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Analýza vývoja vybraných nefinančných ukazovateľov kapacity a výkonov cestovného ruchu na úrovni Slovenskej republiky a v Prešovskom samosprávnom kraji v období 2008 – 2017

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Abstrakt: Trhové prostredie poznačené rastúcou konkurenciou a zvyšujúcimi sa nárokmi na kvalitu služieb, ovplyvňuje úspešnosť podnikov, ako aj výkonnosť celého odvetvia cestovného ruchu. Intenzita zavádzania moderných metód riadenia, zdokonalené prístupy a metódy analýz, inovované organizačné štruktúry a informačné systémy, sú podmienkou pre napredovanie aj v odvetví ubytovacích a stravovacích služieb. Keďže odvetvie cestovného ruchu citlivo reaguje na vonkajšie činitele dané vývojom politického, ekonomického ako aj prírodného a sociálneho prostredia, rastie aj potreba čo najrýchlejšie sa prispôsobiť zmenám, aplikovať vhodné manažérske techniky, za účelom zabezpečenia úspechu podnikov cestovného ruchu. Príspevok sa zameriava na analýzu sústavy ukazovateľov kapacity a výkonov cestovného ruchu na úrovni Slovenska a v Prešovskom samosprávnom kraji (PSK) v období 2008 – 2017. Na zhodnotenie stavu a vývoja odvetvia cestovného ruchu na Slovensku a v PSK sme použili nasledovnú sústavu nefinančných ukazovateľov kapacity a výkonov cestovného ruchu: počet ubytovacích zariadení, počet lôžok v ubytovacích zariadeniach, počet návštevníkov cestovného ruchu a počet prenocovaní v ubytovacích zariadeniach cestovného ruchu, ktoré značne ovplyvňujú výkonnosť podnikov odvetvia cestovného ruchu na Slovensku ale aj vo vybranom regióne. Výsledky analýzy ukázali, že aj keď v priebehu rokov 2008-2017, zvlášť v posledných štyroch rokoch, klesal počet ubytovacích zariadení a s ním aj počet lôžok, nemalo to negatívny dopad na ostatné ukazovatele. Práve naopak, došlo k nárastu počtu návštevníkov ako aj k nárastu počtu prenocovaní.

Kľúčové slová: cestovný ruch; ubytovacie zariadenia; kapacity a výkony cestovného ruchu

JEL klasifikácia: Z32; F63

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1. Úvod

Jedným z najvýznamnejších sektorov svetovej ekonomiky 21. storočia je cestovný ruch. Priamo na Slovensku je v sektore služieb zamestnaných vyše 111 000 zamestnancov. Podiel cestovného ruchu HDP v súčasnosti tvorí približne 2,6 %. Cestovný ruch na Slovensku má ale potenciál dosiahnuť v roku 2020 podiel až 3,2 % na celkovom HDP, ktorý predpokladá Stratégia rozvoja cestovného ruchu do roku 2020. Podľa odhadov Európskej komisie má sektor cestovného ruchu potenciál tvoriť až 12 % HDP štátu, čo by v budúcnosti vo významnej miere prispelo k rozvoju ekonomiky Slovenska.

2. Základné teoretické východiská

Cestovný ruch je tzv. prierezovým odvetvím národného hospodárstva, čo znamená, že ovplyvňuje mnoho ďalších hospodárskych odvetví: dopravu, stavebníctvo, potravinársky priemysel či poľnohospodárstvo. Cestovného ruchu sa týkajú viaceré ekonomické činnosti, ktorých výstupy predstavujú produkty charakteristické pre cestovný ruch, ktoré priamo a v rôznej miere uspokojujú dopyt návštevníkov v cestovnom ruchu (Gúčik 2011). Ekonomické činnosti sú buď špecifickými pre cestovný ruch (ubytovacie služby), alebo majú polyfunkčný charakter (stravovacie služby) a okrem potrieb návštevníkov v cestovnom ruchu uspokojujú aj ostatné obyvateľstvo.

Odvetvie ubytovacích a stravovacích služieb zahŕňa podniky, ktoré ponúkajú ubytovacie a stravovacie služby, pričom ich zaraďujeme medzi služby cestovného ruchu. Orieška (2011, s. 4) definuje služby cestovného ruchu a objasňuje ich individuálny a spoločenský efekt nasledovne: „Služby cestovného ruchu predstavujú užitočné činnosti nemateriálneho charakteru, ktorých výsledkom je buď individuálny, alebo spoločenský efekt“. Individuálny efekt vychádza z cieľa účasti na cestovnom ruchu (napr. rekreačný, kultúrny, športový, zdravotný ap.). Prostredníctvom spoločenského efektu dosahuje individuálny efekt (napr. udržiavanie čistoty v prostredí).

Ubytovacie služby súvisia podľa Oriešku (2011) ďalej s pobytovou stránkou cestovného ruchu. Umožňujú prenocovanie alebo prechodné ubytovanie účastníkov cestovného ruchu. Sú predpokladom vzniku a rozvoja najmä dlhodobého ruchu. Ich súčasťou sú aj služby, ktoré súvisia s pobytom hostí v ubytovacom zariadení. Ide o podávanie informácií, úschovu batožiny a jej prepravu v ubytovacom zariadení, budenie hostí, požičiavanie spoločenských hier, úschovu cenností v hotelovom trezore a mnohé ďalšie. Sniščák (1997) uvádza, že komerčné ubytovacie zariadenia poskytujú prechodné ubytovanie a s tým spojené služby za úhradu. Komerčné ubytovacie zariadenia produkujú a realizujú na predaj svoj produkt, ktorý predstavujú ubytovacie služby, stravovacie služby a doplnkové služby.

Trh ubytovacích služieb je podľa Sládeka (2003) zameraný predovšetkým na uspokojovanie potrieb počas ubytovania, prenocovania pobytu. Dopyt trhu ubytovacích služieb tvoria hostia, ktorí pochádzajú z iného miesta ako z miesta kde sa nachádza ubytovacie zariadenie. Môžeme povedať, že trh ubytovacích služieb je širší a oveľa rizikovejší ako trh stravovacích služieb. Ako uvádza Horner, Swarbrooke (2003), hotelové a reštauračné odvetvie zahŕňa všetky subjekty zúčastnené na poskytovaní služieb hosťom, a to ubytovanie, stravovanie, ale i ďalšie doplnkové služby. Ide teda o poskytovanie ubytovania a stravovania, no nie všetci zákazníci sú turisti, ale určitú časť tvorí miestne obyvateľstvo.

Podľa Oriešku (2011) zabezpečujú stravovacie služby uspokojovanie základných potrieb výživy účastníkov cestovného ruchu. Ide o služby základného stravovania, doplnkového stravovania a občerstvenia, ako aj spoločensko-zábavné služby, spojené s hudobnou produkciou, kultúrnym programom, prípadne ďalšie. Gúčik a kol. (2006) definujú pohostinské zariadenie ako zariadenie poskytujúce pohostinské služby miestnemu obyvateľstvu a návštevníkom počas cestovania a pobytu v cieľovom mieste. Existuje tak významný vzťah medzi pohostinskými a ubytovacími zariadeniami. Ubytovacie zariadenia okrem poskytovania prechodného ubytovania poskytujú verejnosti aj pohostinské služby, ktorých rozsah závisí od kategórie ubytovacieho zariadenia.

Trh stravovacích služieb zahŕňa predaj a nákup tovarov a služieb v pohostinských zariadeniach. Ide o ekonomické vzťahy medzi pohostinskými zariadeniami a hosťami v danej lokalite, ktorým pohostinské zariadenia ponúkajú jedlá a nápoje ako svoju obchodnú činnosť. Dopytom trhu pohostinských služieb sú hostia z daného miesta, kde sa pohostinské zariadenie nachádza, alebo hostia, ktorí pochádzajú z iného miesta (Sládek 2003).

Ubytovacie a stravovacie služby sú súčasťou terciárneho sektora, ktorý zahŕňa všetky odvetvia ľudskej činnosti, ktorých podstatou je poskytovanie služieb. Sektor služieb patrí k najdynamickejšie sa rozvíjajúcim sektorom národného hospodárstva vo vyspelých krajinách. Roguľa (2012) uvádza, že terciárny sektor je značne nízko investične náročný, je tu vysoké tempo zavádzania vedecko-technického pokroku a má vysoký rast produktivity. Ďalší autori, naopak, vnímajú zriaďovanie ubytovacích a stravovacích zariadení za investične náročné.

3. Metodológia

Príspevok sa zameriava na analýzu a komparáciu vývoja vybraných nefinančných ukazovateľov kapacity a výkonov cestovného ruchu v období 2008 – 2017. Cieľom príspevku bolo zhodnotiť vývoj ukazovateľov kapacity a výkonov odvetvia cestovného ruchu na úrovni NUTS 1 - Slovenská republika a NUTS 3 - Prešovský samosprávny kraj (PSK).

Použité sekundárne dáta na národnej a regionálnej úrovni boli získané z databázy Štatistického úradu Slovenskej republiky a následne spracované v programe MS Excel.

Na zhodnotenie vývoja odvetvia cestovného ruchu v rámci Slovenska a zvlášť PSK sme vybrali a aplikovali nasledovné ukazovatele kapacity a výkonov cestovného ruchu:

- počet ubytovacích zariadení,
- počet lôžok v ubytovacích zariadeniach,
- počet návštevníkov v ubytovacích zariadeniach,
- počet prenocovaní návštevníkov v ubytovacích zariadeniach.

4. Výsledky a diskusia

V súlade so stanoveným cieľom príspevku sme sa v nasledujúcej časti zamerali na analýzu sledovaných nefinančných ukazovateľov kapacity a výkonov cestovného ruchu za roky 2008 – 2017, v komparácii zistených hodnôt na úrovni Slovenskej republiky (NUTS 1) a Prešovského samosprávneho kraja (NUTS 3).

Vývoj jednotlivých ukazovateľov za Slovensko (všetky VÚC) a PSK bol spracovaný do prehľadných tabuliek, pričom prostredníctvom grafov sme vývoj vybraných ukazovateľov za PSK porovnali s priemerom za Slovenskú republiku (priemer za VÚC s výnimkou PSK).

1.1 Počet ubytovacích zariadení

Objektom skúmania bol najskôr ukazovateľ počtu ubytovacích zariadení a sledovanie jeho vývoja za roky 2008-2017. Odvetvie cestovného ruchu na Slovensku v sledovanom období vytváralo rôzny počet ubytovacích zariadení. V nasledujúcej tabuľke 1 uvádzame vývoj spomínaného ukazovateľa za PSK a Slovensko, a zároveň Graf 1 podáva porovnanie vývoja ubytovacích zariadení PSK a priemeru Slovenska na základe vývoja v ostatných okrajoch.

Tabuľka 1. Vývoj počtu ubytovacích zariadení

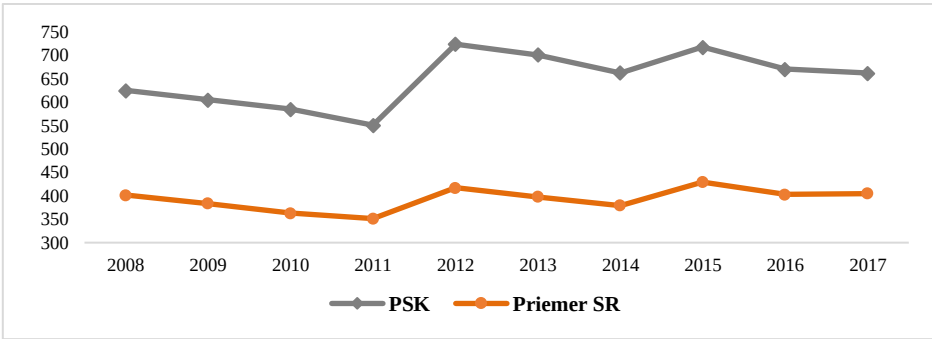
Počet zariadení	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SR	3 434	3 292	3 126	3 011	3 643	3 485	3 318	3 724	3 489	3 495
PSK	625	605	585	551	724	701	663	718	671	662

(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

V priebehu sledovaného obdobia bol zaznamenaný kolísavý trend vývoja počtu ubytovacích zariadení, tak v rámci Slovenska aj ako v rámci PSK. Najnižší počet ubytovacích zariadení na Slovensku bol zistený v roku 2011, a naopak najviac zariadení pôsobilo v krajine v roku 2015. V uvedenom období teda došlo k takmer 24 % nárastu celkového počtu zariadení. Najvýraznejšiu medziročnú zmenu sme kvantifikovali v roku 2012, kedy daný ukazovateľ vzrástol indexom 1,2099, čo predstavovalo zvýšenie počtu ubytovacích zariadení až o 2 647. V komparácii rokov 2008 a 2017 môžeme sledovať, že počet ubytovacích zariadení sa výrazne nezmenil a v roku 2017 sa nachádzal na úrovni roka 2008, teda na úrovni predkrízového obdobia. Celkovo pôsobilo na Slovensku v priemere za skúmané obdobie 3 402 ubytovacích zariadení.

V rámci Prešovského kraja sme evidovali najnižší počet zariadení taktiež v roku 2011. Naproti tomu, najvyššiu hodnotu dosiahol tento ukazovateľ v roku 2012, kedy v PSK vykonávalo podnikateľskú činnosť 742 ubytovacích zariadení. To znamená, v spomínanom období bola zachytená najvýraznejšia medziročná zmena ukazovateľa, a to jeho nárast indexom 1,3140. Pri hodnotení vývoja musíme konštatovať, že v priebehu sledovaných rokov sme zaznamenali prevažne klesajúci trend počtu zariadení, s výnimkou rokov 2012 a 2015, kedy došlo k značnému zvýšeniu ukazovateľa. Rovnako ako v rámci vývoja za Slovensko, aj v prípade PSK sa hodnoty ukazovateľa v roku 2017 dostali takmer na totožnú úroveň roka 2008. V porovnaní s celkovým počtom zariadení za Slovensko, počet ubytovacích zariadení v rámci PSK predstavoval približne 1/5.

Graf 1. Vývoj počtu ubytovacích zariadení



(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Na základe vyššie uvedeného grafu môžeme konštatovať, že počet ubytovacích zariadení v PSK dosahoval počas celého skúmaného obdobia vyššie hodnoty v porovnaní s priemerom za ostatné kraje Slovenska. Výsledky ukázali, že v rámci PSK pôsobilo v priemere až o 38,80 % viac zariadení ako v iných krajoch, pričom priemerná hodnota za PSK sa pohybovala na úrovni 651 zariadení. V prípade priemerného vývoja za kraje Slovenska (s výnimkou PSK) sme v sledovanom období zistili najvyššiu hodnotu v roku 2015 (430 podnikov), a naopak najmenej ubytovacích zariadení vykonávalo podnikateľskú činnosť v roku 2011 (352 podnikov). Priemerná úroveň daného ukazovateľa bez zohľadnenia PSK sa v období 2008-2017 nachádzala vo výške 357 podnikov. Podľa výsledkov môžeme usúdiť, že kapacitné predpoklady v PSK sú v porovnaní s ostatnými krajmi Slovenska na dostatočnej úrovni.

1.2 Počet lôžok v ubytovacích zariadeniach

V ďalšej časti príspevku sme pozornosť venovali analýze vývoja ukazovateľa počtu lôžok v ubytovacích zariadeniach za skúmané roky 2008-2017. Je zrejmé, že na území SR ubytovacie zariadenia disponovali rôznym počtom lôžok. Vývoj daného ukazovateľa za Slovensko a samostatne za PSK prezentujeme v nižšie uvedenej Tabuľke 2, pričom v Grafe 2 uvádzame komparáciu vývoja počtu lôžok za PSK a priemer Slovenska podľa vývoja v ostatných okrajoch Slovenska.

Tabuľka 2. Vývoj počtu lôžok v ubytovacích zariadeniach

Počet lôžok	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SR	187 698	187 050	183 898	186 156	201 398	197 747	190 595	198 858	192 218	194 274
PSK	33 942	32 764	31 844	31 207	34 163	34 131	33 318	33 927	32 291	32 009

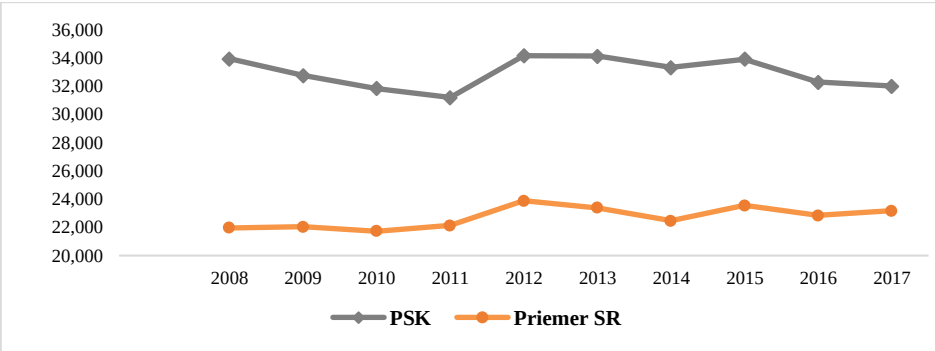
(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Na základe kvantifikovaných výsledkov možno konštatovať, že za sledované obdobie bol zistený kolísavý trend vývoja počtu lôžok. Najviac sa ich na území SR nachádzalo v roku 2012 (v počte 201 398 lôžok), a naopak najmenej v roku 2010 (v počte 183 898 lôžok). V porovnaní daných rokov teda došlo k nárastu lôžok o približne 10 %. V tejto súvislosti bola najvyššia medziročná zmena tohto ukazovateľa zaznamenaná v roku 2012, kedy došlo k nárastu celkového počtu lôžok na Slovensku indexom 1,0819, čo značí zvýšenie o 15 242 lôžok. Rok 2012 bol zároveň obdobím, kedy celkový počet lôžok jediný krát za skúmané obdobie presiahol hranicu 200 000. Od tohto momentu síce ukazovateľ klesal, ale až do roku 2017 sa udržal nad úrovňou počtu 190 000 lôžok. V rámci komparácie celého obdobia došlo k nárastu počtu lôžok iba o 3,38 %, čo indikuje, že Slovensko na dostalo približne na rovnakú úroveň akú dosahovalo v danom ukazovateli ešte pred obdobím samotnej krízy. Analýza tiež preukázala, že na Slovensku bolo v priemere vytvorených 191 989 lôžok po zohľadnení všetkých ubytovacích zariadení.

