ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

Publisher
http://jssidoi.org/esc/home

ECONOMICS OF THE INTERNATIONAL RIDESHARING SERVICES - A TRAP FOR AMATEURS

Aleksandr Ključnikov[1], Boris Popesko[2], Jitka Kloudová[3]

[1] *Faculty of Economics and Business, Pan-European University, Bratislava, Slovakia*

[2] *Faculty of Management and Economics, Tomas Bata University, Zlin, the Czech Republic*

[3] *University of Entrepreneurship and Law, Prague, the Czech Republic*

E-mails:[1] *kliuchnikov@gmail.com* ; [2]*popesko@fame.utb.cz* ; [3]*jitka.kloudova@gmail.com*

Received 15 October 2018; accepted 18 December 2018; published 30 March 2019

Abstract. An explosively growing international business model of peer-to-peer ridesharing brings benefits to the customers and provides part-time and full-time jobs for the drivers. While the services are provided mostly by the drivers with low knowledge of economics and finance, provision of the services might be a trap for them in case that they do not take into consideration all costs related to the service provision. The aim of the study was to investigate the economics of the ridesharing providers in case of UBER in Prague, and to create a simulation model estimating the annual performance of the ridesharing transport service operators and classic taxi service from the point of view of individual drivers, considering certain deviations and random effects defined by the stochastic methods using Monte Carlo approach. The results of the modelling show that the net income of Uber drivers is compatible with the taxi drivers only in case of the most expensive Uber Black category, but the net income of ridesharing providers in the category of Uber Pop and Uber Select hardly covers the costs of service provision. The alarming fact is that most of the drivers, who took part in our research, were not capable to acknowledge the hidden costs of ridesharing and were blinded by the vision of a short-term cash incomes without any awareness of the existence of the postponed or implicit costs. While our results confirm that Uber drivers in general are significantly underpaid, Uber Pop and Uber Select services generate a loss for the driver when we take into account the implicit costs of the driver's salary at the level of an average salary in the Czech Republic.

Keywords: sharing economy; ridesharing; economics of ridesharing; Uber; taxi

Reference to this paper should be made as follows: Ključnikov, A.; Popesko, B.; Kloudová, J. 2019. Economics of the international ridesharing services - a trap for amateurs, *Entrepreneurship And Sustainability Issues*, 6(3): 1172-1181. http://doi.org/10.9770/jesi.2019.6.3(8)

JEL Classifications: F23, H24, H25, L26, K20, M21

Additional disciplines: economics of ridesharing, sharing economy

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

1. Introduction

The sharing of the private assets of individuals is a key element of a sustainable economic system called the sharing economy. Cao (2016) defined the sharing economy as an organized economic activity that may supplant the traditional corporate-centered model and encourages peer-to-peer transactions, and as a system of sharing underused assets or services, for free or for a fee, directly from individuals, bypassing traditional middle men. The concept of peer-to-peer ridesharing, that brings benefits to the customers and provides part-time and full-time jobs for the drivers and at the same time influences the transportation markets worldwide, is a recent and widely discussed topic (Ciobanu & Androniceaanu, 2018, Dillahunt et al., 2017, Chang, 2017, Jurigova & Tuckova, 2016, Ključnikov & Belás, 2016, Ključnikov & Popesko, 2017, Kovács, 2017; Mura & Sleziak, 2014, Ngo & Pavelková, 2017, Sachpazidu-Wójcicka, 2017, Szilágyi, 2017, Rayle et al., 2016. Rodas Vera & Gosling, 2017, Southern et al., 2017, Tuckova & Strouhal, 2010, Vavrečka & Mezuláník, 2016). While the services are provided mostly by the drivers with low knowledge of economics and finance, provision of the services might be a trap for them in case that they do not take into consideration all costs related to the service provision.

