire approach to urban development on the other hand [44]. This implies lower control over market processes (compared to public intervention in west-european towns and cities) [47], which leads to an increase in the significance, power and status of the private sector [27]. Because of high internationalization of central-European economies, the private sector often consists of foreign investors [22]. The Governance regimes oscillate between clientelism and corporativism which is then visible in neo-liberal pro-growth forms of urban governance. The agendas and policies are then instrumental, short-term [40], formulated mainly by the needs and opportunities of the private sector [46]. On the whole it is possible to evaluate the level of the planning process as low [25] or even claim the failure of urban planning.

2. Conceptual and Analytical Framework or Urban Shrinkage and Related Issues

According to Rink et al. [37] population decline is primarily consequence, but can be considered a reason or the starting point for many problems shrinking cities are faced with. Urban shrinkage causes problems that are different from the problems of those faced by growing cities (see Fig. 1).

Fig. 1: The Conceptual Model of Urban Shrinkage



Source: Rink et al. [36]

This conceptual model by Grossmann et al [36] does not represent the final point of discussion on analysis of urban shrinkage. Instead, it serves as a basis for further discussion on urban shrinkage and its causes and trajectories of shrinking cities. Urban shrinkage always appears in a specific context – each city has its own 'local story' which is due to the specific settings of the historical, political, economic, social etc. conditions. On the other hand there are broader or global contexts that also influence the development trajectory of the city independently (more or less) from the local context. Such contexts for the development of Central European cities are e.g. globalisation (and global competition in traditional

manufacturing), European integration and enlargements (e.g. application of the EU law), transformation of political and economic system and restructuring, or even economic crises. Especially, there is a different temporal and spatial context of urban shrinkage in Central and East European post-communist, post-transformation countries and in Western member states of the EU (such as the Western part of Germany, the UK and Italy).

The main spatiotemporal differentiations within the post-communist context can be identified by the following aspects. Firstly, it is necessary to mention the differences of urban development within centrally planned economies under communism. Musil [30] sees the differences between socialist and capitalist urbanization in three factors: a) replacement of market investment allocations by central planning, b) excessive political centralization and suppression of local and regional autonomy, c) excessive amount of redistribution even at the regional level. Apart from this, the modernization of national economies was based on an ideological support of industry on the one hand and neglecting the "non-productive" service sector on the other hand [5]. This led to dual imbalance of 'over-industrialization' and 'over-urbanization' [48, pp. 25]. That led to an overgrowth of industrial agglomerations up to 1989, while towns and cities in western economies (especially industrial ones) had been shrinking since the 1970s.

The systemic changes that were started after the Iron Curtain fell in 1989 were taking place at all hierarchal levels [27] and the transformation processes can be considered as a return to the "natural" development trajectories. However, similarly to other processes like suburbanization, the shrinking process is catching up to its forms and implications in developed economies, which was demonstrated by Turok and Mykhnenko [49]. They state that between 2000 and 2005, 78 % of western towns and cities were growing but 82 % of eastern-European towns and cities were shrinking (within the examined sample) with the medium-term decline being typical for most towns and cities [49]. The trajectories of shrinking cities are, however, various as are their causes. The transformation process caused the economic differences in all CEECs to increase and the "imaginary" winners were capitals and cities situated close to the western markets, often despite their strong industrial basis (Plzeň, Wroclav, Györ, Sopron, etc.). On the other hand, industrial cities have found themselves being "burdens" characterized by economic stagnation and industrialization which led to an increase in unemployment and social problems accelerating the shrinking process [10], [31]. In other words, these cities face urban problems closer to those of Western Europe during the 1980s industrialization, but without their wealth and institutions [48, pp. 25]. Even within the first category of successful cities can we observe shrinking symptoms (primarily caused by uncontrolled suburbanization and absence of city urban policies). However, there are still the premises for their potential regrowth, whereas the unsuccessful "old" industrial cities head more towards long-term decline. All in all, the process of shrinking has quickly become standard especially in the second transformation decade within the CEECs. For a number of industrial or peripheral cities it has become almost a fatality.

3. Research Approaches and Methodology

In the case study of the city of Ostrava, the research design draws on the conceptual and analytical framework of urban shrinkage and urban governance and their operations. The general research questions are as follows:

- What were the major or secondary causes of urban shrinkage of Ostrava or its parts? What is the trajectory of urban shrinkage of the city and its city districts and parts like?
- Does urban shrinkage or any related phenomena lead to creation of new particular arrangements or modes of governance in Ostrava? What impact do the arrangement / modes of urban governance have with respect to the abilities for coping with urban shrinkage?
- What were / have been the strategies of the urban governance structures of the shrinking city of Ostrava like? Were the strategies dealing with shrinkage 'successful'?

A mixed-method research design including both quantitative and qualitative approaches was applied. For the elaboration of the case studies were used following research methods and techniques: desk research – literature review for elaboration of conceptual and

analytical framework, quantitative data analysis and interpretation for identifying the causes and trajectory of shrinkage, documentary analysis i.e. analysis of planning and analytical documents for exploration of policy initiatives by different groups, and qualitative research techniques such as interviews (with 16 stakeholders between January 2010 and April 2011), focus groups (stakeholder meetings with presence of the mayor and deputy mayors, taken place on September 9, 2010) and participatory observation for evaluation and critical discussion on the empirical findings.

4. Causes and Trajectory of Shrinkage of the City of Ostrava

Here in this summary we present the case study of a trajectory of middle-term slight shrinkage of the city of Ostrava – and its historical context and causes – in a very simplified way. This middle-term shrinkage of population and economy between 1990 and 2010 did not have any strong and significant negative impact on the physical structures of the city (building stock and infrastructures) as a whole. On the contrary, Ostrava's urban structures as a whole slightly improved and many urban and economic development projects are in the pipeline. However, the development of the city of Ostrava is strongly dependent on the external structural conditions of the EU and Czech Republic such as support programmes and funding. The case study is written as a story based on empirical data and evidence, having cyclical character, and presenting data and arguments – even identical or analogical – in different contexts. The story of development trajectory of Ostrava as a whole is the story of more than 160 years of economic and population growth, and 20 years of economic and population decline and shrinkage. Ostrava can be shortly characterised as a post-communist, old industrial city with all of the related problems [37]. On the other hand, Ostrava can be considered a successful city on its way from industrial city to post-industrial city, which managed to attract investors, create jobs and carry out basic changes of economic and urban structures.

The peak of population growth was in the year 1990 with 331,219 inhabitants. As of July 1, 2011, Ostrava has 308,277 inhabitants including 10,154 foreigners (according to Czech Statistical Office), or 306,006 inhabitants (according to municipal statistics and Ministry of Interior). However, there were 'only' 298,123 inhabitants of Ostrava, who are citizens of the Czech Republic. The trend from 1990–2011 has shown slight general population decline in the city of Ostrava, which is similar to other large Czech cities or even similar European old industrial cities, with short period of positive deviations from general trend i.e. short-time, 2006 and 2007 with insignificant positive natural balance thanks to higher birth rates than death rates. Due to negative migration balance since 1990 (due to selective out-migration of younger population cohort and lower in-migration), low birth rates, and prevailing deaths since 1994, ageing of population and suburbanisation since the end of 1990s, Ostrava will continue to be a shrinking city in the future. Ostrava has lost more than 1000 inhabitants every year on average. Concerning the ageing of population, in 2007 in Ostrava the share of the age group 0–14 was 14.2 % while the share 65+ reached 14.6 %, which means that there have been more elderly people than youngsters in Ostrava since 2007. For comparison in 2000, there were 16.3 % in age group 0–14, and only 12.9 % in the 65+ age group. The elderly rate (ratio 65+/0-14) in Ostrava was 55.5 % in 1991, and in 2007 102.4 % and 114 % (2011) which means that Ostrava is an ageing city. Concerning average age, in 2000 it was 38.5, and in 2010 41.0 (Czech Republic 38.8 and 40.8). Similarly, the life expectancy grew in Ostrava during the 1990–2010 period as well, which meant the absolute ageing. The trend of ageing in Ostrava and Czech Republic is very clear. The process of a city ageing has had increasing tendency and with high probability it will have the same tendency in the future as well. The age index (ratio between people of 65+ and 0–14) reached already at the beginning of 2010 the level of 112.8 (Czech Republic 107.8, CSO) and according to demographic projection [43] the age index will be 158.4 (Czech Republic 145.6) in 2025 and 240.4 (Czech Republic 222.5) in 2045. Especially progressive divergence with the national age index within years 2010 and 2045 implicates the fact that the ageing process can have far more dramatic consequences for a city than for a nation.

The population decline, as the most significant indicator of shrinkage, was

approximately 7 % – from 331,219 inhabitants in 1990 to 308,277 in 2010), which is evidently a slight demographic shrinkage. Shrinkage of some parts of Ostrava, or of Ostrava as a whole, is not a single process but rather a case-specific combination of three macro-processes (economic change/decline, demographic developments, changing settlement structure) that impact on cities in a very time- and place-specific manner, and leads to population losses. Shrinkage can only be understood when set into its context; thus, it makes a difference whether population losses appear in the situation of tight or weak housing markets, in compact or fragmented cities, or in situation which is characterised by accentuated national welfare politics or neoliberal globalisation. All these factors have an impact on the form or urban shrinkage, so that the outcome of similar macro trends is often fairly different from place to place [36].

The causes of the urban shrinkage of Ostrava are as follows: 1) Economic changes, especially deindustrialisation after the launch of the necessary societal and economic transformation and job related out-migration, of young, well educated people to other Czech regions or abroad. For example, in 2010, Ostrava lost 2,294 inhabitants; the in-migration amounted to 3,475 inhabitants, and the out-migration 5,769. The same processes of out-migration we track at the level of Moravian-Silesian Region, which lost 3,959 inhabitants in 2010.2) Suburbanisation – the movement of people from the inner city, or neglected and unattractive housing estates or city neighbourhoods (a classic example of escapism), to the 'villages' on the fringes of Ostrava or even beyond the administrative borders of Ostrava city – e.g. city district Krásné Pole, which is not a part of compact town, gained 210 inhabitants between 2005–2010. The same situation appears in all the city districts on the fringes of the city of Ostrava, which are not part of a compact urban structure [15]. Moreover, the county of Ostrava-City gained population. 3) Rapid drop in birth rates in the whole Czech Republic as a natural adaptation to the Second demographic transition i.e. to the low birth rates and prolonged life expectancy in developed countries [39] A drop in birth rates has been seen in Ostrava since 1994. In 2010, there were 3,410 deaths and 3,307 births in Ostrava, which means negative natural increase of -103 inhabitants (compare with 1990: 4,516 births and 3,098 deaths). Low birth rates (1.44 child per woman in 2007) are causing relative ageing of population, and growing life expectancy (73.7 men, 79.9 women in 2007) causes absolute ageing of population in almost all well developed countries in the world. Thus, Ostrava with elderly rate 102.4 % since 2007 is an elderly city.

The immigration from abroad has grown since 2000s. In 2010 live in Ostrava 10,085 foreigners in comparison with 7,339 in 2005. However, the immigration cannot compensate for mid-term population losses caused by out-migration and deaths surpluses. The immigration is economically motivated and depends on economic performance and job opportunities available in Ostrava.

Moreover, in 2010, Moravia's Silesian Region lost 3,959 inhabitants, which is a number of inhabitants of a small city, and had 1,243,320 inhabitants (compare with 1,280,131 in 1990). Main reason for demographic shrinkage at the regional level is the out-migration into other regions, which in 2010 amounted to 8,417 persons, while the in-migration was only 4,458 persons. Secondary reason of shrinkage of the region is the negative natural balance, i.e. 194 more deaths than births. Only radically changed external and internal framework conditions for the city of Ostrava and Moravian – Silesian Region development could be the reason for change of negative population trends, which is not likely.

According to the Solansky conservative demographic projection [43], Ostrava will witness a continuous population loss, ageing and decrease in total number of (on average smaller) households in the future and will have 280,000 inhabitants in 2050, which shows the necessity of being aware of the existing shrinkage trajectory and importance of political initiatives dealing with the main causes of urban shrinkage in Ostrava.

Šotkovský [45] states that based on the actual development of inhabitant numbers, it is safe to presume that the number of inhabitants in 2050 will be somewhere between the middle (262,000) and the low (223,000) prognosis which has been released by the CSO. Whatever the decline may be, it is clear that the decreasing number of inhabitants imposes

direct implications on the fiscal income of the city (for more information see the basic quantifications at the end of the paper).

Of course, the process of population shrinkage is spatially differentiated. In the inner city's older housing stock and large housing estates inhabited in 1950s–1980s, such as Poruba or Zábřeh, is ageing more pronounced, while in peripheral rural parts of Ostrava with more attractive natural environment such as Krásné Pole, Lhotka, or even some suburbanised localities in Slezská Ostrava, the population is young (suburbanites) and natural population increase can be observed. Paradoxically, we can even assume that in socially excluded localities with Roma population in very unattractive environment, there is dynamic natural increase of population in line with typical reproductive behaviour of this social – ethnic group [20].

5. Governance of Economic Regeneration of the City of Ostrava

Even if in the period 1990–2010, the shrinkage became a reality and topic of marginal political discourse, it is not recognised by political leaders as a specific problem of Ostrava, but rather of the whole Czech Republic and Europe. There has not been any important policy initiative dealing with the shrinkage as a new normality to be prepared for. We can speak about 'almost no direct action' in the field of dealing with demographic shrinkage i.e. loss of population, out-migration, ageing, social exclusion etc. The reasons for almost non-action are the 'slightness' of shrinkage in 1990–2010 and no significant visible signs of negative serious developments caused by population losses such as vacant buildings and houses in the (inner) city. The low birth rates and closures of kindergartens and primary schools, population ageing, out-migration related to suburbanisation and so on in 1990–2010 are perceived by experts and politicians as general societal problems in Europe, not as something specific to Ostrava.

The dominant policy initiatives of the Ostrava city region's governance system 1990–2010 were motivated economically due to the problem of high unemployment rates. The major goal of governance system has been to strengthen the local economic base in the course of deindustrialisation and restructuring, induce economic growth and help create new jobs. There were beliefs that job creation would be sufficient to re-introduce population growth or to retain population in Ostrava city region. Moreover, there is a belief in general economic recovery of the old industrial city region of Ostrava and economic growth as panacea for all problems of the city of Ostrava. The concept of shrinkage (defined as pure population decline) has not been the reason for activity by governance system of the Ostrava city region. Moreover, there were problems which were perceived as more important such as the creation of conditions for economic development with accordance to European Community acquis communautaire such as construction of new environmental infrastructures and improvement of accessibility through transport infrastructure improvements. The cause of policy initiatives and activities is to support the economic regeneration by all means.

It may be correct to state that Ostrava city region was not the master of its fate but rather prisoner of its external environment and structural conditions and constraints in its last 150 years history and especially in the communist period 1948–1989. The development of the city region (and of course, of the whole Moravian Silesian region and Czech Republic) was strongly determined by external geopolitical and geoeconomic structures and external decisions made elsewhere. The development history of the city region is a history of dependence on external decisions and resources and of insufficient space for own decisions made by local or regional actors.

Economic restructuring and regeneration of the Ostrava city region has been on the top of agenda setting by local actors since 1990s (see Fig. 3). Local authority (the city council, commission and municipality) at the beginning of 1990 was very inexperienced, unprofessional and the whole governance system immature and fragmented. The transformation of the political and economic systems was implemented in a very centralised way 'top-down" by few reformists with Vaclav Klaus as a leader, who repeatedly and convincingly put through the idea of neoliberal free market economy without attributes based on private initiatives. At the central government level has been decided on the rapid closures of the

inefficient coal mines, coke plants, iron works and related plants in Ostrava.

In the course of and after the main stage of the political and economic transformation in the Czech Republic since 1990, the institutional milieu and governance structures in the country and Ostrava changed. New actors emerged and new institutions had been created for the formulation and implementation of new economic development strategies and policies [16]. The new economic development strategy of most of Central European Countries was based on attraction of foreign direct investment / investors [52]. This new actors and institutions were CzechInvest agency for attraction of investment and business support (established 1992) at the state level, Regional Development Agency at quasi 'regional' level (1993) and Department of Economic Development at level of local authority of Ostrava (1998).

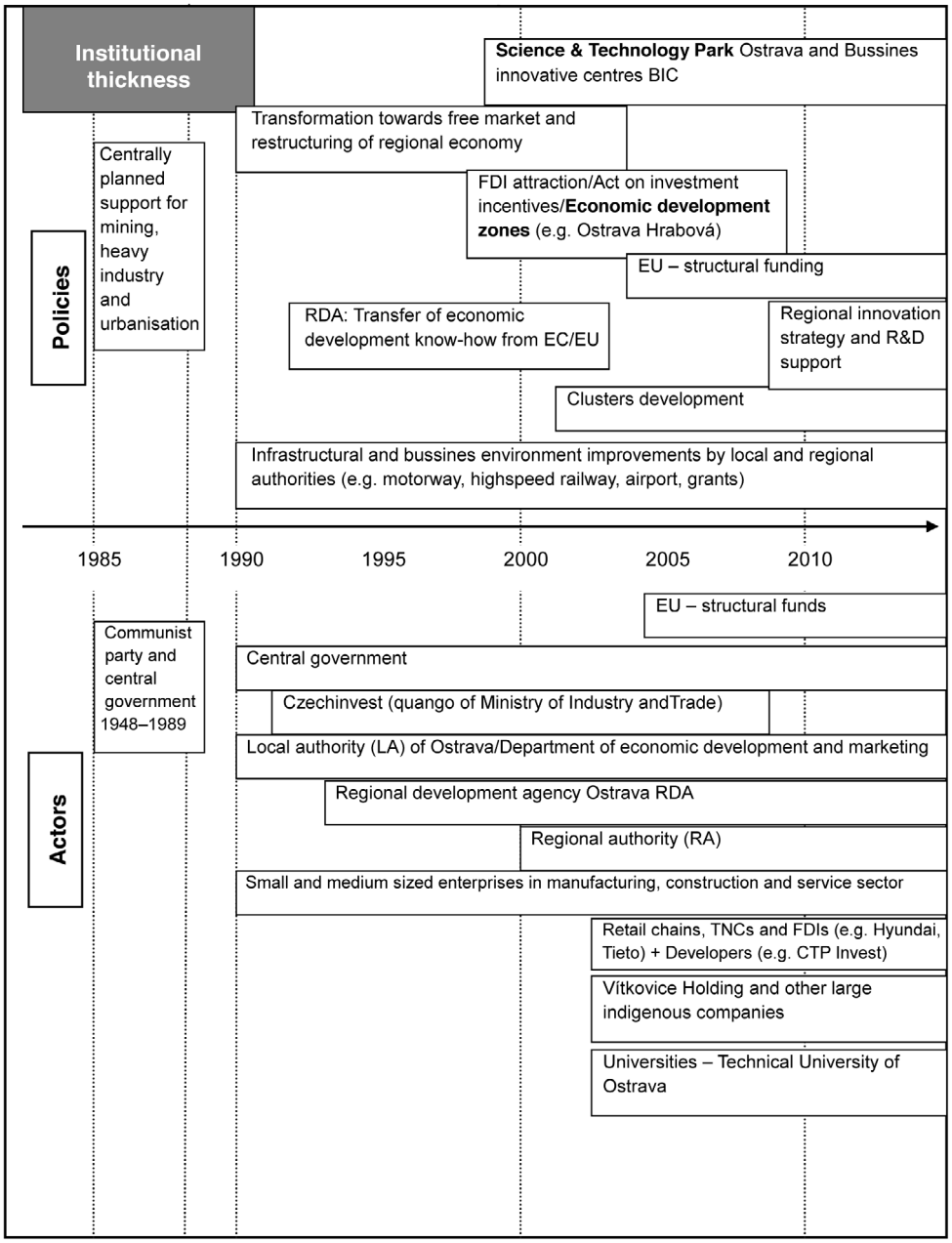
According to Pavlinek [32], after the collapse of state socialism in Central and Eastern Europe, Western liberal economists and multilateral institutions suggested that a successful 'transition' from the centrally planned economy to a market economy system could only be achieved with large inflows of foreign direct investment (FDI). FDI was supposed to play a 'critical role' in the economic development of CEE and generate industrial restructuring that would spread throughout the entire economy and ultimately lead to national prosperity [8]. FDI was often attributed such a critical role because it is often viewed as an 'engine of development', a vehicle of economic modernization and a driving force of productivity development in CEE [51]. To attract large FDI inflows, the CEE countries (CEECs) only needed to develop appropriate institutional and policy frameworks to position themselves within flows of global capital [8].

Thus, in the above-mentioned structural conditions and normative frameworks, an exogenous 'low road' development strategy of attracting FDI by promoting low-cost inputs was the most important economic development activity of the city of Ostrava in close cooperation with other regional actors such as Regional Development Agency. Most of politicians and experts believed that FDI would help to open the Ostrava region up and provide new innovative impulses to the regional economy and create jobs, which mirrored in the political discourse and normative frameworks at the local level as well. Throughout the 2nd half of 1990s and up until 2008, local government actors and RDA gradually formulated and implemented a fundamentally 'low road strategy", based on promotion of low cost inputs for attracting FDI as a means contributing to increase the strengths and diversification of the weakened local (and regional) economy. Additionally, certain policy measures were taken to strengthen local and regional economy, such as the establishment of new universities and faculties, the establishment of business innovation centres, of Science and Technology Park and the improvements of accessibility of the city region of Ostrava or city centre renewal.