Prešovský kraj disponoval v období rokov 2008 – 2017 v priemere 17 % z celkového počtu lôžok na Slovensku. V prípade daného kraja bol najnižší počet lôžok k dispozícii v roku 2011, avšak hneď v nasledujúcom roku dosiahol tento ukazovateľ svoje maximum, keď sa jeho hodnota pohybovala vo výške 34 163 lôžok. Výsledky teda potvrdili, že

v roku 2012 ubytovacie zariadenia celkovo poskytovali najviac lôžok a zároveň došlo k najvyššiemu medziročnému nárastu indexom 1,0947. Na základe výsledkov je ďalej zrejmé, že celkový počet lôžok za sledované obdobie neustále klesal, s výnimkou roka 2012 a 2015. Dôkazom toho je aj porovnanie rokov 2008 a 2017, keďže hodnota ukazovateľa poklesla o 5,70 %, čo značí, že ubytovacie zariadenia ponúkali čoraz menej lôžok a dochádza tak k poklesu ponuky, čím sa rozvoj cestovného ruchu spomaľuje.

Graf 2. Vývoj počtu lôžok v ubytovacích zariadeniach



(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Komparáciou vývoja počtu lôžok v ubytovacích zariadeniach za PSK a priemer Slovenska (bez zohľadnenia PSK) sme zistili, že aj v rámci daného ukazovateľa sa PSK nachádzal výrazne nad priemerom Slovenska. PSK ponúkal v priemere o 9 391 viac ubytovacích lôžok, a to aj napriek zaznamenanému poklesu v posledných skúmaných rokoch. V priemere za roky 2008 – 2017 bolo v rámci PSK vytvorených 32 960 lôžok. V prípade priemerného vývoja za kraje Slovenska (s výnimkou PSK), sa priemerná hodnota ukazovateľa pohybovala na značne nižšej úrovni, a to len 22 719 lôžok. Na základe analýzy krajov (s výnimkou PSK) bola odhalená najnižšia hodnota daného ukazovateľa v roku 2010, a naproti tomu, v roku 2012 bolo vytvorených v priemere najviac lôžok. Pri pohľade na celkový vývoj lôžok za kraje je tiež dôležité konštatovať, že v sledovanom období došlo k zvýšeniu ukazovateľa, a to o 5,25 %.

1.3 Počet návštevníkov v ubytovacích zariadeniach

V nasledujúcej časti sme sa zamerali na analýzu tretieho vybraného ukazovateľa kapacity a výkonov cestovného ruchu, a to na sledovanie celkového počtu návštevníkov v ubytovacích zariadeniach. Aj v tomto prípade bola analýza realizovaná za obdobie 2008 - 2017. Vývoj počtu návštevníkov za všetky ubytovacie zariadenia spolu v rámci SR v porovnaní s PSK prezentuje Tabuľke 3. V nižšie uvedenom Grafe 3 uvádzame komparáciu vývoja počtu návštevníkov za PSK a priemer Slovenska na základe vývoja v ostatných okrajoch.

Tabuľka 3. Vývoj počtu návštevníkov v ubytovacích zariadeniach

Počet návš.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SR	4 082 645	3 381 354	3 392 361	3571 093	3 774 062	4 048 505	3 727 710	4 330 249	5 023 629	5 375 475
PSK	736 051	586 447	611 663	618 470	664 863	700 248	642 706	740 701	854 528	894 173

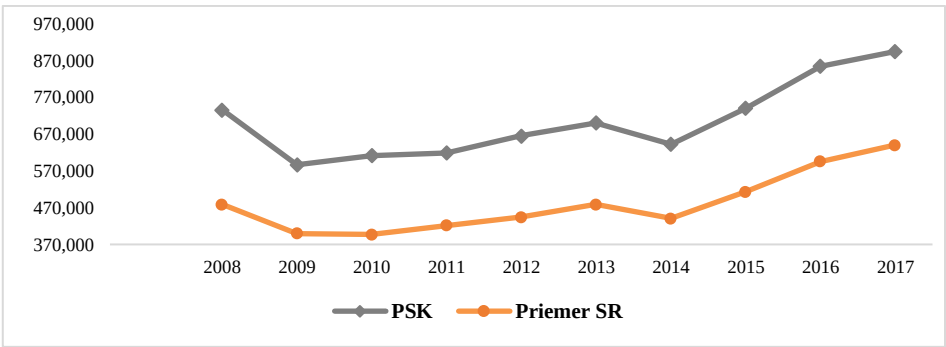
(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Na základe zistených výsledkov možno konštatovať, že počet návštevníkov v ubytovacích zariadeniach Slovenska bol v období rokov 2008 – 2015 síce premenlivý, ale od roku 2015 s pozitívnym trendom vývoja. Osciloval v intervale od 5 375 475 návštevníkov (v roku 2017) do 3 381 354 návštevníkov (v roku 2009). To znamená, že ak neberieme do úvahy rok 2008, za sledované obdobie došlo k nárastu celkové počtu návštevníkov ubytovacích zariadení o 41,03 %. Je zrejmé, že prepad počtu návštevníkov v rokoch 2009 – 2011 ovplyvnila hospodárska kríza a do istej miery aj zavedenie eura, ktoré zdraželo dovolenky pre turistov z Česka, Poľska a Maďarska. Okrem toho bol výrazný prepad tohto ukazovateľa zaznamenaný v roku 2014, kedy počet návštevníkov Slovenska v porovnaní s predchádzajúcim

rokom poklesol indexom 0,9208. Avšak, hneď v nasledujúcich rokoch 2015 a 2016 došlo k výraznému zvýšeniu o 1 295 919 návštevníkov. Súhrne teda môžeme zhodnotiť, že napriek pomalšiemu tempu rastu v počte ubytovacích zariadení a im prislúchajúcich lôžok, sa celkový počet návštevníkov vyvíjal oveľa priaznivejšie a zvyšoval sa rýchlejším tempom. Ubytovacie zariadenia na Slovensku navštívilo za skúmané obdobie v priemere 3 571 093 návštevníkov.

Vývoj počtu návštevníkov v PSK k celkovému počtu návštevníkov na území SR, za obdobie rokov 2008 – 2017 dosahoval v priemere 17%. Počet návštevníkov v Prešovskom kraji dosahoval najnižšiu hodnotu 611 663 návštevníkov v roku 2010, a naopak najvyššiu úroveň 894 174 návštevníkov dosiahol tento ukazovateľ v roku 2017, čo predstavuje nárast o 46 %. Tento vývoj môžeme hodnotiť pozitívne, pretože ho sprevádza nárast pracovných možností a rast výkonov v odvetví CR. Počty návštevníkov v Prešovskom kraji medziročne v posledných troch rokoch mali rastúci trend, nakoľko v roku 2015 došlo k nárastu počtu návštevníkov o 15,2 %, v roku 2016 o 15,4 % a v roku 2017 navštívilo PSK o 4,6 % viac návštevníkov oproti predchádzajúcemu roku. Najvyšší medziročný prepad ukazovateľa bol zaznamenaný v roku 2009 (indexom 0,7967), pričom k najvyššiemu nárastu v počte návštevníkov došlo v roku 2016 na úrovni indexu 1,1537.

Graf 3. Vývoj počtu návštevníkov v ubytovacích zariadeniach



(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Počet návštevníkov ubytovacích zariadení v PSK bol v porovnaní s priemerným počtom návštevníkov v SR vyšší takmer o 47 %, čo zobrazuje aj Graf 3. Dynamický nárast návštevníkov bol zaznamenaný v období rokov 2015 – 2017, čo je signálom oživenia odvetvia cestovného ruchu, a to aj napriek poklesu počtu ubytovacích zariadení a počtu lôžok. Pri pohľade na vývoj počtu návštevníkov za kraje Slovenska je možné sledovať rastúci trend, s výnimkou v rokoch 2009, 2010 a 2014, kedy došlo k ich poklesu. V priebehu analyzovaného obdobia bol zaznamenaný najvyšší počet v priemere za kraje v roku 2017 (640 186 návštevníkov), a naopak, ubytovacie zariadenia navštívilo najmenej ľudí v roku 2010 (397 243 návštevníkov). V danom kontexte sme ďalej zistili, že priemerná hodnota daného ukazovateľa sa nachádzala na úrovni 480 818 návštevníkov. V porovnaní s týmto výsledkom je zrejmé že v rámci PSK navštívilo ubytovacie zariadenia oveľa viac návštevníkov, keďže priemerná hodnota za PSK bola za sledovaného obdobie na úrovni 706 802 návštevníkov.

1.4 Počet prenocovaní návštevníkov cestovného ruchu

V poslednej časti príspevku sme sa venovali analýze posledného zvoleného ukazovateľa kapacity a výkonov cestovného ruchu, konkrétne sme analyzovali počet prenocovaní návštevníkov cestovného ruchu. Sledovaným obdobím boli aj v tomto prípade roky 2008 - 2017. V nasledujúcej Tabuľke 4 uvádzame celkový počet prenocovaní návštevníkov cestovného ruchu v rámci Slovenska v porovnaní s vývojom v PSK. V Grafe 4, ktorý je zobrazený v texte nižšie, podávame komparáciu vývoja počtu prenocovaní za PSK a priemer Slovenska na základe zohľadnenia vývoja v ostatných okrajoch krajiny.

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Tabuľka 4. Vývoj počtu prenocovaní návštevníkov cestovného ruchu

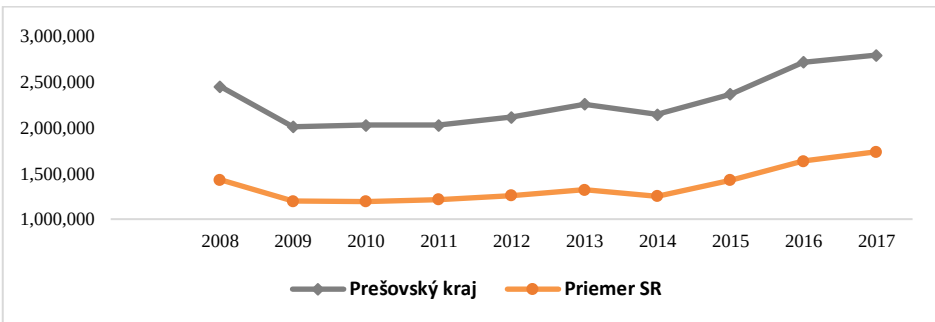
Počet pren.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SR	12 464 104	10 391 069	10 367 330	10 524 738	10 908 200	11 486 571	10 900 434	12 350 080	14 138 420	14 936 766
PSK	2 447 557	2 008 277	2 024 817	2 027 582	2 112 644	2 256 759	2 142 701	2 362 386	2 713 587	2 790 308

(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

V súlade so zistenými výsledkami zobrazenými v Tabuľke 4 je zrejmé, že počet prenocovaní nadobúdal rovnaký trend vývoja v porovnaní s vývojom ukazovateľa celkového počtu návštevníkov, nakoľko tieto dva ukazovatele sa vzájomne výrazne determinujú. Počet prenocovaní v ubytovacích zariadeniach na Slovensku dosiahol v roku 2017 svoje maximum v hodnote 14 936 766 prenocovaní. Oproti roku 2010 s počtom 10 367 prenocovaní (minimum) je to nárast o takmer 46 %. Do roku 2014 sme zaznamenali klesajúci trend vývoja indexom 0,8745, s výnimkou v roku 2013, kedy došlo k nárastu ukazovateľa o 5,04 %. V období 2014-2017 bol ale odhalený už len priaznivý rastúci trend ukazovateľa, s celkovým zvýšením počtu prenocovaní o 4 036 332. K najväčšiemu zvýšeniu ukazovateľa došlo v období rokov 2015/2016 na úrovni 14,48 %. Na základe komparácie rokov 2008 a 2017 sme tiež zistili, že počet prenocovaní návštevníkov cestovného ruchu sa zvýšil indexom 1,1984. Po zohľadnení celého analyzovaného obdobia možno konštatovať, že na Slovensku v ubytovacích zariadeniach bol priemerný počet na úrovni 11 846 771 prenocovaní.

Prešovský kraj v sledovanom období dosahoval v porovnaní so SR v priemere 19,32 % podiel počtu prenocovaní. Z porovnania počtu prenocovaní návštevníkov SR a PSK v rokoch 2014 – 2017, vidíme 19,16 % podiel prenocovaní na území PSK oproti počtu prenocovaní v SR. Najnižší počet prenocovaní v PSK bol zaznamenaný v roku 2009 na úrovni 2 008 277 prenocovaní a najvyšší počet prenocovaní vykazovali ubytovacie zariadenia v roku 2017 na úrovni 2 790 308 prenocovaní, čo predstavuje nárast o takmer 39 %. V rámci vývoja daného ukazovateľa za PSK bol zaznamenaný priaznivý rastúci trend vývoja, s výnimkou v rokoch 2009 a 2014. Analýzou medziročného vývoja sme ďalej zistili, že k najvyššiemu nárastu došlo v roku 2016 (indexom 1,1487), a naopak k najvyššiemu poklesu došlo v roku 2009 na úrovni indexu 0,8205. Celkovo môžeme konštatovať, že počet prenocovaní, ktorý mal rastúci trend hlavne v ostatných rokoch dáva predpoklad pre ďalší rozmach odvetvia cestovného ruchu naprieč celým Slovenskom.

Graf 4 Vývoj počtu prenocovaní návštevníkov cestovného ruchu



(Zdroj: vlastné spracovanie podľa ŠU SR 2018)

Aj vývoj počtu prenocovaní návštevníkov cestovného ruchu v PSK oproti priemernému počtu prenocovaní návštevníkov cestovného ruchu na Slovensku (v rámci ostatných krajov, Graf 4), má podobný charakter ako u predchádzajúcich ukazovateľov. Prešovský samosprávny kraj vykazuje v podstatnej miere vyšší počet prenocovaní návštevníkov cestovného ruchu. V rámci PSK prenocovalo v priemere o takmer 68 % viac návštevníkov cestovného ruchu ako je priemerný počet prenocovaní návštevníkov za ostatné kraje SR. Na základe výsledkov ukazovateľa za priemer Slovenska (bez zohľadnenia PSK) možno zhrnúť, že najviac prenocovaní sa na Slovensku uskutočnilo v roku 2017, a naopak najmenej v roku 2010 (pokles o 31,32 %). V priemere za jednotlivé kraje sa počet prenocovaní pohyboval za analyzované obdobie na úrovni 1 246 745.

Konštatovanie, že PSK má dostatočný počet ubytovacích zariadení a dostatočný počet lôžok v ubytovacích zariadeniach, a to aj napriek ich poklesu vo vývoji má svoje opodstatnenie. Potvrdzuje to rast počtu návštevníkov a rast počtu prenocovaní v existujúcich zariadeniach. Ubytovacie kapacity, podmienené veľkosťou Prešovského kraja, ktorý je najväčším VÚC, ako aj jeho bohatý prírodný potenciál daný polohou Vysokých Tatier, ho predurčujú, aby sa stal lídrom v odvetví cestovného ruchu na Slovensku.

4. Záver

Cieľom príspevku bolo analyzovať a porovnať vybrané ukazovatele kapacity a výkonov cestovného ruchu v období rokov 2008 – 2017, na úrovni Slovenskej republiky (NUTS 1) a Prešovského samosprávneho kraja (NUTS 3) pomocou vybraných nefinančných ukazovateľov kapacity a výkonov cestovného ruchu. Vývoj počtu ubytovacích zariadení cestovného ruchu a počtu lôžok v ubytovacích zariadeniach cestovného ruchu, bol kolísavý a v rokoch 2016 a 2017 došlo k ich poklesu. Vývoj počtu návštevníkov v ubytovacích zariadeniach a počtu prenocovaní návštevníkov cestovného ruchu v období rokov 2014 – 2017 dosahoval rastúci trend. Môžeme teda vyjadriť presvedčenie, že tento stav neovplyvňovali počty ubytovacích kapacít, ale ďalšie podporné faktory: pozitívny rast ekonomiky SR, rast miezd, pozícia Slovenska ako bezpečnej krajiny pre organizovanie cestovného ruchu, rast počtu zahraničných návštevníkov (hlavne z Českej republiky), zlepšenie propagácie cestovného ruchu doma aj v zahraničí.

Na základe tohto zistenia môžeme konštatovať, že nie je nutné investovať do výstavby nových kapacít ubytovacích zariadení, ale väčšiu pozornosť je potrebné venovať rekonštrukcií a modernizácii už existujúcich ubytovacích zariadení a to hlavne hotelov strednej triedy, ktoré podporujú rast domáceho cestovného ruchu, zároveň je nutné venovať pozornosť investíciám do nových balíkov služieb, ich kvality s ohľadom na primeranú cenovú úroveň. Tento pozitívny trend predpokladáme aj v budúcom období, vzhľadom na prijaté podporné opatrenia akými je zníženie sadzby DPH na ubytovacie služby vo výške 10 % a zavedenie rekreačných poukazov od januára 2019.