The aim of the study was to investigate the economics of the ridesharing providers in case of UBER in Prague, and to build a simulation model estimating the annual performance of the ridesharing transport service operators and classic taxi service from the point of view of individual drivers, which takes into consideration all explicit and implicit costs of the ridesharing providers, and considers certain deviations and random effects defined by the stochastic methods using Monte Carlo approach.

2. Literature review

The database of the Web of Science currently includes 289 articles, at least partially related to ridesharing and its economical aspects. Most of the relevant papers, devoted to this field of study, are very current, published mostly in the last three years. Business models represent the basis of any successful business (Slávik and Zagoršek, 2016; Rajnoha and Lesníková, 2016; Wroblowská, 2016; Rajnoha and Lorincová, 2015), being defined as how an organization creates value and captures return from that value and containing the following elements: value proposition, customer segments, key activities, key resources, key partnerships, cost structure, revenue streams, customer relationship, channels according to the nine building block canvas of Osterwalder and Pigneur (2010). Elements of business models have been inquired by more authors in the literature regarding several fields of activity, for example, renewable energy (Tanţău and Nichifor, 2014), energy efficiency (Chang et al, 2017; Tvaronavičienė, 2018), and entrepreneurial business models based on efficiency (Păunescu, 2013; Moraru et al, 2017, Tvaronavičienė, 2017; Shumakova et al, 2018), researching practically the implementation of the nine building blocks canvas of Osterwalder and Pigneur (2010) in several business sectors or in different lifecycle stages of a business. A main objective of the efficiency and effectiveness of a business model is thus, the customer-perceived delivered value by the organization, which can influence the relationship between customers and organization in terms of failure severity, perceived justice dimensions and satisfaction, as the study of Jha and Balaji (2015) indicated. If the value of the delivered products or services fails to be perceived by the customer it can lead to difficulties in maintaining customer loyalty or gaining new customers, that can lead to business failure in time as well.

Another main issue of entering a new market with a new type business refers specifically to three elements of the nine building block canvas, specifically to how their business will cooperate with business partners, such as suppliers, customers and other with a main purpose of aiming to reduce the operations and other business costs for all the parties involved (Păunescu, 2013). This represents a main challenge in order to establish a successful and efficient position on the market. The pressure towards more knowledge, networking, efficiency and effectiveness of applying business models elements into practice originates from the development of some main factors of the

ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

business environment, such as: the fast pace of technology evolution, increased standards of customers and other employers and thus, competition, internationalization, accreditation pressure and qualitative standards (Dima and Vasilache, 2016). These elements were also present in the case of introducing UBER on the market, as a new business model concept of ridesharing transport service versus the classical taxi driving services.
Regarding the ridesharing sector Dillahunt et al. (2017) concluded that Real-time ridesharing services are often touted as sharing-economy leaders and dramatically lower the cost of transportation and argued that low digital literacy of the users and providers can make such services infeasible and disadvantageous.

Chang (2017) empirically assessed the economic impact of Uber service on taxi drivers' business performance using a case study in Taiwan as an illustration and found that Uber reduced regular taxi drivers' service revenue by approximately 12 percent in the initial year and 18 percent in the third year of entry of Uber. The author also stated that the negative impacts of Uber on taxi drivers' service revenue are more likely associated with the reduction in operating miles of taxi drivers. Krželj-Čolović et al. (2016) show clustering has important effects on the small and medium enterprises and possible effects can be mirrored in future Uber services.

The issue of the economics and cost of driving trips was for instance assessed by Southern et al. (2017) and Kot (2015) who identified an existence of the awareness gap, and built and deployed a system that makes the total cost of each driving trip, including the cost, mostly hidden for an amateur user, including depreciation, maintenance, insurance, and fuel visible, so the drivers were able to more accurately and confidently estimate costs of their driving commutes, and better estimate their net income.

Rayle et al. (2016) and Ključnikov et al. (2018) presented the findings that indicate that, despite many similarities, taxis and ridesourcing differ in user characteristics, wait times, and trips served.