However, the old industrial city region of Ostrava in the North-Eastern part of the Czech Republic became successful in attraction of investors later than other important economic cores such as Praha, Plzeň or Brno. Ostrava became attractive for investors in 2004, but the cities such as Plzeň or Brno attracted investors much earlier since 1998 [51]. There are many reasons for the 'later success': reluctance of major political actors such as mayor because of cognitive and political lock-ins (see [12]), better locations in the Western part of the Czech Republic from the point of view of Western investors until their relative saturation, a missing motorway in Ostrava city region, the bad image of this old industrial region, higher wage requirements by formerly well-paid workers, lack of co-operation because of institutional thinness and fragmentation, low level of preparedness of industrial zones until 2003. Important role also played later implemented regionally different system of investment incentives which gave preference investment to the region with high level of unemployment.

Major policy initiatives in the field of economic development by the governance system of Ostrava city region were since the beginning of 2000s the Science & Technology Park Ostrava, Business and Industrial Zone Ostrava – Hrabová, Industrial Zone Nošovice and Mošnov Development Area – strategic business and industrial development zone. All this policy initiatives at local level, in cooperation with regional and national levels, brought significant changes in employment and diversification of the economy.

Fig. 2: Actors and Policies in the Economic Development Governance of Ostrava



Source: authors

Consequently, in the whole Ostrava city 'travel to work' region, between 2000–2010, about 20 industrial zones with a total area of more than 1000 hectares were prepared. Hundreds of firms established new locations in these zones, especially in Ostrava-Hrabová and Nošovice. This accelerated the re-industrialisation of the local and regional economy through the influx of FDI into the automotive industry, electronics, ICT and business and personal services. These include one of the most important investments in Czechia: the Hyundai Motor Company's investment in Nošovice (near Ostrava) which resulted in approximately 3,000 new jobs (2011) in the plant and an additional roughly 10,000 jobs in supplier companies located mostly in the vicinity of the assembly plant. At the industrial zone Ostrava – Hrabová, thanks to partnership of the local government with development company CTP Invest, approximatelly 8,000 jobs have been created. The sectoral structure of the companies is very heterogeneous and diverse – advanced services – banking (GE Money), automotive (Sungwoo Hitech, CTS), logistics (DHL), media print (Ringier Print) or ICT manufacturing and services (Pegatron – Asus Czech Service). Despite the crisis, in 2009–2011 the developer company CTP Invest has extended its Axis Office Park for new tenants-investors.

In the Science & Technology Park Ostrava (in Ostrava-Pustkovec, at the campus of the Technical university) had been created until December 2007 803 jobs in 30 companies, mostly in the new economy sectors such as ICT and R&D. In 2008–2010 the number of jobs dropped because of crisis and 2010 there are 650 jobs in 28 firms, plus jobs in services such as restaurant, facility management, sports centre and security.

Additionally, at the same time in 2004–2008, in the course of economic revival through industrial investment, came to dynamic development at the real estate market in line with economic growth and gradual increase of employment. The demand for land for residential, office, hospitality and logistics development has gone up. We have already mentioned that retail developers and foreign retail chains were since 1997 the first foreign direct investors at all. The politicians and municipal authority officials applied towards developers the same approach as to foreign direct investors i.e. the almost 'unlimited' support of any initiative by private sector, especially developers and investors. The developers, who were able to establish networks with leading politicians, got all the necessary support by public sector according to their needs and business interests. In 2004–2008 several projects of commercial residential, office and logistics development had been carried out (generally for evaluating development projects [38]). The Irish developer company Red Group constructed 'The Orchard' at the Hornopolní Street, which is a mixture development consisting of offices and hotel. In one of the new buildings is located the HSBC bank service department with 800 jobs in service sector.

If we consider that the attraction of investors has been the main approach of economic development, job creation and diversification, then we can see that there is a correlation between the entry of investors into the particular industrial zone and the decrease in unemployment and increase in regional GDP and wages. However, we have to mention the favourable structural conditions for economic development on the global and European market in the period 2004–2008. As an empirical evidence of success of the economic regeneration strategy based on external resources such as FDIs and developers' resources the drop of unemployment rate in the Ostrava city from 18.4 % in 2004 to 8.4 % in 2008. We have to critically state that the jobs are not in most innovative branches and thus vulnerable in the crisis. In 2009–2010 the unemployment has grown to 12.0 % in 2010 again, which was the case for the whole Czech Republic [24].

Conclusions

The city of Ostrava has lost approx. 7 % of its inhabitants in the last two decades. This demonstrates a relatively slow process of shrinking especially when compared to cities with strong industrial history in developed economies [49] and even cities in the post-communist context [9], [10]. For this reason also the Ostrava municipal authorities deal actively with the main reasons of shrinkage such as job-related out-migration. However, some causes – e.g. deaths surplus because of

low birth rates, suburbanisation, and urban sprawl are not manageable by local authorities and have to be dealt with at the regional and especially national level. There is a lot of non-action in policy-making by Ostrava city authorities and politicians partly because of other priorities and interests, partly due to a lack of knowledge and resources and cognitive lock-in as well.

Speaking about evolution of the mode of governance of economic regeneration we can see following stages, while keeping in mind that the emergence of all of the specific stages of governance regimes was caused primarily (but not exclusively) by an external shock, i.e. a significant change in the structural circumstances. In the first stage between 1990 and 1997, which can be called emerging stage. There was hierarchical managerial mode of governance drawing on external conditions and normative frameworks set up by central government under the reform leader Vaclav Klaus and right-wing Civic Democratic Party. The main goal was to transform the political and economic system towards democracy and free market economy (absolute laissez faire approach). However, the failure of the Czech Privatization Way and its inherent component, the so-called "bank socialism" [28], implied the first economic depression after the revolution. This led to an increase in unemployment across the country and in Ostrava as well. The combination of the economic depression and political changes led to formulation and implementation of new policies. In 1998, when the Social Democratic Party won the elections and established government, the main goals became the entry into EU and attraction of FDIs with the support of investment incentives. This could be considered a good strategy in the unfavourable market conditions of old industrial city, characterised by low local demand for economic factors, loss of attractiveness due to deindustrialization and job losses, air pollution, bad image etc. These structural conditions and normative framework mirrors in the governance arrangements. The public sector and public policy is inferior to interest and needs of private investors and developers. One of the reasons for that is the limited personal and financial capacity of public sector and missing know-how to be able to sort out the problem of economic development. According to results of our qualitative research, in these external conditions the mixed pro-growth, corporatist-clientelistic-managerial mode of governance evolved in the period 2000–2008 at the local level of the City of Ostrava. There have been animosities between regional government and city government as well due to different political affiliation of leaders (see Fig. 3). The third stage of the governance regime was caused partially by the economic depression in 2008 which to some degree led to the emergence of new additional policies. The political elites in the regions of the Czech Republic became aware of the risky dependence on FDIs. Thus, the normative framework (values, beliefs, discourses) changed towards more endogenous development approaches based on the mobilization of local and regional resources for high added value and innovative activities ('high road development strategy'). The new phenomenon became the growth of importance of universities as important actors of regional governance and their R&D development activities based on innovation, which is at top of the agenda setting since 2008. Since that time until today we can see the process of creation of even more close partnerships and concentration of dispersed resources e.g. between local universities or between local government and universities etc. Some pluralist elements emerged in the formation of new economic development governance system. It is hard to say in 2012, if the new corporatist-pluralist mode of governance will be able to steer the endogenous development strategy towards creation of more competitive knowledge-based economy in the City of Ostrava (see Fig. 3).

If the pro-growth economic approach as the dominant approach of the governance system of economic is unambiguously successful is hard to say. On the one hand, there has been an increase in job opportunities and drop in unemployment rate during the re-industrialization and economic development process in 2004–2008, as this case study described an evaluated as a success even in comparison with development of similar West European old industrial city regions, where has been even higher unemployment for last 20 years.

Fig. 3: Mode of Economic Governance in Ostrava

Period	2nd phase 1998–2008	3rd phase since 2009
Governing issue	Unemployment after deindustrialization and job creation	Innovation, competitiveness, diversification and attractivity of the city
Governing relations / coalitions / forms of cooperations	Exclusionary negotiations between local authority and investors;	More and more brokering and mediating in the framework of emerging „networked" innovation system
Governing logic	Exclusive: authorative decision and partly reciprocity between politicians and investors / developers Top-down policy: government subsidies for investors	Inclusive: consensus bulding (networking, cooperation, clustering – Tripple Helix like); Bottom-up: Initiatives of local and regional authority in cooperation with TU
Key decison makers	Politicians/civil servants and their clients: Czechinvest, Foreign Direct Investment – Transnational Corporations TNCs; developers (e.g. CTP Invest) Local authority of the city Ostrava, and its Department of economic development; Regional development agency	Politicians and organised interests: Technical University of Ostrava TU; Vítkovice Holding (Mr. Světlík); Local authority of the city Ostrava, and its Department of economic development; Regional authority (Department of regional development); Firms: SMEs
Objectives	Material: Job creation – elimination of unemployment in any way	Purposeful: Innovative, competitive firms and more attractive city for skilled people
Context	Transformation, restructuring, EU entry, catching up; Czech Republic as low cost country	Crises, global competition, EU policies/funds and law; Czech Republic as EU country with rising costs of inputs; necessity of endogenous development strategy;
Summary	Corporatist mode of governance (with certain signs/characteristics of clientelism)	Corporatist (and more pluralist)

Source: Rink, D. et al according to DiGaetano and Strom [7], modified by authors

On the other hand, it is necessary to take into account the fact that because of the shrinking process, we can today observe a deepening of the social segregation and exclusion or physical decline of certain localities. These phenomena are accelerated by the shrinking process rather than caused by it [9].

Another implication of the shrinking process is the negative impact on the city budget. In the case of cities such as Ostrava in terms of size, the current legal regulations on fiscal purpose of tax money stipulate that a decrease in population of 10,000 inhabitants would cause (if all other variables including the gross collected national tax funds remained constant) a decrease of 230 million CZK in the city budget (in 2010, the total income from the national tax funds was 5.7 billion CZK and the total city income was 6.4 billion CZK). In light of the aforementioned prognoses of inhabitant numbers in 2050, the city budget would be lowered by approximately 550 million CZK in the case of the optimistic prognosis (280,000 inhabitants); by 900 million CZK in the case of the middle prognosis (262,000 inhabitants) and by 1.6 billion CZK in the case of the lowest prognosis (223,000 inhabitants). On the other hand it is important to point out that the given calculations are only an illustrative demonstration since it is in fact impossible for all the current

variables to remain constant for so long. It is also virtually pointless to try to precisely determine their values in terms of future development. A problem of its own is then the upcoming amendment to the Tax Funds Fiscal Distribution Act, which will change the situation significantly even in terms of distribution of funds among the largest cities of the Czech Republic among which the Ostrava city belongs.

All in all, it is clear that apart from the economic growth support strategy, Ostrava will also need a holistic strategy managing shrinkage and decline, aimed at resolving the problem of shrinkage in some of its districts or a strategy of "intelligent development of a shrinking city" (for more see [50]). The first prerequisite for initialization of the "intelligent development of a shrinking city" strategy is undoubtedly the abandonment of the current approach that ignores the shrinking process. Another prerequisite is, as shown by other shrinking cities [35] and contrary to the current practice of short-term and opportunity-driven strategies, the active and above all systematic and continual support of regeneration and integration of all cognizant actors. This should be done not only by large scale development projects but also by small scale development [14]. Although the shrinking process has had low intensity so far, development in the last decades indicates that if the current course remains unchanged, Ostrava stands at a crossroads and is inclined to follow cities undergoing long-term decline. However, ways of halting this trend undoubtedly exist. It is only necessary to start preventing potential problems by adequate urban planning policy as soon as possible, to resolve them rather than passively face their negative implications. The new urban planning policy has to aim at creation of attractive compact inner city with all the necessary urban qualities needed for the launch of reurbanisation. The precondition of new holistic planning approach combining the growth policy with a policy of managing decline is the radical change of governance regime towards stronger role of public sector and improvement of political and professional institutions.

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Abstract

SHRINKING CITIES AND GOVERNANCE OF ECONOMIC REGENERATION: THE CASE OF OSTRAVA

Petr Rumpel, Ondřej Slach, Jaroslav Koutský

The aim of the paper is to describe and analyse the process of urban shrinkage and especially the governance structures, actors and policies tackling the causes of urban shrinkage of the city of Ostrava. In the theoretical chapters, both urban (city) shrinkage and urban governance are conceptualized and an operationalization of these concepts is outlined. Urban shrinkage is understood as population losses and related phenomena such as housing vacancies, underused social infrastructures or different kind of brownfields etc. The research design for empirical study draws on mixed methodology – quantitative (analysis of statistical data) and qualitative research approaches and techniques such as interviews, stakeholder workshops and participatory observations. Research questions are defined and considered to be the starting point for elaboration of empirical case studies. First, brief description of causes of urban shrinkage of the city of Ostrava in the period 1990–2011 is presented. The main part of this paper focuses on the economic governance structures, actors and policies tackling the main cause of shrinkage, which are deindustrialization and job related out-migration, suburbanization and changes of demographic behaviour such as drop in birth rates. Ostrava is a slightly shrinking city (approximatelly 7 % population loss from 331.000 1990 to 306.000 in 2010), which managed thanks to appropriate economic governance in period 2004–2008 to slow down the population losses caused by job related out-migration. However, population losses will continue due to low birth rates and deaths surpluses or suburbanization.

Key Words: *Ostrava, governance, economic regeneration, shrinkage.*

JEL Classification: *R11.*

EMPIRICKÉ OVĚŘENÍ TEORIE FORWARDOVÉHO KURZU

Jitka Ptatscheková, Jan Draessler

Úvod

Česká republika patří mezi malé otevřené ekonomiky. Otevírání se světu byl proces založený na liberalizaci zahraničního obchodu, kapitálového pohybu a postupném zavádění konvertibility domácí měny, který se stal jedním z hlavních pilířů transformace centrálně plánované ekonomiky v ekonomiku tržní [10]. Důležitým milníkem bylo zavedení vnější směnitelnosti české koruny v roce 1995 a zavedení floatingu o dva roky později.

Česká koruna se od roku 1997 pohybuje v systému, který umožňuje větší volatilitu kurzu. Ekonomické subjekty se musí s touto volatilitou vyrovnat, a proto hledají vhodné metody prognóz budoucího pohybu měnového kurzu. Jednou z metod, která nachází v praxi využití je prognóza budoucího pohybu spotového kurzu stanovená na základě hodnoty forwardového kurzu. Ověřením úspěšnosti této progńozy pro měnové páry CZK/EUR a CZK/USD se zabývá předkládaný článek.

V práci bude empiricky na datech ověřována hypotéza o existenci rovnovážného vztahu mezi forwardovým kurzem a očekávaným budoucím spotovým kurzem.

1. Teoretická východiska

V procesu řízení devizového rizika zaujímají významnou roli prognózy pohybu devizového kurzu. Výsledkem prognózy je určitá prognózovaná hodnota devizového kurzu, která byla určena na základě použité metody prognózy. V současnosti existuje velké množství metod [2], které se obvykle rozdělují na základě společných rysů, na metody fundamentální a technické analýzy.

1.1 Prognóza prostřednictvím forwardového kurzu

Prognóza je založena na existenci rovnovážného vztahu mezi forwardovým kurzem a očekávaným budoucím spotovým kurzem. Forwardový kurz lze proto považovat za odhad očekávaného budoucího spotového kurzu

$$SR_t^e = FR_{t-n}^t \qquad (1)$$

kde označujeme,

FR_{t-n}^t termínový kurz měnového páru kotovaný v čase *t-n* se splatností v *t*,

SR_t^e očekávaný spotový kurz měnového páru v čase *t*.

1.2 Narušení rovnováhy

Zachycená rovnováha v rovnici (1) je výsledkem působení spekulantů a arbitražérů. Pojďme se nyní podrobněji podívat na procesy, které nastanou v případě narušení uvedené rovnováhy.

1.2.1 Spekulace na termínovém trhu

Na případné narušení rovnováhy mezi hodnotou forwardového kurzu a očekávaným budoucím spotovým kurzem, začnou reagovat spekulanti nákupy či prodeji deviz na termínovém trhu. Například za situace, kdy bude očekávaný budoucí spotový kurz vyšší než forwardový, začnou spekulanti na termínovém trhu nakupovat devizy. Cílem spekulantů bude dosažení zisku z prodeje termínově nakoupené měny. V opačném případě, tedy pokud by byl očekávaný budoucí spotový kurz nižší než forwardový, budou spekulanti na termínovém trhu devizy prodávat.

1.2.2 Arbitráž

V důsledku provádění spekulativních obchodů popsaných v bodě 1.2.1, bude narušena

rovnováha mezi termínovým a spotovým kurzem, která je označována jako *podmínka kryté úrokové parity.*

$$FR_{t-n}^{t} = SR_{t-n}\frac{1+IR_D}{1+IR_Z} \qquad (2)$$

kde,

IR_D úroková sazba na domácí aktiva srovnatelná se zahraničními,

IR_Z úroková sazba na zahraniční aktiva srovnatelná s domácími.

Úrokové sazby IR_D a IR_Z jsou na dobu splatnosti forwardového kurzu.

Rovnice (2) platí pouze při následujících podmínkách:

- uvažuje se pouze jeden typ devizového kurzu a to devizový kurz střed,
- předpokládají se stejné úrokové sazby na depozita i na úvěry,
- v úvahu se nebere typ úročení.

V případě narušení uvedené rovnováhy je otevřen prostor pro provádění kryté úrokové arbitráže. Arbitražéři budou arbitráže provádět až do doby, kdy začne na trhu mezi termínovým kurzem a spotovým kurzem platit rovnováha, která je vyjádřena v rovnici (2).

1.2.3 Spekulace na spotovém trhu

Uvedené procesy v bodě 1.2.1 a 1.2.2 nepodávají odpověď na otázku, na základě jakých skutečností vytváří spekulanti očekávání ohledně hodnoty budoucího spotového kurzu. Odpověď podává tzv. podmínka nekryté úrokové parity. Podmínka nekryté úrokové parity vyjadřuje rovnováhu mezi očekávaným budoucím spotovým kurzem a současným spotovým kurzem, který je upraven o poměr úrokových sazeb na aktiva v domácí a zahraniční měně.

$$SR_t^e = SR_{t-n}\frac{1+IR_D}{1+IR_Z} \qquad (3)$$

Platnost nekryté úrokové parity je založena na následujících předpokladech:

- neexistují žádná omezení pohybu kapitálu,
- spekulanti jsou neutrální k riziku.

Při platnosti nekryté úrokové parity přináší investorům investice v domácí měně a investice v zahraniční měně po přepočtu spotovým kurzem stejný výnos. Investorovi je tedy jedno, zda investuje v domácí či v zahraniční měně.

V případě, že dojde k porušení rovnováhy vyjádřené nekrytou úrokovou paritou, začínají na spotovém trhu probíhat ***spekulativní obchody.*** Spekulanti začnou investovat do měny, která přináší vyšší očekávaný výnos. Například v situaci, kdy je na domácí aktiva úroková sazba vyšší, investují účastníci trhu do aktiv v domácí měně. Zvýšená poptávka po domácí měně bude mít za následek její zhodnocení vůči měně zahraniční. Pokud má domácí měna pohyblivý měnový systém a úrokové míry jsou pevné, budou spekulanti očekávat znehodnocení domácí měny. Proces zhodnocování spotového kurzu domácí měny se zastaví až tehdy, pokud bude odpovídat očekávané znehodnocení domácí měny úrokovému diferenciálu.

Při pohyblivých úrokových mírách a systému pevného devizového kurzu bude příliv kapitálu způsobovat změnu úrokové míry. V důsledku zvýšené poptávky po domácí měně dojde k poklesu úrokové míry na domácí aktiva. Tento proces bude probíhat ve dvou fázích. V první fázi bude na devizovém trhu růst nabídka zahraniční měny a poptávka po měně domácí. V důsledku směny cizí měny na měnu domácí dojde ke zvýšení nabídky domácí měny. Ve druhé fázi procesu bude domácí měna ukládána a tím se zvýší nabídka domácích aktiv, která bude tlačit na pokles domácí úrokové míry. Tento proces se zastaví při obnovení rovnováhy odpovídající podmínce nekryté úrokové parity.

Z procesů uvedených v bodech 1.2.1, 1.2.2 a 1.2.3 vyplývá, že rovnováha mezi očekávaným budoucím spotovým kurzem a forwardovým kurzem může nastat pouze při platnosti rovnováhy mezi forwardovým a spotovým kurzem

$$SR_t = FR_{t-n}^{t} \qquad (4)$$

Pokud se na rovnici (4) podíváme podrobněji, zjistíme, že v podstatě obsahuje rovnici kryté úrokové parity (2) a nekryté úrokové parity (3).

2. Metodika

Empirické ověření hypotézy je založeno na expost ověření domněnky, že hodnota aktuálního spotového kurzu SR_t v čase *t* odpovídá očekávané hodnotě SR_t^e tj. vycházíme z rovnosti forwardového a spotového kurzu, které jsou splatné ke stejnému dni (4). Předpokládejme tedy splnění rovnosti (4), potom diferenci mezi spotovým a forwardovým kurzem ve stanovený den splatnosti lze popsat náhodnou proměnnou u_t

$$SR_t = FR_{t-n}^{t} + u_t^n \qquad (5)$$

která má střední hodnotu v nule, nevykazuje systematické vychýlení ke kladným ani záporným hodnotám, přičemž, pokud považujeme forwardový kurz za významný prediktor, mělo by platit, že se spotové kurzy v čase kotace *t-n* a v čase splatnosti *t* významně liší. Při ověření domněnky vycházíme z regresního modelu

$$SR_t = c + \beta \cdot FR_{t-n}^t + u_t^n, \qquad (6)$$

kde v případě platnosti $c = 0$ a $\beta = 1$ a dostáváme vztah (5).