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Analýza zákazníckych preferencií v spoločnosti Camea car v podmienkach e-commerce

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Abstrakt: V súčasnosti zohráva elektronické obchodovanie vo svete obchodovania ako takého dôležitú úlohu. Prostredníctvom internetových obchodov dnes nakupuje množstvo zákazníkov. Títo zákazníci tvoria potenciálnych kupujúcich pre rôzne firmy. Rozmach elektronických obchodov nastal hlavne preto, že dnešný spotrebitelia využívajú internet denno denne, radi experimentujú s novými vecami, značkami a produktmi, ale sú taktiež nároční, pohodlní a moderní. Čo u zákazníkov dnes zohráva dôležitú úlohu je to, že k takémuto spôsobu nakupovania im stačí len prístup na internet, čo v súčasnosti už nezohráva žiaden problém, pretože k internetu sa dnes ľudia môžu pripojiť kdekoľvek.

Kľúčové slová: zákazníci, elektronické obchodovanie, zákaznícke preferencie,

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1. Úvod do problematiky

Elektronické obchodovanie alebo e-commerce označuje formu nákupu, predaja alebo distribúcie, kde ku kontaktu medzi predávajúcim a kupujúcim dochádza prostredníctvom elektronických systémov. Pod pojmom elektronické obchodovanie si môžeme v podstate predstaviť obchod medzi osobami, pri ktorom ide hlavne o využívanie informačných a komunikačných technológií (Suchánek 2012). Elektronické obchodovanie je pomerne novým a rozšíreným odborom a je dnes bežnou súčasťou firiem, ktoré ho využívajú pre svoje obchodovanie. Internetové obchodovanie predstavuje v súčasnosti najrýchlejšie sa rozvíjajúcu segment vo zvyšovaní výkonnosti a produktivity podnikov. E-commerce sa zaradzuje do oblasti priameho predaja, pri ktorom si zákazník môže vybrať tovar bez toho, aby musel navštíviť obchod alebo obchodné centrum (Suchánek 2007). Podľa Sedláčka (2006) elektronické obchodovanie spočíva v procese používania takých informačných a komunikačných technológií, ktoré sa využívajú hlavne vo fázach nákupu a predaja, t.j. v obchodných transakciách. Elektronické obchodovanie vo všeobecnosti označuje všetky formy transakcií, pri ktorých dochádza ku uskutočňovaniu predaja. Tieto procesy zahŕňajú a pozostávajú predovšetkým zo spracovania a prenosu digitálnych údajov, v ktorých sú zahrnuté texty, zvuky a vizuálne obrazy (Madleňák 2008). Ako vo svojej publikácií tvrdia Dorčák a Pollák (2010) e-commerce je len istou časťou, segmentom e-business, ktorý je zameraný na predaj tovarov a služieb cez internet. Z uvedených vysvetlení elektronického obchodovania je teda zrejme, že elektronické obchodovanie je rýchlo sa rozvíjajúcim segmentom, ktorý je bežnou súčasťou dnešných firiem. Je založený hlavne na využívaní informačných a komunikačných technológií, online prezentácií a pod. Okrem iného v súčasnosti internetové obchody uľahčujú a urýchľujú obchodovanie pre firmy. Na druhej strane tým, že ide o formu priameho predaja zákazníkom sa tak umožňuje jednoduchšie nakupovanie tovarov a to priamo z pohodlia ich domova. Za posledné desaťročie spôsobil internet veľké zmeny v spoločnosti a dokázal, že je zvláštnou komunikačnou platformou, ktorá sa dokáže rýchlo prispôsobiť potrebám užívateľov. V súčasnosti internet využíva stále viac ľudí, ktorí prostredníctvom neho komunikujú, diskutujú, vzdelávajú sa a vyhľadávajú potrebné informácie. Okrem toho internet umožňuje ľuďom nakupovať, platiť a mať prehľad aj o svojich financiách. Na internete sú dnes ľudia pripojený veľmi často (mobilné telefóny, GPS navigácia) a neustále vznikajú nové formy pripojenia. Internet nám dnes dokazuje, že je významným nástrojom pri obchodovaní, vyhľadávaní zákazníkov, komunikácií atď. Komunikácia cez internet sa môže realizovať prostredníctvom videohovorov, ale aj rôznych sociálnych sietí ako Facebook, Twitter a pod., prostredníctvom ktorých medzi sebou komunikujú milióny ľudí po celom svete (Mare 2012). Rýchly rozvoj lokálnych počítačových sietí v podnikoch komerčnej sféry a tiež štátnej správy výrazne ovplyvnil používanie internetu. Môžeme povedať, že v súčasnosti len máloktorá firma nevyužíva internet a nemá svoju webovú stránku. Internet je vhodným prostriedkom pre prezentácie a propagácie firiem. Na webových stránkach sa môžu prezentovať nielen textové formy prezentácie firiem, ale aj statické a dynamické obrázky a videá (Suchánek 2007). Vznik a postupné používanie elektronického obchodu so sebou prinieslo rôzne výhody pre rôzne sociálne skupiny, podniky a organizácie. V tejto časti sa preto zameriame na to aké výhody prináša elektronické obchodovanie zákazníkom a firmám.

Výhody pre zákazníkov (Tondr 2002):

- prvou výhodou elektronického obchodovania pre zákazníkov je otváracia doba, ktorá na internete nie je obmedzená. Internetové obchody neobmedzujú žiadne voľná, sviatky a preto si zákazník môže vyberať a nakupovať tovary hocikedy kedy má chuť a čas,
- elektronické obchody ponúkajú široké možnosti výberu ponúkaného tovaru, ktorý je rozdelený do jednotlivých kategórií a podkategórií,
- e-commerce umožňuje tiež zákazníkom porovnávať výšku cien a to vďaka zľavovým portálom a nákupným sprievodcom,
- dostupnosť internetových obchodov je tiež jedna z výhod pre zákazníkov. E-obchody nie sú obmedzené hranicami regiónov ani štátov. Stačí ak má zákazník notebook, tablet alebo mobil, ktorý má pripojenie na internet.

Výhody pre firmy (Kotler 2007):

- elektronické obchody poskytujú možnosť získania nových zákazníkov a taktiež poskytujú aj rôzne možnosti pre zistenie potrieb a požiadaviek potencionálnych zákazníkov,

- zákazníci poskytujú firmám prostredníctvom internetu aj spätnú väzbu, na základe ktorej môžu zlepšovať svoje výrobky alebo služby a tým zvyšovať spokojnosť svojich zákazníkov,
- elektronické obchody poskytujú aj výhodu nižších nákladov a vyššej rýchlosti. Prostredníctvom internetu sa firmy priamo spájajú so svojimi distribútormi, dodávateľmi a zákazníkmi čím si tiež znižujú svoje náklady a zabezpečujú svojim zákazníkom úspory, pretože zákazníci jednajú priamo s predávajúcimi,
- e-obchody poskytujú aj vyššiu efektivitu distribučných ciest a logistických funkcií akými sú napríklad spracovanie objednávok, podpora predaja atď,
- internetové obchody poskytujú firmám aj väčšiu flexibilitu a umožňujú im realizovať priebežné úpravy ponúk a programov. Online katalógy si môže firma prispôsobovať a meniť každý deň dokonca aj hodinu, čo sa pri bežných katalógoch, ktoré sú už vytlačené a odoslané zákazníkom, nedá,
- Vývoj internetu so sebou prináša okrem výhod aj nevýhody. Opäť ako v predchádzajúcej kapitole sa zameriame na nevýhody pre zákazníkov a firmy.

Nevýhody pre zákazníkov (Dorčák 2012):

- mnoho zákazníkov aj naďalej uprednostňuje namiesto internetového obchodovania osobný predaj pri kúpe určitých druhov tovarov akými sú napríklad oblečenie, autá a pod., pretože majú voči internetovým obchodom nedôveru,
- pri elektronických nákupoch musí zákazník uviesť aj svoje osobné údaje, čím vzniká riziko nerešpektovania súkromia, kedy si firmy medzi sebou vymieňajú informácie o zákazníkoch a databázy kontaktov, čo môže ohroziť ich bezpečnosť,
- rovnako ako pri zneužití osobných údajov, pri ktorých dochádza k nebezpečenstvu tak aj platby, pri internetových nákupoch, môžu mať nedostatočnú alebo narušenú bezpečnosť.

Nevýhody pre firmy (Joseph 2015):

- nevýhodou pri elektronických obchodoch pre firmy je fakt, že môžu mať problémy so zaškoľovaním a prispôsobovaním svojich zamestnancov novým technológiám, dizajnom a novým podnikovým zručnostiam, ktoré sú potrebné pre tvorbu efektívneho elektronického obchodovania,
- ďalšou nevýhodou internetových obchodov je zložité zapájanie existujúcich databáz a softvérov určených pre spracovanie transakcií a navrhovaných pre tradičný obchod do softvéru, ktorý umožňuje elektronické obchodovanie,
- okrem technologických a softvérových problémov, mnohé firmy čelia kultúrnym a právnym prekážkam pri vykonávaní svojich internetových obchodov ale aj tým, čo bolo spomenuté v predchádzajúcej časti, že mnohý spotrebitelia majú strach zasielať čísla svojich kreditných kariet a osobných údajov cez internet a to môže zhoršovať podnikanie firiem, ktoré predávajú svoje produkty prostredníctvom elektronických obchodov.

2. Metodológia

Hlavným cieľom tohto článku je zhodnotiť zákaznícke preferencie v procese elektronického obchodovania a preferencií zákazníkov vo firme Camea Car. Prieskumu sa zúčastnilo dokopy 114 respondentov, ktorí tvoria potenciálnych zákazníkov pre akékoľvek firmy. Na otázky týkajúce sa firmy už odpovedalo iba 72 respondentov a to z toho dôvodu, že nie každý z opýtaných poznal firmu Camea Car. Dáta boli zbierané v období február až marec 2018. Dotazník, na ktorý respondenti odpovedali bol rozosielaný v elektronickej podobe cez sociálnu sieť Facebook. Vzorka respondentov bola vyberaná náhodne a dotazník bol anonymný. Pre účely prieskumu v rámci tohto článku sme brali do úvahy len druhú časť respondentov, ktorá pozná, prípadne je zákazníkom spoločnosti Camea Car. V článku boli zozbierané dáta spracované formou tabuliek, grafov a pri spracovaní dát bola použitá aj popisná štatistika a vyššia štatistika spracovaná v programe NCSS 11. Spoločnosť Camea Car a.s. vznikla v roku 1992 a jej predmet podnikania sa orientoval na predaj a servis vozidiel značky Škoda. V roku 1993 sa firma rozšírila o značku Seat a neskôr v roku 1995 sa otvoril nový autosalón, ktorý mal sídlo na Duklianskej ulici a ktorý sa orientoval na

poskytovanie služieb zákazníkom v oblasti predaja a servisu nových vozidiel. Dôležitým rokom v rozvoji tejto firmy bol rok 2003, kedy došlo k rozdeleniu značiek Škoda a Seat. Pre značku Seat bol vybudovaný a otvorený nový, samostatný autosalón na Levočskej ulici. K ďalšiemu rozšíreniu firmy došlo v roku 2006, kedy pribudla k pôvodným dvom značkám automobilov značka Volvo, ktorá bolo umiestnená do priestorov na Levočskej ulici. Následne v roku 2007 došlo k ďalšiemu rozšíreniu o značku Honda, ktorá bola umiestnená do samostatného autosalónu v Košiciach na Prešovskej ulici. Od roku 2011 pribudla k značke Honda v košickom autosalóne ešte značka Volvo (Cameacar 2011). Hlavným predmetom činnosti tejto spoločnosti je predaj a servis osobných automobilov značiek Škoda, Seat, Volvo, Honda. Ďalším predmetom činnosti je predaj autodoplnkov, automobilových príslušenstiev a taktiež údržba a opravy osobných automobilov, leasing strojov, reklamná a propagačná činnosť a pod. Firma okrem uvedených činnosti poskytuje poradenstvo aj v oblasti financovania a poisťovania vozidiel (Cameacar 2011).

3. Výsledky a diskusia

Hypotéza 1: Predpokladáme, že podľa zákazníkov imidž internetovej stránky spoločnosti Camea Car korešponduje s úrovňou súčasných trendov.

Podľa predpokladov úroveň súčasných trendov v oblasti elektronického obchodovania do veľkej miery ovplyvňuje aktuálny imidž internetovej stránky a teda skúmané premenné budú vykazovať pozitívnu lineárnu korelačnú závislosť.

$$H0 = 0 \qquad H1 \neq 0$$

Hladina štatistickej významnosti: $\alpha < 0,05$

Hypotéza 2: Predpokladáme, že jednotlivé atribúty webových stránok, ktoré sú súčasťou procesu elektronického obchodovania výrazne ovplyvňujú aj celkový imidž internetovej stránky Camea Car, a že medzi skúmanými veličinami bude existovať pozitívna lineárna korelačná závislosť.

$$H0 = 0 \qquad H1 \neq 0$$

Hladina štatistickej významnosti: $\alpha < 0,05$

Cieľom štatistickej analýzy údajov bolo overiť stanovené hypotézy a tak zistiť skutočný stav v oblasti elektronického obchodovania prostredníctvom webovej stránky. Analýza dát pozostáva z vykonania korelačných analýz a následného štatistického testovania výsledkov prostredníctvom T - testu. Korelácia predstavuje vzťah medzi skúmanými premennými a hodnota korelačného koeficienta „r“ sa môže pohybovať v intervale od – 1 až 1. V prípade, že sa hodnota korelačného koeficienta pohybuje v mínusových hodnotách, vzťah medzi skúmanými veličinami je determinovaný negatívnou lineárnou koreláciou, čo znamená, že čím je jedna veličina väčšia, tým je tá druhá menšia. Ak sa hodnota korelačného koeficienta pohybuje v pozitívnych hodnotách, aj vzťah medzi skúmanými veličinami je determinovaný pozitívnou lineárnou koreláciou, čiže vzťah medzi skúmanými veličinami je priamo úmerný. Čím je hodnota korelačného koeficienta bližšia k číslu 1, tým je vzťah skúmaných premenných silnejší. Ak sa hodnota korelačného koeficienta rovná nule, medzi skúmanými veličinami nie je žiadny vzťah. Štatistická významnosť zistených výsledkov je overovaná na hladine štatistickej významnosti $\alpha < 0,05$.

Hypotéza 1 predpokladala, že úroveň súčasných trendov v oblasti elektronického obchodovania do veľkej miery ovplyvňuje aktuálny imidž internetovej stránky a teda skúmané premenné budú vykazovať pozitívnu lineárnu korelačnú závislosť. Výsledky korelačnej analýzy sú znázornené v nasledujúcej tabuľke. Z výsledkov je zrejmé, že úroveň súčasných trendov v oblasti elektronického obchodovania do veľkej miery ovplyvňuje tvorbu imidžu internetovej stránky spoločnosti Camea Car. Korelačný koeficient dosiahol hodnotu 0,5729, čo predstavuje pomerne silnú pozitívnu korelačnú závislosť premenných.

Tabuľka 1 Vplyv súčasných trendov elektronického obchodovania

Úroveň súčasných trendov elektronického obchodovania	N – počet skúmaných	r – korelačný koeficient	P – hodnota T - test
Imidž internetovej stránky spoločnosti Camea Car	72	0,5729	0,0795

(Zdroj: vlastné spracovanie)

Štatistická významnosť výsledkov plynúcich z predmetnej korelačnej analýzy bola následne overovaná prostredníctvom T-testu. Na základe p – hodnoty je možné potom skonštatovať, že výsledky korelačnej analýzy nie sú štatisticky významné, avšak aj napriek tomu zamietame hypotézu H0, ktorá tvrdí, že medzi skúmanými premennými nie je žiadny vzťah a prijímame hypotézu H1, ktorá tvrdí, že medzi skúmanými veličinami predsa len nejaký vzťah existuje.

Hypotéza 2 pojednáva o vplyve jednotlivých atribútov webových stránok, ktoré sú súčasťou procesu elektronického obchodovania na celkový imidž internetovej stránky spoločnosti Camea Car. Predmetný výskum skúmal vplyv týchto atribútov webových stránok:

- prístup na internetovú stránku,
- rýchlosť vyhľadávania,
- dizajn internetovej stránky a facebookového profilu,
- propagácia firmy cez internetovú stránku a facebook,
- sortiment ponúkaných automobilov na internetovej stránke,
- prepojenosť internetovej stránky a facebooku,
- prepojenosť internetovej stránky na iné webové stránky (autobazary a pod.).

Na základe vykonania korelačnej analýzy je možné skonštatovať, že všetky vymenované atribúty webových stránok v oblasti elektronického obchodovania štatisticky významne ovplyvňujú imidž internetovej stránky spoločnosti Camea Car, a vo všetkých prípadoch pojednávame o pozitívnej lineárnej korelačnej závislosti skúmaných premenných. Najväčší vplyv na imidž internetovej stránky spoločnosti Camea Car má prístup na internetovú stránku spoločnosti, potom nasleduje rýchlosť vyhľadávania, sortiment automobilov ponúkaných prostredníctvom internetovej stránky, prepojenosť internetovej stránky a facebookového profilu, design internetovej stránky a facebookového profilu, propagácia firmy prostredníctvom internetovej stránky. Najmenší vplyv na tvorbu imidžu internetovej stránky má prepojenosť internetovej stránky s inými webovými stránkami. Po overení štatistickej významnosti výsledkov prostredníctvom vykonania T-testu je možné jednoznačne tvrdiť, že výsledky sú štatisticky významné, a že vo všetkých prípadoch zamietame nulovú hypotézu H0 a prijímame alternatívnu hypotézu H1.

