

Risk Management and Public Administration for Entities of Urban Public Transport: The Case of Silesian Voivodeship, Poland*

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Abstract

The paper presents risks related to the organisation of urban public transport, broken down to entities and the level of city transport policy, public transport organiser, and operators providing services. The risks were identified for a model, in which gross costs contracts are concluded based on the example of the central part of the Silesian Voivodeship, using selected methods for knowledge gaining about the organisation, analyses of documents and case studies. Also basic rules of risk allocation have been presented, so as to reduce the probability of their occurrence, and the possible effects, if any.

Keywords: Risk, Urban Public Transport

Introduction

The risk is a widespread phenomenon, exists in the activities of any entity, irrespective of the sector or branch, and the effects of risks materialisation can be very different in nature, not only financial, but also legal, image-related, social, or environmental. The uncertainty and risk apply to most decisions made in the activities of urban public transport organisers and service providers, not only related to investment projects or implementation of new innovative solutions, but also related to everyday and current matters. The decision maker is not always aware of the existing risk, not always he/she can estimate possible negative effects, or answer the question, whether they are significant or not. Sometimes risks are hidden by opportunities, which are provided by the undertaking of a given project, the attention is then focused on them. It happens that great attention is paid to a risk, which effects are small and marginal, and a risk, and related possible situations, which can cause substantial negative effects for the entity and its environment, is missed. Also opposite situations may be encountered, in which any risk is avoided, and this means that all the changes are hindered and missing and, as a result, it means stagnation and the lack of development.

Unfortunately, nowadays there are many such situations, in which a risk is taken, many more than a few decades ago; also the effects resulting from such events are and can be significant. The multitude of situations, in which risks exist, results from e.g. the increased complexity of the economic and social world, the abundance of information and complicated solutions, both in the economic, social, and legal, as well as technical and technological sphere.

Various risks exist in the urban public transport, the financial effects can be small, but in majority of cases they may be and are significant, which results from the universal nature of this service provision. The effects of risks materialisation

can be and are frequently perceptible by many persons, and also, taking into account substantial funds related to the provision of public transport services, the effects can have and also frequently have a substantial financial dimension. The urban public transport is related to high-value deliveries and building services - this applies both to means of transport and to the infrastructure, as well as to a significant scope of services - the very provision of transport services, but also to the costs related to the transport organisation or to the maintenance of necessary ICT systems. Risks exist both at the decision making and in activities related to the obtained income, as well as related to expenditures, in the investment activities, and in the transport management on a current basis.

The objective and research methods, the state of research so far

The risk management has its dynamic dimension, it can allow to reduce the cost of the entire public transport system operation, it is also possible to reduce effects of negative events. Just the possible significant financial effects related to the existing risk were the basic factor to undertake the research on the risk in the organisation of urban public transport. In particular it is important that the funds spent for the urban public transport are public funds, originating mostly from taxes paid to local budgets or other tiers of the public sector. Because in many cases the public transport systems may be and also are financed from the regional, national, or EU budgets, e.g. in the field of investment projects improving the availability or from funds for environmental protection, reduction of harmful compounds and CO₂ emission.

The study is aimed at identification and presentation of risks existing at the organisation of urban collective transport. The results of this research are necessary for further analyses and assessments, aimed at the creation of a risk management system in the organisation of urban public transport, including in particular the indication of principles of risk allocation between various entities, processes and procedures *inter alia* in the field of adopted solutions during the development of contractual provisions, and in particular risks allocation and division between the parties to the agreement, and settlements related to the contracts execution. The issues of risks allocation in net costs contracts and gross costs contracts have been omitted in this paper, because they were the subject of a separate study and will be published in a separate paper.

The study utilised methods characteristic of acquiring the knowledge about the organisations operation, in particular talks and discussions with employees and entity management, meetings and discussions with external experts, and documents analyses. These are results of the knowledge about risks of organisers in the urban public transport acquired during many years of work in an entity organising the urban public transport in one of larger urbanised areas in Poland - in the central part of the Silesian Voivodeship. Also heuristic methods can be used for risk identification, Delphi and brainstorming method being the most popular among them. To a large extent the risks are identified during the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, in particular during the threats identification. The analyses of subject literature and case studies have also been used in the research. The results of carried out studies have practical application in the development of organisational solutions of the urban collective transport, during the implementation of development projects, and also during current operations of the entities of urban public transport.