Problémem při konstrukci regresního modelu je nestacionarita časových řad SR_t a FR_t. Testem jednotkového kořene ve smyslu rozšířeného Dickey-Fullerova testu (ADF) lze prokázat, že obě časové řady jsou typu I(1). V tomto případě je tedy nutno určit, zda jsou obě časové řady kointegrovány a zda je možné předpokládat dlouhodobý vztah obou časových řad, či zda lze očekávat, že vzájemný souběh obou časových řad je pouze krátkodobý. Pro tento účel byl použit model korekce chyb (error correction EC), kterou představili Engle a Granger [4] a jehož prostřednictvím je možné oddělit dlouhodobé a krátkodobé závislosti v časových řadách [1]. Ověření kointegrace je posuzováno na základě Durbin-Watsonovy statistiky reziduí.

Vycházejme z dynamického regresního modelu ADL(p,q,1), který je vyjádřen ve tvaru

$$SR_t = c + \sum_{i=1}^{p} \alpha_i \cdot SR_{t-i} + \sum_{i=0}^{q} \beta_i \cdot FR_{t-n-i}^{t-i} + u_t^n, \qquad (7)$$

V našem případě je vzhledem ke stupni integrace obou řad použit model ADL(1,1,1) tj.

$$SR_t = c + \alpha_1 \cdot SR_{t-1} + \beta_0 \cdot FR_{t-n}^t + \beta_1 \cdot FR_{t-n-1}^{t-1} + u_t^n, \qquad (8)$$

Poněvadž posuzujeme možnou existenci dlouhodobého vztahu, zajímá nás, zda existuje rovnovážný stav, jímž by časová řada byla generována. Rovnici (8) tedy uvažujeme dále ve tvaru EC popsané v [1], [4]

$$\Delta SR_t = c + \alpha(SR_{t-1} - \beta \cdot FR_{t-n-1}^{t-1}) + \gamma \Delta FR_{t-n}^t + e_t^n, \qquad (9)$$

kde $\alpha = \alpha_1 - 1$, $\beta = -\frac{\beta_0 + \beta_1}{\alpha_1 - 1}$, $\gamma = \beta_0$. Výraz $SR_{t-1} - \beta \cdot FR_{t-n-1}^{t-1}$ v závorce představuje regresor popisující hledaný rovnovážný stav obou časových řad, přičemž parametr α lze interpretovat interpretuje, jako sílu, s jakou se rovnovážný stav prosazuje na úkor krátkodobých výkyvů [1]. Posouzení, zda tento regresor je v modelu významný, bude provedeno na základě testu hypotézy o koeficientu α.

3. Pořízení a příprava dat

Základní informace o aktuálních kurzech měnových párů CZK/EUR a CZK/USD byly převzaty z oficiálního webového portálu České národní banky (ČNB). ČNB poskytuje forwardové kurzy ve formě tzv. forwardových bodů pro pár CZK/USD se splatností od 2. 2. 1996 a pro CZK/EUR od 1. 5. 2001. Prognózy na základě forwardových kurzů CZK/USD jsou za období devadesátých let uváděny poměrně nepravidelně. Z důvodu omezení zbytečných dopočtů chybějících dat jsou zvoleny kurzy s kotací až od 2. 5. 2001 se splatností tři měsíce (90 dnů) i šest měsíců (180 dnů). V případě, že splatnost forwardového kurzu připadá na dny, kdy neprobíhá obchodování, a tudíž k datu splatnosti chybí aktuální hodnota spotového kurzu, je třeba spotový kurz dopočítat. V takovém případě je možno postupovat způsoby:

a) použije se poslední prognóza předcházející aktuálnímu dni,
b) provede se interpolace mezi předcházející a následující hodnotou.

Žádná z možností významně neovlivní kvalitu dat a nemá zásadní vliv na analýzu vztahů sledovaných časových řad. V našem případě byla použita hodnota poslední známé prognózy.

4. Shrnutí výsledků a interpretace

4.1 Základní popisné údaje

Přehledové srovnání přesnosti forwardového kurzu jsme provedli na základě popisných statistik z odchylek odhadů budoucího spotového kurzu pomocí forwardového kurzu a skutečného spotového kurzu v den vypořádání.

Na odchylkách $SR_t - FR_{t-n}^n$ je možné sledovat celkovou tendenci k podhodnocování či nadhodnocování kurzu, na základě absolutních odchylek $|SR_t - FR_{t-n}^n|$ lze popsat základní přesnost prognózy. V následujícím srovnání byly použity charakteristiky

$D_t = SR_t - FR_{t-n}^n$ odchylka odhadu měnového páru,

$AD_t = |SR_t - FR^n_{t-n}|$ absolutní odchylka odhadu měnového páru,

$PAD_t = \left|\frac{SR_t - FR^n_{t-n}}{SR_t}\right| \cdot 100\%$ procentuální absolutní odchylka odhadu měnového páru.

Tab. 1: Základní popisné údaje vývoje měnových párů – denní údaje

Měnový pár		CZK/EUR(90)	CZK/EUR(180)	CZK/USD(90)	CZK/USD(180)
Počet hodnot		2657	2567	2657	2567
AD_t (CZK)	Max	4,059	5,251	5,611	7,777
	Min	0,000	0,000	0,0005	0,000
PAD_t (%)	Max	14,28 %	17,82 %	25,33 %	32,02 %
	Min	0,00 %	0,00 %	0,002 %	0,00 %
Průměr AD_t		0,684	1,029	1,291	1,889
Medián AD_t		0,549	0,814	1,139	1,609

Zdroj: vlastní zpracování

Podle údajů v Tab. 1 lze předpokládat, že nepřesnost odhadu budoucího spotového kurzu na základě forwardového kurzu se liší nejen u jednotlivých měnových párů, ale i u různé délky předpovědi.

Je možné sledovat, že

- u páru CZK/USD dochází k nižší přesnosti odhadu a větším odchylkám,
- při prognózách na 180 dní dochází k větším chybám, než při prognózách na 90 dní.

V následující tabulce jsou zaznamenány základní popisné statistiky odchylek D_t

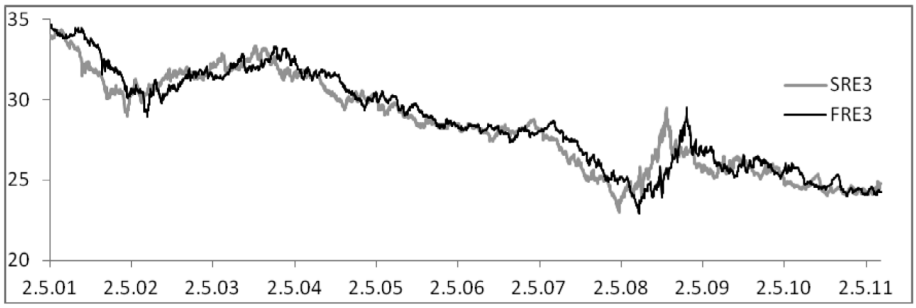
Tab. 2: Popisné statistiky odchylek FR-SR

	CZK/EUR(90)	CZK/EUR(180)	CZK/USD(90)	CZK/USD(180)
N	2657	2567	2657	2567
Mean	-0,205	-0,432	-0,503	-0,976
Median	-0,198	-0,468	-0,646	-1,164
Std. Deviation	0,865	1,305	1,522	2,176
Minimum	-2,98	-3,80	-5,61	-7,78
Maximum	4,06	5,25	5,10	7,04

Zdroj: vlastní zpracování

Hodnoty v Tab. 2 naznačují, že dlouhodobě nedochází k systematickému nadhodnocování či podhodnocování, střední hodnoty se od nuly liší jen nevýznamně. Na druhé straně je z Obr. 1 možné vysledovat určitou systematičnost v chybách předpovědí očekávaného spotového kurzu ve srovnání se skutečným. V grafu se tento problém jeví, jako určité „opoždění“ forwardového kurzu za hodnotami spotového kurzu. Můžeme tedy usuzovat, že chyby odhadu na základě forwardového kurzu nelze považovat za zcela nahodilé. Zatímco obecně lze střední hodnotu odchylek považovat za nulovou, protože průběžně dochází ke kompenzaci, v dílčích časových úsecích tomu tak být nemusí.

Obr. 1: Vztah tříměsíčního forwardového a posunutého spotového kurzu CZK/EUR



Zdroj: vlastní zpracování

Podhodnocení, resp. nadhodnocení můžeme prokázat, pokud rozdělíme sledované období na časové sekvence

- období slabé koruny/silného dolaru (eura),
- období silné koruny/slabého dolaru (eura).

Na tuto nenahodilost upozornil např. Madura [8] při studiu vývoje měnového páru GBP/USD.

4.2 Regresní model

Předpokládejme nyní, že existuje závislost mezi forwardovým kurzem FR^{t}_{t-n} stanoveným v čase *t-n* se splatností v čase *t* a spotovým kurzem SR_t ve smyslu rovnice (8) resp. (9). Na základě testu jednotkového kořenu založeném na rozšířeném Dickey-Fullerově (ADF) testu bylo na hladině 5 % prokázána existence jednotkového kořenu, že všechny řady jsou integrovány stupněm jedna.

Pro jednotlivé předpovědi jsme získali Error Correction model ve tvaru

- pro tříměsíční předpověď CZK/EUR

$$\Delta SR_t = -4{,}20 \cdot 10^{-4}(SR_{t-1} + 0{,}713 \cdot FR^{t-1}_{t-90-1}) + 0{,}0260 \cdot \Delta FR^{t}_{t-90} + e^{n}_{t},$$
$$DW = 1{,}956,$$

- pro šestiměsíční předpověď CZK/EUR

$$\Delta SR_t = 2{,}22 \cdot 10^{-4}(SR_{t-1} + 1{,}51 \cdot FR^{t-1}_{t-180-1}) + 0{,}0398 \cdot \Delta FR^{t}_{t-180} + e^{n}_{t},$$
$$DW = 1{,}997,$$

- pro tříměsíční předpověď CZK/USD

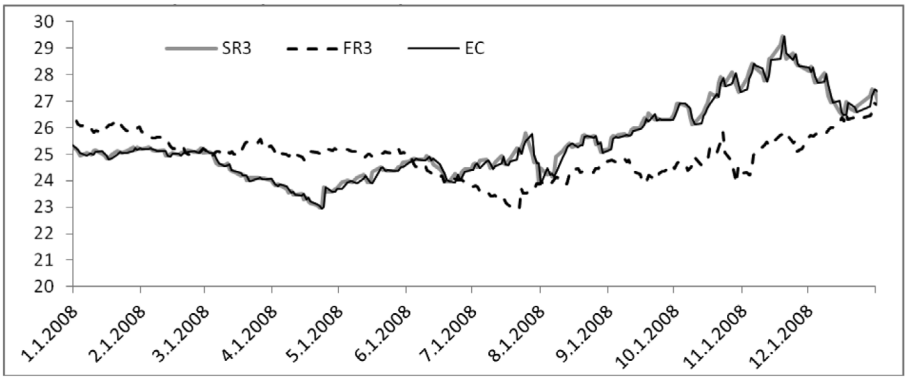
$$\Delta SR_t = -6{,}60 \cdot 10^{-4}(SR_{t-1} + 0{,}391 \cdot FR^{t-1}_{t-90-1}) + 0{,}0151 \cdot \Delta FR^{t}_{t-90} + e^{n}_{t},$$
$$DW = 1{,}925,$$

- pro šestiměsíční předpověď CZK/USD

$$\Delta SR_t = -2{,}80 \cdot 10^{-4}(SR_{t-1} - 0{,}355 \cdot FR^{t-1}_{t-180-1}) + 0{,}0313 \cdot \Delta FR^{t}_{t-180} + e^{n}_{t},$$
$$DW = 2{,}004.$$

Na následujícím obrázku je zobrazena ukázka srovnání EC modelu s predikcí pomocí samotného tříměsíčního forwardového kurzu pro měnový pár CZK/EUR v období 1. 1. 2008 až 31. 12. 2008.

Obr. 2: Srovnání predikce spotového kurzu pomocí forwardového kurzu a EC modelu



Zdroj: vlastní zpracování

Část modelu popisující vztah obou veličin, která je deklarována koeficientem EC členu, lze vzhledem k velikosti koeficientu a chyby považovat za zanedbatelnou. Potom vztah mezi forwardovým a spotovým kurzem lze v dlouhém období za nevýznamný. Přestože tedy model poměrně dobře odpovídá skutečnému vývoji spotového kurzu, nelze to přisuzovat vztahu forwardového a budoucího spotového kurzu.

4.3 Možné příčiny neplatnosti hypotéz

Nebyla potvrzena rovnost mezi forwardovým kurzem a očekávaným spotovým kurzem, dokonce ani nebyla potvrzena domněnka, že by existovala významná souvislost mezi forwardovým kurzem a budoucí hodnotou spotového kurzu. Přestože odchylky v odhadu mezi forwardovým a budoucím spotovým kurzem se nechovaly zcela nahodile, nelze na základě forwardového kurzu konstruovat spolehlivý model předpovědi budoucího kurzu ani u jednoho sledovaného měnového páru. Na základě výsledků empirického posouzení je tedy možné vyslovit závěr, že forwardový kurz není vhodou prognózou spotového kurzu, která by dlouhodobě zajišťovala zisky.

Mechanismy, na kterých je založena prognóza prostřednictvím forwardového kurzu, vyplývají z platnosti nekryté úrokové arbitráže a fungují pouze za určitých zjednodušujících předpokladů. Neplatnost těchto předpokladů bude nejpravděpodobnější příčinou nepotvrzení hypotézy.

Předpoklad nulového rizika. Vztahy, na nichž je založena prognóza budoucího spotového kurzu prostřednictvím termínového kurzu, platí pouze za předpokladu, že spekulanti jsou *rizikově neutrální.* Pouze takoví účastníci trhu nebudou hodnotit riziko, které je spojené se spekulací mezi očekávaným spotovým kurzem a forwardovým kurzem [7].

V případě, kdy budou spekulanti s obchodem určité riziko spojovat, tzn., budou *averzní k riziku,* nebude platit rovnost mezi forwardovým kurzem a budoucím spotovým kurzem (9). Oba kurzy se poté budou odlišovat o tzv. *rizikovou prémii R* (15). Riziková prémie *R* vyjadřuje v tomto případě riziko spojené se spekulativními obchody [13].

$$SR_t - R \leq FR_{t-n}^t \leq SR_t + R \quad (15)$$

Výše rizikové prémie bude významně ovlivňovat rozhodování spekulantů, protože na jejím správném určení bude záviset výše dosaženého zisku. Pokud by platil uvedený vztah mezi kurzy a rizikovou prémií v souladu s rovnicí (3), tak by spekulant dosahoval zisku pouze v intervalu určeném výší očekávaného spotového kurzu a rizikové prémie.

Na závěr je třeba upozornit na skutečnost, že výsledky empirických testů vztahu hodnot forwardového kurzu a očekávaného spotového kurzu prokázaly existenci *rizikové prémie*. Velikost rizikové prémie, ale nejsou prognostici schopni určit, protože se doposud nepodařilo zjistit funkční vztah pro její predikci.

Předpoklad nulových transakčních nákladů. Při formulaci podmínek, na nichž je založena prognóza budoucích spotových kurzů pomocí forwardových kurzů, se vychází z nulových transakčních nákladů. V praxi tento předpoklad není splněn, jak dokládají následující příklady. Obchodníkům s devizami vznikají například transakční náklady *při získávání potřebných informací* [5]. Dalším zdrojem nákladů může být *spread*, tedy rozdíl mezi nákupním a prodejním kurzem deviz.

Předpoklad racionálních očekávání. Další podmínkou platnosti výše uvedených vztahů je předpoklad racionálních očekávání spekulantů. Všichni spekulanti by podle tohoto předpokladu měli očekávat stejný budoucí spotový kurz, protože pouze tehdy povede jejich chování k ustanovení rovnováhy mezi forwardovým kurzem a očekávaným spotovým kurzem. Ve skutečnosti mohou spekulanti vytvářet i tzv. *adaptivní očekávání* a obchodovat pouze na základě vývoje devizových kurzů v minulosti. V důsledku adaptivních očekávání může chování spekulantů naopak vést ke zvětšení nerovnováhy mezi devizovými kurzy.

Existence dostatečného objemu kapitálu. Předpoklad dostatečného objemu kapitálu se vztahuje k činnosti spekulantů. Postačující množství kapitálu by mělo všem spekulantům umožnit, aby spekulovali v souladu se svými očekáváními a nebyli omezeni nedostatkem finančních prostředků. Předpoklad dostatečného kapitálu by měl zabezpečovat, aby se neprosazovali při spekulaci pouze spekulanti, kteří jsou silně kapitálově vybaveni [3].

Závěr

V závěrečné diskusi se budeme věnovat porovnání s obdobnými studiemi. Výsledky provedeného výzkumu se nechají srovnat s výsledky výzkumů prováděných například na datech české koruny již Mandelem/Tomšíkem [9], Ptatschekovou [11], [14], Durčákovou a Mandelem [3]. Přínosem provedeného výzkumu je kromě jiného provedené testování na delší časové řadě údajů měnových kurzů CZK/USD a CZK/EUR.

Další otázkou je posouzení systematické chyby. Ve výzkumech forwardových prognóz provedených již v sedmdesátých letech významnými zahraničními ekonomy Giddy a Dufey [6], nebyla systematická chyba nalezena. Také zde, pokud na posouzení vztahu forwardového a budoucího spotového kurzu nahlížíme pouze dlouhodobě z pozice popisu celého sledovaného období (11 let) vývoje, nenalezneme významné znaky odchýlení.

Na druhé straně pozdější výzkumy ukázaly existenci systematického vychýlení odhadů v závislosti na vývoji měnového páru. Jako příklad uveďme výzkum provedený v devadesátých letech Madurou [8] na měnovém páru USD a GBP, kde nachází období, kdy docházelo k systematickému nadhodnocování a podhodnocování. Přestože se tato práce ověřením této domněnky přímo nezabývá, je zřejmé, že podobné vlastnosti lze očekávat i u zde sledovaných měnových párů CZK/EUR a CZK/USD.

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Abstract

EMPIRICAL VERIFICATION OF THE THEORY OF FORWARD RATE

Jitka Ptatscheková, Jan Draessler

In 2012, the Czech koruna celebrated twenty years since its inception. During this time it went through systems of various exchange rates. While fixed system was implemented at the beginning of its existence, since 1997 the Czech Koruna has moved to a system that allows greater exchange rate volatility. Businesses must cope with this volatility, and therefore seek appropriate methods of forecasting future exchange rate movements. One of the methods is forecast by forward rates. The indisputable advantage of this method is the low cost associated with the detection of forward exchange rate for the most traded currency pairs.

The euro and dolar are the most important currencies in the Czech republic for foreign trade. Con-sequently it is necessary to forecast exchange rates for the Czech Koruna and USD and Euro. One of the tools for forecasting the future spot rate is the forward rate. In this paper, we verify the hypothesis the forward rate does not provide long-term profit. Our validation is based on the design of error correction model for exchange rates CZK/USD and CZK/EUR in 2001–2011.

Key Words: *forward exchange rate, spot exchange rate, the markket efficiency, futures spot rate, rorecast of ruture spot rate.*

JEL Classification: *F31, F37.*

DETERMINÁCIA SYSTEMATICKÉHO RIZIKA KMEŇOVEJ AKCIE V MODELI ČASOVO-PREMENLIVÉHO FUNDAMENTÁLNEHO BETA

Jozef Glova

Úvod

Model CAPM, zvyčajne označovaný ako model oceňovania kapitálových aktív, je fundamentálnym základom na pochopenie spôsobu, na ktorom kapitálové trhy pracujú. Pri existencii všetkých predpokladov modelu CAPM, jediné portfólio rizikových aktív, ktoré investori budú vlastniť, je trhové portfólio. Rozhodujúcimi parametrami, na základe ktorých sa investori rozhodujú pri investovaní či už do samotných akcií alebo portfólií, sú očakávaná výnosnosť, ktorú im investícia prinesie, a riziko, ktoré budú musieť podstúpiť. Tento model vyjadruje vzťah medzi rizikom a výnosnosťou, pričom fundamentálnym predpokladom CAPM je tvrdenie, že riziková prémia v podobe nadmernej očakávanej výnosnosti cenného papiera je funkciou systematického rizika. Tento koncept rovnako predpokladá, že investori držia alebo majú schopnosť držať kmeňové akcie vo veľkých, dobre diverzifikovaných portfóliách.

Systematické riziko je v CAPM determinované prostredníctvom faktora nazývaného ako beta alebo beta koeficient. Beta pritom predstavuje funkciu nadmernej výnosnosti individuálneho cenného papiera alebo portfólia takýchto cenných papierov, vyjadrenú k nadmernej výnosnosti trhového portfólia. Tá sa často označuje ako riziková prémia trhu. Takéto vyjadrenie CAPM je tiež známe ako charakteristická priamka cenných papierov.