Tabuľka 2 Vplyv jednotlivých možností na imidžotvornosť internetovej stránky

Imidž internetovej stránky spoločnosti Camea Car	N – počet skúmaných	r – korelačný koeficient	P – hodnota T - test
Prístup na internetovú stránku	72	0,4586	0,0000
Rýchlosť vyhľadávania	72	0,4337	0,0000
Dizajn internetovej stránky a facebookového profilu	72	0,2474	0,0029
Propagácia firmy cez internetovú stránku a facebook	72	0,2374	0,0000
Sortiment ponúkaných automobilov na internetovej stránke	72	0,3621	0,0000
Prepojenosť internetovej stránky a facebooku	72	0,2656	0,0030
Prepojenosť internetovej stránky na iné webové stránky (autobazary a pod.)	72	0,1618	0,0087

(Zdroj: vlastné spracovanie)

4. Zhrnutie

Predmetný článok sa zameriaval na využívanie elektronického obchodovania a vplyvu preferencií zákazníkov na podnikanie firiem. Internet sa stal súčasťou dnešného sveta a bez neho si mnohí ľudia nevedia fungovanie spoločnosti predstaviť.

Na základe vyššie vykonaných analýz môžeme konštatovať, že úroveň súčasných trendov v oblasti elektronického obchodovania do veľkej miery ovplyvňuje tvorbu imidžu internetovej stránky spoločnosti Camea Car. Atribúty ako prístup na internetovú stránku, rýchlosť vyhľadávania, dizajn internetovej stránky a facebookového profilu, propagácia firmy cez internetovú stránku a facebook, sortiment ponúkaných automobilov na internetovej stránke, prepojenosť internetovej stránky a facebooku a prepojenosť internetovej stránky na iné webové stránky štatisticky významne ovplyvňujú imidž internetovej stránky spoločnosti Camea Car.

Na internete dnes trávime veľa času, či už cez neho pozeráme filmy alebo nakupujeme nejaké výrobky. Vďaka tomu sa internetové obchody stali významným nástrojom propagácie firiem. Svoje webové stránky majú zriadené pomaly všetky firmy. Je to hlavne preto, že prostredníctvom webových stránok sa zákazník môže dozvedieť viac o danej firme a taktiež si môže cez ne nakúpiť výrobky. Propagácia firiem prostredníctvom internetu je rýchlejšia, efektívnejšia a menej nákladná.

Okrem webových stránok je vhodné spomenúť aj vplyv sociálnych sietí na prosperitu firiem. Na sociálnych sieťach má zriadený účet neskutočný počet ľudí, ktorí tvoria potenciálnych zákazníkov. Kontaktovať zákazníkov prostredníctvom nich je pomerne jednoduché a efektívne vtom, že zriaďovanie účtov je bezplatné. Na siete môžu firmy pridávať akékoľvek aktuality, fotografie, videá, prezentácie a pod. To všetko posilňuje aj ich propagáciu. Pre firmy je však veľmi dôležité, aby svoje ponuky neustále prispôsobovali dnešným trendom.

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Fraud Red Flags and the Procedure of Implementation of Forensic Audit

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Abstract: Fraud red flags refer to undesirable situations or conditions that consistently contribute to fraud, waste, and abuse of resources. When an investigator is reviewing the company's stocks or financial statements, certain undesirable characteristics may stand out as fraud red flags or contributors to fraud.It is an obligation of forensic auditor as a fraud-proofing expert to identify certain warning signals, also called "red flags", when identifying a fraud. With a help of methods and techniques carried out in such a type of audit, it is necessary to collect sufficient amount of evidences that will eventually describe the elements of fraud, created damage, and suspected individuals, which will be presented, if necessary, in a court.

Keywords: Fraud, red flags, identifying a fraud, forensic audit, forensic auditors, security, detection of fraud

JEL klasifikácia: C22; C51; Q11; Q13

1. Introduction

Individuals who are engaged in occupational fraud schemes often exhibit certain behavioral traits or warning signs associated with their illegal activity. In the ACFE's 2018 Report to the Nations, survey respondents were presented with a list of 17 common behavioral red flags and asked to identify the red flags that had been displayed by the perpetrator before the fraud was discovered.

These six behavioral red flags have been the most common in every one of our studies dating back to 2008, with a remarkably consistent distribution:

Living beyond one's means
Financial difficulties
Unusually close association with a vendor or customer
Excessive control issues or unwillingness to share duties
Recent divorce or family problems
A general "wheeler-dealer" attitude involving shrewd or unscrupulous behavior

While the presence of these red flags doesn't imply that fraud is being committed, understanding and recognizing the behavioral red flags displayed by fraud perpetrators can help organizations detect fraud and mitigate losses.[1]

2. Identifying of the "Red Flags" and Detection of a Fraud

Red flags can be described as fingerprints in fraud.[2] When fraud occurs, traces of a fraud remain untouched just as fingerprints at the crime scene. Red flags are types of warning signs that can be shown in different forms and can be identified as accounting anomalies, weaknesses in the system of internal controling, analytical anomalies, notices and acquisitions, extravagant lifestyles, or changes in the behavior of the invidividual who commited the fraud. Forensic auditors study and analyze „red flags" in order to prevent and detect frauds.

2.1 Warning Signs of a Fraud

Warning signs, red flags, can be in form of financial or personal information.[3] Warning signs of personal information include changes in behavior and lifestyle. Certainly these attributes need to be cautiously accessed due to various factors that may affect lifestyle and behavioral changes. If such illogicalities coincide with other evidence of fraud, then it is possible to associate them with other evidence. Changes in lifestyle are recorded as red flags if the changes are significant, clearly visible and are present over a longer period of time.

Warning signs that detect irregularities in financial data can be divided by different types of frauds.[4] Most authors commit fraudulent actions on fraudulent financial reporting, illegal appropriation of property and corruption.

Warning signs pointing to corruption are: the company inputs pay more than the usual market price, specific requirements are referred to only one supplier, the projects are divided into two contracts to avoid higher approval, the limited duration of the tender, one bidder often wins tenders, private co-operation between the client and tenderness who are applying for the tender, weak production quality of the new supplier, conflicts of interest (the family relationship between suppliers and employees of client firm) and the purchasing employee who lives above his/her possibilities.[5]

The illegal appropriation of property consists of various categories of frauds, including skimming, money laundering, fraudulent disbursements, and larceny and misuse of property (non-cash larceny and misuse).[6] "Skimming" can also be defined as "obing" or "evading". Skimming is a type of fraud, which occurs before enrollment into a business book.[7] It is difficult to detect this fraud, because it happens outside of the business book.

[1] GLOBAL STUDY ON OCCUPATIONAL FRAUD AND ABUSE (2018) ACFE - Association of Certified Fraud Examiners, Inc., and are registered and/or used in the U.S. and countries around the world.
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[7] Singelton, T., Singelton, J., (2010.) Fraud Auditing and Forensic Accounting. Hooboken, New Jersey, John Wiley & Sons, Inc., p. 108.

Such type of fraud usually is present in different transactions as sales, receivables or refunds.[8] To detect such a type of fraud it is often required to extensively investigate the case by experts or forensic auditors. "Cash Larceny" usually occurs by taking away cash equivalents before they enter the company's business books of the company, and the money is usually stolen from cash register or cash deposits.[9] Fraudulent disbursements are made up of various types of fraud: the fraud of the account occurs when an employee who collects fake personal accounts, counterfeits are related to the modification or falsification of company's invoices for their own needs and purposes, reimbursements include false claims or fictitious business expenses, fraud involves a deception of the company's pay wages that are not earned and payments in cash registers, which consist of fraudulent transactions.[10] Red flags include: unusual activity on business credit cards, purchase of unusual products, employee/employees constantly constantly over the budget, high number of blank invoices, disappearance of invoices, giving employees permission to use business invoices, changing recipients of invoices, surplus of rejected invoices, questionable addresses of recipients of invoices, duplication of invoice numbers, non-existent employees, falsified wages, false commissions and compensation.[11]

Fraudulent financial reporting is done by high management for the benefit of a company, but ultimately financial fraud does not use the company as it is initially manifested while fraud lasts.[12] Some of the common warning signs for this type of fraud are accounting anomalies, accelerated growth, unusual profits, weaknesses of internal controls, and aggressive access by executive directors, stock market obsession, and micro management by executive directors. These warning signs also consist of potential red flags of management style or the character of key directors. Also one of the warning signs, which indicate the change of character of management are secrecy and holding back of certain financial information.

2.2 Detection of fraud

Asset classification is appropriately followed by the procedure of risk analysis. It helps to create a guiding framework for assessing the significance of vulnerability in the context of asset classification and thus facilitate the decision-making in implementing security measures and prioritizing them.

There are more ways of accessing the assessment of information security risks. Based on the approach to risk analysis, the methods are divided as follows:

- Qualitative risk analyses describe the impact and its likelihood verbally. The disadvantage of this approach is in a considerable degree of subjectivity in chosen means of expression by the evaluator, which may lead to misinterpretation of the resulting report. The disadvantage lies also in the inconsistency of such analysis, as well as in the inability to compare the analysis with those of other organizations. Qualitative risk analyses are used especially where it is not possible to evaluate probabilities or impacts numerically.
- Quantitative risk analyses use numerical values to evaluate the impact. The advantage over the qualitative risk analysis lies to some extent in the elimination of the evaluator's subjectivity. The disadvantage of this type of analysis is in the need for sufficient numerical data to evaluate the

[8] Albrecht, C.,Kranacher, M.J., Albrecht, S., Asset Misappropriation Research White Paper for the Institute for Fraud Prevention, (online) .Institute of fraud prevention,str.3., dostupno na: http://www.theifp.org/research- grants/IFP-Whitepaper-5.pdf.

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[10] Singelton, T., Singelton, J., (2010.) Fraud Auditing and Forensic Accounting. Hooboken, New Jersey, John Wiley & Sons, Inc., p. 109.

[11] Coenen, T. L., (2008.) Essentials of Corporate Fraud. Hooboken, New Jersey, John Wiley & Sons,Inc.,p.79.

[12] Singelton, T., Singelton, J., (2010.) Fraud Auditing and Forensic Accounting. Hooboken, New Jersey, John Wiley & Sons, Inc., p. 99.

impacts and their probabilities. It is quite difficult to set the rating scale. Each successive step increases the number of combinations of impact probabilities. There are also specialized software tools for quantitative risk analyses.

- As a result of risk analysis, the risks assessed as being damaging and unacceptable, can have a significant negative impact on the business. Therefore, it is the latter category of risks that should be prioritized in the process of applying security measures in order to reduce them to an acceptable level.

2.3 Risk Assessment of Fraud

Regulators, shareholders and the legal system often point out that it is crucial to assess the risk of fraud and how risk management is essential to building and maintaining an effective anti-fraud program. Enterprises attempt to identify and assess the risk of fraud in the overall risk assessment in the business environment or as a stand-alone project.

The assessment of the risk of fraud should be carried out periodically in order to identify potential fraud or events and mitigate the potential difficulties that the company would have.[13] Auditors should check and test the ways and how efficiently the enterprise carries out the risk assessment of fraud and the importance that management assigns to risk management and its composition in company policies and procedures.

In order to better assess the risk of fraud, it is necessary to study the company's business and the economic and market situation in which the company operates, the presence of other fraud risks and also the effectiveness of internal controls.

Likewise, risk factors can be observed at several levels, as mentioned at the business level, then at the level of people, sectors, geography, products or services, controls, information systems, and accounting and business processes.[14]

The Association of Certified Fraud Investigators has produced fifteen questions that help determine the potential for fraud in the company and create an action plan to mitigate this risk. Questions are placed such as whether one or two key employees appear to be dominating the company, whether one of the employees is closely related to suppliers, educates the company's employees regarding the ethics and education programs and the fraud prevention program, employees who have access to confidential information information and whether a confidentiality agreement has been signed.

SAS 99 provides guidance on how auditors can apply a risk management approach to minimize corporate fraud and provide the most important guidance.15 The first risk management guideline attaches importance to the discussion with the staff involved in the audit process regarding the risks posed by material misconduct arising from fraud. Other guideline requires obtaining the information needed to identify the risk of material irregularities. In order to be able to collect such information, it is necessary to: examine management and others within the enterprise about fraud risks, the investigation covers information on potential fraud, fraud knowledge, view on fraud risk in the company management, and views on risk management programs and internal controls in the enterprise that should reduce the specific identified risk of fraud. Further, it is necessary to include the results of analytical procedures in the audit planning. The following directive covers the identification of risks resulting from material irregularities. Auditors use information collected through compliance with the first two risk management guidelines. Then it comes to assessing the risk identification with the risk management program and the internal control ratings of the audited company. After the presented guidelines there follows the results of the assessment. The final guideline presents the evaluation of audit evidence. During the audit, the auditors must assess the risk and material irregularities due to the

[13] Golden, T., Skalak, S., Clayton, M., (2006.) A guide to forensic accounting investigation, Hoboken, New Jersey., John Wiley & Sons, Inc., p. 43.
[14] Singelton, T., Singelton, J., (2010.) Fraud Auditing and Forensic Accounting. Hooboken, New Jersey, John Wiley & Sons, Inc., p. 114.
[15] Golden, T., Skalak, S., Clayton, M., (2006.) A guide to forensic accounting investigation, Hoboken, New Jersey., John Wiley & Sons, Inc., p. 47.

possibility of fraud, and at the completion of audit, he/she must evaluate if the audit evidence collected affects the risk assessment, furthermore, the auditor must take into account if the identified irregularities can be a fraud detector and assess the impact on the financial statements.

3. Procedure for a forensic audit investigation

A forensic auditor is required to have special training in forensic audit techniques and in the legalities of accounting issues.

A forensic audit has additional steps that need to be performed in addition to regular audit procedures.

Plan the investigation – When the client hires a Forensic auditor, the auditor is required to understand what the focus of the audit is. For example, the client might be suspicious about possible fraud in terms of quality of raw material supplied. The forensic auditor will plan their investigation to achieve objectives such as:

- Identify what fraud, if any, is being carried out
- Determine the time period during which the fraud has occurred
- Discover how the fraud was concealed
- Identify the perpetrators of the fraud
- Quantify the loss suffered due to the fraud
- Gather relevant evidence that is admissible in the court
- Suggest measures that can prevent such frauds in the company in future

Collecting Evidence – By the conclusion of the audit, the forensic auditor is required to understand the possible type of fraud that has been carried out and how it has been committed. The evidence collected should be adequate enough to prove the identity of the fraudster(s) in court, reveal the details of the fraud scheme, and document the amount of financial loss suffered and the parties affected by the fraud.

A logical flow of evidence will help the court in understanding the fraud and the evidence presented. Forensic auditors are required to take precautions to ensure that documents and other evidence collected are not damaged or altered by anyone.

Common techniques used for collecting evidence in a forensic audit include the following:

- Substantive techniques – For example, doing a reconciliation, review of documents, etc
- Analytical procedures – Used to compare trends over a certain time period or to get comparative data from different segments
- Computer-assisted audit techniques – Computer software programs that can be used to identify fraud
- Understanding internal controls and testing them so as to understand the loopholes which allowed the fraud to be perpetrated.
- Interviewing the suspect(s)

Reporting – A report is required so that it can be presented to a client about the fraud. The report should include the findings of the investigation, a summary of evidence, an explanation of how the fraud was perpetrated, and suggestions on how internal controls can be improved to prevent such frauds in future. The report needs to be presented to a client so that they can proceed to file a legal case if they so desire.

Court Proceedings – The forensic auditor needs to be present during court proceedings to explain the evidence collected and how the suspect was identified. They should simplify the complex accounting issues and explain in layman's language so that people who have no understanding of the accounting terms can still understand the fraud that was carried out.

To summarize, a forensic audit is a detailed engagement which requires the expertise of not only accounting and auditing procedures but also expert knowledge regarding the legal framework. A forensic auditor is required to have an understanding of various frauds that can be carried out and of how evidence needs to be collected.

4. Conclusions

Today's financial services industry is challenged with increasingly innovative ways of committing fraud and cyber-crime. While banks, building societies and credit card companies comply with ever-changing regulations and legislation and contend with increasing pressure to release products that enhance the customer experience, first generation fraud management systems are falling short.

Forward-thinking financial institutions evolving their fraud management systems from a level of basic standalone detection to a more enterprise-focused approach that integrates disparate data platforms, predicts risk assessment using adaptive analytics, all with real-time functionality and without compromising on customer satisfaction.

While there are a number of fraud detection software solutions available for individual internet banking, mobile banking and credit card platforms, each has its own case management interface, the majority of which fail to meet the exacting needs of the financial service provider.

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Improving Accessibility in Rural Areas Using New Technology Based Solutions.

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Abstract: Rural areas are facing different demographic changes which have direct impact on the accessibility of rural areas. New technology solutions, available also in rural areas, can at the same time help to improve the accessibility of rural regions. This article is presenting theoretical discussion about the situation in rural areas associability and overview on possible solutions based on application of new technologies and transportation systems like Demand-Driven Transport – DTR and Flexible Transport Solutions FTS.