Cao (2016) stated that the regulatory regimes in place prior to the rise of the "sharing economy" should be revisited and appropriately restructured for these newly emerged business models. Moderate approach to regulation is also recommended by Svecova & Veber (2017). Arshov and Bucevska (2017) show efficient regulatory framework based on transparency and good governance practice in transitional economies lack behind western economies. This could be a large obstacle for collaborative economy diffusion in former transitional economies.

Miguel Rodriguez-Anton et al. (2016) even taking into consideration the fact the European Union has clearly adopted a position in favour of collaborative economy state that in order to have a proper coexistence between the activities developed in a collaborative economy area as well as a traditional one, it is necessary to have regulations providing clear rules of the game.

While most of the authors devote their attention to the model of ridesharing, the problematics of the economics of the ridesharing providers and the financial performance of the ridesharing transport service operators from the point of view of individual drivers is not sufficiently covered by the scientists (Ohanyan, Androniceanu, 2017).

3. Methodology

The modelling of the economy of the driver was carried out in the simulation software Powersim by Solvico (http://www.powersim.com/).The simulation model estimates the annual performance of the transport service operator or taxi service from the point of view of individual driver, considering certain deviations and random effects defined by the help of stochastic methods using pseudo-random numbers (Monte Carlo). The model involves all related variables, interconnected by the defined relations. The input data for modelling comes from both public sources (the revenue side in particular) and the questionnaire surveys described above.

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

Based on the analysis of the methods of transport services provision, the research team prepared several partial models of the economy of operation that included:

- traditional taxi services operated by the own vehicle of the driver, and operated by the vehicle leased through the operational leasing;
- commercial transportation on the UBER platform, provided by the private vehicle up to 10 hours per week in Shared Economy mode (approx. 30 percent of all UBER drivers) for Uber Pop and Uber Select price variants;
- full time commercial transportation on the UBER platform on Uber Black and Uber select price variants on both owned and leased vehicle.

The model takes into consideration all explicit and implicit costs of the ridesharing providers and allows the user to define the following parameters:

- travel parameters (average journey time, paid by the customer, the average length of the trip to the customer (delivery of the vehicle), length estimation deviation in %, car use ratio for private purposes (0-100%, this parameter determines in which ratios the selected cost types will be reflected in the cost of the economic model of the transport services), number of trips per day);
- general costs (fuel costs, expected change in fuel prices per cent per year, period of amortization);
- revenues (rate for 1 km, initial rate, waiting rate, average waiting time);
- service-related costs (car price, operating leases costs, average fuel consumption, service costs, price for a set of tires, the average life of the tire set, tire replacement price, annual cost of liability insurance, annual cost of accident insurance, annual cost of taxi place, annual technical control costs, annual road tax, the annual price of the taximeter verification, monthly cost of parking space, cleaning expenses, frequency of cleaning, highway toll price, fee of the provider of clients (Uber, taxi service)).

4. Data

Our research team investigated the economics of the ridesharing providers in case of UBER in Prague from the point of view of individual drivers. We have performed two surveys focused on the economics of transportation services in Prague.

The first survey was conducted in 2017 via questionnaire, created at the Google Docs platform and distributed to all users of Liftago, one of the main transportation service provider in Prague. The number of the respondents that fulfilled the questionnaire was 353 out of 1000 registered users of Liftago. This questionnaire was mainly focused on verification of all related costs and all related parameters of taxi services in Prague. While the total population of the taxi drivers in Prague reaches the number of 7000, we consider the data sample to be representative at the level of reliability of 95 % (significance 0.05, error rate 1.5 %, accuracy of 0.5 %).

The second survey was focused on the Uber drivers, and was conducted in 2017 by the personal interviews of the Uber drivers. The survey was focused on validation of the data from the first survey in case of Uber platform, finding specifics and differences in case of full time and part time Uber drivers. The total number of the respondents was 49. While the total population of the Uber drivers in Prague reaches the number of 2000, we consider the data sample to be representative at the level of reliability of 95 % (significance 0.05, error rate 3 %, accuracy of 2 %).