V tomto príspevku sa práve zaoberáme upravenou verziou charakteristickej priamky cenných papierov, a to s ohľadom na vyjadrenie časovo premenlivého systematického rizika cenného papiera. Celý príspevok je rozdelený do troch častí. Prvá v stručnej forme objasňuje princíp fungovania modelu CAPM a jeho predpoklady. Druhá časť poskytuje pohľad na možnú modifikáciu klasického modelu v zmysle uvažovania fundamentálneho beta v rozšírení modelu Beaver, Kettler a Scholesa o časovo premenlivého beta. Tretia analytická časť je zameraná na demonštráciu špecifikácie modelu fundamentálneho beta, odhad jeho podoby a testovanie. Výsledkom aplikácie je mapovanie systematického rizika daného kapitálového aktíva v čase, čo výrazne dynamizuje podobu pôvodne statického modelu CAPM.

Vzhľadom na to, že model CAPM je jeden z najčastejšie aplikovaných modelov v stanovení implicitných nákladov kapitálu, resp. vlastných nákladov kapitálu, môže takýto postup výrazne spresniť odhad implicitných nákladov a vďaka časovej premenlivosti beta aj lepšie vyjadriť systematické riziko cenného papiera a na neho naviazanej očakávanej výnosnosti.

1. CAPM a rovnovážne modely kapitálového trhu

V oblasti kapitálových aktív majú výrazný vplyv pre definovanie požadovanej výnosnosti rovnovážne modely, nazývané tiež ako jednofaktorové alebo viacfaktorové, ktoré prostredníctvom vysvetľujúcich premenných (faktora alebo indexu) determinujú vysvetľovanú premennú, teda požadovanú mieru výnosnosti alebo nadmernej výnosnosti kapitálového aktíva.

Najznámejším a najtradičnejším konceptom v tejto oblasti je CAPM – model oceňovania kapitálových aktív (Capital Asset Pricing Model). Tento model, tiež nazývaný ako Sharpe-Lintner-Mossinov model, nadväzuje na teoretické práce H. Markowitza [11] v oblasti diverzifikácie a modernej teórie portfólia, pričom bol nezávisle predstavený W. Sharpem [16], J. Lintnerom [10] a J. Mossinom [12]. Model berie do úvahy citlivosť kapitálového aktíva na nediverzifikovateľnú zložku rizika, takzvaného

systematického rizika, reprezentovaného relatívnou mierou rizika v podobe beta (β) koeficientu, ako aj očakávanú výnosnosť trhu a očakávanú výnosnosť teoreticky definovaného bezrizikového aktíva, a to na základe definovaných predpokladov. Existuje množstvo odvodených podôb tradičného modelu, kde najznámejšími sú modely Zero-beta CAPM, T-CAPM, M-CAPM , IP-CAPM. CAPM sa zvyčajne vyjadruje v podobe procesu generujúceho výnosnosť alebo charakteristickej priamky cenného papiera, pričom je vhodne modifikovateľný na všeobecný jednofaktorový model.

V prípade CAPM boli predpoklady pre definovanie efektívnej hranice podľa Markowitza a Tobina doplnené a spolu tak tvoria základ pre tento model. Medzi jednotlivými predpokladmi sú uvedené tieto: Neexistujú transakčné náklady. Jednotlivé aktíva sú nekonečne deliteľné. Neexistencia daní z príjmu. Jednotlivec nemôže ovplyvniť cenu akcie svojim nákupným alebo predajným rozhodnutím. Od investorov sa očakáva uskutočniť rozhodnutia samostatne z hľadiska očakávaných výnosností a štandardných smerodajných odchýlok ich portfólií. Prípustnosť neobmedzeného predaja na krátko. Neobmedzené požičiavanie a vypožičanie si za bezrizikovú úrokovú sadzbu. Homogenita v očakávaní investorov ohľadom výnosnosti a ich variability. Informácie sú voľné a okamžite dostupné všetkým investorom. Všetky aktíva sú predajné (speňažiteľné). Jednotlivé predpoklady sú podrobne popísané v [3].

Ako je z prehľadu týchto predpokladov zrejmé, CAPM redukuje situáciu na hraničný prípad. To dovolí presunúť pozornosť na to, čo sa stane s cennými papiermi, keď budú mať všetci investori rovnaké podmienky a všetci budú investovať podobným spôsobom. A na základe sledovania kolektívneho správania sa investorov môže byť odvodená podstata výsledného rovnovážneho vzťahu medzi rizikom a výnosnosťou každého cenného papiera.

Významným príspevkom do teórie oceňovania kapitálových aktív je tiež všeobecná arbitrážna teória oceňovania kapitálových aktív [13], [15]. Tá tvrdí, že výnosnosť kapitálových aktív je možné modelovať ako lineárnu funkciu rôznych makroekonomických a mikroekonomických faktorov, kde je citlivosť na zmenu faktora vyjadrená špecifickým beta koeficientom daného faktora. Vzťahy medzi ekonomickými fundamentmi (v podobe makro- alebo mikroekonomických ukazovateľov) sú dostatočne dokumentované pre akcie firiem tradičných odvetví krajín Západnej Európy a USA, ako to ukazuje intenzívny výskum v tejto oblasti (pozri napríklad [5] alebo [9].

Beaver a kol. [2] sa ako prví pokúšali nájsť vzťah medzi beta koeficientom jednoduchého faktorového modelu, špecificky CAPM a fundamentmi v rámci podniku. Pre overenie vzťahu použili viacrozmernú regresnú analýzu v nasledujúcej forme

$$\beta_i = b_0 + \sum_{j=1}^{n} b_{j,\mathrm{t}} \gamma_{j,\mathrm{t}} + e_t \qquad (1)$$

Analýzou dospeli k modelu s úrovňovou konštantou b_0, so siedmimi premennými $\gamma_{j,\mathrm{t}}$ a ich regresnými koeficientmi $b_{j,t}$ konkrétne pomer výplaty dividend, pomer dlhu k vlastnému kapitálu, likvidita, veľkosť aktív podniku, volatilita zisku a účtovné beta. e_t pritom predstavuje náhodné chyby modelu. Okrem tejto štúdie boli realizované mnohé ďalšie, ktoré hľadali vzťah ku skupine ekonomických faktorov – fundamentov, predovšetkým však v [1], [3], [6], [14], [17] a [18], kde ako sa ukázalo, model zahrňujúci fundamentálne údaje a historické beta viedol k lepšiemu odhadu budúcich hodnôt beta koeficientu, ako pri použití konceptu historického beta alebo konceptu fundamentálneho beta v izolovanej forme. Zaujímavý príspevok od Harveyho [8] predstavuje nový prístup v hodnotení systematického rizika prostredníctvom faktorového modelu, špecificky na úrovni krajín, kde sú ako premenné uvažované hodnoty rezíduí modelov pre nestacionárne časové rady.

2. Špecifikácia CAPM a jeho modifikovanej varianty

V zmysle modernej teórie portfólia, ktorá umožňuje vymedziť efektívnu hranicu na prípustnej množine portfólií, uvažujme dvojicu charakteristík definovaných H. M. Markowitzom v [11]. Tieto udávajú všeobecný vzťah pre očakávanú výnosnosť a hodnotu smerodajnej odchýlky očakávaných výnosnosti jednotlivých portfólií cenných papierov. Nech $\bar{R}_p$ predstavuje očakávanú výnosnosť ľubovoľného portfólia P na prípustnej množine, ktorá je definovaná očakávanou výnosnosťou jednotlivého i-tého aktíva označeného ako $\bar{R}_i$, a jeho relatívnym podielom sumy investovanej do tohto aktíva k sume celkovej investície, označeným ako X_i. Hodno-

ta *i* indikuje jednotlivé rozdielne druhy cenných papierov, do ktorých bola realizovaná investícia, pričom i = {1, 2, 3, ..., N}. Na základe uvedeného platí pre očakávanú výnosnosť portfólia *P* vzťah

$$\bar{R}_P = \sum_{i=1}^{N} X_i \bar{R}_i \qquad (2)$$

Smerodajnú odchýlku σ_p tejto očakávanej výnosnosti portfólia *P* je podľa [11] možné zapísať ako

$$\sigma_P = \sum_{i=1}^{N} X_i^2 \sigma_i^2 + \sum_{i=1}^{N} \sum_{\substack{j=1 \\ j \neq i}}^{N} X_i \cdot X_j \cdot \sigma_{ij} \qquad (3)$$

kde X_i a X_j sú definované ako vo vzťahu (2). Vo všeobecnosti teda máme *N* smerodajných odchýlok očakávanej výnosnosti jednotlivého *i*-tého aktíva obsiahnutého v portfóliu *P*. *N* je pritom najvyššia hodnota pre *i*, pričom i = {1, 2, 3, ..., N}. Rovnako máme $\frac{N^2 - N}{2}$ párových kovariancií σ_{ij} *i*-tého a *j*-tého druhu cenného papiera v danom portfóliu *P*.

Označme si takúto kombináciu cenných papierov ako portfólio *P*. Existuje definovaná množina rizikových portfólií (jedno a viaczložkových), ktoré majú rôzne vlastnosti z pohľadu parametrov rizika a výnosnosti. Ak takýto systém prípustných množín portfólií rozšírime o bezrizikové aktívum, dostaneme situáciu zakreslenú v Obr. 1. Vznikne nová množina prípustných portfólií ako kombinácia bezrizikovej investície a rizikových aktív z pôvodných prípustných množín. Jej najefektívnejšie kombinácie budú ležať na priamke, ktorá sa nazýva priamka kapitálového trhu. Táto priamka je označená v Obr. 1 ako CML (z angl. Capital Market Line).

Keďže hodnoty ležiace na tejto priamke budú za predpokladov podľa [16] najefektívnejšie, budeme hľadať hodnotu výnosnosti tzv. efektívneho portfólia *P*. Označme si ho ako portfólio *P(E)*, pričom jeho očakávanú výnosnosť označíme ako $\bar{R}_{P(E)}$ a smerodajnú odchýlku tejto výnosnosti ako $\sigma_{P(E)}$. Pri uvažovaní tzv. tangenciálneho portfólia (nazývaného tiež trhové portfólio) označeného ako *M*, uvažujeme jeho očakávanú výnosnosť označenú ako $\bar{R}_M$ a smerodajnú zapísanú ako σ_M. Výnosnosť uvažovaného bezrizikového aktíva indexujeme ako R_F. S použitím zadefinovaných označení môžeme zapísať vzťah pre priamku trhu cenných papierov vykreslenú tiež v Obr. 1 (zvýraznená hrubšou čiarou).

$$\bar{R}_{P(E)} = \frac{\bar{R}_M - R_F}{\sigma_M - 0} \cdot \sigma_{P(E)} + (R_F - 0) \qquad (4)$$

teda

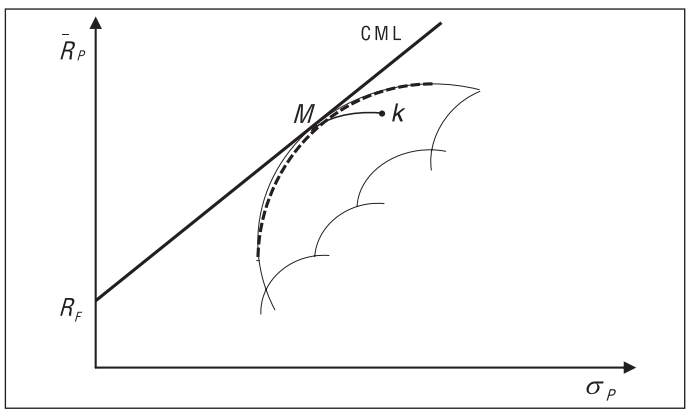
$$\bar{R}_{P(E)} = R_F + \frac{\bar{R}_M - R_F}{\sigma_M} \cdot \sigma_{P(E)}$$

resp. ak substituujeme $\frac{\bar{R}_M - R_F}{\sigma_M} = \theta$, potom

$$\bar{R}_{P(E)} = R_F + \theta \cdot \sigma_{P(E)} \,, \qquad (5)$$

kde jednotlivé atribúty sú popísané v texte vyššie a θ predstavuje sklon priamky kapitálového trhu.

Obr. 1: Grafické znázornenie modelu CAPM v podobe priamky kapitálového trhu ako aj zobrazenia pre odvodenie priamky trhu cenných papierov.



Zdroj: vlastné spracovanie

Pre určenie skladby trhového portfólia vieme tento problém riešiť ako optimalizačný problém s ohraničením, a to pre maximalizáciu očakávanej výnosnosti $\bar{R}_{P(E)}$. Samozrejme existujú štandardné techniky riešenia takéhoto problému. Napríklad môžeme použiť metódu Lagrangeových multiplikátorov pre riešenie optimalizačnej úlohy s obmedzujúcimi podmienkami v tvare rovnosti. Rovnako tiež existujú iné alternatívne riešenia. Ohraničenie môžeme nahradiť do objektovej funkcie a maximalizovať takúto objektovú funkciu ako neohraničený problém. Presný postup optimalizácie je možné nájsť napríklad v [3], [4] a [7]. Riešením optimalizačného problému tiež determinujeme skladbu trhového portfólia.

Je potrebné si ale uvedomiť, že rovnica priamky trhu cenných papierov nám nepostačuje pre determinovanie očakávanej výnosnosti ľubovoľného portfólia cenných papierov *P*, a to vzhľadom na fakt, že na priamke kapitálového trhu sa nachádzajú len efektívne kombinácie investícií, teda len portfólia označené ako *P(E)*.

Pre určenie vzťahu medzi rizikom ľubovoľného portfólia cenných papierov (či už jedno alebo viaczložkového) a ich očakávanou výnosnosťou je potrebné postup upraviť, keďže väčšina portfólií sa nebude nachádzať na novej efektívnej hranici, teda na priamke CML. Je potrebné si uvedomiť, že napríklad vo vnútri pôvodnej prípustnej množiny Markowitzovho modelu ležia všetky jednotlivé rizikové cenné papiere (alebo ich portfólia), ktoré práve odvodeným modelom nie sú popísané práve pre ich neefektívnosť. Pre našu analýzu si môžeme vybrať ľubovoľný cenný papier nachádzajúci sa v neefektívnej časti prípustnej množiny (efektívna hranica je zvýraznená prerušovane). Označme tento cenný papier ako jednozložkové portfólio *k*, pričom ho môžeme vhodne znázorniť v Obr. 1.

Uvažujme ľubovoľné dvojzložkové portfólio *P*, skladajúce sa z dvoch zložiek. A to tangenciálneho, resp. trhového portfólia *M* a jednozložkového portfólia *k*. Podiely investovaných súm do týchto dvoch zložiek môžeme zadefinovať ako podielu X_k investovaného do jednozložkového portfólia zloženého z cenného papiera *k* a podielu $X_M = (1 - X_k)$ investovaného do nami vymedzeného viaczložkového portfólia *M*, teda trhového portfólia. Takéto portfólio bude mať očakávanú výnosnosť rovnú $\bar{R}_P = X_k\bar{R}_i + (1 - X_k)\bar{R}_M$ a varianciu $\sigma_P^2 = X_k^2\sigma_k^2 + 2(1 - X_k)X_k\sigma_{kM} + (1 - X_k)^2\sigma_M^2$.

Všetky tieto portfóliá budú ležať na krivke spájajúcej body *k* a *M*, ako je to zakreslené v Obr. 1.

Nás bude zaujímať smernica tejto zakrivenej čiary. Pretože sa jedná o zakrivenú čiaru, táto smernica nebude konštantná. Môže však byť určená pomocou diferenciálneho počtu. Smernicu krivky *kM* z obrázku môžeme zapísať ako $\left(\frac{\partial \bar{R}_P}{\partial X_k}\right)/\left(\frac{\partial \sigma_P}{\partial X_k}\right)$.

Zaujímať nás bude smernica krivky *kM* v koncovom bode *M*. Pretože proporcia investovaná do jednozložkového portfólia *k*, teda X_k, je v tomto bode rovná nule, môžeme smernicu *kM* vypočítať dosadením nuly za X_k. Následne dostávame

$$\frac{\frac{\partial \bar{R}_P}{\partial X_k}}{\frac{\partial \sigma_P}{\partial X_k}} = \frac{(\bar{R}_k - \bar{R}_M)(\sigma_M)}{\sigma_{iM} - \sigma_M^2}. \qquad (6)$$

V bode *M* sa smernica priamky kapitálového trhu $\frac{\bar{R}_M - R_F}{\sigma_M}$ rovná smernici krivky *kM*, ak $X_k = 0$. Vzhľadom k tejto skutočnosti môžeme zapísať rovnosť

$$\frac{(\bar{R}_k - \bar{R}_M)\sigma_M}{\sigma_{kM} - \sigma_M^2} = \frac{\bar{R}_M - R_F}{\sigma_M}. \qquad (7)$$

Riešením rovnice (7) vzhľadom k $\bar{R}_k$ sa dostaneme ku kovariančnej verzii priamky trhu cenných papierov pre výnosnosť jednozložkového portfólia, resp. cenného papiera k (SML – Security Market Line)

$$\bar{R}_k = R_F + \frac{(\bar{R}_M - R_F)}{\sigma_M^2}\sigma_{kM}. \qquad (8)$$

V prípade, ak v rovnici (8) nahradíme $\frac{\sigma_{kM}}{\sigma_M^2}$ za β_k dostaneme beta verziu priamky trhu cenných papierov

$$\bar{R}_k = R_F + (\bar{R}_M - R_F)\beta_k \qquad (9)$$

CAPM sa veľmi často vyjadruje v podobe charakteristickej priamky cenného papiera, ktorá má nasledujúci analytický tvar s vyjadrením tzv. nadmernej výnosnosti cenného papiera *k*, teda $(\bar{R}_k - R_F)$, čo je

$$(\bar{R}_k - R_F) = (\bar{R}_M - R_F)\beta_k \qquad (10)$$

Respektíve v prípade uvažovania úrovňovej konštanty α_k vo vzťahu (10), dostávame

$$(\bar{R}_k - R_F) = \alpha_k + (\bar{R}_M - R_F)\beta_k \quad (11)$$

Aplikácia modelu CAPM prostredníctvom vzťahu (11) však vyžaduje úpravu, keďže ide o odhad procesu generujúceho nadmernú výnosnosť cenného papiera k vyjadrenú ako $(\bar{R}_k - R_F)$. Pre odhad je možné použiť regresný vzťah, ktorý je definovaný v rovnici (10).

$$(R_{kt} - R_{Ft}) = \alpha_k + \beta_{kt}(R_{Mt} - R_{Ft}) + \varepsilon_{kt} \quad (12)$$

Pričom pre očakávanú výnosnosť cenného papiera *k* po úprave platí

$$R_{kt} = \alpha_k + R_{Ft} + \beta_{kt}(R_{Mt} - R_{Ft}) + \varepsilon_{kt} \quad (13)$$

V prípade aplikácie vzťahu (1) je možné zapísať beta pre jednozložkové portfólio, resp. cenný papier *k* v podobe tzv. fundamentálneho beta

$$\beta_{kt} = b_{0,k} + \sum_{j=1}^{n} b_{j,kt}\gamma_{j,t} + e_{kt} \quad (14)$$

Avšak vzhľadom na nemožnosť odhadu jednotlivých parametrov priamo použitím vzťahu (14), keďže beta nie je empiricky pozorovateľnou premennou, vyjadríme β_{kt} podľa vzťahu (14) do rovnice (12), pričom preformulovaním získame odhadované hodnoty regresných koeficientov, čo je vyjadrené vo vzťahu (15) a (16). Takto vznikne model, v ktorom je integrované časovo premenlivé fundamentálne beta, vyjadrujúce systematické riziko cenného papiera

$$(R_{kt} - R_{Ft}) = \alpha_k + b_{0,k}(R_{Mt} - R_{Ft}) + b_{1,i}(R_{Mt} - R_{Ft})\gamma_{1,kt} + \cdots + b_{n,k}(R_{Mt} - R_{Ft})\gamma_{n,kt} + \vartheta_{kt} \quad (15)$$

$$(R_{kt} - R_{Ft}) = \alpha_k + b_{0,k}(R_{Mt} - R_{Ft}) + \sum_{j=1}^{n}\left[b_{j,k}(R_{Mt} - R_{Ft})\gamma_{j,kt}\right] + \vartheta_{kt} \quad (16)$$

Ako je možné vidieť zo vzťahov (15) a (16), endogénna premenná v podobe rizikovej prémie cenného papiera alebo skupiny cenných papierov ($R_{it} - R_{ft}$) v časovej perióde *t*, je vysvetľovaná skupinou exogénnych premenných v podobe súčinov rizikovej prémie trhového portfólia zastúpeného zodpovedajúcich trhovým indexom a jednotlivých faktorov zo vzťahu (14).

Vzhľadom na skutočnosť, že rovnice (15) a (16) sú vyjadrené vo forme empiricky sledovaných premenných, môžeme odhadnúť parametre v rovnici (14). Nepriamo tak determinujeme beta vybraného cenného papiera alebo portfólia cenných papierov.

3. Analýza a návrh modelu časovo premenlivého beta pre vybranú kmeňovú akciu

Pre analýzu a návrh ekonometrického modelu použijeme jednoduchý postup zložený z troch hlavných krokov:

1. Výber, resp. špecifikácia modelu,
2. Odhad modelu,
3. Testovanie modelu.

Tento postup bude iteratívne aplikovaný pre každý odhad modelu, až do úrovne kedy nami analyzovaný model nebude správne špecifikovaný za predpokladu vhodnosti tohto modelu.