Key words: rural areas accessibility, Demand Driven Transport, Flexible Transport solutions
JEL classification: H41; R42

1. Introduction

Today's demographic, social, economic and technological trends are changing the way transport problems are defined. At the same time, new possibilities for their solution and evaluation arise. The "New Transport Planning Paradigms" (Litman, 2013) describes a change in the transport planning and evaluation paradigm that is related to these trends. The original transport planning paradigm focused on mobility, focusing on maximizing the transport distance that an individual can pass for a certain amount of time and money. The new transport planning paradigm is based on the assumption that mobility is not a goal in itself, the goal is to make the required services and activities overall available. Naturally, there are different accessibility measures that are usually aimed at improving pedestrian and cycling, linking taxi and public transport, and so on (Duraton & Guerra, 2016).

Accessibility can be defined as "the potential of interactions opportunities" (Hansen, 1959), or as ease with which individual services are available from a particular location using an existing transport system (Dalvi & Martin, 1976). Accessibility is therefore the goal of the vast majority of transport activities. Accessibility is influenced by many factors (demand for transport and activities, mobility, transport options, available information, degree of integration of transport services, affordability, etc.) (Litman, 2018). Similarly, accessibility in rural areas can be defined as (Donnges, 2003) the ability of rural residents to achieve the necessary goods and services. Improving accessibility for rural areas is therefore aimed at cost-effective improvement of access to goods and services that rural populations need for their social and economic development. Improving accessibility for rural populations is directly linked to economic growth, improving social inclusion and mobility (Farrington & Farrington, 2005).

The aim of this paper therefore is to describe the new possibilities for improving accessibility in the rural areas with application of new technological approaches and transportation solutions. In the first part of the paper the issue of accessibility on the rural areas is discussed. In the next part several examples of new technologies used for improvement of accessibility in the rural regions from empirical studies are described.

2. Accessibility in rural areas

Accessibility in the rural areas depends directly on the localization of the home, the location of goods and services, and the transport system that links these two elements (Donnges, 2003). Current possibilities in information and communication technologies bring new challenges in the area of new transport system for rural areas. According to (Velaga, et al., 2012) many rural areas have limited access to public transport, which has a significant impact on residents with limited access to cars (children older people, people with disabilities). The use of new information and communication technologies and "smart" solutions can improve both the efficiency and quality of rural transport services (Wang, et al., 2015). One of the most widespread approaches to addressing accessibility in rural areas is demand-responsive transport DRT" and flexible transport services" Flexit Transit Servise FTS "(Papanikolaou, et al., 2017). These approaches are based on complementing or replacing a fixed transport system with defined transport routes and arrival and departure times by a flexible system based on the actual need to achieve, goods, or service. They are often used for specific groups of the population eg. visiting the hospital, transporting to the airport or shopping malls (Ryley, et al., 2012). The advantage of these systems is to increase the benefits to the population, as transport is available when they need it and often "door to door" (Velaga, et al., 2012). The correct application of the DRT systems is of benefit for end users (citizens) form different socio-economic groups, but also can be considered as the effective way from the public expenditure point of view. The successful implementation of the DRT system depends from several factors. According to the (Wang, et al., 2015) three factors that affect DRT use, can be identified: service-related or 'schemetype' factors; area-related factors; and individual-related factors. The first factor is related to the type of operation scheme and vehicle type. The second factor relates to the area, of DTR systems Implementation. The DTR scheme are more efficient in small and difficult to serve locations, or in times of low demand. Form consumers' point of view the most attractive for DTR solutions are elderly, mobility limited, disabled or low income citizens. Several studies have also investigated the third factor focused on characteristic of individuals, which use the DRT systems. It is again most of all elderly, disabled people and students which use the services for shopping, education and commuting. Most of the clients require the "door" to "door" service.

DRT schemes are not new; first application of DRT systems could be seen in 70´s last century. Availability of new IKT technologies enables the efficient use of the DRT systems. On the other side many DRT project failed. In (Enoch & Parkhurst, 2006) authors invetegeted 72 DRT project with aim to analyze factors why the projects were not successful. Marketing environment was used for analying the fail factors. They have splitedt the factor into three groups – Interna, Micro and Macro factors. Among the inters fail factors belongs the technical problems, lack of planning and poor marketing and wrong fee system. Internal factors are predominately problems of compatition and problems caused by local auhorities. The external factors caoused only minimum fails of DRT factors and only in areas with realy low population density.

According to the authors knowledge the application of DRT systems in Slovakia were not analysed in details yet. On another side there are many possibilities for application these systems in Slovak rural areas. Many boarder regions suffer from typical rural problems with accessibility. In Slovakia, according to the public passenger transport strategy, 2030 is only 30% of all public transport journeys, with particularly low levels being achieved in rural regions. At the same time, a more rapid decline in public passenger transport was recorded in rural regions, where tactile transport to centres throughout the day is not provided, but only selected social connections (SR, 2017) are operated. The problem is in the hands of self-governing regions, which are the right body for regular bus services while also ordering and financing suburban bus services. In rural areas in Slovakia, public passenger transport is largely provided by a traditional fixed system (mostly by bus) with a fixed timetable. According to our information, the possibilities of implementation of demand-oriented transport projects as a substitute or supplement to the traditional fixed transport system have not been systematically explored. Currently, projects aimed at creating a Sustainable Mobility Plan are being implemented in several regions. These projects involve a massive collection of data (both primary and secondary) on regional transport. There is, therefore, a unique opportunity for research to improve the accessibility of rural areas using new smart solutions.

3. New solution for improving accessibility in rural areas

The latest solution based on DRT is the Flexible Integrated Transport System FITS (Velaga, et al., 2012) . This approach can provide flexibility in choosing road, time, mode of transport, service provider, payment systems etc, and can provide sophisticated, comfortable and cost effective transport options for rural areas inhabitants. The core of the FITS system is virtual agency, which serves as the intermediator between customer and transport service provider of any kind. This virtual agency is responsible for orders collection, route planning, trip reservation and route optimization for vehicles etc. Current technologies allow managing these activities as web based solution available in real time. The problem can be in availability of reliable, fast and financially available internet connection in some rural areas.

The DRT systems are usually focused on some particular group of inhabitants (Eldery, Mobility impaired, Youth) for some specific goal of transport (health services, shopping, school etc.). These services are secured by public authorities, private sectors or volunteers. As an example of DRT in Rural Norway (Leiren & Skollerud, 2016) can be briefly described. The first important note is, that there is strong political pronounce, to maintain settlements in rural Norway. At the same time there is strong political focus on inclusion and citizenship based on the ideal that every citizen has the individual right to be able to participate in community life. Marker is south-eastern rural area with almost 3500 inhabitants. Apart from the traditional public transport inhabitants from more separated areas have access to the local DRT. At the beginning the system was restricted to elderly people, but after some time the public authority open the system for all inhabitants. System has two predefined roads, but customer can order pick-up up to 2 km from predefined road. The operation time starts at 10:00 am (just after the school transport is finished) and second service start about 3 hours later. If nobody demands the service, at least two hours in advance of the scheduled departure, there will be no trip. According to demanded number of passengers as well as their special needs system selects the most efficient vehicle type (taxi, minibus etc.).

Another example is from Scotland, where DRT services are very popular due to large areas with low population density. In (Velaga, et al., 2012) authors describes the situation in Scotland. According to this study there were about 140 DRT schemes operated in Scotland in 2006. The analysis showed that many of schemes were cancelled due to different reasons (economy efficiency, technology problems etc.). Most of the still running services are characterized by still low or no intelligent transport systems. The ride can for example be ordered only one day in advance. The systems are usually introduced in areas with no public transport or alternated the fixed public transport systems in areas with very low demand. It seems that the use of existing taxi services is the good strategy for public administration, due to use of existing infrastructure and reduction of operating costs. Based on analysis of existing DRT systems in Scotland the study offers also several challenges and opportunities for development of DRT systems in rural areas. It is very important to make holistic approach when planning the system. This must be represented by involving users, operators and transport authorities' in designing of the system. The good idea is also to have a top down view. Most of the services are operated on relatively small areas without connection to each other's. The national – or wider regional approach can encourage integration and coordination of services. Combination of different transport modes – connecting existing DRT service with rail service can also improve the efficiency and sustainability of the system. The usual challenge for local authority is to find transport service provider in rural areas and in areas with very low population density also to manage door to doors service. Another problem is demand estimation. The social composition and low density in some rural areas complicate the demand estimation. One of the reasen are also lower IT skills of gropes for which are DRT systems designated. For the moment there exists no fully accepted methodology for ex-ante or ex-post evaluation of DRT projects. This is very challenging for public authorities to implements new DRT projects within rural areas.

An example from middle-east Europe can be found in Poland in municipality of Niepolomice (Hunkin & Krel, 2018). The city representatives wanted to make public transport more efficient, convenient for users and more economy and ecologically efficient. The system of Tele-bus was introduced as an on demand bus service in three districts with very low population. Within the system the user can order journey between any of predefined 77 stops in coverage area up to 30 min. before required departure. The typical users of the systems are students, elderly people and commuting workers. The system is successful with increasing number of users. There were only 300 users a month in 2007 (when the system was introduced) comparing to more than 3500 users per month last year (2018).

4. Conclusion

The aim of this paper was to describe the new possibilities for improving accessibility in the rural areas with application of new technological approaches and transportation solutions. As it was showed in the paper the demand oriented transport systems and flexible transport systems are suitable solutions for solving accessibility problems in rural areas in sustainable way.

This solutions and systems are not new. In Scotland for example the first DRT systems were introduced in 60´s of the last century. The quick development of ICT and its availability in rural areas gives new possibility for introducing new DRT systems with massive use of ICT and internet. The ICT skills among older population are increasing and the situation will naturally go better in the future. On the another side the problems with associability of rural regions will growth. The reason is strong urbanization, so cost per passenger for ensuring the public transport in rural areas will grow in the future. So it is very probable, that the importance of DRT and FTS will also grow in the future.

The situation in Slovakia regarding to demographic and spatial distribution, is very similar to the rest of the Europe. The rural areas in Slovakia suffers from population reduction and aging of population. The current public transport system based on fixed time tables and roads will probably become unsustainable from economical as well as from the accessibility point of view. It is therefore necessary to start to consider new transport systems based on DRT or FTS also in Slovakia.

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Information Security Management System

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Abstract: Networks and information systems play a crucial role in free movement and are often interconnected and linked to the Internet as a global tool. A disruption of the network and information systems in one member state therefore affects other member states and the whole European Union. The resilience of networks and stability of the information system is therefore a basic prerequisite for a smooth and undistorted functioning of the European Union's internal market and a prerequisite for credible international cooperation. The information security policy applies to every piece of information that is processed in an organization, regardless of its form or method of processing. It also applies to systems through which the information is processed, including their supporting infrastructure and persons processing the information.

Keywords: Information security, information and communication technologies, information systems, management system, security, cyber security

JEL klasifikácia: C22; C51; Q11; Q13

1. Introduction

According to the international standard ISO / IEC 27001, information security is a protection of information against a wide range of threats. Its aim is to ensure the continuity of business processes by:

- minimizing losses and
- maximizing returns on investment.

At present, the measure of electronic information being processed by means of computers and other information and communication technologies is increasing. The potential to disrupt this information, either directly or through attacking the technical devices or environment in which the information is being processed, is called a threat. There

are many factors either potentially threatening or directly disrupting information and communication technologies and degrading the information being processed within. These include, for example, natural impacts, technical failures, human errors and mistakes, malicious software, targeted attacks, cybercrime and international terrorism. All of them have the potential to bring about serious security problems.

The objectives of information security are to minimize the possibilities of threats being carried out and, in case that consequences have already occurred, to minimize their impact. These objectives are essential for both the public administration and private sphere, but especially for critical information infrastructure of a country[1].

Information security must take into account the interests and needs of owners and users of information and communication technologies as well as the rights of natural persons and legal entities whose data are processed in the systems. From the users' point of view, the most important factors in the processing of information are its purpose, content, accuracy, timeliness, accessibility, authenticity, arrangement and quality. From the point of view of owners and operators, the most important factors include the (preferably on-line) availability of information resources, and their security against information leaks unauthorized use and disruption of the integrity of the data, including the integrity of the authority and reputation of the system owner.

A failure to secure the information can result in irreparable losses and damaged reputation of the organization and state. Given that the state is a guarantor of critical processes, it has a role to play in taking care of the overall level of competitiveness of the society and thereby in protecting national wealth, including knowledge and information. Therefore, the state cannot afford to operate at a low level of security criteria. Given the potential adverse impact, it is the duty of the state to ensure the protection of information from misuse and to minimize the consequences of such misuse.

The need for information security was also recognized by national governments, supranational authorities and world-renowned organizations such as the Organization for Economic Cooperation and Development, United Nations, North Atlantic Treaty Organization, and G8 as well as international and European standardization organizations which created various institutions and institutional systems for ensuring information protection, such as the European Information Security Agency, High Level Internet Governance group, and Computer Incident Response Team. These institutions have established their strategic goals and are taking action to meet them. Many of their goals have already been achieved.

2. Legislative Basis

Based on the approved program statement of the Government of the Slovak Republic for the years 2016-2020 and in line with the approved Cyber Security Concept of the Slovak Republic for 2015-2020 and action plan for implementing the latter concept in the Slovak Republic in years 2015-2020, the National Security Authority, as the central state authority for cyber security, prepared a bill on cyber security and amendments and supplements of some laws (hereinafter “the bill”) by which a new directive is transposed into the national law, namely the

Directive 2016/1148 of the European Parliament and Council as of 6 July 2016 on measures to achieve a high common level of security of network and information systems in the European Union (hereinafter NIS Directive). The aim of the NIS Directive, as well as that of Act No. 69/2018 on Cyber Security, effective from 1 April 2018, is to ensure the protection of information systems and networks against disruption of either the technical devices themselves, data processed in them or services provided by them.

In its individual articles, Act no. 69/2018 Coll. on Cyber Security amends some legal regulations to achieve sufficient transposition. This applies specially to Act no. 198/1994 Coll. on military intelligence as amended, Act No. 319/2002 Coll. on the defense of the Slovak Republic as amended, Act no. 45/2011 Coll. on critical infrastructure,

[1] Critical information infrastructure is the means and networks of information and communication technologies, related values and electronic services whose destruction or malfunctioning as a result of the risk factor poses a threat or distorts the political and economic functioning of a state or the threat to life and population health.

Act No. 351/2011 Coll. on electronic communications, as amended, and Act No. 483/2001 Coll. on banks and on amendments to certain acts, as amended. In connection with the introduction of the new administrative fee, the Act no. 145/1995 Coll. on administrative fees has been also amended.

Act no. 69/2018 on cyber security imposes an obligation to its primary addressees, namely basic service operators and digital service providers, to meet the requirements of the latter act no later than October 1st, 2018. The identification criteria for basic service (and their operators) are set out in a respective implementing regulation (National Security Authority Regulation No. 164/2018 Coll., which defines the identification criteria of the service being operated). Digital services and their providers include online marketplaces, web search engines and cloud computing services provided by a legal entity or natural person, namely an entrepreneur who at the same time employs at least 50 employees and has an annual turnover or total annual balance of more than 10 million Euros.

In addition to other state administration bodies, the obligatory entities include the National Security Authority, Ministry of Transport and Construction of the Slovak Republic, Ministry of Finance of the Slovak Republic, Ministry of the Economy of the Slovak Republic, Ministry of Defense of the Slovak Republic, Ministry of the Interior of the Slovak Republic, Ministry of Health of the Slovak Republic, Ministry of Environment of the Slovak Republic, Slovak Information Service, Office of the Deputy Prime Minister for Investment and Informatization and Military Intelligence.

The NIS Directive is the first pan-European legislation on cyber security aimed at strengthening the competences of relevant national authorities, increasing their mutual coordination and representing security conditions for key sectors.

The aim of the NIS Directive is to guarantee a common security of networks and information systems within the European Union by enhancing the security on the Internet, private networks and information systems, on which the functioning of economic and social interests is largely based.

The European Network and Information Security Agency (ENISA) is a very important subject in the field of cyber security in the European Union. It contributes to the achievement of high level of security. In cooperation with European countries, it creates a common culture of network security and information systems in the European Union.

The Member States' obligations under the NIS Directive are set at the least acceptable level necessary to achieve the required preparedness and ensure a cross-border confidence-based cooperation. Within the framework of adopted measures, the member states may take account of their national specificities while each member state transposes the NIS Directive in the light of real risks occurring in their own society.

The main implications of NIS Directive are as follows:

- To introduce the security requirements as well as requirements for reporting cyber-security incidents to the Basic Service Provider and Digital Service Provider (hereinafter referred to as "BSP" and "DSP", respectively),
- To oblige member states to designate national competent authorities and establish integrated points of contact and teams for resolving cyber security incidents (hereinafter referred to as "CSIRT" units),
- To oblige member states to adopt their own national cyber security strategies,
- To establish a cooperation group to promote a strategic cooperation and exchange of information between member states, and build mutual trust,
- To establish a network of CSIRT units to contribute to the development of trust between member states, and promote an effective cooperation.

In line with the objectives of NIS Directive and in connection with the Legislative Purpose of the Information Security Act, which in addition to partial objectives sets out solutions to two basic areas of problems, namely those of ensuring protection for public administration information systems and establishing a general legal framework for the protection of the entire digital space of the Slovak Republic, it can be stated that the Cyber Security Bill addresses all relevant issues in a comprehensive and integral way.

The aim of the Act is to create a functional legislative framework that is essential for the effective implementation of key measures for national cyber security space, and to transpose the priorities and requirements that have been set up at European level and adopted by general consensus through the NIS Directive.