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

5. Results and discussion

Our research team investigated the economics of the ridesharing providers in case of UBER in Prague from the point of view of individual drivers. We have performed two surveys focused on the economics of transportation services in Prague.

The values of each parameter in the simulation were subsequently defined for each sub-model based on a field survey. The average length of the journey with the customer in case of taxi was calculated based on data from the Liftago questionnaire survey that included the number of daily journeys, the number of hours worked per week, the expected number of 49 working weeks per year, and the number of mileage estimated by taxi drivers.

The average length of the journey to the customer (vehicle delivery) in case of taxi was calculated on the basis of data from the Liftago questionnaire survey in a similar way, and took into consideration the mileage difference between the total mileage the paid distance.

The average length of the journey with the customer in case of Uber was calculated based on the UBER questionnaire survey of the number of daily journeys made and the number of mileage estimated by the UBER driver. The average journey time in the case of Uber is slightly lower than in the case of taxi service.

The average length of the journey to the customer (delivery of the vehicle) in case of Uber was determined on the basis of an expert estimation in the value of 100% of the average length of the paid journey.

The number of journeys per day was defined for each service as the average of the estimations of the drivers of the service. The number of rides per day reported by Uber drivers was almost twice as high as in case of the taxi drivers.

The expert estimation of the deviation of the length for the simulations was set at the level 20%, and the expected change in the prices of the fuel at the level of 5% per year.

The parameters *car use ratio for private purposes, car price, operating lease price per month, average fuel consumption, service costs, tire set price, average tire life, tire replacement cost, liability, the annual cost of the liability, the annual cost of the accident insurance,* were defined on the basis of a questionnaire survey.

The other parameters, including *the commissions of intermediaries, annual state technical control, yearly taximeter verification price, motorway price, car cleaning price, depreciation period, monthly parking space price* were defined based on information from public sources and on information from Liftago drivers survey.

Fuel costs were determined on the basis of the average fuel prices listed on the Peníze.cz server (https://www.penize.cz/en/press-payments-and-centers/history/table) for Prague and were increased by CZK 1.

Based on these values, the annual economic result is simulated from the point of view of individual drivers, considering certain deviations and random effects, using stochastic methods using pseudo-random numbers (Monte Carlo).

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

The questionnaire survey shows that operating leasing vehicles have an average consumption of 0.4 l / 100 km on average, due to lower vehicle age. Tires and vehicle service costs are included in operating lease costs. The investigation also shows that the maximum number of km travelled by the leased vehicle is not usually limited.

Table 1. The results of the annual modelling of the economics of transport services

Model	Taxi (VA)	Taxi (L)	U-Pop	U-Select	U-Black (VA)	U-Black (L)
Number of rides	2 779	3 140	1 097	1 097	5 479	5 479
Number of kilometres	58 528	76 669	20 982	20 982	104 811	104 923
Total revenues (CZK)	866 092	1 052 180	137 864	179 161	1 699 844	1 701 351
Total expenses (CZK)	385 566	502 376	119 171	129 495	828 968	906 677
Net income before taxes (CZK)	480 526	549 804	18 693	49 666	870 876	794 674
Net income before taxes (EUR)	18 993	21 731	738	1 963	34 421	31 410

Source: Own processing. Note: VA – own vehicle, L – operating lease, CZK/EUR rate is 25.3.

The results of the simulation shows that provision of UBER Pop and Uber Select services in sharing economy mode generates relatively low incomes. In the case of occasional provision of this service, the driver would not incur any additional (or very minimal) tax liability on personal income tax. In addition to this income limit, the taxpayer is not obliged to pay the social and pension insurance.