Pracovať budeme s modelmi viacrozmernej lineárnej regresie. To vyžaduje odhad jednotlivých regresných koeficientov s použitím historických údajov, ako napríklad uvádza [19]. Ako metóda odhadu regresných koeficientov modelu je použitá metóda najmenších štvorcov, známa aj ako metóda OLS (ordinary least squares).

Pre demonštráciu postupu modelovania je potrebné použiť praktický príklad, ktorý v našom prípade predstavujú dáta výnosnosti americkej spoločnosti Dell Inc. (ďalej len Dell). Účelom nasledujúceho postupu je determinovať model viacnásobnej lineárnej regresie, s použitím ktorého bude možné určiť faktory ovplyvňujúce rizikovú prémiu akcií danej spoločnosti, a teda aj nákladov vlastného kapitálu, resp. očakávaní jednotlivých investorov odvodených z tohto modelu.

Analyzovaná spoločnosť Dell pôsobí vo vývoji, podpore, výrobe a predaji stolných počítačov, pracovných staníc, serverov, notebookov

a iných technologických zariadení v sektore informačných technológií (IT). Spoločnosť je výrazne zastúpená ako v Českej republike, tak aj na Slovensku, a to prevažne z pohľadu podpory predaja svojich výrobkov a poskytovania služieb v oblasti IT.

Pre získavanie a výber relevantných údajov pre analýzu bolo rozhodujúcim faktorom určenie časového obdobia takejto analýzy. Toto bolo špecifikované od prvého štvrťroka 1999 do posledného kvartálu roka 2011 (52 štvrťročných údajov), pri použití štvrťročných údajov. V modeli sa vyskytuje 24 vysvetľujúcich premenných.

Gangemi a kol. [6] odporúčajú v modeli časovo-premenlivého beta aplikovať iba rezíduá ARIMA modelov jednotlivých exogénnych premenných. Pre každú nezávislú premennú bol preto determinovaný jej najvhodnejší ARIMA model s použitím Bayesovského a Akaikeho informačného kritéria, pričom rezíduá tohto modelu boli vynásobené o rizikovú prémiu trhu (alebo tiež nazývanú nadmernú výnosnosť), tak aby to je uvedené vo vzťahu (15) a (16).

Vzhľadom na úplnosť získavaných údajov sme pre analýzu uvažovali rezíduá ARIMA modelov týchto exogénnych premenných: výnosnosť kmeňových akcií konkurenčnej spoločnosti Apple Inc. (f1), index spotrebiteľských cien CPI v USA s vylúčením služieb zdravotnej starostlivosti (f2), hodnoty ziskovosti firiem v oblasti priemyslu v mil. USD (f3), krátkodobá 6-mesačná úroková miera z termínovaných vkladov v eurodolároch (f4), efektívna úroková miera federálnych fondov USA (f5), celkové fixné investície súkromného sektora v USA v mld. USD (f6), hrubý domáci produkt USA v bežných cenách v mld. USD (f7), percentuálna zmena hrubého domáceho produktu v bežných cenách v USA (f8), cenový index importu a exportu výrobkov a služieb USA (f9), miera inflácie v USA (f10), celkový čistý export USA (f11), čistý export výrobkov a služieb medzinárodného obchodu s Čínou (f12), menový agregát M1 v mil. USD (f13), menový agregát M2 v mil. USD (f14), zamestnanosť v odvetví výroby v tis. pracujúcich (f15), index nákupných cien v oblasti výroby PMI (f16), výrobný index hotových výrobkov PPI (f17), percentuálna zmena v produktivite práce (f18),). verejný dlh vlády USA v mil. USD (f19), trhová výnosnosť amerických štátnych dlhopisov s 10-ročnou splatnosťou (f20), výnosová miera 6-mesačných pokladničných poukážok vlády USA (f21), vládny deficit USA v mil. USD (f22), miera nezamestnanosti v USA (f23), referenčný výmenný kurz USD/EUR stanovený ECB (f24). Hodnoty jednotlivých exogénnych faktorov vo vybraných periódach boli násobené hodnotami rizikovej prémie trhu $(R_{mt} - R_{ft})$, ako sme sa už zmienili vyššie.

Ako endogénna resp. vysvetľujúca veličina bola uvažovaná riziková prémia výnosnosti kmeňových akcií Dell $(R_{it} - R_{ft})$. Jednotlivé nadmerné výnosnosti boli vyjadrené v ich kvartálnych hodnotách.

Zdrojom získavaných informácií jednotlivých exogénnych premenných a endogénnej premennej boli Aeroweb Database System, Federal Reserv System Statistical Release, Bureau of Economic Analysis, EconStats, European Central Bank Statistical Data Warehouse, U.S. Bureau of Labor Statistics, Webster Pacfic LLC a Yahoo Finance. Pre analýzu využívame štatistický softvér R vo verzii 2.12.2, ako aj balíky „car", „fBasics", „forecast" a „lmtest".

Počiatočný model (model1) bol špecifikovaný podľa vzťahu (15) nasledovne

$$\left(R_{DELL,t} - R_{Ft}\right) = \alpha_{DELL} + \beta_{0,DELL}\left(R_{Mt} - R_{Ft}\right) + b_{1,DELL}\left(R_{Mt} - R_{Ft}\right) f_{1,DELL,t} + \\ + b_{2,DELL}\left(R_{Mt} - R_{Ft}\right) f_{2,DELL,t} + \cdots + b_{24,i}(R_{Mt} - R_{Ft}) f_{24,DELL,t} + \vartheta_{kt} \quad (17)$$

Kde hodnota fundamentálneho beta vyjadreného zo vzťahu (5) by mala byť rovná

$$\beta_{kt} = \beta_{0,k} + \sum_{j=1}^{n} b_{j,k}\gamma_{j,kt} + e_{kt} = \beta_{0,DELL} + b_{1,DELL} f_{1,DELL,t} + b_{2,DELL} f_{2,DELL,t} + \cdots + \\ + b_{24,k}(R_{Mt} - R_{Ft}) f_{24,DELL,t} + e_{kt} \quad (18)$$

Postupným vylúčením nevýznamných premenných podľa testovacieho kritéria t-hodnoty pre signifikanciu jednotlivých premenných, ako aj podľa hodnôt testov významnosti modelu ako celku – testovacia štatistika F-testu, sme dostali model2, ktorý pracoval s desiatimi exogénnymi faktormi (er_dell ~ er_sp + f5 + f9 + f11 + f13 + f17 + f18 + f19 + f21 + f22). V tomto modeli však bola prostredníctvom Farrar-Galuberovho testu a vysokých hodnôt VIF (Variance Inflation Factor) detekovaná významná multikolinearita jednotlivých premenných. Keďže možnosť riešenia problému multikolinearity prostredníctvom prvých diferencií sa ukázala ako neúčinná, ďalším krokom bolo vyňatie jednej z premenných.

Vyňatý bol exogénny faktor f9, ktorý vykazoval najvyššiu mieru kolinearity s inými faktormi, pričom bol definovaný model3. Keďže takýto model bol nevýznamný z pohľadu jeho premenných, pokračovali sme s vylučovaním nevýznamných premenných, a to až po úroveň, keď uvažovaný model bol dostatočne signifikantný a zároveň vyhovoval predpokladom správnej špecifikácie modelu, tak aby bolo možné predpokladať vhodnosť tohto modelu. Spĺňať musel nasledujúce predpoklady

- Predpoklad 1: Náhodné poruchy majú vo všetkých pozorovaniach nulovú stretnú hodnotu

  $$E(\overline{\vartheta_t}) = 0.$$

- Predpoklad 2: Rozptyl náhodných porúch je vo všetkých pozorovaniach rovnaký

  $$Var(\vartheta_i) = \sigma^2.$$

- Predpoklad 3: Náhodné poruchy nie sú navzájom korelované, teda ich kovariancie sú rovné nule

  $$Cov(\vartheta_i \vartheta_j) = 0\,.$$

- Predpoklad 4: Vysvetľujúce premenné sú nenáhodné, nestochastické

  $$E(X^T \vec{\vartheta}) = \vec{0}.$$

- Predpoklad 5: Exogénne premenné sú lineárne nezávislé

  $$h(uX) = k + 1 \leq n\,.$$

- Predpoklad 6: Náhodné poruchy υ_i majú normálne rozdelenie.

V praktickej ekonometrickej analýze často dochádza k porušeniu spomínaných predpokladov v modeli, ktorý je nutné pre ich odstránenie ďalej upravovať. Pri nedodržaní predpokladov o náhodných zložkách hovoríme o heteroskedasticite a autokorelácii (predpoklady 1 až 3). Nedodržanie predpokladov o matici pozorovaní vysvetľujúcich premenných podľa predpokladu 5 spôsobuje multikolinearitu. Z tohto dôvodu realizujeme testovanie nami vytvorených modelov tak, aby vyhovovali jednotlivým predpokladom, kladeným na správne špecifikovaný model.

Ako najvhodnejší model sa nám na základe vykonanej špecifikácie, odhadu a testovania javí model4, ktorého sumárnu štatistiku je vidieť nižšie.

Tab. 1: Sumárne výsledky pre regresnú rovnicu modelu4

Estimate	Std. Error	t value	Pr(>|t|)	
er_sp	1.2791	0.2788	4.588	3.03e-05 ***
f21	-1.7339	0.6644	-2.610	0.0119 *

Residual standard error: 0.1398 on 50 degrees of freedom

Multiple R-squared: 0.4888, Adjusted R-squared: 0.4684

F-statistic: 23.91 on 2 and 50 DF, p-value: 5.175e-08

Zdroj: vlastné spracovanie

Model4 môžeme teda formálne zapísať pomocou tejto rovnice

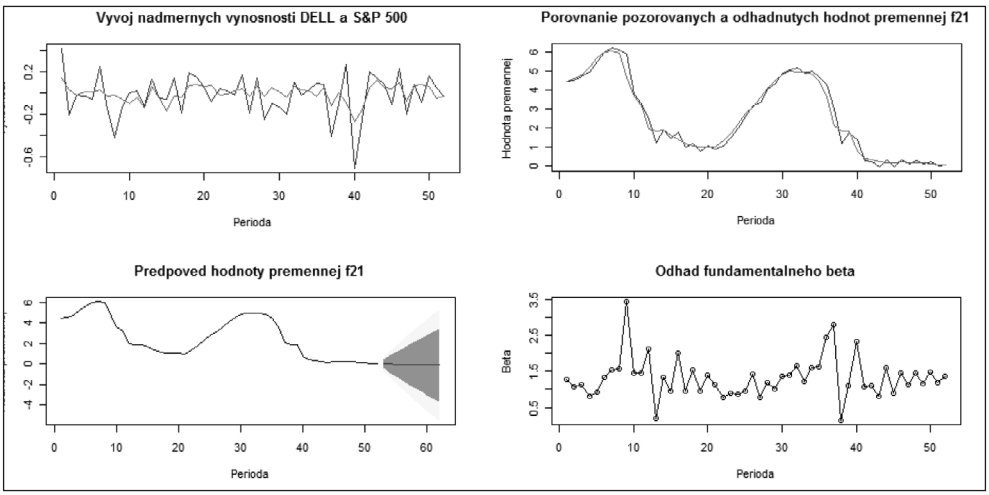
$$R_{DELL,t} - R_{ft} = \beta_{0,\mathrm{DELL}} \left(R_{mt} - R_{ft}\right) + b_{21,\mathrm{DELL}} \left(R_{mt} - R_{ft}\right) f_{21,\mathrm{DELL},t} + \vartheta_{it} \qquad (19)$$

Kde hodnota fundamentálneho beta vyjadreného zo vzťahu (9) je rovná

$$\beta_{it} = \beta_{0,i} + \sum_{j=1}^{n} b_{j,i}\gamma_{j,it} + u_{it} = \beta_{0,\mathrm{DELL}} + b_{21,\mathrm{DELL}} f_{21,\mathrm{DELL},t} \quad (20)$$

V Obr. 2 je vľavo hore viditeľné porovnanie vývoja nadmernej výnosnosti Dell (časový rad s vyššou volatilitou) a nadmernej výnosnosti indexu S&P 500 (časový rad s menšou volatilitou). Rovnako vpravo hore je zobrazené porovnanie pozorovanej hodnoty premennej f21 (výnosová miera 6-mesačných pokladničných poukážok vlády USA) a jej odhadnutej hodnoty na báze modelu univariantného časového radu f21 ARIMA (3,1,1). Práve rezíduá tohto modelu boli použité pre modelovanie časovo premenlivého beta. Rovnako Obr. 2 vľavo dole je realizovaná projekcia odhadu tejto premennej s uvažovaným posunom o desať období. Vpravo dole je nakoniec zobrazený odhad hodnôt fundamentálneho beta v časových obdobiach od prvého štvrťroka 1999 do posledného kvartálu roka 2011.

Obr. 2: Grafické zobrazenie jednotlivých premenných modelu časovo premenlivého beta ako aj odhadov fundamentálneho beta.



Zdroj: vlastné spracovanie.

Testovanie normality rozdelenia náhodnej zložky

Predpokladom normality rozdelenia náhodnej zložky je normálne rozdelenie $u \sim N[0,\sigma^2]$ rezíduí modelu. Použijeme Jarque – Berov test normality, a to na hladine významnosti $\alpha = 0{,}05$. Hypotézy modelu sú stanovené nasledovne

H_0: Rezíduá majú normálne rozdelenie.

H_1: Rezíduá nemajú normálne rozdelenie.

Jarque – Bera Normality – Test Results:
Sample Size: 52
STATISTIC:
LM: 0.37
ALM: 0.791
P VALUE:
LM p-value: 0.814
ALM p-value: 0.625
Asymptotic: 0.831.

Z uvedených *p*-values je zaujímavá hlavne asymptotická *p*-value. Ak by mala platiť nulová hypotéza, a teda dosiahnutie, že nulová hypotéza sa nezamieta, potom *p*-value > α na hladine významnosti, kde $\alpha = 0{,}05$. V našom prípade *p*-value=0,831 a je zároveň > 0,05=α., podmienka platí. Hypotéza H_0 o normalite reziduí sa nezamieta, resp. zamieta sa hypotézu H_1, a predpokladá sa normalita rozdelenia náhodnej zložky.

Testovanie prítomnosti heteroskedasticity
Medzi klasické požiadavky ekonometrického modelu patrí požiadavka konečného a konštantného rozptylu náhodných porúch a teda aj reziduí, ktorú označujeme ako homoskedasticita. Ak sa porušuje táto podmienka, hovoríme o heteroskedasticite. Na testovanie heteroskedasticity použijeme Breusch–Paganov test na hladine významnosti $\alpha = 0,05$ s takýmito hypotézami

H_0: reziduálne odchýlky majú konštantný rozptyl (Predpoklad homoskedasticity nie je porušený) $\sigma_1 = \sigma_2 = ... = \sigma_n$.
H_1: reziduálne odchýlky nemajú konštantný rozptyl (prítomnosť heteroskedasticity) $\sigma_i \neq \sigma_j$.

studentized Breusch-Pagan test
data: model4
BP = 0.9041, df = 1, p-value = 0.3417.

P-value je rovná 0,3417 > α, nulová hypotéza sa nezamieta, je možné vysloviť, že daný model, teda model4, nie je zaťažený heteroskedasticitou a reziduálne odchýlky majú konštantný rozptyl.

Testovanie autokorelácie
Dôležitým predpokladom lineárneho ekonometrického modelu je nulová kovariancia náhodných porúch. Tento predpoklad zväčša nie je splnený, ak sa robí odhad z parametrov, ktoré vychádzajú z údajov z časových radov. Autokorelácia je závislosť medzi dvoma a viac premennými usporiadanými v čase. Jej výskyt v nami definovanom modeli sa testuje Durbin-Watsonovým testom, pričom ide o testovanie autokorelácie v zmysle autoregresnej schémy prvého radu.

$$u_t = \rho u_{t-1} + \varepsilon_t \qquad (21)$$

p – koeficient korelácie (miera intenzity korelácie – závislosti premenných)
Hypotézy sa definujú takto
H_0: v modeli sa nenachádza výskyt autokorelácie, teda $p = 0$.
H_1: v modeli sa nachádza výskyt autokorelácie, teda $p \neq 0$.

Pre testovaciu štatistitiku DW po úprave platí

$$d \approx 2(1 - \hat{\rho}) \qquad (22)$$

Ak hraničnými hodnotami koeficientu korelácie je 1 (veličiny sú priamo zvislé) a (-1) (veličiny sú nepriamo závislé), potom

Durbin-Watson test
data: model4
DW = 2.1575, p-value = 0.7581
alternative hypothesis: true autocorrelation is greater than 0.

Hodnota DW-testu je 2,1575, najbližšie teda hodnote 2, hodnota p-value je väčšia ako 0,05. Nulová hypotéza sa zamieta. Záverom testu je výrok, že v modeli nie je prítomná autokorelácia v zmysle autoregresnej schémy prvého radu.

Keďže v našom prípade ide o štvrťročné údaje, overme pomocou Breusch-Godfreyho testu prítomnosť autokorelácie v zmysle autoregresnej schémy štvrtého rádu.

Breusch-Godfrey test for serial correlation of order 4
data: model4
LM test = 1.6552, df = 4, p-value = 0.7988.

Keďže p-value je vyššia ako zvolená hladina významnosti, môžeme predpokladať, že v našom modeli nie je prítomná autokorelácia vyššie radu.

Testovanie multikolinearity
Prítomnosť multikolinearity je potvrdená, ak sa poruší predpoklad 5, tzn. vysvetľujúce premenné sú lineárne nezávislé. Multikolinearita je problémom neexperimentálneho výberu ekonomických dát. Ak sa v modeli vyskytuje problém multikolinearity, je predpoklad, že existuje istá závislosť medzi dvoma, či viacerými vysvetľujúcimi premennými. Multikolinearita spôsobuje znižovanie presnosti odhadu regresných koeficientov, získaných z konkrétneho výberu, v dôsledku chýb hodnôt estimátora.

Multikolinearita nezávislých premenných modelu je detekovaná prostredníctvom inflačného faktora rozptylu (Variance Inflantion Factor) VIF, ktorého hodnota sa určí nasledovne

$$VIF_j = \frac{1}{1-R_j^2} \qquad (23)$$

kde R_j^2 je koeficient determinácie.

Ak vypočítaná hodnota VIF > 10 indikuje významnú kolinearitu je potrebné vykonať úpravu premenných modelu prostredníctvom diferenciácie, vynechaním premenných alebo použitím iného postupu ako napríklad metódou analýzy základných komponentov.

VIF values

er_sp	f21
1.243392	1.243392

Faktor VIF je vykazuje vhodné hodnoty, jednotlivé premenné modelu nie sú postihnuté multikolinearitou.

Testovanie chyby špecifikácie modelu

Chybami špecifikácie modelu sú nevhodnosť funkčného tvaru modelu, zahrnutie nerelevantných alebo nezahrnutie relevantných premenných. Chybu špecifikácie modelu testujeme pomocou Ramseyho testu chyby špecifikácie, označovaného ako RESET test (Regression Specification Error Test). Na hladine významnosti α=0,05 sa stanovíme hypotézy

H_0: Model je špecifikovaný správne.

H_1: Model nie je špecifikovaný správne.

V prípade zamietnutí nulovej hypotézy je potrebné špecifikovať iné premenné. Zo samotného modelu správna indikácia premenných však nevyplýva.

RESET test

data: model4

RESET = 1.3136, df1 = 2, df2 = 48, p-value = = 0.2783.

Rozhodujúcou hodnotou je p-value, ak je vyššia ako hladina významnosti, nulová hypotéza sa nezamieta a model je špecifikovaný správne a predpokladá sa lineárnosť modelu. Model4 dosiahol hodnotu p-value výrazne nad hladinou významnosti, z čoho môžeme usudzovať správny funkčný tvar modelu.

Zhodnotenie navrhnutého modelu

Nami navrhnutý model pracuje s nadmernou výnosnosťou akciového indexu S&P 500 a násobkom rezíduí ARIMA modelu výnosovej miery 6-mesačných pokladničných poukážok vlády USA a nadmernej výnosnosti akciového indexu S&P 500. Rovnica modelu je zapísaná v rovnici (17). Vyjadrenie fundamentálneho beta pomocou rovnice (12) nás vedie k odhadu hodnôt fundamentálneho beta, zapísaného v rovnici (18). Sumárne štatistiky hodnôt časovo premenlivého beta sú zobrazené v Tab. 2. Ako je vidieť priemerná hodnota beta koeficientu je 1,32235, čo sa blíži k odhadom analytikov dostupným na portáloch ako Bloomberg alebo Reuters.

Tab. 2: Sumárne štatistiky časovo premenlivého beta Dell.