Major areas of bill amendments in line with the NIS Directive are as follows:

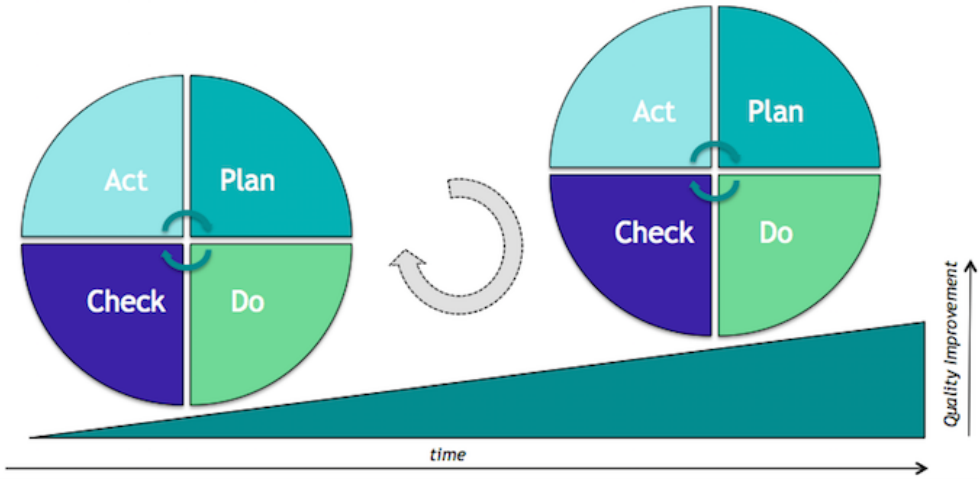
- Organizations and scope of public authorities in cyber security,
- National cyber security strategy,
- Single cyber security information system,
- Status and obligations of BSP and DSP,
- Organization and operation of CSIRT units and their accreditation,
- System securing cyber security and minimum requirements for cyber security,
- Control and audit.

In addition to those mentioned above, the Act also addresses some further requirements of the NIS Directive, such as the definition of international cooperation on cyber security, fulfillment of notification obligations, reporting of cyber security incidents as well as voluntary reporting of cyber security incidents, supporting research and education as well as increasing security awareness in the field of cyber security. In a comprehensive manner, the law further addresses employee remuneration on the part of the state so that the state can employ cyber security professionals and compete with private employers.

The information security requirements resulting from the laws briefly mentioned in the overview of legislation apply mainly to information systems processing the personal data or information systems of public administration. The range of security measures in the private sphere is not strictly required by legislation, except for those relating to personal data and, where appropriate, to the provision of electronic communication services. If a company wants to achieve a situation where full and correct data are obtained by those who need them and are eligible to access them, it is important to establish an information security management system within the enterprise.

ISMS (Information Security Management System) is part of an enterprise-wide organization management based on an approach to risk activities. It is focused on provision, implementation, operation, monitoring, review, maintenance and improvement of information security (ISO / IEC 27001: 2013). ISMS is defined by ISO / IEC 17799: 2005 and ISO / IEC 27001: 2013. According to ISO / IEC 27001: 2013, the implementation of an information security management system is seen as a project. Thus, the Deming PDCA cycle is used, while the whole project consists of four repeating steps: plan, implementation (Do), monitoring (Check), and decision-making (Act).

Figure 1 Deming cycle



Source. ICT Istitute.nl

The access to information security management must be tailored to the size of the particular organization and its nature or focus. In general, for small companies with up to 20 employees, there is no need to hire a full-time security expert. The latter need or even that of a whole department that is independent of IT department becomes relevant in larger companies. We will briefly describe a documentation related to information security management. The latter documentation analyzes the internal environment from the aspect of vulnerability of the corporate network.

3. Information Security Policy

The basic document of information security in a company is its information security policy. This document should be accepted in co-operation with business management and should include a statement that for the sake of protecting information and related assets the organization shall ensure sufficient personnel, material, and organizational and legal conditions as well as introduce mechanisms for monitoring security incidents and assessing their severity.

In their information security policy, the organization should assess the key people, their responsibilities for their level of information security in the organization as well as possible sanctions for violating their obligations.

- The main objectives of the organization in information security are as follows:
- To ensure the protection of all information assets of the organization (computers, networks, software, data, etc.) and reduce to a reasonable extent the risks arising from the disruption of confidentiality, integrity and availability of its information assets;
- To ensure that all users of information communication technologies (ICT) of the organization are aware of and carry out their obligations in line with relevant European and Slovak legislations;
- To provide a reliable and secure work environment to all organization employees and other legitimate ICT users through information and communication systems.

4. Risk Analysis

Asset classification is appropriately followed by the procedure of risk analysis. It helps to create a guiding framework for assessing the significance of vulnerability in the context of asset classification and thus facilitate the decision-making in implementing security measures and prioritizing them.

There are more ways of accessing the assessment of information security risks. Based on the approach to risk analysis, the methods are divided as follows:

- Qualitative risk analyses describe the impact and its likelihood verbally. The disadvantage of this approach is in a considerable degree of subjectivity in chosen means of expression by the evaluator, which may lead to misinterpretation of the resulting report. The disadvantage lies also in the inconsistency of such analysis, as well as in the inability to compare the analysis with those of other organizations. Qualitative risk analyses are used especially where it is not possible to evaluate probabilities or impacts numerically.
- Quantitative risk analyses use numerical values to evaluate the impact. The advantage over the qualitative risk analysis lies to some extent in the elimination of the evaluator's subjectivity. The disadvantage of this type of analysis is in the need for sufficient numerical data to evaluate the impacts and their probabilities. It is quite difficult to set the rating scale. Each successive step increases the number of combinations of impact probabilities. There are also specialized software tools for quantitative risk analyses.
- As a result of risk analysis, the risks assessed as being damaging and unacceptable, can have a significant negative impact on the business. Therefore, it is the latter category of risks that should be prioritized in the process of applying security measures in order to reduce them to an acceptable level.

4.1 Security measures for reducing the level of risk

When adopting security measures in an organization, it is also appropriate to follow the Deming methodology. The desired effect can be achieved only by strictly adhering to the process of drawing up a plan for their implementation, implementation as such, regular monitoring of its effectiveness and correction of any deficiencies.

Safety precautions must be carefully chosen in the plan following the risk analysis. They need to be considered in the context of other risks so that they do not overlap or, exclude each other, while the introduction of a particular measure does not create a new vulnerability.

4.2 Emergency plans and recovery plans

In an enterprise, it is important to think about maintaining the continuity of its activities in the event of accidents. The primary objective of BCM (Business Continuity Management) is to protect property, name and reputation and thus the business owners against financial loss. The deployment of BCM is recommended for both large and small businesses.

The plans developed in the framework of BCM should describe accurately the post-disaster procedures so that the services can be restored to the minimum necessary level in the shortest possible time. Such recovery is only possible if the enterprise in its BCM plan has a scheduled regular and sufficient data backup, ready alternate software, hardware, and personal resources. The plans should include the conditions for starting an emergency plan, order of individual corrective actions, placing alternate resources, personal roles and tasks.

5. Conclusions

In practice, we are confronted with the fact that information security measures are built in a chaotic way as a result of security processes being introduced just as a response following a specific security incident. The individual components of the system then do not bind well together, and the system as a whole is unnecessarily expensive.

Provided that the process of building the information security system is approached systematically in line with a logically drawn up plan, it is possible to achieve a particular balance between the funds spent on security and potential losses resulting from known risks. In the field of research, there is a rule that there is a mutual correlation between security costs and potential damage, and an optimal point of balance.

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Metoda na zvýšení konzistence matice párových porovnání v Analytickém hierarchickém procesu

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Abstrakt: Příspěvek popisuje dílčí problém vícekriteriální rozhodovací metody, analytického hierarchického procesu (AHP), stručně popisuje jednu známou metodu na zvýšení konzistence matice párových porovnání.

Kľúčové slová: AHP metoda; rozhodování; konzistence

JEL klasifikácia: C02

1. Úvod

Učinit rozhodnutí je běžným úkolem každého manažera, zde je v roli rozhodovatele (decision maker). Úkolem rozhodovatele je vybrat jednu nebo více variant z množiny všech přípustných variant. Rozhodovatele tedy definujeme jako subjekt, který má učinit rozhodnutí, vybrat variantu, která je hodnocena nejlépe, optimální variantu. Výběr z množiny *m* možných variant usnadňuje rozhodovací metody. Strukturování variant do hierarchie, popis jednotlivých kritérií rozhodování, jejich kvantifikace a vyhodnocení, to umožňuje vícekriteriální rozhodovací proces. Rozhodovatel se díky hierarchii vícekriteriálního rozhodovacího procesu může soustředit na dílčí kritéria, není ovlivněn subjektivním pohledem na celkové rozhodnutí, rozhoduje jen podle dílčích kritérií. Syntéza výsledků dílčích kritérií je potom součástí metody vícekriteriálního rozhodovacího procesu.

Analytický hierarchický proces (AHP) profesora Saatyho používaný ve vícekriteriálním rozhodování vychází ze stanovení kritérií mezi jednotlivými faktory, které ovlivňují rozhodování. Pokud se rozhodovatel rozhoduje mezi více variantami, je pro každou variantu nutné stanovit kritéria, resp. vztahy mezi jednotlivými faktory. Získání co nejvíce pravděpodobných hodnot kritérií je nejtěžší částí rozhodovacího procesu. Další je již jen maticový počet, jak jej popsal a používal profesor Saaty (SAATY, 1980).

2. Vícekriteriální rozhodovací metoda analytický hierarchický proces (AHP)

AHP metoda je široce používána napříč průmyslovými odvětvími pro řešení problémů s rozhodováním podle různých kritérií zahrnujících subjektivní úsudek. Nicméně, AHP je často kritizována za její neschopnost adekvátně se přizpůsobit přirozené nejistotě a nepřesnosti spojené s mapováním rozhodovacích preferencí na přesné číslo (SOMSUK, 2013).

Analytický hierarchický proces AHP (SAATY, 1977, 1994) je jednou z nejčastěji používaných metod pro rozhodování na základě více kritérií. AHP využívá matematiku ke zpracování subjektivních a osobních preferencí jednotlivce nebo skupiny při rozhodování. V Saatyho AHP je rozhodovatel požádán, aby poskytl svůj názor na porovnání A_{ij} pro každé párové porovnání mezi otázkami (alternativy, kandidáty atd.) A_1, A_2, ..., A_n pro každé kritérium (cíl) v hierarchii a mezi kritérii. Aby bylo možné provést porovnání, měla by být použita škála čísel, která udává, kolikrát je důležitější nebo dominantní jeden prvek nad jiným prvkem s ohledem na porovnávané kritérium nebo vlastnost. V Saatyho základní škále měření používaném při porovnávání jsou čísla pro poměry obvykle převzata z množiny 1, 3,…, 9. Skládá se z porovnání dvou variant, které se pohybuje od rovných po extrémní (stejné, mírně důležitější, mnohem důležitější, výrazně důležitější, extrémně důležitější). Číselné hodnoty pro úsudky 1, 3, 5, 7, 9 odpovídají slovním úsudkům. Například, jestliže rozhodovatel považuje A_1 za mírně důležitější než A_2, pak a_{12} se

rovná 3/l. Poměr a_{ij} označuje důležitost, se kterou A_i převyšuje významem A_j. Devítibodová škála hodnot je aplikována v metodě AHP (YANG, 2010, 2013).

3. Konzistence matice párových porovnání

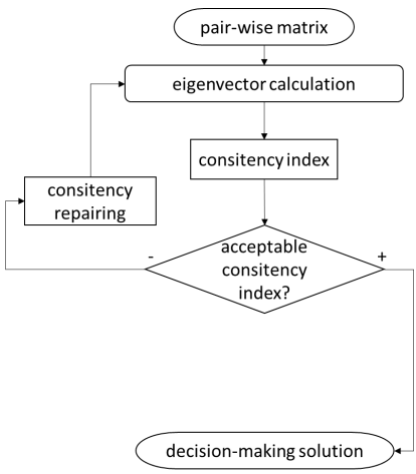
V příspěvku se zaměřujeme na dílčí problém metody AHP, zvaný konzistence, a jednu ze známých metod pro její zvýšení. Konzistenci matice párových porovnání S = (s_{ij}) můžeme definovat takto: řekneme, že prvek x_i je s_{iq} -krát důležitější než prvek s_q (podle hodnotícího kritéria f), a dále prvek s_q je s_{qj} -krát důležitější než prvek x_j , potom prvek x_i je $s_{ij} = s_{iq} \bullet s_{qj}$ -krát důležitější než prvek x_j. Při porovnávání kvalitativních kritérií je však naprostá konzistence matice párových porovnání spíše výjimečná. Naopak, při porovnávání kvantitativních kritérií je matice párových porovnání dokonale konzistentní, platí totiž, že váhy, hodnoty kvantitativního kritéria jsou známy $v_i > 0$ a $v_j > 0$ a pro prvky matice párových porovnání platí $S_{ji} = v_i / v_j$. Platí-li uvedený vztah, matice S = (s_{ij}) je reciproká a konzistentní (RAMÍK, 2000).

Pro úspěšnost metody AHP je důležitý *index konzistence*. Platí, že *maximální vlastní číslo* čtvercové matice párových porovnání S = (s_{ij}) typu n × n, která je vždy reciproká ale nemusí být konzistentní, $\lambda_{max} \geq$ n (SAATY, 1980). Je-li matice S = (s_{ij}) plně konzistentní, vždy platí, že λ_{max} = n (SAATY, 1980). *Indexem konzistence* nazýváme číslo C_I vypočítané ze vztahu

$$CI = \frac{\lambda_{max} - n}{n-1}$$

Dobře známý index relativní konzistence je CR = CI / RI (n), kde RI (n) je náhodný index, jehož hodnota závisí na n. Náhodný index RI (n) určil Saaty výpočtem 50 000 náhodně generovaných matic. Pokud je index relativní konzistence CR ≥ 0,10, párová matice není plně konzistentní (SAATY, 1994). V tomto příspěvku demonstrujeme na krátkém příkladu jednu z metod na zvýšení konzistence, ke které přistoupíme, jestliže je CR mimo doporučenou mez.

Vývojový diagram postupu práce rozhodovatele je zobrazen na Obrázku 1.



Obrázek 1: relativní index konzistence CR a proces opravy (zdroj: autor)

Zakladatel metody AHP profesor Saaty publikoval v roce 2003 "*metodu ke zvýšení očekávané účinnosti rozhodování v praxi. Je založena na skutečnosti, že*

$$n\,\lambda_{max} - n = \sum_{\substack{i,j=1 \\ i \neq j}}^{n} (\varepsilon_{ij} + \varepsilon_{ij}^{-1}).$$

To znamená, že zkoumáme rozhodnutí, pro který je ε_{ij} nejvzdálenější od konkrétní hodnoty, tedy a_{ij}, pro které je $a_{ij} \cdot w_j / w_i$ největší, a zjistíme, zda tento záznam může být přiměřeně menší. Doufáme, že taková změna a_{ij} povede k nové matici párových porovnání, která bude mít menší vlastní číslo matice λ_{max}." (SAATY, 2003)

Abychom ukázali, jak metoda funguje, použili jsme příklad použití metody AHP v turismu. Autorka diplomové práce na Vysoké škole obchodní v Praze, o.p.s. navrhla metodu AHP na výběr destinace pro produkt cestovní kanceláře, čtyři destinace podle několika kritérií. Tyto čtyři destinace byly porovnány navzájem podle jednoho z kritérií a podle škály používané v metodě AHP jim byly přiřazeny váhy důležitosti. Dílčím kritériem byla v tomto kroku metody AHP vzdálenost mezi bydlištěm hodnotitele a destinací. Matice párových porovnání je uvedena v Tabulce 1. Zde je jako *w* označen vlastní vektor matice *A*, *v* je vlastní vektor kladné transponované matice A^T, který byl normalizován.

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varianta:		v1	v2	v3	v4	*w*	*v*
Chorvatsko	v1	1	9	7	7	0,678	0,050
Egypt	v2	1/9	1	1/7	1/3	0,038	0,308
Řecko	v3	1/7	7	1	5	0,211	0,560
Španělsko	v4	1/7	3	1/5	1	0,073	0,081
$\lambda_{max=}$ 4,442		CI=0,147		CR=0.164			

Tabulka 1 – matice párových porovnání $A=a_{ij}$ (zdroj: autor)

Z Tabulky 1 vidíme, že hodnota relativního indexu konzistence je CR je vyšší než 0,10, což znamená, že je matice párových porovnání nekonzistentní, a názory rozhodovatelů by bylo zapotřebí znovu korigovat. Jenže kterou variantu, resp. destinaci vůči které znovu posuzovat. To může napovědět tato metoda.

Abychom identifikovali prvek k opětovnému posouzení, sestavíme matici $\varepsilon_{ij} = a_{ij} \cdot w_j / w_i$ *(Tabulka 2)".* (SAATY, 2003)

1,00000	0,50442	**2,17847**	0,75369
1,98246	1,00000	0,79323	0,64035
0,45904	1,26066	1,00000	1,72986
1,32681	1,56164	0,57808	1,00000

Tabulka 2 – $\varepsilon_{ji} = a_{ij} \cdot w_j / w_i$ (zdroj: autor)

Zaměníme hodnotu a_{13} hodnotou w_1 / w_3 a odpovídající diagonální hodnotu a_{31} hodnotou w_3 / w_1. Tedy, $a_{13} \leftarrow w_1/w_3 =$ 3,213 nejbližší celočíselná hodnota z AHP škály pro a_{13} je 3 a odpovídající hodnota pro a_{31} je 1/3.

varianta:		v1	v2	v3	v4	*w*
Chorvatsko	v1	1	9	**3**	7	0,583
Egypt	v2	1/9	1	1/7	1/3	0,042
Řecko	v3	1/7	7	1	5	0,289
Španělsko	v4	**1/3**	3	1/5	1	0,085
$\lambda_{max=}$ 4,165		CI=0,055		CR=0,061		

Tabulka 3 – matice párových porovnání $A=a_{ij}$ (zdroj: autor)

Index konzistence CI je nyní mnohem více akceptovatelný, protože relativní index konzistence rekonstruované matice párových porovnání je CR ≤ 0,10 a λ_{max} je blíže hodnotě *n*, *n*=4.