Based on these findings, it can be concluded that *a) there is no significant tax evasion at the level of individual service providers in the ridesharing and b) the actual net income before taxes, that includes all explicit and implicit costs of ridesharing providers is extremely low and reaches the level of only approximately 61.5 EUR per month in case of Uber Pop and 163.58 EUR per month in case of Uber Select.*

The important fact is, that the model does not include the implicit cost of the wage of the driver. If we assume that one average ride, including the trip to the customer, takes approximately 30 minutes, the hourly wage of the driver in case of the Uber Pop is only 1.44 EUR, and 3.57 EUR in case of Uber Select. While according to the report of the Czech statistical office (2018) the average wage in the Czech Republic in 2017 reached the level of 29 504 CZK (1166,16 EUR), and the average hourly wage was 7.28 EUR, Uber drivers are significantly underpaid.

The alarming fact is that most of the drivers, who took part in our research, were not capable to acknowledge the hidden costs of ridesharing and were blinded by the vision of a short-term cash incomes without any awareness of the existence of the postponed or implicit costs.

This awareness gap was addressed by Southern et al. (2017), who built and deployed a system that makes the total cost of each driving trip, including the explicit and implicit costs visual for an uneducated driver, and let him better estimate the net income.

Our results are also conformal with Dillahunt et al. (2017), who concluded low literacy of the ridesharing providers can make such services disadvantageous for them.

A more detailed analysis of the economic models of taxi and Uber drivers shows that the revenues of the Uber drivers are higher in comparison with the traditional taxi drivers. The deeper analysis shows that these results are influenced by a different setting of partial service delivery parameters in terms of number of journeys and their

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2019 Volume 6 Number 3 (March)
http://doi.org/10.9770/jesi.2019.6.3(8)

lengths. This finding is conformal with the results of Rayle et al. (2016) and Simarmata and Ikhsan, (2017), who stated that despite many similarities, taxis and ridesharing differ in user characteristics, wait times, and trips served.
To compare the performance of taxi vs Uber drivers in the equal conditions we have compiled a partial model with the following parameters: *average journey time (payable by the customer) - 11.00 km; average journey time to the customer (delivery of the vehicle) - 9.00 km; the ratio of car use to private use - 15.00%; number of trips per day - 12,00.*

The results of the modelling are shown in the following table.

Table 2. The results of the annual modelling of the economics of transport services

Model	**Taxi (VA)**	**Taxi (L)**	**U-Pop**	**U-Select**	**U-Black (VA)**	**U-Black (L)**
Number of rides	3 128	3 128	3 128	3 128	3 128	3 128
Number of kilometres	62 588	62 588	62 588	62 588	62 588	62 588
Total revenues (CZK)	988 790	988 790	437 743	569 476	1 092 060	1 092 060
Total expenses (CZK)	399 639	473 883	385 307	418 240	564 936	644 898
Net income before taxes (CZK)	589 151	514 907	52 436	151 236	527 124	447 162
Net income before taxes (EUR)	23 286	20 352	2 072	5 977	20 834	17 674

Source: Own processing. Note: VA – own vehicle, L – operating lease, CZK/EUR rate is 25.3.

The results of the modelling in the equal conditions show, that in case that the driver wants to deliver transportation services as a full time job, his earnings will be higher in case that he will work under the licence of a taxi driver. At the same time, despite the increased costs associated with obtaining a taxi license, the provision of a classical taxi service is more advantageous compared to the cooperation with the Uber service.

Earnings of the Uber drivers are compatible to taxi drivers only in case of Uber Black. Uber Pop and Uber Select services generate a loss for the driver if he takes into consideration an implicit cost of his wage at the level of an average wage in the Czech Republic. Under normal commissioning, Uber pockets more funds than traditional taxi providers or alternative applications. Aggressive Uber strategy was also mentioned by Chang (2017). Driving for Uber will be more advantageous in peak times when prices are rising, and this is probably the reason why drivers combine Uber with the other services.

Based on the results of the simulation we can state that the operation of transport services by a vehicle acquired through the operational leasing is less advantageous compared to the use of the own vehicle. The results are the same for the classic taxi service and the Uber.

Conclusions

The aim of the study was to investigate the economics of the ridesharing providers in case of UBER in Prague, and to create a simulation model estimating the annual performance of the ridesharing transport service operators and classic taxi service from the point of view of individual drivers, considering certain deviations and random effects defined by the stochastic methods using Monte Carlo approach.