	Hodnoty
Priemer	1,322350
Medián	1,236200
Max	3,419019
Min	0,143967
Smerodajná odchýlka	0,560500
Šikmosť	1,260453
Špicatosť	3,085614
Pozorovania	52

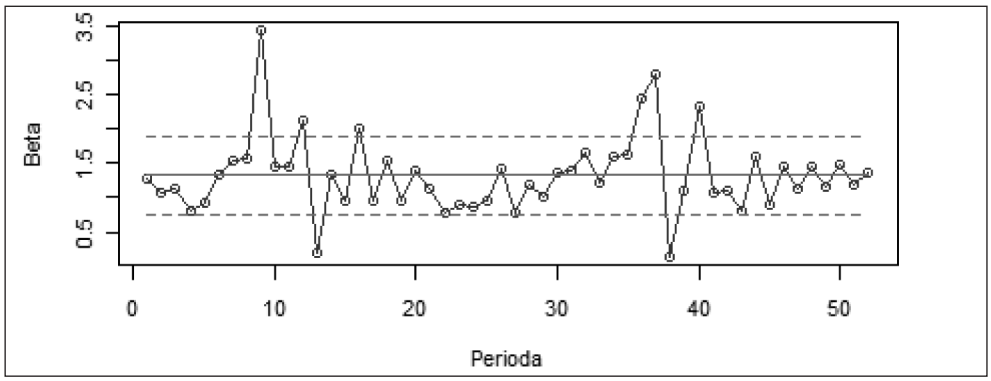
Zdroj: vlastné spracovanie.

Výrazné zmeny v systematickom riziku kmeňových akcií Dell sú zreteľné (pozri Obr. 3) najmä v jednotlivých kvartáloch rokov 2000 až 2001, čo je spojené s výraznou zmenou vyhliadok sektora informačných technológií, spôsobených prasknutím cenovej bubliny práve tohto sektora a jej vplyvu práve v rokoch 2000 až 2001. Rovnako je viditeľne zvýšená hodnota beta v období rokov 2007 až začiatkom roka 2008, čo je spojené so znížením globálneho dopytu spôsobeného ekonomickou krízou vo svete.

Záver

V príspevku sa zaoberáme konceptom CAPM, ktorý vo svojej statickej podobe vyjadruje vzťah medzi nadmernou výnosnosťou trhového portfólia a jeho systematickým rizikom. Systematické riziko je často vyjadrované prostredníctvom beta koeficientu. Po diskusii všeobecného modelu a jeho vývoja z pohľadu modernej teórie portfólia sa zameriavame na odvodenie jeho statickej podoby. Keďže takáto forma nie je dostatočná pre zachytenie zmien v systematickom riziku, navrhujeme v rovniciach (12) a (13) postup pre zohľadnenie jeho časovej premenlivosti. Takto dostávame dynamický model, ktorý umožňuje vyjadriť hodnotu systematického rizika v podobe fundamentálneho beta v jednotlivých periódach pozorovania.

Obr. 3: Odhadnuté hodnoty fundamentálneho beta



Pozn.: Priemerná hodnota je zobrazená vodorovnou plnou čiarou, kanál smerodajnej odchýlky prerušovanou čiarou.

Zdroj: vlastné spracovanie

Pre demonštrovanie aplikovateľnosti tohto všeobecne navrhnutého modelu používame nástroje finančnej ekonometrie zahŕňajúce tri kľúčové kroky – výber modelu, odhad a testovanie modelu. Navrhnutý model je špecifikovaný a testovaný na časovom rade výnosnosti kmeňovej akcie spoločnosti Dell, pričom uvažujeme s 24 exogénnymi premennými, ktoré môžu ovplyvňovať nadmernú výnosnosť týchto akcií. Keďže predpokladáme, že efektívne finančné trhy reagujú iba na neočakávané zmeny jednotlivých faktorov, používame rezíduá modelov nestacionárnych časových radov.

Výsledky nášho modelovania predstavuje model pracujúci s nadmernou výnosnosťou akciového indexu S&P 500 a násobkom rezíduí ARIMA modelu výnosovej miery 6-mesačných pokladničných poukážok vlády USA a nadmernej výnosnosti akciového indexu S&P 500. Prostredníctvom takto špecifikovaného modelu (model4) určíme hodnoty časovo premenlivého fundamentálneho beta, ktoré predstavuje systematickú zložku rizika kmeňových akcií analyzovanej spoločnosti. V príspevku sú tiež demonštrované výsledky testovania nami špecifikovaného modelu.

Nami navrhnutý a demonštrovaný postup je možné aplikovať predovšetkým v determinovaní miery kapitalizácie vo výnosových metódach stanovenia hodnoty podniku, a teda aj v stanovení vnútornej hodnoty kmeňových akcií. Rovnako je možné definovať očakávanú mieru výnosnosti pripravovaných investičných projektov podniku.

Príspevok bol spracovaný s podporou projektu VEGA č. 1/0799/13.

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Abstract

EQUITY SYSTEMATIC RISK DETERMINATION USING TIME-VARYING BETA MARKET MODEL

Jozef Glova

The current paper explores CAPM as a static model expressing relationships between excess return on the market portfolio often proxied by capital market indices, where beta is a measure of the volatility or systematic risk. We discuss background to the CAPM and derive the equations of the capital market line and security market line. To become more dynamic in the model we suggest apply the equations (12) and (13) expressing the time varying measure of the systematic risk of equity – fundamental beta.

To demonstrate the applicability of the general model we apply financial econometrics involving three key steps – model selection, estimation and testing. We suggest a variety of factors (quite 24 variables) that potentially influence equity risk of Dell. In an efficient financial market we expect only stock market reaction to the unanticipated component of the fundamental variables. Thus we focus on the unanticipated or unexpected components, which we find as the residuals from ARIMA models fitted to the fundamental data. These ARIMA models were identified from the autocorrelation and partial autocorrelation functions of the data.

The outcome of our modelling shows that only the multiplying the residuals from ARIMA model fitted to 6-month treasury bills yield data by the excess return on the market portfolio data and the excess return on the market portfolio data are linked to variations in Dell's equity risk. The results of estimating the most comprehensive specification of the economic variable market model of equation (17) are reported in Tab. 1. Tests are indicating an absence of autocorrelation and heteroskedasticity in the model.

The applied model can be used to determination of equity costs within a discounted cash flow approach to assess of the business value of equity or intrinsic value of stock.

Key Words: *Systematic Risk, Capital Asset Pricing Model, Time-Varying Beta, Equity Risk Premium.*

JEL Classification: *C51, C52, G12, G32.*

THE EFFECTS OF JOB RESOURCEFULNESS AND CUSTOMER ORIENTATION ON PERFORMANCE OUTCOMES: EVIDENCE FROM NIGERIA

Osman M. Karatepe

Introduction

In today's global market environment where there are intense competitive pressures, having a pool of motivated and high-performing employees in frontline service jobs provides service firms with competitive advantage [5], [10], [31]. This is not surprising, because a synthesis of the services management and marketing literatures proposes three key features of employees in frontline service jobs. First, frontline employees represent their organization to outsiders (customers), enhance the image of the organization, and improve the organization's legitimacy through advocacy [8]. Second, frontline employees are important sources of information about customers' requests, complaints, and expectations due to their intense face-to-face or voice-to-voice interactions with customers [6], [31]. Third, frontline employees play a critical role in achieving customer satisfaction through delivery of service quality, are expected to cope with a number of customers' complaints in the service encounter and resolve them to the satisfaction of the complainants [11], [23].

Despite this recognition, frontline employees work under scarce resource conditions in the service industries. Therefore, managers need to have a pool of employees in frontline service jobs who can work productively under resource-deprived conditions. Job resourcefulness, which is a situational-level personality trait and refers to "the enduring disposition to garner scarce resources and overcome obstacles in pursuit of job-related goals" [26, p. 258], is particularly important for frontline employees who should be skilled at directly having intense face-to-face or voice-to-voice interactions with customers [4]. In addition, as a surface-level personality trait, customer orientation refers to "an employee's tendency or predisposition to meet customer needs in an on-the-job context" [12, p. 111]. As discussed by Licata et al. [26], a job-resourceful individual would be able to have energy to find innovative ways for satisfying customers. Consequently, such individuals would display customer-oriented service behaviors in the workplace.

Against this backdrop, the purpose of this study is to develop and test a conceptual model, which examines customer orientation as a *full* mediator of the relationship between job resourcefulness and frontline employees' external representation, internal influence, and service delivery behaviors.

This study contributes to the services marketing literature in the following ways. First, a limited number of empirical studies have assessed the relationships among job resourcefulness, customer orientation, and various job outcomes [17], [26]. Personality traits, such as self-efficacy and intrinsic motivation are also important predictors of a number of job outcomes [7], [16]. This study focuses on job resourcefulness and customer orientation, because there is a paucity of empirical research regarding their effects on various job outcomes in the services marketing literature. With this realization, this study partially fills in this void by testing customer orientation as a full mediator of the effect of job resourcefulness on frontline employees' service behaviors.

Second, the preponderance of empirical research on job resourcefulness and customer

orientation has been conducted in the developed Western countries, especially the United States. As a matter of fact, empirical research based on data obtained from the developing sub-Saharan African countries in the services marketing literature is meager [30]. Therefore, the current study uses data obtained from the hotel industry of Nigeria. Nigeria, which is situated on the Gulf of Guinea, is a developing sub-Saharan country. Nigeria is the most populous country in Africa. Nigeria has thirty-six states, and its capital, Abuja, is the administrative and political center of the country. English is the official language throughout Nigeria and Hausa is the second prevalent language [1]. Nigeria is one of the largest crude oil exporters of the world. However, such an oil-rich country has been confronted with political instability, corruption, and high unemployment rates for years [19], [27].

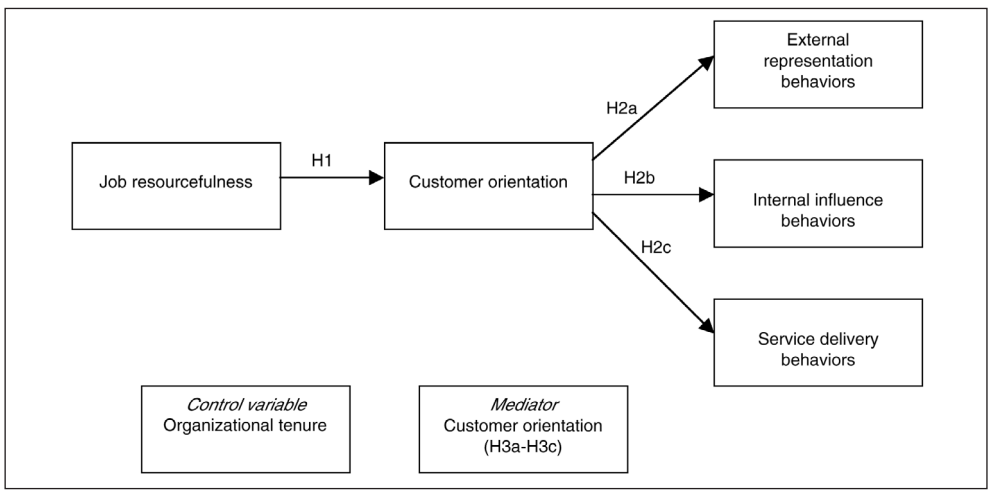
Finally, in addition to filling in the above-mentioned gaps in the relevant literature, the results of this study will provide useful implications for service managers.

The next section of the article includes the conceptual model and hypotheses. This is followed by discussions of the method and results of the empirical study. The article concludes with implications of the results and directions for future research.

1. Conceptual Model and Hypotheses

Figure 1 demonstrates the conceptual model and the hypothesized relationships. The model proposes that job resourcefulness is positively linked to customer orientation. According to the model, customer orientation positively influences frontline employees' external representation, internal influence, and service delivery behaviors. The model also contends that customer orientation fully mediates the impact of job resourcefulness on the aforementioned service behaviors. In the model organizational tenure is treated as a control variable.

Fig. 1: Conceptual Model



Source: own

As mentioned above, there is a positive association between job resourcefulness and customer orientation. Job resourcefulness is a situational-level personality trait within a hierarchical personality structure and operates within a general work setting [26]. Job-resourceful employees have the abilities to accomplish job-related goals, even if they are faced with scarce resources in the workplace [17]. Job resourcefulness is a critical personality trait in frontline service jobs, because lack of training, inadequate social support, and insufficient empowerment and rewards are prevalent in most of the service industries [7], [22].

As a surface-level personality trait, customer orientation emerges from the joint effects

of elemental (e.g., conscientiousness), compound (e.g., competitiveness), and situational (e.g., job resourcefulness) traits as well as the specific work environment [26]. Babakus et al. [6] state, "Customer orientation is cushioned, nourished and supported by a set of deeper more abstract personality traits" (p. 483). In this study, it is posited that job-resourceful employees are expected to come up with innovative ways for responding to customer requests effectively and satisfying customers, though they work under resource-depleted conditions (cf. [4]). In empirical terms, Licata et al. [26] found that job resourcefulness exerted a significant positive effect on customer orientation among bank employees and nurses. Harris et al. [17] also reported a similar finding among bank employees.

Therefore, the following hypothesis is proposed:

H1: Job resourcefulness is positively related to frontline employees' customer orientation.

As shown in Figure 1, customer orientation enhances frontline employees' external representation, internal influence, and service delivery behaviors. External representation refers to "being vocal advocates to outsiders of the organization's image, goods, and services; internal influence refers to "taking individual initiative in communications to the firm and coworkers to improve service delivery by the organization, coworkers, and oneself; and service delivery refers to "serving customers in a conscientious, responsive, flexible, and courteous manner" [9, p. 142]. These definitions suggest that service delivery behaviors appear to be linked to frontline employees' in-role performance, while external representation and internal influence behaviors are likely to be linked to frontline employees' extra-role performance [8], [9]. Frontline employees high in customer orientation are likely to display higher in-role and extra-role performances.

There is empirical evidence that customer orientation is positively associated with in-role and extra-role performances. Specifically, in a study of bank and restaurant employees, Donavan et al. [14] reported that as the level of employees' customer orientation increased, their level of organizational citizenship behavior--altruism also increased. In a study of media retailers and travel agencies in Germany, service employees' customer orientation positively affected customer satisfaction [18]. According to the findings of another study, salesperson customer orientation enhanced their sales performance [13]. Recently, Farrell and Oczkowski [15] found that customer orientation enhanced organizational citizenship behavior-courtesy among food servers. In a study of frontline bank employees in New Zealand, Babakus et al. [6] also demonstrated that customer orientation was positively linked to job performance.

Therefore, the following hypotheses are proposed:

H2: Customer orientation is positively related to frontline employees' (a) external representation, (b) internal influence, and (c) service delivery behaviors.

The person-job fit is one of the types of the person-environment fit and refers to the fit between the abilities of a person and the requirements of a specific job [24]. It also refers to the fit between employees' needs, desires, or preferences and the attributes of a specific job [25]. A type of job-fit which has a healthy research tradition is the link between personality traits and job characteristics. Consistent with the person-job fit perspective, highly resourceful employees would fit well in work environments, where there are scarce job resources. Such employees would try to focus on various ways to satisfy their customers. Consequently, they would display high levels of in-role and extra-role performances.

There are limited empirical studies regarding the mediating role of customer orientation on the relationship between job resourcefulness and job outcomes. For example, Licata et al. [26] demonstrated that customer orientation partially mediated the relationship between job resourcefulness and self-rated job performance. Harris et al. [17] found that customer orientation fully mediated the effect of job resourcefulness on job satisfaction and turnover intentions.

Underpinned by the person-job fit perspective and limited empirical evidence, the following hypotheses are proposed:

H3: Customer orientation fully mediates the effect of job resourcefulness on frontline employees' (a) external representation, (b) internal influence, and (c) service delivery behaviors.

2. Method

2.1 Sample and Procedure

Data were gathered from a judgmental sample of frontline employees in the four- and five-star hotels in Abuja, the capital city of Nigeria. The selection criteria were that frontline employees had full-time jobs and frequent face-to-face or voice-to-voice interactions with hotel guests. Since many part-time employees think that they are outsiders [2] and they do not stay at work as long as full-time employees do [29], they have not been included in the study sample.

According to the information we received from the Director for Planning, Consultancy and Information Services in the National Institute for Hospitality and Tourism in Abuja at the time of our study, there are 2 five- and 7 four-star hotels, which were licensed by the Nigerian Tourism Development Corporation. Permission was received for data collection from managements of all five-star hotels and 1 four-star hotel. Promising complete confidentiality, 70 questionnaires were personally distributed to frontline employees in each of the five-star hotels, while 40 were personally distributed to those in the four-star hotel. In total, 180 self-administered questionnaires were distributed to frontline employees. By the cut-off date for data collection, 102 usable questionnaires were retrieved, yielding a response rate of 56.7 percent.

19 percent of the respondents were between the ages of 18–27, 41 percent between the ages of 28–37, 31 percent between the ages of 38–47, and the rest were older than 47. The sample was balanced in gender (50 percent male and 50 percent female). With respect to education, 2 percent of the respondents had primary school education, while 9 percent had secondary and high school education. 21 percent of the respondents had two-year college degrees, while 61 percent had four-year college degrees. The rest had graduate degrees. 7 percent of the respondents had tenures below one year. 34 percent of the respondents reported having tenures between one and five years and 33 percent between six and ten years. The rest had tenures more than ten years. 41 percent of the respondents were single or divorced, while the majority of the respondents (59 percent) were married.

2.2 Measurement

Each of the constructs depicted in Figure 1 was operationalized using scales derived from the services marketing literature. Job resourcefulness was measured using four (4) items from Licata et al. [26]. Sample items are 'I am very clever and enterprising in doing my job' and 'I am a very resourceful person in finding ways to do my job'. Twelve (12) items from Brown et al. [12] were used to measure customer orientation. Sample items are 'I enjoy responding quickly to my customers' requests' and 'I get customers to talk about their service needs with me'.

External representation, internal influence, and service delivery behaviors were measured using items from Bettencourt et al. [9]. That is, external representation and internal influence each were operationalized via four (4) items, while service delivery was measured through five (5) items. Sample items for external representation are 'I tell outsiders this is a great place to work' and 'I say good things about our hotel to others'. Sample items for internal influence are 'I make constructive suggestions for service improvement' and 'I share creative solutions to customer problems with other team members'. Finally, sample items for service delivery are 'I follow customer service guidelines with extreme care' and 'I follow up in a timely manner to customer requests and problems'.

Organizational tenure was treated as a control variable to avoid statistical confounds. Responses to the items in job resourcefulness, customer orientation, external representation, internal influence, and service delivery were elicited on 5-point scales ranging from 5 (strongly agree) to 1 (strongly disagree). Organizational tenure was measured using a six-point scale. Higher scores indicated higher job resourcefulness, customer orientation, external representation, internal influence, service delivery, and longer tenure.

The pilot test of the survey instrument, with five (5) frontline employees in one of the five-star hotels in Abuja, revealed no compelling reason to make changes in the instrument.

3. Results

3.1 Measurement Results

The dimensionality, convergent and discriminant validity of the measures were assessed based on a series of confirmatory factor analyses [3],

[20]. Several items were dropped during confirmatory factor analysis due to non-significant *t*-values and low standardized loadings. Specifically, one item each from job resourcefulness and service delivery and four items from customer orientation were removed from further analysis. The final results of confirmatory factor analysis demonstrated a moderate fit of the five-factor model to the data on the basis of a number of fit statistics (χ^2 = 271.55, df = 220; GFI = .81; CFI = .84; RMSEA = .048; SRMR = .088). In addition, Anderson and Gerbing [3] suggest that all observable indicators should load significantly on their respective latent variables in order to provide evidence of convergent validity. According to the results of confirmatory factor analysis, all observable indicators loaded on their latent variables and the magnitudes of the loadings ranged from .37 to .83. Their t-values were higher than 2.00. Overall, the results provided support for convergent validity [3].

Discriminant validity was evaluated based on a series of chi-square difference tests using measures of each pair of constructs. In particular, a two-dimensional model for each pair of constructs was first fit, and then items representing each construct were forced into a single-factor solution. The chi-square difference test produced a significant result for each pair of measures. Thus, imposing a single factor solution on the two sets of items representing different constructs demonstrated a significant deterioration of the model fit. These results provided evidence of discriminant validity [3].

In addition, common method bias was checked with a confirmatory factor analysis approach to Harman's single-factor test as a statistical remedy [28]. This test is based on the assumption that common method bias is a serious problem when a single latent factor will account for more than 50 % of the total variance of the measures [28]. The results of the single-factor model were as follows: (χ^2 = 501.09 df = 230; GFI = .70; CFI = .52; RMSEA = .108; SRMR = .11). The single-factor model accounted for only 17.4 % of the total variance. The chi-square test also demonstrated that the five-factor model was superior to the single-factor model ($\Delta\chi^2$ = 229.54, Δdf = 10, $p < .001$). Consequently, the results were worse than that of a five-factor model and one single-factor model did not account for the majority of the variance. According to these results, common method bias was not a significant problem in this study.

Composite scores for each measure were obtained by averaging scores across items representing that measure. Means, standard deviations, and correlations among the study variables are presented in Table 1. Coefficient alphas were as follows: job resourcefulness .56, customer orientation .75, external representation .76, internal influence .65, and service delivery .67. The small sample size of this study appears to be responsible for coefficient alphas below .70.

Tab. 1: Scale Reliabilities, Means, Standard Deviations, and Correlations of Study Variables (n = 102)

Variables	Mean	SD	Alpha	1	2	3	4	5	6
1. Organizational tenure	2.86	1.07	-	1.000					
2. Job resourcefulness	4.11	.42	.56	.079	1.000				
3. Customer orientation	4.15	.37	.75	.067	.413**	1.000			
4. External representation	3.90	.53	.76	-.038	.209*	.293**	1.000		
5. Internal influence	4.01	.44	.65	.013	.084	.191	.417**	1.000	
6. Service delivery	4.06	.46	.67	.056	.032	.305**	.251*	.333**	1.000

Notes: Composite scores for each measure were obtained by averaging scores across items representing that measure. The scores ranged from 1 to 5. Organizational tenure was measured using a six-point scale. Higher scores indicated longer tenure.