The research methods used are a systematic literature review, in particular databases indexing Scopus and Web of Science articles as well as google scholar and long-term observations of organizational solutions in Europe, particularly in Poland. On this basis, it can be concluded that there are relatively few studies and publications on risk allocation in urban collective transport organizational solutions, despite the universality of this service and diverse organizational solutions in this area [Chaudhary, M.L. (2015); Global Green Growth Institute (2018), Hrelja, R., Rye, T. and Mullen, C. (2018); Piechucka, J. (2020); Preston, J. and Almutairi, T.M. (2013); Preston, J. and Almutairi, T.M. (2014); Transport for London (2015); van De Velde, D. et al. (2008); van de Velde, D. M. (1999); van der Ploeg, R., Geier, T., and Bouma F. (2016); Walters, J. (2018); Zatti, A. (2011); Zatti, A. (2012)]. The exceptions are the issues of 3P (public-private partnership) or contract formulas, i.e. net or gross costs. The multiplicity of solutions and the participation of many entities makes the issue of risk sharing more complex [Hirschhorn, F., Veeneman, W. and Van De Velde, D. (2019); Poliak, M., Semanová, Š. and Kilianová, K. (2013)]. This is a significant problem, because proper, unambiguous and clear division of risk facilitates its management, and thus minimizes the probability and effects of various negative situations [Dydkowski, G., Krawczyk, G., and Urbanek A., (2022); Groton, J., Smith, R.J. (2012); Mohamed, R.Z., Hartman F.T., (2000)]. As a result, appropriate risk allocation increases the efficiency of public transport services. It should be borne in mind here that the goal should be optimization, not minimization of risk in the entity and thus transferring it to another entity [Pellegrino, R., Vajdic, N. and Carbonara, N. (2013)].

Risks are widely recognized and analyzed in projects implemented in the formulas of public-private partnership [Le, P. et al. (2019); Rybnicek, R., Plakolm, J. and Baumgartner, L.M. (2020)] – where the publications focus on large infrastructure projects, as well as in the formulas of contracts with entities performing transport [Gagnepain, P. and Ivaldi, M. (2017); Gomez-Lobo, A. and Briones, J.C.G. (2014); Mouwen, A. and Van Ommeren, J. (2016); Stanley, J. and Van De Velde, D. (2008); Stefanikova, L. et al. (2013); van de Velde, D. (2008); van de Velde, D. et al. (2008); van De Velde, D., Veeneman, W. and Schipholt, L.L. (2008); Vigren, A. and Pyddoke, R. (2020)]. Analyses in the case of 3P are carried out both at the stage of preparation of the project itself and (if any) during competitive procedures in which the entity implementing the project is selected. Analyses are also conducted by potential contractors of the project, assessing the

possibility, risks and expected remuneration before starting the competitive procedure. There have been and are studies aimed at optimizing risk management [Medda, F. (2007)]. At the same time, it is pointed out that sometimes the risk allocation itself is quite difficult [Bing, L. et al. (2005)].

There is a lack of broader research and available publications on analyses and the location of risk in the processes of designing organizational solutions in urban public transport. In a situation where the performance of the service is entrusted to an internal entity, without an open competitive procedure, there is also no motivating factor on the part of the contractor to analyze and assess the risk. In the remuneration formula in which reasonable costs and a reasonable profit are covered, the entity accepts the risks and bears the costs related and resulting from them. Therefore, the research and the presented results focus on the systematics of economic risk, omitting the issues of risk related to vehicle traffic, technical and technological solutions and safety during transport.

Risk Identification for Entities of Urban Public Transport

Irrespective of the very solution, separation of the organisation from the transport provision or combination of those functions in the entity providing transport services, the duty to ensure urban transport is related to various risks. These risks can occur in the entity responsible for the ensuring of the public transport, including the provision of transport services. They also can be divided between various entities, in particular the level of transport policy in a given area - the administration responsible for ensuring the urban public transport, the transport organiser, and also the operator or operators providing transport services. Obviously, depending on the adopted solution, individual tasks can be combined, and that also means combining the risks in the given entity. Table 1 presents the risks broken down into public entities, which competences include the ensuring of urban transport and its public financing, transport organisers, and operators providing the transport services. The table also includes the assessment made by the entity on a three-point scale of assessing the impact of the materialization of effects on the performance of objectives and tasks, as well as financial effects and costs. The smallest, insignificant, small impact is marked as 1, medium as 2, large as 3.