The main results of the research are as follows. The results of the modelling show that the net income of Uber drivers is compatible with the taxi drivers only in case of the most expensive Uber Black category, but the net

income of ridesharing providers in the category of Uber Pop and Uber Select hardly covers the costs of service provision. The alarming fact is that most of the drivers, who took part in our research, were not capable to acknowledge the hidden costs of ridesharing and were blinded by the vision of a short-term cash incomes without any awareness of the existence of the postponed or implicit costs. While our results confirm that Uber drivers in general are significantly underpaid, Uber Pop and Uber Select services generate a loss for the driver when we take into account the implicit costs of the driver's salary at the level of an average salary in the Czech Republic.

We consider the scale and validity of our dataset with the level of reliability of 95 % (significance 0.05, error rate 1.5-3 %, accuracy of 0.5-2 %) for a strength of our research. The research was conducted only in one European city and that may be considered for a most substantial weakness of the research. We would like to validate the results of our research in case of other large cities in the V4 countries in the future.

References

Arsov., S., & Bucevska, V. (2017). Determinants of transparency and disclosure – evidence from post-transition economies, *Economic Research-Ekonomska Istraživanja*, 30(1), 745-760. https://doi.org/10.1080/1331677X.2017.1314818

Cao, D. (2016). Regulation through deregulation: sharing economy companies gaining legitimacy by circumventing traditional frameworks. *Hastings LJ*, 68, 1085.

Ciobanu, A., Androniceanu, A. (2018). Integrated human resources activities – the solution for performance improvement in Romanian public sector institutions. *Management Research and Practice*, 10(3), 60-79.

Chang, H. H. (2017). The economic effects of Uber on taxi drivers in Taiwan. *Journal of Competition Law & Economics*, 13(3), 475-500.

Chang, M. Ch., Shieh, H. S. (2017). The Relations between Energy Efficiency and GDP in the Baltic Sea Region and Non-Baltic Sea Region. *Transformations in Business & Economics*, 16, 2 (41), 235-247.

Czech Statistical Office (2018). Průměrné mzdy - 4. čtvrtletí 2017. Retrieved April 24, 20178 from https://www.czso.cz/csu/czso/cri/prumerne-mzdy-4-ctvrtleti-2017

Dillahunt, T. R., Kameswaran, V., Li, L., & Rosenblat, T. (2017). Uncovering the values and constraints of real-time ridesharing for low-resource populations. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (pp. 2757-2769). ACM.

Dima, A.M., Vasilache, S. (2016). Trends in the internationalization of European higher education in a convergence perspective. *Management & Marketing. Challenges for the Knowledge Society*, 11(2), 449-457 https://doi.org/10.1515/mmcks2016-0008

Jha, S. and Balaji, M.S. (2015). Perceived justice and recovery satisfaction: the moderating role of customer-perceived quality. *Management & Marketing. Challenges for the Knowledge Society*, 10(2), pp. 132-147 https://doi.org/10.1515/mmcks-2015-0011

Jurigova, Z., Tuckova, Z. (2016). Sustainable Tourism in a Knowledge Based Economy. PROCEEDINGS OF THE 17TH EUROPEAN CONFERENCE ON KNOWLEDGE MANAGEMENT. Ulster Univ, NORTH IRELAND, pp. 1038-1046

Ključnikov, A., Belás, J. (2016). Approaches of Czech entrepreneurs to debt financing and management of credit risk. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 11(2), 343-365. http://dx.doi.org/10.12775/EQUIL.2016.016

Ključnikov, A., & Popesko, B. (2017). Export and its financing in the SME segment. Case study from Slovakia. *Journal of Competitiveness*, 9(1), 20-35. https://doi.org/10.7441/joc.2017.01.02

Ključnikov, A., Krajčík, V., Vincúrová, Z. (2018). International Sharing Economy: the Case of AirBnB in the Czech Republic. *Economics and Sociology*, 11(2), 126-137. https://doi.org/10.14254/2071-789X.2018/11-2/9

Kot, S. (2015). Cost structure in relation to the size of road transport enterprises, *Promet - Traffic - Traffico*, 27 (5), 387-394.