* Correlations are significant at the .05 level.

** Correlations are significant at the .01 level. Correlations without asterisks are not significant.

Source: own

3.2 Model Test Results

The correlation matrix in Table 1 was used as input to LISREL 8.30 to test the hypotheses via path analysis [20]. The results of path analysis demonstrated that organizational tenure was not significantly related to study variables. The results in Table 2 indicated that the model fit the data well (χ^2 = 5.76 df = 4; p = .22; GFI = .98; CFI = .96; RMSEA = .066; SRMR = .049). The results accounted for 1 % of the variance in job resourcefulness, 17 % in customer orientation, 9 % in external representation, 4 % in internal influence, and 10 % in service delivery.

Tab. 2: Model Test Results

Control variable and hypotheses	Standardized estimates	*t*-values
(I) Impact on JR		
Control variable		
Organizational tenure	.08	80
(II) Impact on COR		
Control variable		
Organizational tenure	.04	.41
Direct effect: Hypothesis 1		
JR → COR	.41	4.45*
(III) Impact on EXREP		
Control variable		
Organizational tenure	-.06	-.63
Direct effect: Hypothesis 2a		
COR → EXREP	.29	3.07*
(IV) Impact on INIF		
Control variable		
Organizational tenure	-.01	-.03
Direct effect: Hypothesis 2b		
COR → INIF	.19	1.96
(V) Impact on SERDEL		
Control variable		
Organizational tenure	.04	.40
Direct effect: Hypothesis 2c		
COR → SERDEL	.31	3.23*
(VI) Mediating effects		
Hypothesis 3a		
JR → COR → EXREP	.12	2.53**
Hypothesis 3b		
JR → COR → INIF	.08	1.79
Hypothesis 3c		
JR → COR → SERDEL	.13	2.61**
R^2 for: JR = .01, COR = .17, EXREP = .09, INIF = .04, SERDEL =.10		
Model fit statistics:		
χ^2 = 5.76, df = 4, p = .22		
GFI = .98; CFI = .96; RMSEA = .066; SRMR = .049		

Notes: Organizational tenure was measured using a six-point scale. Higher scores indicated longer tenure. JR = Job resourcefulness; COR = Customer orientation; EXREP = External representation; INIF = Internal influence; SERDEL = Service delivery. GFI = Goodness of fit index; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; SRMR = Standardized root mean square residual. The t-values without asterisks are not significant

* The t-values demonstrate a statistically significant relationship at the .05 level.

** Sobel test results. The t-values demonstrate a statistically significant relationship at the .05 level.

Source: own

Hypothesis 1 predicts that job resourcefulness is positively linked to customer orientation. The results in Table 2 indicate that there is empirical support for this relationship (β = .41, t = 4.45). Therefore, hypothesis 1 is supported. An examination of the standardized estimates in Table 2 indicates that customer orientation is significantly and positively related to external representation (β = .29, t = 3.07) and service delivery (β = .31, t = 3.23) behaviors. Therefore, hypotheses 2a and 2c are supported. However, hypothesis 2b cannot be supported, because there is no significant association between customer orientation and internal influence behaviors.

A close examination of Sobel test results in Table 2 demonstrates that customer orientation fully mediates the effect of job resourcefulness on external representation (β = .12, t = 2.53) and service delivery (β = .13, t = 2.61) behaviors. Therefore, hypotheses 3a and 3c are supported. However, there is no empirical support for hypothesis 3b, since customer orientation does not significantly influence internal influence behaviors.

The main results reported above remain intact with or without organizational tenure as a control variable in the model.

4. Discussion

This empirical investigation makes contributions to the services marketing literature in two ways. First, it provides insights pertaining to customer orientation as a *full* mediator of the relationship between job resourcefulness and frontline employees' service behaviors. Second, it tests the abovementioned relationships using data collected from frontline hotel employees in Nigeria, which is a developing sub-Saharan African country. There are a number of useful findings, which emerge from this empirical investigation.

The finding regarding the direct effect of job resourcefulness on customer orientation is consistent with past writings [17], [26]. This is an important finding, because frontline hotel employees try to perform their job-related tasks in an environment, where there are limited job resources. Therefore, job-resourceful employees can seek various ways of satisfying customers in order to minimize customer defection. In addition, the findings appertaining to the direct impact of customer orientation on external representation and service delivery behaviors are in line with prior and recent empirical studies ([e.g. [13], [15]). Such findings suggest that frontline employees high in customer orientation can perform their job-related tasks better and can represent the organization to outsiders successfully.

The findings regarding customer orientation as a full mediator of the effect of job resourcefulness on external representation and service delivery behaviors are consonant with the study predictions. Also consistent with the person-job fit perspective, the results suggest that highly job-resourceful employees would fit well in the work environment and would try to find innovative ways for meeting customer needs and requests. Consequently, they would have elevated levels of external representation and service delivery behaviors. It should also be noted that the small sample size used in this study appears to be responsible for the non-significant relationship between customer orientation and internal influence behaviors.

In closing, the current empirical investigation makes useful additions to the services marketing literature by testing the aforementioned relationships via data obtained from frontline employees in the hotel industry of Nigeria.

4.1 Management Implications

There are important implications for managers for business practice. First, it is obvious that managers should use effective recruitment and selection techniques to be capable of hiring frontline employees who can work in an environment, where there are scarce resources and cutbacks. For example, using mini case studies or scenario-based tests would be helpful for understanding whether the abilities, needs, desires, and preferences of candidates as well as their personalities match the requirements of frontline service jobs. Second, as mentioned before, customer orientation is an enduring disposition. Therefore, the existing frontline employees in the organization could be trained to learn customer-oriented behaviors [6]. Having such training programs could make employees improve their acting skills over time and consistently display customer-oriented behaviors. Consequently, such implications would lead to better external representation and service delivery behaviors.

4.2 Limitations and Avenues for Future Research

There are several limitations to the present study. A first limitation is the use of self-report data, which is prone to common method bias. In this study, common method bias was checked using Harman's single-factor test via confirmatory factor analysis. However, such a technique only evaluates the extent to which common method bias may pose a problem [21]. Therefore, future studies should obtain data from multiple sources (e.g., supervisors or customers) to minimize this potential problem. Second, the present study used cross-sectional data to test the study relationships. Using cross-sectional data in empirical studies does not permit a true test of causality. With this realization, in future studies longitudinal designs are needed for verifying the causal relationships among the study variables. Finally, replication studies with large sample sizes in the other service settings of Nigeria would be useful for making further generalizations. Having large sample sizes would also be a potential remedy for increasing the internal consistency reliabilities of job resourcefulness, internal influence, and service delivery.

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Abstract

THE EFFECTS OF JOB RESOURCEFULNESS AND CUSTOMER ORIENTATION ON PERFORMANCE OUTCOMES: EVIDENCE FROM NIGERIA

Osman M. Karatepe

This study develops and tests a conceptual model that investigates customer orientation as a full mediator of the effect of job resourcefulness on performance outcomes. Data were obtained from a sample of full-time frontline employees in the four- and five-star hotels in Abuja, the capital city of Nigeria. These relationships were tested with path analysis in LISREL 8.30. As hypothesized, job resourcefulness is positively linked to employees' customer orientation. Consistent with the study predictions, customer orientation enhances employees' external representation and service delivery behaviors. However, the results indicate that customer orientation does not significantly affect employees' internal influence behaviors. The results further reveal that customer orientation fully mediates the impact of job resourcefulness on employees' external representation and service delivery behaviors. In other words, job resourcefulness influences such performance outcomes via customer orientation. Managements of the hotels would benefit from the use of effective recruitment and selection techniques to be able to hire employees who can work under resource-depleted conditions. In addition, managements of the hotels could arrange training programs to teach their employees customer-oriented behaviors. By doing so, employees could improve their acting skills over time and consistently demonstrate customer-oriented behaviors. In future studies using longitudinal data would be a potential remedy for minimizing problems associated with the cross-sectional data. In future studies collecting data from multiple sources would also minimize problems emerging from self-report data. In closing, this study partially fills in the void in the services marketing literature by testing the aforementioned relationships using data gathered from frontline hotel employees in a developing sub-Saharan African country.

Key Words: *customer orientation, hotel employees, job resourcefulness, Nigeria, performance.*

JEL Classification: *M31.*

INVESTIGATING ON SUCCESSFUL FACTORS OF ONLINE GAMES BASED ON EXPLORER

Sarfaraz Hashemkhani Zolfani, Mahdi Farrokhzad, Zenonas Turskis

Introduction

Multiplayer online games have become one of the most popular game types these days. The new online games are generally hosted in some server machines running on the Internet, which are referred as game servers rather than running such games on peer computers and connecting the game machines through modems. Game players from different geographical locations can connect to the games through some broadband network connections using a computer or a game console. Such game platforms (computer or a game console) are referred as game clients. 'Meridian 59' was the first commercial multiplayer online game of this type which was published in 1996 by 3DO [3]. After that some major game types, including FPS, RTS, and RPG, have appeared in the market of multiplayer online games [13].

GameSpy believes that the multi-player online game had over 2 million subscribers at the end of 2002. Also in 2002, Everquest had 450,000 and Asheron's Call had 250,000 subscribers. Friday January (2004) believes that The numbers for concurrent online gamers is more than 91,000 for Counter-Strike, 9,000 for Call-of Duty and 8,000 for Battlefield 1942. The numbers clearly show the amount of interest in both multi-player online 'role playing' games and action based computer games is significant. The overall trend based on the number of players continues to increase though the popularity of the games is different [10].

Many factors are important in this area that may influence player's selection of online game. The factors affecting player's game selection can be regarded in two dimensions; one is the intrinsic factor of consumer and some other environment factors; the other side is the controllable factor by business operators or designers before starting and releasing the game. Researchers point out that using external plug-in will affect the fairness of game, and also the reputation of game agencies and it reduces their profits. The identification of player can help player's sense of group in online game, self-respect and increase participation desire. This is based on the viewpoints of online games [9].

Lou et al [9] proposed the factors that influence player's selection of games which include: game quality, game design, and fairness of the game, player's game group and game maker's reputation.

1. Literature Review

1.1 History of Multiplayer Online Games

Multiplayer online games have been developed as early as the late 1980s. The uniqueness of this game type is that it connects people from geographically dispersed locations to a common game environment for game playing. One of the early developed online games was the Modem Wars, which was a simple 2-D game designed for the personal computer "Commodore 64". The game connected two game players using modems into a shared game environment. During game playing, game players can interactively move the game items around the game environment to attack any enemy items located within a certain predefined range. Despite the game design being simple, it set a good foundation [13].

Nowadays, multiplayer online games have become one of the most popular game types. Unlike the old days, instead of running such

games on peer computers and connecting the game machines through modems, the new online games are generally hosted in some server machines running on the Internet, which are referred as game servers. Game players from different geographical locations can connect to the games through some broadband network connections using their preferred game platforms, which can be a computer or a game console. Such game platforms are referred as game clients. The first commercial multiplayer online game of this type was, Meridian 59, published in 1996 by 3DO [3].

Thereafter, some major game types, including FPS, RTS, and RPG, have dominated the market of multiplayer online games [13].

According to GameSpy, the multi-player online role playing game Lineage had over 2 million subscribers at the end of 2002. Also in 2002, Everquest had 450,000 and Asheron's Call had 250,000 subscribers. The numbers for concurrent online gamers (based on Friday January 2004 figures) exceeds 91,000 for Counter-Strike, 9,000 for Call-of Duty and 8,000 for Battlefield 1942. The numbers clearly show the amount of interest in both multi-player online role playing games and action based computer games is significant. While popularity of games varies from year to year, the overall trend based on the number of players continues to increase [10].

Many factors are important in this area that may influence player's selection of online game. The factors that influence player's selection of game can be regarded as two aspects; one is the intrinsic factor of consumer and some other environment factors; the other aspect is the controllable factor by business operators or designers prior the launch of the game. A game's quality and level of fluency can be the factors that influence customer's selection of online games. Group communication is also the factor that influences customer's selection of online games. Lou et al [9] indicates that the identification of player can help with online game player's sense of group, self-respect and increase participation desire, based on the viewpoints of online games. They [9] proposed the factors that influence player's selection of games so far include (A) game quality (B) game design (C) fairness of the game (D) player's game group (E) game maker's reputation.

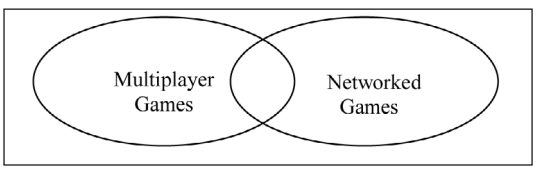
1.2 Defining Networked and Multiplayer Games

By its very definition, a network game must involve a network, meaning a digital connection between two or more computers. Multiplayer games are often network games in that the game players are physically separated and the machines, whether PCs or consoles or handhelds, are connected via a network. However, many multiplayer games, especially early ones were not network games.

Typically, such multiplayer games would have users take turns playing on the same physical machine. For example, one player would take turns fighting alien ships while the second player watched. Once the first player was destroyed or when he/she completed the level, the second player would have a turn. Scores for each player were kept separately. For simultaneous multiplayer play, either cooperatively or head-to-head, each player would see their avatar on the same screen or the screen would be 'split' into separate regions for each player [3].

For example, a multiplayer sports game may have each player working one member of opposing teams. The game field could either be entirely seen by both players or the screen would be physically split into the part of the field viewable by each player. Thus, the area of multiplayer games includes some games that are not network games [6] (figures 1 and 2).

Fig. 1: The Sets of Multiplayer Games and Network Games Are Overlapping, but Not Subsets or Supersets of Each Other



Source: [6]

The advances in computer networks, while is respectable in their own right, look slow when compared to advances in graphics cards. 56Kbps modems first became widely available in 1990s.

Based on surveys by Nielsen/Net Ratings while 75 % of Americans have internet access in 2003, 59 % of these users connect to the internet at 56Kbps or less. While US is fifth among OECD countries in terms of broadband penetration (Korea, Canada, Belgium, Denmark and Sweden having higher subscriber connectivity), it has a larger impact on network architecture and has a more prominent role in the development of computer games and interactive entertainment technologies. The market penetration of broadband in US is expected to be as high as 70 % at the end of 2005 for users connected to the internet which will make high speed network connection the default rather than the exception [10].

Fig. 2: Timeline Overview of Early Online and Multiplayer Games

1960s – Era of early multiplayer games	1958 Tennis for two
1970s and 1980s – Era of arcade multiplayer games	1961 Space war
1990s and beyond – Era of on-line multiplayer games	1970 Galaxy war
	1972 Pong
	1978 Atari Football
	1993 Doom
(a)	(b)

Note: (a) Lists approximate game eras. (b) Lists the release of important milestone games

Source: [6]

1.3 Game Industry Bright Future

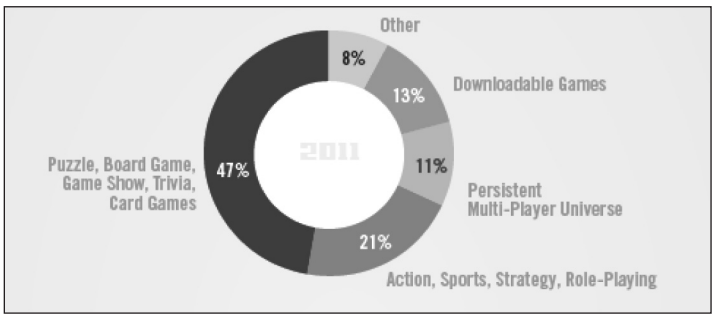
It is also interesting that the Game economy is one of the few profitable businesses now. Many online games have obtained huge success in less time. Online gaming has become a multi-billion dollar industry in these years. The market will also take steps in this direction too, because people like to play with real human opponents and sometimes they also want to pay for this reason [3].

According to statistics by ESA i-nstitute and the Digital economy Fact Book:

- In 2007, 67 % of American heads of households play computer or video games; in 2011 this figure reached up to 72 %.
- In 2007, 51 % of gamer shave said that they play online games, this statistics compared to year 2000, increased by 32 %, in 2011; also population of gamers has reached up to 65 %.
- According to this 2011 statistics, more than 19 % of online game users, also paying fee for this group of games [1], [2].
- U.S. retail sales of portable and console gaming hardware, software, and accessories generated $18 billion in revenue in 2007, up 43 % from the $12.5 billion generated in 2006. PC game software revenues fell to $911 million from the $970 million generated in 2006. PC and console software sales reached $9.5 billion in 2007, up 28 % from the $7.4 billion those sales totaled in 2006.
- Worldwide mobile gaming revenue is expected to climb to $4.5 billion in 2008, up from $3.9 billion in 2007. The industry is expected to grow at a compound annual growth rate of 10.2 % from 2007 to 2011, and reach $6.3 billion in revenue in 2011.
- Twenty-eight % (nearly 217 million people) of the worldwide online community visited an online gaming site in May 2007, an increase of 17 % over May 2006.
- According to Juniper Research, mobile gaming revenues were $5 billion in 2007, and are expected to grow to nearly $16 billion by 2012.
- The top 5 MMOGs in the first quarter of 2008 were World of Warcraft, RuneScape, Lord of the Rings Online, Final Fantasy XI, and City of Heroes.63.

- World of Warcraft is the world's largest Massive Multiplayer Online Role Playing Game.
- (MMORPG), recently surpassing 10 million subscribers.64 Subscriptions to the game brought in $1 billion in revenues in 2007 and, at the current pace of more than $100 million per month in sales and subscriptions, the game is likely to surpass that figure in 2008.
- E-Marketer expects the U.S. in-game advertising market to grow from $295 million in 2007 to $650 million by 2012.
- Among virtual worlds, Second Life has 12 million registered users, but only 1 million are active. Fewer than 10 % of all virtual world registrants are actually active users [15]. Fewer than 10 % of all virtual world registrants are actually active users [15] (figure 3).

Fig. 3: Types of Online Games Played Most Often



Source: own

The gaming ecosystem is undergoing major technology and business model transitions that will last beyond 2015. Gartner-Inc, estimates that worldwide spending on the gaming ecosystem will exceed 74 billion dollars in 2011, 10.4 % greater than 2010 (67 billion dollars). By 2015, this growth will reach 112 billion dollars [4].

According to Table 1, Online games industry in the next 5 years will have highest growth compared to other sections of this industry, also its market spending at least 2.38 more greater than 2011, and will be reach 28.2 billion dollars in 2015 [4].

Tab. 1: Total Gaming Market Spending, 2010–2015 (millions of dollars)

	2011	2013	2015
Gaming Hardware	17797	24621	27354
Gaming Software	44730	51129	56512
Online Gaming	11899	21453	28298
Total	74426	97204	112163

Source: [4]

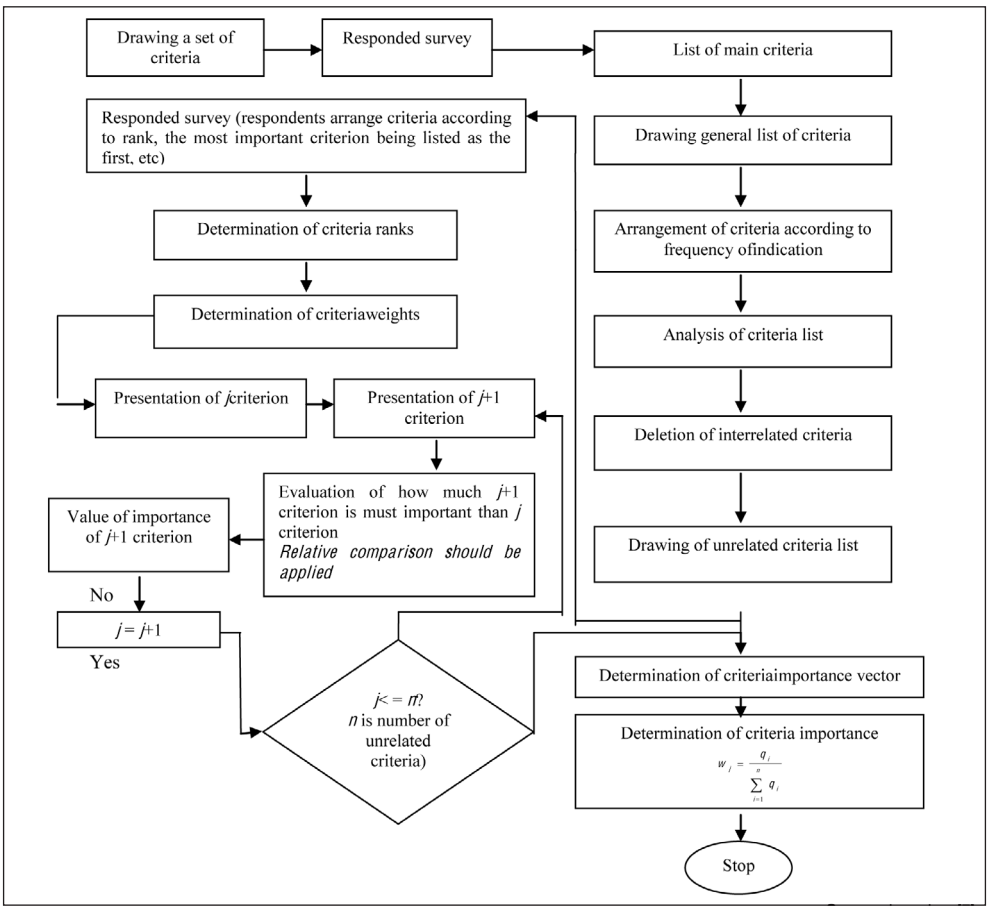
2. A Step-Wise Weight Assessment Ratio Analysis (SWARA) Method

The procedure, applied in the case study, for the criteria weights determination is presented in Fig. 4.