4. Závěr

Metoda na zvýšení konzistence matice párových porovnání v metodě AHP popsaná v roce 2003 profesorem Saatym, za použití vlastního vektoru matice $\boldsymbol{\lambda}_{max,}$ byla demonstrována na uvedeném příkladu matice párových porovnání. Tato metoda by mohla být užitečná při opakování vícekriteriálního rozhodovacího procesu při

nepřítomnosti původních rozhodovatelů a nutnosti jejich rozhodnutí korigovat. Pokud relativní index konzistence matice párových porovnání CR není v požadovanému rozsahu, může tato metoda pomoci rozhodovací proces pomocí metody AHP opakovat a lépe nalézt konečné rozhodnutí.

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Multidisciplinary level of observation of digital print from the point of view of informatics and criminology

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Abstract: The aim of this post is to clarify the concept of digital print, pointing to the interdisciplinary nature of the issue, in particular by linking the two main areas of informatics and criminology. The solution of this issue is based on the partial outputs and conclusions of the research conducted between 2015 and 2018. The structure of the article has the character of the process from general to concrete, which means that in the first part of the article is defined digital print, its possible division from several points and their subsequent description. In the next part of the article there is clarified the criminalistic aspect of the search and the process of providing a digital track at the crime scene. The conclusion of the work provides an analysis of knowledge and proposals of recommendation character.

Keywords: Information security, informatics, criminology, trace, digital trace, ensuring traces, cyber security, security

JEL Classification: C22; C51; Q11; Q13

1. Introduction

Every individual during his existence leaves marks behind him - footprints, biological prints, memory marks. The technological development of the company and the innovations that have influenced the whole world has resulted in a new phenomenon - the creation of a digital print that every single person generates, regardless of technological knowledge. Digital shadows "or" digital footprints "relate to the traces of information we produce every day and the concern that arises on who can access and what can be done to this information.[1] There are some societal benefits arising from digital footprints. For example, we can use this information to study human behavior and social interactions.[2] A digital trace forms the basis for information science and is an integral part of every user ofinternet and digital device. Due to this, that digital trace affects to a high degree on every individual, it is necessary to focus on this evolving area, not only in terms of observing the changes that this area creates and provides through its constant development, but also, in particular, in terms of taking the single legislative position of the international level. To this issues is clearly included the issue of security and prevention against various forms of crime committed in the area.

[1] Golder, S. A.; Macy, M. W. 2014. Digital footprints: Opportunities and challenges for online social research
[2] Plachouras, V.; Leidner, J.L.; Garrow, A.G. 2016.Quantifying self-reported adverse drug events on Twitter: Signal and topic analysis.

Nowadays, secure development has become a real and urgent matter in many countries around the world.[3] Due to this that this area is not well known to the public, an important factor is getting to know this issue, especially because parts of the digital print are very difficult to remove. As a result of ignorance and basically non-existent solutions to the removal of such unwanted data, it often results in loss of privacy, personal data, reputation and social degradation. The complete irremovability of the digital print is based on a criminalistic investigation, the success of which is in its permanent character, which enables it to be searched, secured and analyzed. However, the problem is the high degree of latency of such crime, as it is very difficult to detect, although generally well documented. Digital forensics investigations are an important task for collecting evidence based on the artefacts left in computer systems for computer related crimes. The requirements of such investigations are often a neglected aspect in most of the existing models of digital investigations. Therefore, a formal and systematic approach is needed to provide a framework for modeling and reasoning on the requirements of digital investigations. In addition, anti-forensic situations make the forensic investigation process challenging by contaminating any stage of the investigation process, its requirements, or by destroying the evidence. Therefore, successful forensic investigations require an understanding of the possible anti-forensic issues during the investigation.[4]

2. Classification of digital trace

The digital print is also considered to be user-generated when using the Internet and its services, technologies, and digital devices. For exmaple it is web site visits, social networks, apps, emails, ATM cards, and more. It is a unique set of digital activities, actions and communications that leave marks on the Internet or on a digital device to identify a particular user or device.[5] The term digital print in the larger sense can be defined as data left by users on digital services or devices.[6] In the narrower sense, it is also the consecuive analysis and utilization of collected and stored data.

The issue of the digital print is characterized by an interdisciplinary character, particularly in the fields of computer science, forensics and economics. From the informatics point of view, the very essence of the digital footprint, its storage, distribution and properties are examined. Criminology is concerned with the digital print of searching, securing and investigating digital prints in the process of investigating and illustrating illegal activities, criminal or other offenses. The economic point of view of the digital print is mainly in the statistical collection and analysis of the data needed for marketing purposes, allowing to businesses, companies and individuals to adjust their offer according to current market demand.

An active digital print is created by the user knowingly in order to create a certain content. The user publishes the information with the awareness of the availability of such content to other users. The most popular ways to create an active digital print include social networks, emails, blogs, and other electronic communication systems where there is voluntary web site information, phone calls, and interviews.

A passive digital print is created without the intention of the user to view and use Internet services. These are IP addresses, search terms on the Internet, cookies, connectivity providers, and localization. At the usual user level, it is not possible to prevent the passive digital print from being continually created during an Internet connection. Every device connected to the Internet has a unique internet protocol address that is static or changes at each login. Based on the device's IP address on the network, the web server can send the content of the page to the browser. The holder of personal information is the connection of the IP address with the personal data connection provider. A cookie is a saved text file that the web site saves on your device while browsing the Internet, with web pages storing information about the login name, password, language, and other settings.[7] Another use of cookies is to collect anonymous

[3] Korauš et al. 2017 The safety risks related to bank cards and cyber attacks.
[4] Beckett, P. 2018. Focus on protecting what's most important – the data, Computer Fraud and Security
[5] Digital footprint [online]. [cit. 18. 01. 2019]. Dostupné na internete: https://www.dictionary.com/browse/digital-footprint
[6] Arakerimath, 2015
[7] Európska komisia. Súbory cookie [online]. [cit. 19. 01. 2019]. Dostupné na internete: https://ec.europa.eu/info/cookies_sk

statistics. The goal of cookies is to simplify web browsing - first page cookies on one side and, on the other hand, to help advertisers - a third-side cookie that can customize your personal preferences. In the case of third-side cookies, third sides may have uncontrollable third-side information.[8] Blocking these files increases user security.

In terms of identifiability, the ability to identify data and the source of information is an important factor. In the case of personally identifiable digital tracks, it is possible to track the real name of the source (IP address) of the published information and data. Anonymously generated information is sent under the pseudonym, or the user can use the technology to hide its IP address. One of the easiest ways to hide your own IP address is virtual private networks - VPN. In addition, VPNs encrypt data between the server and the user. Another extended option is a proxy server that provides different server addresses while browsing the site, but does not provide data encryption, which can lead to information gathering.[9] One of the most complex open-source resources available is The Onion Router - Tor, which protects user data. It works on the principle of identity protection by moving traffic across different servers and encrypting, resulting in random nodes on the Tor network, not on the user's computer.

A classic digital footprint consists of raw data / data, while a personal digital print, besides these raw materials, also contains data such as storage, analysis and value.[10]

3. Principles of searching and ensuring of digital traces

Digital trace as the object of investigation is ensured according to the same principles as the other subject, which serve as a source of important informations. The distinction of securing is based on the specifis properties of the carriers of these prints. Digital print can be found on every scene of crime and can be also included in all types of crime.[11] As an example, we can put regular desktop computer as one of the major carrier of print and divide it into the following categories:

1.) Crimes, where the computer is target – the computer as a digital print, stores data and informations and because of this is often the target of attacks by hackers (we recognize a hacker sucha s an individual, an organized group and in some countreys as state sponsored subject)

2.) Computer as the crime instrument – generally speaking, the tool refers to abuse of legally controlled item for simplification a crime, sucha s programming instructions for manipulation with computer analytical processes. For example, we may report abuse of bank accounts, credit cards, theft of identity and deceptions from transactions (sale of funds).

3.) Computer as an accompanying phenomenon for other types of crime – a computer is not necessary for these crimes, but its use is related to a crime. These crimes can occur without the use of computer, but the computer allows the crime to become much more difficult to identify, monitoring and prosecuting (for example: money laundering, falsifying and child pornography).[12]

As it was mentioned, computer as an individual unit can be used immediately in variety of ways, so it is important to care and respect Fundamentals of inspection. In general, crime scene observation is defined as a „specific method of criminal investigation, that seacrhes for immediate observation, provides forensic prints, identifies, investigates, evaluets and documents the state of the material environment as well as other significant objects having

[8] Roos, D. How to surf the web anonymously [online]. [cit. 20. 01. 2019]. Dostupné na internete: https://electronics.howstuffworks.com/how-to-tech/how-to-surf-the-web-anonymously1.htm
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[12] Barbara, J. J. Digital forensic insider: Cybercrime in perspective, *In: Forensic magazine Vol. 14* [online] 11. 2. 2018. Dostupné na internete: http://www.forensicmag.com/

a relation to a criminally relevant event, to find out total situation and informations servinf to understand the objective truth about a critically relevant event.“[13]

From this definition also follows the targets we want to achieve: to search and secure prints, to identify and clarify the mechanism of the prints, uncovering and securing other criminally significant events.[14]

The process of searching and tracing is governed by the different policies and result from the features of digital prints. A digital print is an indication of information that is transmitted on a carrier that indicates that it belongs to latent prints. Other important features include time sensitivity, changeability but can be easily damaged or destroyed. Nowadays, it is very important for IT managers to be able to effectively protect their assets against modern threats.[15] Instead of criminally relevant event, i tis necessary:

- to define and correctly identify, to search and to secure all digital prints
- to document the entire loacation and location of the evidence
- to collect and mark prints
- packaging and consecutive transport[16]

Under the conditions of Slovak republic, we are guided by the principles of crime´s scene observation, withing the digital trail and the procedure for securing the Directive for performance of expert and Professional activities in the Police Chambers. When the inspection starts, important is to focus first on computers but also on people working with them. To finish any activity of these people, including keyboard or mouse manipulation. These computer components may contain biological or dactyloscopis prints. If it is possible, these prints need to be ensured first. With the computers turned on, i tis very important to document photographed running programs or open files like the Word and so on. During the inspection is important to focus on searching for non-standard devices, such as various USB keys or for example mobile phones in wristwatches.

4. Techniques and tools for securing digital prints

Assurance of investigation objects at the place of criminally relevant event is done by forensic technician. Personal computers of all kinds are provided as complete asi t is possible, in case that some components of computer are missing, then, they are overlapped with the security tape. Paper tape is not recommended.

Computer is during the securing photographicaly documentated (photographic documentation of labels with type, model, and serial number is recommended). When we are securing computers, only the unit itself is provided. The accessories of the computer are not provided, except where these components need to be provided for other investigations, for example, fingerprints. Portable computers (notebooks) are provided with a power supply.

Mobile phones and mobile devices (tablets, GPS navigation, dictaphones, etc.) are similar to laptops with a power supply or a spare battery. Data storage devices, external drives, memory cards are mechanically poorly resilient and therefore must be taken care to avoid damage. If their original packages are available, these prints will be covered in them.

In most cases, devices containing a digital track can be secured using standard tools and materials. However, it is important to ensure that digital devices are not collected, packaged or stored in order to avoid the changes, damaging or destroying the digital tracks. Do not use any tools or materials that could produce static electricity or magnetic fields, as they can damage or destroy the exploration object. In particular, it is recommended to use the following tools: camera or videocamera, gloves, cardboard boxes, security tapes, paper and plastic packaging, antistatic packaging, registration labels, etc.[17] If plastic pockets of the required sizes are available, computers and other devices are packed, but the principle is that only one print is wrapped in a single package. The security tape will

[13] Meteňko, J., Bačíková, I., Samek, M. *Kriminalistická taktika*, 2013. s. 134
[14] Porada, V. 2016. Kriminalistika
[15] Korauš, A.; Kelemen P .: 2018. Protection of persons and property in terms of cybersecurity
[16] Casey, E. Handbook of Digital Forensics and Investigation, 2010
[17] Lerner, D. E. *Electronic crime scene investigation*, 2009, s. 142

overlay the drives where the data carrier can be located as well as the places for the power supply. When we are packaging the storage media, antistatic packaging is used. Every damage to the secured object needs to be documented thoroughly. Documentation of the crime scene is a matter of urgent action, so it is very important to accurately record the location of the crime-relevant event as well as the site itself. The photographic documentation, as well as topographic methods, are most frequently used in the conditions of the Slovak Republic. You need to document the status of computers and power, storage media, wireless networks, mobile phones, data storage devices, the Internet, and network access. Additional system and device documentation can be performed during the securing of prints. Ideally, the documentation should contain a detailed record using video, photos, and scene sketches.[18]

An example of where we would proceed as described above and where we could search for and secure a digital print can be referred to § 270 for counterfeiting, altering and unauthorized production of money and securities, or § 272 for the production and possession of counterfeit instruments.[19] Potential digital prints could in this case be:

- personal computers of all kinds,
- printers, copiers and scanners,
- mobile devices,
- information related to Internet activity,
- information about checks, currencies and money orders,
- removable media and external memory devices,
- photo editing software, graphics programs,
- false identification,
- information regarding financial records,
- email communication, etc.

From the example above, the print in the digital environment is on the rise and is growing with the progressive development of technology, demonstrating the need to focus on this issue as stated in the introduction to this paper. In similar cases where the digital print could be found in various offenses, there is a large amount. Of course, after the search and retrieval operations, there is a transport track for further investigation at the Institute of Criminology and Expertise.

5. Conclusions

The digital print can not be attributed to just one sector, since it is a multidisciplinary character of the solving problematics. In this post is points to the importance of the digital print in terms of informatics and criminology, while the study has demonstrated the close interconnection and inseparability of both sectors. If the principle of complexity is to be complied with, it is not possible to examine the digital print separately.The advancement of technological advances increases not only the digital print of the overall population but also the individual, resulting in an increased risk of loss of privacy, personal and other sensitive data, identity theft, illegal trade with illegally acquired data created by leaving a digital print, and others. It is essential for society to begin to perceive the issue of digital print abuse as it perceives document theft, money, good reputations, and other serious crimes, as the virtual environment has become a normal part of the life of the individual and society as such.In the long-term study of this issue, it has been found that the digital print leaves everyone regardless to his technological skill, and this print is virtually impossible to remove altogether. Therefore, it is necessary to link the digital print with criminology, in particular in terms of collecting statistics and prevention, which confirms the multidisciplinary nature of the digital print. Additionally, there is still a lack of sufficient legislation, resulting in the failure of competent authorities to deal with serious incidents, not only in the absence of qualified staffing in the police, but also in the courts' jurisdiction, and in the lack of specialized literature and incident handling practices related to the digital print.

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Abstrakt: Autor metody AHP, narodil se v Iráku v Mosulu 18. 7. 1926. Byl význačný univerzitní profesor University of Pittsburgh's Joseph M. Katz Graduate School of Business. Pracoval na Wharton School University of Pennsylvania a také pracoval mnoho let pro americké vládní agentury a společností pro vládní podporu výzkumu. Je tvůrce, architekt a hlavní teoretik Analytického hierarchického procesu (AHP). Zemřel po dlouhé nemoci 14. 8 2017 ve věku 91 let.

Kľúčové slová: AHP; rozhodování

JEL klasifikácia: C02

1. Úvod

Profesor Thomas L. Saaty se narodil v Brity ovládaném Iráku, v Mosulu, 18. 7. 1926. Studoval v USA a ve Francii, dizertační práci z matematiky obhájil na Univerzitě v Yale v roce 1953. Byl význačný univerzitní profesor University of Pittsburgh's Joseph M. Katz Graduate School of Business. Pracoval na Wharton School University of Pennsylvania a také pracoval mnoho let pro americké vládní agentury a společností pro vládní podporu výzkumu. Saaty byl tvůrcem a hlavním teoretikem vícekriteriální rozhodovací metody analytický hierarchický proces (AHP). Zemřel po dlouhé nemoci 14. 8 2017 ve věku 91 let.

2. Dílo

Vydal mnoho knih, publikací a vědeckých článků o metodě AHP. Základní a jeho dodnes nejcitovanější je kniha z roku 1980 *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation*. Zanechal v oblasti operačního výzkumu nesmazatelnou stopu. Napsal více než 35 knih a 350 příspěvků o matematice, operačním výzkumu a rozhodování. Mezi oblasti jeho práce patří teorie grafů a její aplikace, nelineární matematika, analytické plánování, teorie her, řešení konfliktů a v neposlední řadě rozhodovací procesy.