Kovács, G. Y. (2017). Development of performance evaluation software for road freight transport activity. *Polish Journal of Management Studies*, 15(1), 121-134.

Krželj-Čolović, Z., Milić-Beran, I., & Vrdoljak-Raguž, I. (2016). The impact of clustering on the business performance of Croatian SMHEs, *Economic Research-Ekonomska Istraživanja*, 29(1), 904-913, https://doi.org/10.1080/1331677X.2016.1204101

Miguel Rodriguez-Anton, J., del Mar Alonso-Almeida, M., Rubio-Andrada, L., & Celemin Pedroche, M. S. (2016). Collaborative economy. An approach to sharing tourism in Spain. *Ciriec-Espana Revista De Economia Publica Social Y Cooperativa*, 88, 259-283.

Moraru, A. D., Ilie, M., Sorici, C. O. (2017). The Mediating Role of Market Orientation in the Relationship between Entrepreneurial Orientation and SMEs Business Performance. Evidence from Romania. *Transformations in Business & Economics*, 16, No 2A (41A), 386-401.

Mura, L., Sleziak, J. (2014). *Innovation and Entrepreneurship Network*. In: Cers 2014: 5th Central European Conference in Regional Science, International Conference Proceedings. Kosice, Slovakia, pp. 643-651.

Ngo, V., & Pavelková, D. (2017). Moderating and mediating effects of switching costs on the relationship between service value, customer satisfaction and customer loyalty: investigation of retail banking in Vietnam. *Journal of International Studies*, 10(1), 9-33. https://doi.org/10.14254/2071-8330.2017/10-1/1

Ohanyan G., Androniceanu, A. (2017). Evaluation of IMF program effects on employment in the EU. *Acta Oeconomica*, 67(3): 311-332.

Osterwalder, A. and Pigneur, Y. (2010). *Business Model Generation*, John Wiley & Sons, New Jersey.

Păunescu, C. (2013). Challenges of entering the business market: the pre-entry knowledge and experience. *Management & Marketing Challenges for the Knowledge Society*, 8(1), pp. 63-78.

Rajnoha, R., Lesníková, P. (2016). Strategic Performance Management System and Corporate Sustainability Concept - Specific Parametres in Slovak Enterprises. *Journal of Competitiveness*, 8(3), 107-124. https://doi.org/10.7441/joc.2016.03.07

Rajnoha, R., Lorincová, S. (2015). Strategic Management of Business Performance Based on Innovations and Information Support in Specific Conditions of Slovakia. *Journal of Competitiveness* 7(1), 3–21. https://doi.org/10.7441/joc.2015.01.01

Rayle, L., Dai, D., Chan, N., Cervero, R., & Shaheen, S. (2016). Just a better taxi? A survey-based comparison of taxis, transit, and ridesourcing services in San Francisco. *Transport Policy*, 45, 168-178.

Rodas Vera, L. A., & Gosling, M. D. S. (2017). Sharing economy in tourism: a theoretical discussion about collaborative consumption and sharing. *Revista Eletronica De Estrategia E Negocios-Reen*, 10(1), 226-251.

Sachpazidu-Wójcicka, K. (2017). Innovation as a determinant of the competitiveness of Polish enterprises. *Oeconomia Copernicana*, *8*(2), 287-299. https://doi.org/10.24136/oc.v8i2.18

Simarmata, J., Ikhsan, R.B. (2017). Building customer retention in on-line transportation. *Polish Journal of Management Studies*, 15 (2), 229-239.