Table 1: Risk identification for entities of urban public transport

Units	Risks	Impact on the implementation of goals and tasks, financial and environmental effects of the risk materialization
Entities of the transport policy level in the given area	Low social assessment of the provided services and not the best image of urban public transport services.	2
	The lack of planned division of the transport work in the city service between the public transport and the movements by individual means of transport	3
	Low efficiency of the city transport system, substantial overcrowding of roads and congestion, difficult movements, and as a result deterioration of conditions of residents life and of business operators functioning in the city	3
	Substantial negative impact of the transport system on the surroundings, in particular accidents, noise, pollution of the air by exhaust gases emitted by vehicles	3
	Low effectiveness of the urban public transport system, which will result in relatively high service prices and significant public financing of the collective transport with respect to the quality of provided services	3
	Difficulty in ensuring public funds at an appropriate amount to finance the current operations and investments in the public transport	2
	Breach of regulations on attributes and competences of administration authorities, non-fulfilment of duties, omission of taking actions or their performance within an insufficient scope	1
Transport organiser	Decline in the demand for public transport services as a result	2

	<p>of decrease in the population living and staying in the city, suburbanisation, increase in movements by cars, development of parking spaces in city centres and their neighbourhoods, and no parking charges</p> <p>Process of spatial development, which will result in the development of areas with low-rise buildings, difficult and of low effectiveness to serve by the public transport</p> <p>Related to starting new lines or to introduced changes in the transport offer - improper forecasts of the number of service users can result in a situation of higher than anticipated financial deficits</p> <p>Implementation of appropriate, rational, and effective price policy for the urban public transport services, so as to retain the balance between the income as well as the motivational and parametric function of prices</p> <p>Increase in the costs of services provision and ultimately the necessity for a significant price increase for the urban public transport services under conditions of high competitiveness of movements by cars and low parking charges in city centres</p> <p>Proper estimation of funds for financial plans, and later on raising funds necessary to ensure the organisation and provision of urban public transport services</p> <p>Raising funds at an appropriate amount and in the next years to cover the liabilities incurred under annual or long-term contracts</p> <p>Related to implementation of IT systems supporting the management of urban public transport, including in particular the collection of charges for services, information systems, monitoring, and transport management</p> <p>Improperly prepared and carried out bidding procedure, which precedes the contract conclusion, resulting in irregularities in the bid selection or mismanagement</p> <p>Improperly carried out procedure in projects co-financed by the EU funds, e.g. in the field of contractor's selection or non-obtaining of the intended output and result indicators, which can result in charging the adjustments or reduction of the co-financing part</p> <p>Improper settlements of contracts with external entities, improper calculation of remuneration, failure to charge penalties or reduce the payments in contracts on deliveries or services provision, non-checking the scope and quality of the works performed by external entities</p> <p>Improper division principle for the income on common tickets or the lack of periodical adjustment of the income division based on the studies related to the number of passengers or other parameters stipulated in the contract</p> <p>Related to the performance of studies on the occupancy and number of passengers using the public transport services, which can result in irregularities in settlements of the public financing of urban collective transport</p> <p>Breach of regulations on attributes and competences of administration authorities, non-fulfilment of duties, omission of taking actions or their performance within an insufficient</p>	<p></p> <p>3</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p> <p>1</p> <p>1</p>
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	scope, which also can have significant financial effects, for example in the form of failure to obtain the due incomes or not claiming them at the required amount	
Operator, service provider to the organiser's order	Deviations in the costs level above the planned values, e.g. resulting from not including all cost items in the calculations, higher in reality prices or rates, for which the production factors are purchased, or higher use of personal or tangible resources, not included in the calculation	1
	Adoption in long-term contracts of adjustment principles and formulae, which do not reflect the actual increase in costs and related losses	2
	Possessing not only an appropriate number, but also structure of vehicles, especially vehicle types (combustion engines, electric motors) and their capacity (minibuses, normal, and articulated buses), so that this structure would correspond to the organiser's demand. The purchased buses are usually operated by 8 and more years, hence within a short period it is not possible, obviously without substantial expenditures on the purchase of new vehicles, to change the structure of the owned vehicles	2
	Increase, above the planned figures, in the expenditures on the vehicles purchase, which may be related to price fluctuations on the market, and also may be a derivative of implementing numerous additional systems, related primarily to the improvement in comfort and safety, and to reduction of harmful compounds and CO ₂ emissions	1
	Lower than supposed reliability of vehicles (higher failure rate), which results in higher costs of repairs and also in related longer downtimes, ultimately in increased costs due to maintaining additional standby vehicles	1
	Availability of parts for vehicles repairs in the time expected from the order; longer periods of deliveries will result in longer times of vehicles exclusion from traffic and the use of reserve vehicles, which causes the necessity for their number increasing, and thereby and increased costs	1
	The lack on the labour market of persons having expected qualifications and experience as vehicle drivers, which can result in the impossibility to carry out the transport tasks and in lowering the transport quality and safety	3
	Introduction of electric buses to operation - the risk of achieving the planned mileage without the necessity of batteries recharging, especially in winter conditions and at high occupancy in rush hours, extension of charging time necessary to obtain the planned level of batteries capacity and their life	1
	The amounts of costs related to servicing modern equipment of vehicles (electronic ticket systems, monitoring, systems for stops announcement and of passenger information, location systems, passenger counting systems); this applies both to costs of repairs and replacements, but also to costs resulting from the necessity of earlier starting of the work by drivers to log in, to check the correctness of operation, and on selected days to wait for downloading of the software and data updates	2
	Ambiguities in contractual provisions and, as a result, disputes or unfavourable settlements	1