There are various approaches for assessing weights [14], [15], e.g. the eigenvector method, SWARA [8], expert method [16], analytic hierarchy process (AHP) [11], [12], Entropy method, etc [7], FARE [5].

In SWARA method each of experts first of all ranks criteria. The most significant criterion is given rank 1, and the least significant criterion is given rank last. The overall ranks to the group of experts are determined according to the mediocre value of ranks [7]. The stepwise weight assessment ratio analysis (SWARA) [8] methodology is developed in 2010 and applied for the selection of rational dispute resolution method [7].

Fig. 4: Determining of the Criteria Weights



Source: based on [7]

The main feature of SWARA method is the possibility to estimate experts or interest groups opinion about significance ratio of the criteria in the process of their weights determination [8]. This method helps is useful for coordinating and gathering data from experts. SWARA applications are uncomplicated and experts in various fields can contact with general idea of this method easily.

3. Evaluation of Research Model

There are many important factors in this area and field. In table 2 you can find a framework about important factors about online games which is presented by Farrokhzad [3]. Those factors are based on explorer. Based on literature review and interviews with experts, Farrokhzad [3] proposed his model.

Tab. 2: Research Model of Online Games

	Factors
C_1	Transaction Fees
C_2	Game Scenario
C_3	Customer Service
C_4	Game Rewards
C_5	Game Play
C_6	Attractive Website Graphic
C_7	Similarity to real world

Source: based on [3]

Like other similar methods (AHP and ANP), SWARA is also based on expert's ideas but experts can be participated easily in this method. Information about experts is shown in table 3.

Tab. 3: Background Information of Experts

Category	Classification	No.
Working background	Web designer	2
	Game designer	3
	Graphics	2
	Marketing instructor	1
	Software experts	2
Education Level	Bachelor	0
	Master	6
	Ph.D.	4
Sex	Male	8
	Female	2

Source: own

Ten experts of game designing participated in this research. They have worked on web designing, graphics, marketing instructing and software. All of the experts were interested in this topic and had experiences on this issue. Presenting a framework and evaluating the needs from several perspectives, the researcher proposed these five areas and field in this research. Then the experts stated their opinions on identifying relative importance of each criterion for estimating the values of each criterion.

Procedure of this section was based on SWARA method and the result is shown in table 4.

Conclusion

Game industry, as we know, is one of the powerful industries which is based on knowledge and is also a field of interesting for investigators in developed country. Game industry is consisted of several categories and online games are one of the most profitable ones. The main aim of this research was online games based on explorer that the researcher decided to develop a framework for constructing game in highest level. In this research a new method in MADM is applied to categorize factors and calculate relative importance and value of each factor which is called SWARA.

The model of research is included seven factors: transaction fees, game scenario, customer service, game rewards, game play, attractive website graphic and finally similarity to real world.

In process of research ten experts participated in different fields and they were: two web

Tab. 4: Final Results of SWARA Method in Weighting Criteria

Criterion	Comparative importance of average value s_j	Coefficient $k_j = s_j + 1$	Recalculated weight $W_j = \frac{x_{j-1}}{k_j}$	Weight $g_j = \frac{w_j}{\sum_{w_j}}$
C_6		1	1	0.192
C_5	0.1	1.1	0.90	0.173
C_2	0.093	1.093	0.823	0.158
C_7	0.137	1.137	0.723	0.138
C_3	0.112	1.112	0.65	0.125
C_4	0.1	1.1	0.59	0.114
C_1	0.118	1.118	0.527	0.100

Relative importance of each criterion was calculated by SWARA method. Source: own

designers, three game designers, two graphics, one marketing instructor and two experts in software.

Results of SWARA method illustrated that attractive website graphic is the most important factor in this area and also show that importance of factors is very close. The importance and weight of each factor is shown in table 4.

This research can be useful as a powerful framework for game producers companies and designers of online games specially and also this model can be developed by each case and situation by producers and designers. Authors suggest that this research is powerful as a general form and model.

Competitive situation of markets is different from case by case and different markets and didn't consider by this research and that is one of limitations of this research. Authors propose that to applicants consider this matter in real world cases.

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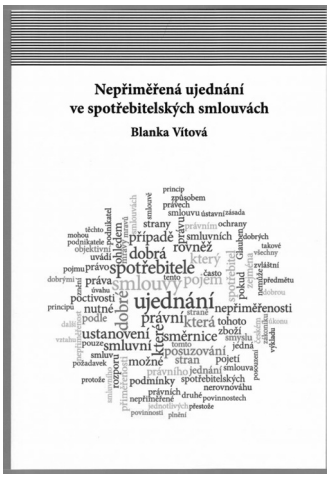
INVESTIGATING ON SUCCESSFUL FACTORS OF ONLINE GAMES BASED ON EXPLORER

Sarfaraz Hashemkhani Zolfani, Mahdi Farrokhzad, Zenonas Turskis

Game industry is one of the profitable industries nowadays and a lot of individuals and companies are working in this field. A lot of people like the products of such industries, especially online games which are new. The aim of this research is studying the category of online games based on explorer. Designers and producers can create a game based on a useful framework which can be underlined in this study. Transaction fees, game scenario, customer service, game rewards, game play, attractive website graphic and similarity to real world are the model of this research. SWARA method applied in evaluating important factors of model are used in this research and results shown that attractive website graphic are the most important factors in this area. Authors believe that results of this research are very useful for game producers and designers of game.

Key Words: *online games, online games based on explorer, game industry, SWARA.*

JEL Classification: *C63, M31, M15.*



NEPŘIMĚŘENÁ UJEDNÁNÍ VE SPOTŘEBITELSKÝCH SMLOUVÁCH

Autor: Blanka Vítová
Nakladatelství: Iuridicum Olomoucense, Olomouc, 2011

Ešte začiatkom roka 2012 pribudol medzi odbornú literatúru nový titul z pera JUDr. Blanky Vítovej, PhD., LLM., vysokoškolskej pedagogičky, ktorá pôsobí na Právnickej fakulte Univerzity Palackého v Olomouci na Katedre občianskeho práva, s názvom „Nepřiměřená ujednání ve spotřebitelských smlouvách“.

Česká republika sa začala zaoberať vyššou ochranou spotrebiteľa v súvislosti s pripravovaným vstupom Českej republiky do Európskej únie. Spotrebiteľskú legislatívu Európskej únie tvoria prevažne smernice. Európska politika ochrany spotrebiteľa je založená najmä na článku 169 Zmluvy o Európskej únii a Zmluvy o fungovaní Európskej únie, podľa ktorého k podpore záujmov spotrebiteľov zabezpečiť vysokú úroveň ochrany spotrebiteľov prispieva Únia k ochrane zdravia, bezpečnosti a hospodárskych záujmov spotrebiteľov, ako aj k podpore ich práva na informácie, vzdelávanie a práva združovať sa na ochranu ich záujmov, a to najmä opatreniami na vytváranie vnútorného trhu a ďalšími opatreniami, ktoré podporujú, dopĺňajú a sledujú politiku členských štátov.

Ochrana spotrebiteľa je súčasťou právneho poriadku už niekoľko desaťročí. Napriek tomu stále zostávajú problémy, a to ako teoretické tak praktické, ktoré zákonodarca zabúda a ktoré spôsobujú celý rad problémov ako v praxi tak v teórii. Problémy spojené s tzv. neprimeranými opatreniami v spotrebiteľských zmluvách pretrvali dodnes. Právna úprava takýchto dohôd sa stala súčasťou právneho poriadku mnohých štátov (vrátane ČR) na základe smernice 93/13 EHS. Pred zavedením tejto smernice však bolo možné niektoré z neprimeraných dohôd vyhlásiť za neplatné z dôvodu rozporu so zákonom alebo dobrými mravmi, alebo ak boli nezrozumiteľné.

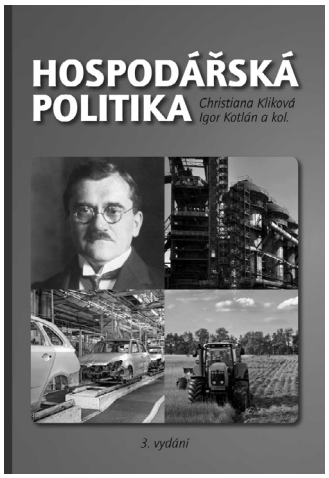
Ďalším problémom je povinnosť štátov Európskej únie zabezpečiť zavedenie vhodných a účinných postupov pre mimosúdne riešenie spotrebiteľských sporov v súvislosti so spotrebiteľskými záväznými vzťahmi. Mimosúdne riešenie spotrebiteľských sporov je však potrebné zabezpečiť tak, aby spotrebiteľ nebol zbavený ochrany, ktorú mu právo poskytuje.

Rozhodcovská doložka v niektorých prípadoch skutočne môže znamenať nerovnováhu v právach a povinnostiach strán (a teda byť neprimeranou dohodou). Ako Súdny dvor Európskej únie, tak české súdy vo svojej rozhodovacej praxi na rozhodcovské doložky už narazili, vyslovili možnosť využitia arbitrážnych doložiek pre spotrebiteľské spory de lege lata, avšak potvrdili výklad smerujúci k väčšej ochrane spotrebiteľa.

Predkladaná publikácia sa zaoberá rozborom právnej úpravy neprimeraných dohôd v spotrebiteľských zmluvách, a to ako z pohľadu českého tak európskeho práva. Medzi základné problematické aspekty v rámci týchto dohôd v spotrebiteľských zmluvách patrí najmä terminológia súčasného znenia právnej úpravy v Občianskom zákonníku, výklad neprimeranosti, kritériá neprimeranosti a posudzovania dohôd. Autorka publikácie tiež predkladá rozbor príkladov neprimeraných dohôd, ktoré sa viac alebo menej často vyskytujú v spotrebiteľských zmluvách, vrátane právnej úpravy arbitrážnych doložiek v spotrebiteľských zmluvách a rozdielov v implementácii oproti Smernici 93/13/EHS o nekalých podmienkach v spotrebiteľských zmluvách.

Predkladaná publikácia je určená nielen študentom práva, ale i ostatným študentom vysokých škôl, tiež advokátom, podnikateľom i samozrejme spotrebiteľom.

Dr. h. c. doc. JUDr. Alena Pauličková, PhD.
Vysoká škola v Sládkovičove



HOSPODÁŘSKÁ POLITIKA

Autoři: Christiana Kliková, Igor Kotlán a kol.
Nakladatelství: Institut vzdělávání SOKRATES, Ostrava, 2013

V letošním roce se na knižním trhu odborné ekonomické literatury objevila zajímavá publikace, kterou napsal autorský kolektiv vedený prof. Christianou Klikovou a doc. Igorem Kotlánem. Jak je patrné z názvu, publikace se věnuje specifické vědní disciplíně, hospodářské politice, a to jak z teoretického hlediska, tak i praktického. Jedná se již o třetí, aktualizované a rozšířené vydání publikace, která si již našla nemálo příznivců, a to nejen v akademické obci.

Kniha je strukturována do devíti kapitol. První kapitola vymezuje hospodářskou politiku jako teoretickou vědní disciplínu včetně jejích interakcí s jinými disciplínami, jako jsou obecná ekonomie, politologie, právo či sociologie. Současně je tato část doplněna o dnes aktuální téma korupce, jež může mít negativní vliv na úspěšnost provedených hospodářsko-politických opatření. Ve druhé kapitole jsou specifikovány jednotlivé cíle hospodářské politiky, přičemž jsou zároveň objasněny vzájemné vztahy mezi nimi. Třetí kapitola popisuje koncepční přístupy k hospodářské politice, jež jsou nezbytné pro pochopení jednotlivých opatření praktické hospodářské politiky ve smyslu stabilizační, prorůstové, nabídkové, poptávkové, mikroekonomické či makroekonomické hospodářské politiky. Čtvrtá kapitola se zaobírá problematikou očekávání, včetně jejích teoretických konceptů, jež formují ekonomické subjekty a která mají v současné době, čili době nepřetržitého toku informací, zásadní vliv na vývoj některých makroekonomických agregátů či dílčích trhů a jejich elementů. Pátá kapitola na předchozí navazuje ve smyslu časové nekonzistence, se kterou se musí praktická hospodářská politika potýkat. Jedná se zejména o velmi problematické relace mezi optimálními ex ante a ex post opatřeními hospodářské politiky. V šesté kapitole jsou vymezeny klíčové typy hospodářské politiky – monetární politika, fiskální politika a vnější hospodářská politika, a to jednak z teoretického pohledu, jednak z praktického, kdy jsou na relevantních ekonomických ukazatelích vhodně demonstrovány konkrétní opatření hospodářské politiky. V obdobném duchu jsou v sedmé kapitole popsány ostatní typy hospodářské politiky. V této souvislosti je třeba ocenit, vzhledem k členství České republiky v Evropské unii, že autoři doplňují tuto problematiku i o vymezení těchto politik na unijní úrovni, včetně z toho plynoucích implikací pro českou ekonomiku či české hospodářsko-politické autority. Předposlední, osmá kapitola představuje souhrn typických modelových konceptů praktické hospodářské politiky, se kterými jsme se mohli v minulosti setkat a které mohou být inspirativní i v současnosti. V deváté kapitole se autoři zamýšlejí nad vlivem světové ekonomiky, resp. ekonomické integrace na realizaci národní hospodářské politiky.

Publikace má charakter logicky uspořádané materie, ve které autoři prezentují klíčové poznatky v oblasti teoretické i aplikované hospodářské politiky. Mezi nesporné klady knihy patří široké teoretické zázemí a aktuálnost dat použitých v tabulkách či grafech, jež názorně reprodukují situaci v dané oblasti hospodářské politiky. Čtenář tak může porovnat celou řadu teoretických poznatků s jejich praktickou realizací a získat tak komplexní pohled na popisovanou tematiku.

Celkově vzato, jedná se o velmi zdařilou publikaci, která srozumitelnou formou seznamuje s problematikou hospodářské politiky a současně propojuje teorii s aktuální hospodářskou realitou v České republice a Evropské unii. Domnívám se proto, že si tato publikace najde široké spektrum čtenářů.

Mgr. Ing. Michal Tvrdoň, Ph.D.
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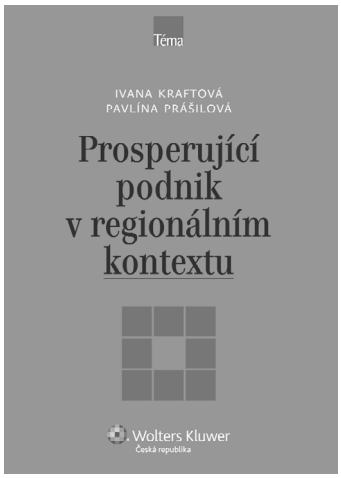

PROSPERUJÍCÍ PODNIK V REGIONÁLNÍM KONTEXTU

Autoři: Ivana Kraftová, Pavlína Prášilová
Nakladatelství: Wolters Kluwer Česká republika, 2013

Kniha nabízí teoretický a prakticky využitelný obsah zaměřený na podnik a jeho okolí. Je bohatě vybavena grafy, tabulkami, schématy a příklady a je tak přes obsahovou náročnost čtenáři lépe přístupná. Je strukturována do čtyř kapitol, které se zaměřují na regionální a odvětvové souvislosti podnikání a věnují se také podnikatelské prosperitě spojované s povzbudivým růstem a inovačními trendy.

Autorky si kladou za cíl „s využitím interdisciplinárního přístupu v rámci ekonomických oborů propojit vybrané poznatky z oblasti mikroekonomie, podnikové ekonomiky a finančního řízení podniku s mezoekonomickými, tj. regionálními a odvětvovými aspekty, což mnohdy umožňuje nové pohledy a přístupy k víceméně známým problémům spjatých s tak závažnou otázkou, jakou je prosperita ekonomických subjektů".

První kapitola se věnuje regionálním a odvětvovým determinantům podnikání, deskripci lokalizace podnikatelské aktivity v prostoru a regionu s využitím indikátorů zdrojů a indikátorů výstupů Kapitola je vydatně vybavena rozsáhlými teoretickými i statistickými informacemi a je studijně plně využitelná.

Následující dvě kapitoly mají výrazné teoretické ekonomické zaměření na mikroekonomii, podnikovou ekonomiku a finanční řízení. Není uváděn přímý, připusťme jednoduchý návod, jak podnik vázat na region, ale cestou vyspělých teoretických úvah, doplněných názornými příklady, může čtenář nacházet návody a výzvy.

Kapitálová efektivnost je dána v kapitole třetí do souvislosti s hodnotou podniku a vysvětlena pomocí finanční páky – její síly, směru a intenzity působení, ale i citlivosti, s jakou reaguje tempo růstu čistého zisku na tempo růstu zisku před odečtením daní a úroků. Možnost a schopnost využívat při řízení nástrojů finančního inženýrství, které se významně rozvíjí při naplňování kohezní politiky EU, může být pro podnikatele, stejně jako region, výraznou konkurenční výhodou.

Závěrečná čtvrtá kapitola charakterizuje povzbudivý růst jako dynamickou rovnováhu. Ukazuje na důsledky růstu pro podnik a hledá „růstovou rovnováhu" s využitím tří vybraných modelů růstu – Gordonova, Higginsova a Brealey-Myersova. Pro řízení povzbudivého růstu jsou vymezeny kompetence provozního a finančního manažera. Do zdánlivého protikladu hledání růstové rovnováhy se staví inovace jako prvek vyvolávající nerovnováhu. V této souvislosti jsou zachyceny dvě triády: 3i (invence, intuice, inovace) a 3V (věda, výzkum, vývoj) spolu s jejich důsledky pro prosperitu podniku.

Práce je napsána na vysoké teoretické úrovni se snahou vzájemně provázat rozdílné teoretické výstupy i v kombinaci se statistickými daty a příklady. Může být vhodnou pomůckou jak pro teoretickou, tak i aplikační sféru a zcela jistě poslouží zájemcům o teoretická studia.

prof. Ing. Petr Němeček, DrSc.
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MALÝ SLOVNÍK FINANČNÍHO PRÁVA

Autorka: Alena Pauličková
Vydavatel: DPC Advertising, 2013

Finanční gramotnost, právní gramotnost jsou nepochybně mj. diskutovanými tématy a to nejen v České republice. Začátkem roku 2013 vyšla na Slovensku útlá, ale velmi potřebná publikace s názvem „Malý slovník finančního práva“. Autorkou této publikace doc. JUDr. Alena Pauličková, PhD., Dr.h.c. Z vydaných publikací a zejména ohlasů je patrné, že autorka je zkušeným odborníkem v oblasti finančního práva.

Jak uvádí autorka v publikaci, současná doba je poznamenána množstvím nových právních předpisů a zejména množstvím jejich změn. V tomto ohledu je prospěšné získat informace o pojmech ve finančním právu, které autorka ve své publikaci předkládá.

Publikace je strukturována v abecedním pořádku, k jednotlivým pojmům je připojen srozumitelný výklad s podrobnostmi. Zvláštní pozornost věnuje autorka pojmům z oblasti daňové problematiky. Za významné považuji zařazení zásad finančního práva. Zásady ve finančním, daňovém, celním tj. veřejném právu jsou, jak známo povinností dodržovat je správci daně. Samostatnou část tvoří rejstřík, který jednoznačně umožňuje zájemci rychlou orientaci k získání informace.

Charakter publikace Malý slovník finančního práva je popularizačně – právní, zvláště tím se stává pro širokou veřejnost pochopitelnější a srozumitelnější. Autorka v publikaci předkládá své bohaté teoretické poznatky, které ve srozumitelné podobě aplikuje do praxe. Zájemce zcela jistě ocení možnost získat rychlou orientaci v problematice, jakož i praktické využití.

Po prostudování předložené publikace lze jen doporučit zájemcům seznámit se s výkladem pojmů a v praktickém životě je používat.

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[1] JÁČ, I., RYDVALOVÁ, P. a ŽIŽKA, M. *Inovace v malém a středním podnikání.* 1. vyd. Brno: Computer Press, 2005. ISBN 80-251-0853-8.

[2] PITTNEROVÁ, R. *Revitalizace textilních brownfields* [online]. Liberec: Technická univerzita v Liberci, 2005. [cit. 2007-07-04]. Dostupné z: <ndz.hf.tul.cz>.

[3] SIMOVÁ, J. Způsob diferencovaného řízení vztahů se zákazníky podle jejich hodnoty pro podniky v sektoru služeb. *E+M Ekonomie a Management*. 2007, roč. 10, č. 2, s. 118–127. ISSN 1212-3609.

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[1] HÁJEK, L. *Economics: an overview of basic concepts and problems.* 1st. ed., Hradec Králové: Gaudeamus, 2000. ISBN 80-7041-004-3.

[2] LOW, CH. and LUNGOVÁ, M. *The ethical approach to private sector property development: A comparison between the UK and the Czech Republic* [online]. Liberec: Technical University of Liberec, 2006. [cit. 2007-07-04], <http://ndz.hf.tul.cz>.

[3] ZÁMEČNÍK, R. Personnel controlling as a part of the management controlling system in an enterprise. *E+M Ekonomie a Management.* 2007, Vol. 10, Iss. 2, pp. 29–36. ISSN 1212-3609.

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