Slávik, Š, Zagoršek, B. (2016). Relationship between business strategy and business model studied in a sample of service companies. *Journal of Competitiveness*, 8(4), 72 – 84. https://doi.org/10.7441/joc.2016.04.05

Southern, C., Cheng, Y.N., Zhang, C. Abowd, G.D. (2017). Understanding the cost of driving trips. Proceedings of the 2017 Acm Sigchi Conference on Human Factors in Computing Systems (CHI'17), pp. 430-434. https://doi.org/10.1145/3025453.3025686

Shumakova, O. V.; Gapon, M. N.; Blinov, O. A.; Epanchintsev, V. Y.; Novikov, Y. I. (2018). Economic aspects of the creation of mobile units providing everyday services in off-road conditions in Western Siberia. *Entrepreneurship and Sustainability Issues* 5(4), 736-747. https://doi.org/10.9770/jesi.2018.5.4(3)

Svecova, L., Veber, J. (2017). *Is The Sharing Economy Unfair Competition And Should It Be Regulated?* In: IDIMT-2017 - Digitalization In Management, Society And Economy, Podebrady, Sep. 6-8, 2017. pp. 55-60.

Szilágyi, G. A. (2017). Exploration Knowledge Sharing Networks Using Social Network Analysis Methods. *Economics and Sociology*, 10(3), 179-191. https://doi.org/10.14254/2071-789X.2017/10-3/13

Tanţău, A.D. and Nichifor, M.N. (2014). Specific business models in the wind energy field in the European Union: comparative study on Romania and Germany. *Management & Marketing. Challenges for the Knowledge Society*, 9(3), 301-316.

Tuckova, Z., Strouhal, J. (2010). On Management of Knowledge Services. Proceedings of the 9th Wseas International Conference on Artificial Intelligence, Knowledge Engineering and Data Bases. Cambridge, ENGLAND. pp. 327-339.

Tvaronavičienė, M. (2017). Clusters, innovations and energy efficiency: if relantionship could be traced. *Marketing and Management of Innovations*, 2, 382 - 391 http://doi.org/10.21272/mmi.2017.2-35

Tvaronavičienė, M. (2018). Towards sustainable and secure development: energy efficiency peculiarities in transport sector. *Journal of Security and Sustainability Issues*, 7(4), 719-725. https://doi.org/10.9770/jssi.2018.7.4(9)

Vavrečka, V., Mezuláník, J. (2016) Marketing communication in tourism – trends and reality. *Marketing and Management of Innovations*, 16(2), 80-93. ISSN 2218-4511

Wroblowská, Z. (2016). Requirements for Brand Managers and Product Managers Responsible for Competitiveness of Product and Brands. *Journal of Competitiveness*, 8(3), 5-21. https://doi.org/10.7441/joc.2016.03.01

Short biographical note about the contributors at the end of the article (name, surname, academic title and scientific degree, duties, research interests):

Aleksandr KLJUČNIKOV is the Associate Professor at the Faculty of Economics and Business, Pan-European University, Bratislava, Slovakia and University of Entrepreneurship and Law in Prague. He focuses his research activities on the fields of Entrepreneurial Economics, Financial Economics, Sharing Economy and Business Administration. His research interests also include international and export financing and the activities of the sharing economy in the field of Tourism.
ORCID ID: orcid.org/0000-0003-0350-2658

Boris POPESKO is the Associate Professor and Vice-Dean for Research and Business Liaison at the Faculty of Management and Economics, Tomas Bata University, Zlin, the Czech Republic. He focuses his research activities on Managerial Accounting, Costing, Healthcare Economics, Hospital Management. His research interests also include international financing, business environment and sharing economy.
ORCID ID: orcid.org/0000-0002-3590-7070

Jitka KLOUDOVÁ is the Associate Professor at University of Entrepreneurship and Law, Prague, the Czech Republic. She focuses her research activities on microeconomic and makroekonomic aspects of the entrepreneurial activities, including the sector of the Sharing Economy, Creative Economy, the effect of creativity on the regional development and other related issues.
ORCID ID: orcid.org/ 0000-0002-8582-2323