3. Metoda AHP, Saatyho odkaz

Thomas L. Saaty byl tvůrcem a hlavním teoretikem metody analytický hierarchický proces (AHP), rozhodovací metody, kde se posuzuje dvojice variant s ohledem na vlastnost, kterou mají společnou. V multikriteriálních rozhodovacích procesech se tato kritéria dekomponují v hierarchické struktuře, aby se vybrala ta nejlepší varianta z několika variant. Síla metody AHP prof. Saatyho je v její schopnosti posuzovat varianty podle kvalitativních kritérií. Škálováním a eliminací subjektivních vlivů na rozhodovací proces je metoda použitelná v jakékoliv oblasti lidského života, kde se lidé rozhodují, v řízení i v běžném životě. Metoda přinesla matematickou preciznost a objektivnost, v okamžicích, kdy jsou rozhodnutí složitá či ovlivněna mnoha subjektivními pocity rozhodovatelů. Metoda AHP v podstatě kvantifikuje rozhodování podle kvalitativních kritérií a vytváří metodu, kde zpětná syntéza dílčích výsledků dekomponovaných dílčích rozhodnutí je matematicky jasná a neovlivnitelná subjektivním pocitem rozhodovatelů.

Všichni jsme v podstatě autoři rozhodnutí. Rozhodováním lidé vyjadřují důležitost a preferenci vybrané varianty. Výběr je ovlivněn sociálními, politickými, environmentálními, i dalšími vlivy. Rozhodnutí o výběru závisí na znalostech a zkušenostech, nebo analýze přínosů, ztrát, i na riziku. Někdy mohou zkušenosti a znalosti posloužit jako standardy posuzování silných i slabých stránek, můžeme je použít pro výběr nejlepší varianty. To můžeme v takových

opakujících se situacích, jako jsou přijímací zkoušky studentů nebo rozhodování o zvýšení mzdy. Bez standardů však porovnáváme varianty místo abychom je měřili. Analytický hierarchický proces (AHP) zahrnuje jak hodnocení, tak porovnávání variant. Abychom rozhodovali racionálně, potřebujeme spolehlivou hierarchickou strukturu nebo zpětnovazební síť, která zahrnuje výběr různých typů kritérií a rozhodovací metody k určení nejlepší varianty (SAATY, 1994).

I když vážně nemocen, dále publikoval články, poslední s názvem "*An Indicator of One's Life Satisfaction*' (SAATY, 2018) byl zaslán k publikování v dubnu 2018, 8 měsíců po Saatyho smrti. Článek byl publikován 31.července 2018. Se spoluautorem tohoto článku Jerry Zofferem Saaty vhodně popsal použití analytického hierarchického procesu v oblastech, kde nebyl předtím použit. Autoři vytvořili model 58 kritérií a sub kritérií použitých v dosavadních publikacích. Tato kritéria pokrývají všechny oblasti, lidská práva, milostné vztahy, zdraví a charitu, přístřeší a klima. V souvislosti s tímto článkem autoři vytvořili Excelovou šablonu, kde si čtenář může ověřit svoji úspěšnost ve všech kritériích, a pokusit se změřit svoji *spojenost se životem* (ÇETIN, 2018).

4. Závěr

Pokrok závisí na schopnosti efektivního rozhodování, jež je závislé na vědomých příčinách a následcích, na vstupech a výstupech. Zajištění maximálního potenciálu a úspěchu vyžadují rozhodnutí na základě komplexního pohledu, ta jsou ale různorodá v čase i prostoru. Inovativní Analyticko hierarchický proces (AHP) byl vyvinut tak, aby zachytil vztah mezi různými úrovněmi činností lidí ve společnosti. Stupně důležitosti, myšlenky a kritéria patří do široké škály heterogenních subjektů. Ty musí být setříděny a uspořádány do homogenních skupin několika prvků, aby bylo možné vyhodnotit jednotlivé vztahy pro odvození priorit (SAATY, 2011).

To jsou slova profesora Saatyho z roku 2011. Saaty zůstane navždy autorem a propagátorem metody AHP, která je dnes rozvíjena v mnoha stovkách vědeckých pracích po celém světě.

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Sports manager in physical education and sports and its management method

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Abstract: Sports management is a comprehensive way of managing sports and sports associations, clubs and teams, where entrepreneurial behavior is also partially manifested. This paper analyses sports manager position and its theoretical basis, defines its personality attributes and roles, that are very specific particularly in the management of sports clubs and other sports activities. Nevertheless, sports management opens up other opportunities for jobs in the sports world. This could mean working for professional sports teams (i.e. hockey, football, basketball) and many other professional or nonprofessional activities in context of marketing, health, and promotions (Tollison, 2008). In this context, it is a profession that allows closer cooperation with athletes, coaches, officials or club owners.

Keywords: Sports manager; personality; legislative; sport clubs; sport product

JEL Classification: Z2, P4

1. Introduction

We understand sports management as a multidimensional phenomenon characterized by specific dimensions and their bearers. Dimension of Sports Management (Duchoslav, 2009): Under the term manager, it is possible to perceive a leader, a manager, an organizer, a coordinator, a manager who analyzes information, decides on goals and practices, leads his associates (Haslam, 2011). Management definition emphasizes leadership, means performing tasks through the work of others. In this context, management is the process of creating and maintaining an environment in which individuals work together in groups, effectively pursuing their goals. The manager's role is a set of many complex tasks, functions and responsibilities, divided by criteria of knowledge, skill, access to work and values. The term management of physical education and sport can be understood as a way of comprehensive management of physical education and unions, associations, clubs, sports unions, cooperatives that at least partially accentuate business-oriented behavior.

2. Sports Management

Sports management is based on marketing orientation, globalization of the market in the sport of strategic sport marketing and mega trends in information society. When it comes to sports management, there was a need at the time in the process of independent physical and sports practice with the application of commercial interests in the field of sport, the use of financial resources circulating in sport. At the same time, it was created as a response to addressing the specific problems of sports youth management and the provision of sports administration. Sport management has an interdisciplinary character and draws on a number of disciplines such as economics, management, sociology, psychology, law, and others. The subject of sports management research is:
1. basic managerial and sports activities (as a whole)
2. specific management activities in the field of sport
3. organizations and institutions in the field of sport - present a comprehensive range of management activities
4. people in different managerial positions in sports (Čáslavová, 2009). Sports management aspects are based on a scientific learning and practical basis.

3. Sports manager personality

According to Pošvář and Erbesa (2008), the manager is a person who, in the interest and on behalf of one or more private owners, is responsible for running the organization and executes managerial and business roles for maximum profit. The manager needs specific professional skills (education), interpersonal (interaction with people), conceptual (managerial intellectual capacity), diagnostic (ability to understand the situation), analytical (identify key factors in a given situation) to perform his / her function.
According to Čáslavová (2009), the sports manager is a manager of performing typical activities and divides it into the following areas:

1. Manager at the level of sport activity - these are the leaders of teams and individuals in individual competitions, specialists trained for sporting events, specialists for the application of sport in the leisure time of people in the work process, among disabled people and so on.
2. The manager at the level of the management of a particular sports association, respectively organizations, members of executive committees of sports and physical education associations, or secretaries of associations, etc.
3. Managers in the business sector - the production of sports goods, the operation of paying physical education services, the head of fitness, the workers of advertising and marketing agencies for physical and sport as well as other managers dealing with the sports industry.

But individual personality components can be included in the three basic categories:

- What a person knows - his skills, knowledge and skills
- What man wants and what his goals are - his motives, needs, interests, values and goals
- How man reacts and manifests - his temperament and character.

The manager's personality is still connected to the company or organization where he / she is active. How powerful it is, how to deal with co-workers will later be reflected in the company's success.

The manager must motivate his subordinates, deal with them, understand them, be positive, tolerant, and fair, be an example. A good manager should define goals, wishes and instructions accurately and comprehensibly, and make decisions in difficult situations, organize and control effectively. His work is often stressful, so he should cope with

stressful situations and solve problems effectively. It is important that the manager himself focuses on himself, knows about his qualities and is able to effectively use his personality type (Mikšík, 2007).

3.1 Content of the work of a sports manager

The content of each manager's work is to perform a large number of significantly different planned and unplanned, technical, personnel, administrative, organizational and other activities. (Posh, Erbes, 2008).
Sport has been spontaneous since its inception. Two basic ways of managing sport have gradually evolved: administrative and managerial (Duchoslav, 2009).

The sports manager can work in the management of a sports club, re-realize the sale of sporting goods or organize sports activities / events.
Typical activities for the manager's work are characterized by the Postman, and Erbes (2008) as follows:

- performs a great deal of work at a fast pace (time stress)
- performs activities that are diverse, rugged and short
- giving priority to current, specific and non-routine issues
- it is affected by internal (colleagues, subordinates and superiors) and external (economic, market and other conditions) constraints, but it can gain control over its work.

The content and scope of the work of individual managers is variable and dependent on:

- the type, size and objectives of the organization,
- the type of organizational structure and management structure, at the management level at which the manager performs tasks,
- professional orientation of the manager,
- the number and qualifications of associates and subordinates,
- competition in the industry and the stimuli of the external environment (Pošvář, Erbes, 2008).

Čáslavová (2009) divides the activities of the manager in physical education and sports as follows with the content of basic and specific activities.

1. Planning: creating a strategic plan, developing an organization, creating a long-term, medium-term and current program.
2. Organizing: procedures / evaluation of results, provision of training cycles, use of computer technology in sports competitions, provision of advertising.
3. Creating organizational structures: improving the organizational structure of the organization, transferring players and coaches / specific activities.
4. Choosing, deploying and leading people: HR, knowledge of the organization / functioning of international and national sports organizations.
5. Control: financial and administrative control of sports organizations, formalities for contracting at home and abroad.
6. Marketing: the area of paid sports services, marketing in sporting goods businesses, marketing concept of sports clubs, health, insurance and social security issues.
7. Finance: overview / current economic trends and measures in the state and business sphere.
8. Law: tax, trade and other laws, statutes, standards and others.
9. Communication: the necessary activity inside / outside the organization between employees and other people, negotiating sponsorship contacts and so on.

We also include co-ordination in sponsorship and sports advertising. Based on these activities, Čáslavová (2009) presents the following functions of a sports manager:

- the scope of the sports manager's functional content
- the criteria of his professional profile and qualification
- demands on his / her specific individual skills and abilities

Sports Manager can act in a position - Generalist Manager, Specialist Manager, Sports Training Manager and / or Competition, Marketing Manager.

3.2 Environment for the work of a sports manager

The term "sport management" is divided into two basic domains of sport and management. The management and commerce component includes not only managerial management functions such as management functions. planning, organizing, leading people and controlling, as well as areas such as accounting, marketing, economics, finance and law. In terms of sports management, the management component includes the audience focusing on entertainment and fitness, having the participants' active participation in sports and physical activities at the centre of their interest. Differentiation of individual types and focus of a sports manager (manager in the field of physical education) obviously tends to be the specialization. Particularly important for the manager in terms of the effectiveness of his work, an overview of the links and the functioning of the top, middle and core levels of physical and sport management, especially when it comes to goals, organizational structures and their staffing. Among other things, the contribution of sport in the current commercial era was the professional application of athletes, the space for marketing communication, the growing share of GDP, socialization and communication, the health of the lifestyle and the emotional enjoyment of the individual. Organizations located in the sports environment in our territory belong to three basic sectors, a similar breakdown is in the Czech Republic.

1. The sector is a state administration covered by the Ministry of Education of Science, Research and Sport, within which the State Care Department is a state unit ensuring the fulfilment of the tasks of the program declaration of the government from the organizational, legislative and conceptual portfolio. This section also includes de facto the National Sports Centre and the Slovak Anti-Doping Agency.
It is also responsible for granting subsidies to state entities for sports: - school sports and sports for all - sports - talented youth - state sports representation - material and technical support. In addition to the Ministry of Education, the Ministry of Interior of the Slovak Republic and the Ministry of Defence of the Slovak Republic also participate in care of top sport. For this purpose, these resorts have established sports representation centres. Other ministries are also partially involved in promoting sport, eg. Ministry of Labor, Social Affairs and Family of the Slovak Republic in the field of sports for the disabled, Ministry of Health of the Slovak Republic in the field of medical care for athletes, etc.

2. The sector consists of non-governmental organizations, which form regional conditions and cooperate with the 1st Sector. Currently, national sports federations are the most important non-governmental sports organizations at national level, responsible for the development of their sports sector and for the sporting representation of Slovakia. In addition to sports federations, organizations that provide services to sports federations or other national or local organizations (www.sportslovakia.sk) operate at national level.
There are approximately 7,000 sports clubs and organizations at regional and local level that provide services at the appropriate level for organized or unorganized sports. The Slovak sports non-governmental sector is characterized by a high number of organizations that are created on a civic basis.

3. The sector includes sports facilities such as: fitness centres, wellness centres, solariums, massage services, offices and agencies with sports activities, shooting ranges, swimming and ski schools and other facilities offering paid sports services to public. Furthermore, there are marketing and advertising agencies for sports and physical education, operation of sports facilities, halls, arenas and the like. At the same time, commercial sports clubs companies can also be included, where one of the goals is to make a profit with sports activities.

Advantages and disadvantages of profit-oriented non-profit environment (Časlavová, 2009).
A) A non-profit-oriented environment has the following benefits for management:
- less competition in the working environment
- possible certain tax breaks for managers
- a large range of services and programs

The disadvantage of managing work in non-profits is:
- impossibility of career advancement
- the work of a manager can also be done by voluntary, non-professional workers
- their activities are to some extent regulated by legislation, governmental organization regulations, etc.

B) A profit-oriented environment has the following benefits for management:
- good advertising opportunities
- better conditions and financial valuation of workers
- emerging business opportunities

The disadvantages of managing work in profit organizations are:
- competitive environment
- high responsibility of workers
- subordination to owners or sponsors.

4. Analysis of components of gross domestic sport product in sports business

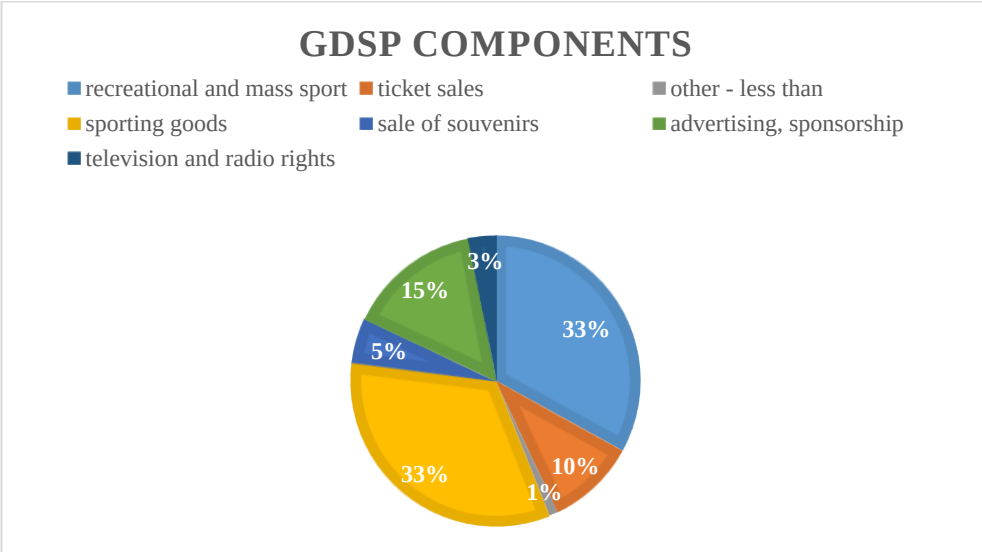
Most sports entities (with the exception of clubs and centres of education, defence and home affairs) are not state-owned. Administrative management is characterized by addressing the only possible alternative resulting from the existence of a single (or significantly dominant) financial channel. It is irrelevant whether the financial resource is a state, general or private source. Management directing means choosing the most appropriate alternatives, creating their (current) hierarchy and finding new alternatives. However, we do not consider the existence of either solely administrative or exclusively managerial management. We understand the model as range where on one side is absolute management and absolute administrative management on the other. A particular sports subject may be controlled

- absolutely administrative
- mostly administrative,
- administrative management,
- predominantly managerial,
- absolutely managerial.

More often, we deal with mixed management. Alternative financial flows can only exist if a sports entity sells products. The flow of finance depends on the sale of goods and services. If all the sources of funding come only from sales, then we are talking about absolute managerial management. Of course, sales must be supported by marketing. Sports marketing is one of the starting points of sports management. It allows you to create independent financial channels - if we sell multiple products. There is more resource financing that is more stable than funding from a dominant central source. Any financial resource may collapse. If there are more than one, the risk of fatal financial inadequacy is reduced. The high level of marketing orientation is a determining factor in managerial management in sport.

To analyse the gross domestic sport product, we focused on the components that make it and are presented in the graphical representation. Recreational and mass sports, together with sports sales, account for more than half of the GDSP share. They are followed by advertising and sponsorship, which is a buy-in relationship, the sponsor is a buyer, sponsored by the seller. The use of sport, sports motifs and spaces in marketing other products is precisely the area of sports management and marketing that brings resources to sports from the outside. Services for viewers include the sale of tickets and souvenirs and additional services. Television and radio broadcasting rights also have their status.

Chart 1 GDSP (Gross Domestic Sport Product) Components



Source: own processing

5. Conclusions

The area of physical education and sport is currently particularly demanding on the quality of control components through which tasks are carried out on individual sections, where the quality of the functions performed is conditional on the levels of professionalism of the manager.

The emergence of a sports manager profession, which has started to emerge mainly at the level of sports clubs and organizations, dominant in collective sports and professional approach from the above mentioned points, is desirable, necessary and required in the market economy conditions. There is a interconnection between physical education, sport and economic, managerial, marketing and legislative areas. The current reality points to the need for a broad-spectrum focus of the sports manager's profession with an emphasis on physical education and sports, as well as economics, legislation, marketing and financial literacy. Last but not least are language competences. By analysing the Components of Gross Domestic Sport Product, we wanted to point out the importance of proper management and financing of sports activities.

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