Risks common for all or selected entities	Imprecise determination of the scope of tasks and responsibilities in contracts and related competence disputes, or failure to implement part of tasks	2
	Imprecise determination in contracts of the rules of remuneration, of charging the contractual fines, and of cases, in which the contract can be terminated	1
	Occurrence in contracts of events and situations, which have not been predicted and related necessity for additional tasks and/or expenditures	2
	Force majeure events or other random events, which result in difficulties in the implementation, suspension, or in substantial increase in the cost of services provision	2
	Improper image of the urban public transport	2
	Related to employment of persons, who do not have the required knowledge, education in a given field, skills, experience, and thereby to improper decisions	2
	Related to the lack of appropriate organisational structures, frequently expanded, not matched to the carried out processes, not modernised due to changes in tasks or IT technologies implementation, which can result in the extension of decision making time, competence disputes, the lack of decision making, or decisions and documents on a low subject-matter level	1

Source: Own study

The risks specified in the table have been divided between entities for a solution, in which the role of urban transport organiser was separated, and one or more gross costs contracts were concluded. Such a solution relatively frequently occurs in big cities and conurbations. In the situation of reducing the scope of public intervention and increasing the marketisation of the urban public transport, the selected risks will not burden a public entity responsible for the transport policy implementation, and part of them will be transferred on operators/carriers providing the transport services. However, it is necessary to emphasise, that the problems will remain on the level of public sector in the case of poor quality of services, deterioration of movement and mobility conditions, and the issues of external effects.

Discussion on risk and its allocation

The reduction of risk level and possible negative effects is obtained in general by implementation of control procedures and methods of proceeding, appropriate organisational and legal solutions, and also training and raising the staff knowledge in this field. However, first it is necessary to prepare and implement solutions, which will result in:

- appropriate risk allocation, i.e. risks will be assigned to entities, which can affect and manage them, the risk should be clearly indicated and specified,
- reduction of risk concentration, in particular there, where it will be justified, and also favourable for other reasons, the transport services suppliers or providers are diversified,
- giving up (if possible) the performance of tasks or implementation of procedures, which are burdened with an overly high risk, and also such, for which the entity does not and will not have relevant competences and resources, and their implementation is possible according to other solutions.

The tasks, and thereby entity’s responsibility for their implementation, are specified at the preparation of a given organisational solution, of the entity statutes or draft contract. Just through properly designed documents, which specify competences, the scope of tasks and responsibilities, including contracts, the duties and risks are divided between the parties, and also by the adoption of a proper method of remuneration the parties behaviour is shaped during the performance of assigned tasks, and thereby it is possible to obtain the intended effects. The documents shall clearly specify, what is the contract subject as well as tasks and duties of each party. In addition, it is necessary to determine, what will happen if something goes wrong, who will then face the effects, that is cover the losses. Various approaches are used in this case. If public entities are the employer, and the organisers of the urban public transport are frequently such entities, one can encounter situations, in which the employer preparing a draft contract pursues minimisation or just avoidance of the risk, hence it is transferred to the contractor. The pursuit of minimisation of actions related to the given

contract fulfilment and the fear of additional expenditures, if the risk assigned to the employer materialises, are the sources of such employers, public entities, attitude.

Each risk may be or is related to defined financial effects, higher costs or lower incomes, which occurrence can turn out unavoidable, and hence one of the contract parties must calculate and reserve funds, which may turn out to be indispensable. So the fact, that one of parties to the contract transfers the risk on the other party, does not mean that financial results related to a specific risk will disappear, and the risk related to this occurrence will cease to exist for the parties. In addition, attention should be drawn to the fact that each contract should be assessed individually, risks should be assessed, and they should be realistically allocated. In the case of projects, high-value contracts, the risk allocation should also consider the valuation of the existing risk, in particular of unfavourable situations, with crucial and substantial effects. It consists in the determination of possible financial results and in totalling their expected values, allocated and divided between the parties. At the same time to divide the risks between the parties, the game theory methods can be used, in particular the theory of cooperative games. The cooperation between parties takes then into account the point of view and limitations existing at the other party, which should result in a situation, where the obtained total benefits will be higher than the sum of benefits of parties focused only on their own objectives, obtained separately, without a broader perspective of the entire project. The risk valuation also allows to concentrate on significant key occurrences, which create the greatest threat from the project point of view, and which can result in greatest losses, and at the same time to pay less attention to those, which potential effects are marginal and insignificant.

The awareness of risk results also in attitudes related to its avoiding, hence not undertaking a part of projects, in particular related to the implementation of various types of innovation and development projects, which are necessary but are related to a relatively high risk. It is also possible to encounter the transfer of risk to the level of cooperating entities, which however have no experience in and possibilities of risk management, which ultimately results in a general increase in the current or of the undertaken project costs.

The risk reduction is also possible due to diversification of suppliers or service providers in the urban public transport. There are quite common solutions, in which the transport in cities is performed, based on the area size, by a few, a dozen or so, or more operators. It is possible to reduce the costs as a result of their competing for orders at the operator, but also to reduce the risk of stopping the services provision, e.g. as a result of collective disputes or wrong decisions in a given entity. Other diversification areas include entities providing services in the field of tickets distribution and sales. Various solutions can be used at the same time: ticket systems, which use applications for mobile devices, in addition sales through ticket machines, and at stationary points of sales. As a result, various entities are suppliers, which allows to reduce the risk of sales continuity, but also via different solutions to reduce the risk of missing approval by the users of a specific solution, because they can choose another one.

The risk reduction means also giving up the implementation of selected tasks by the public sector, and leaving their provision based on market rules. The market verifies the offered services on a current basis, and the entities providing them at their own risk must all the time monitor the requested demand and adapt the service nature to it. Public sector entities e.g. due to the procedures of public funds spending in force, are generally characterised by lower flexibility in adapting to the changing market realities, while private entities can perfectly become part of such niches with the benefit for the entire transport system.

Summary

The risk identification and analysis is necessary at the stages of discussing and designing the organisational solutions in the urban public transport, and also during the current management of this system. The knowledge about risks may be gained using widely known and used methods for information and knowledge acquisition, in particular discussions with persons responsible for the implementation of development tasks and projects may be mentioned, as well as documents analyses and case studies. It should be noticed that under the SWOT analysis, widely used during strategies development, weaknesses and threats are assessed, which is already a significant source of knowledge of risks. The identification of possible risks, and primarily of all the risks of high importance, which effects of occurrence will be significant and which can be affected, is the starting point for risk management. It is necessary to consider, whether it is possible to give up a part of tasks, and thereby risks, and to place them in another entity, or to provide them based on market rules; this applies to tasks, to which implementation the entity does not and will not have competences, and they can be accomplished based on market rules. In addition, it is necessary to allocate risks to entities, which can affect and manage them, and the risks should be clearly indicated and specified. It is also necessary, where it will be justified, and also favourable for other reasons, to reduce the risks concentration, for example by the diversification of transport services suppliers or providers.

References

- Bing, L. et al. (2005) "The allocation of risk in PPP/PFI construction projects in the UK," *International Journal*

- of Project Management, 23(1), pp. 25–35. Available at: <https://doi.org/10.1016/j.ijproman.2004.04.006>.
- Chaudhary, M.L. (2015) “Gross Cost Contract v/s Net Cost Contract: What Should Indian Cities Opt For?,” *International Journal of Business, Management & Research (IJBM)*, Vol 5, Issue 3, Jun 2015, 9 – 18, Available at: <https://ssrn.com/abstract=2649777>.
 - Dydkowski, G., Krawczyk, G., and Urbanek A., (2022) “Ryzyko w umowach i rozliczeniach w miejskim transporcie zbiorowym,” *Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach*, Katowice 2022, ISBN 978-83-7875-791-7
 - Gagnepain, P. and Ivaldi, M. (2017) “Economic Efficiency and Political Capture in Public Service Contracts,” *Journal of Industrial Economics*, Wiley Blackwell, vol. 65(1), pages 1-38, March.
 - Global Green Growth Institute (2018) “Comparative Analysis of Bus Public Transport Concession Models,” Full Report, The Global Green Growth Institute, December 2018, Available at: <https://ggi.org/wp-content/uploads/2019/04/Public-Transport-Concessions-Full-report-English.pdf>.
 - Gomez-Lobo, A. and Briones, J.C.G. (2014) “Incentives in Bus Concession Contracts: A Review of Several Experiences in Latin America,” *Transport Reviews*, 34(2), pp. 246–265. Available at: <https://doi.org/10.1080/01441647.2014.895451>.
 - Grotton, J., Smith, R.J. (2012) “Realistic Risk Allocation. Allocating Each Risk to the Party Best Able to Handle the Risk,” *International Institute for Conflict Prevention & Resolution*, New York 2012
 - Hirschhorn, F., Veeneman, W. and Van De Velde, D. (2019) “Organisation and performance of public transport: A systematic cross-case comparison of metropolitan areas in Europe, Australia, and Canada,” *Transportation Research Part A-policy and Practice*, 124, pp. 419–432. Available at: <https://doi.org/10.1016/j.tra.2019.04.008>.
 - Hrelja, R., Rye, T. and Mullen, C. (2018) “Partnerships between operators and public transport authorities. Working practices in relational contracting and collaborative partnerships,” *Transportation Research Part A-policy and Practice*, 116, pp. 327–338. Available at: <https://doi.org/10.1016/j.tra.2018.06.032>.
 - Le, P. et al. (2019) “Taxonomy of risks in PPP transportation projects: a systematic literature review,” *The International Journal of Construction Management*, 22(2), pp. 166–181. Available at: <https://doi.org/10.1080/15623599.2019.1615756>.
 - Medda, F. (2007) “A game theory approach for the allocation of risks in transport public private partnerships,” *International Journal of Project Management*, 25(3), pp. 213–218. Available at: <https://doi.org/10.1016/j.ijproman.2006.06.003>.
 - Mohamed, R.Z., Hartman F.T., (2000) “How to Reduce Your Project Cost,” *AACE International Transactions*, Morgantown 2000, s. PM.15.1.
 - Mouwen, A. and Van Ommeren, J. (2016) “The effect of contract renewal and competitive tendering on public transport costs, subsidies and ridership,” *Transportation Research Part A-policy and Practice*, 87, pp. 78–89. Available at: <https://doi.org/10.1016/j.tra.2016.03.003>.
 - Pellegrino, R., Vajdic, N. and Carbonara, N. (2013) “Real option theory for risk mitigation in transport PPPs,” *Built Environment Project and Asset Management*, 3(2), pp. 199–213. Available at: <https://doi.org/10.1108/bepam-05-2012-0027>
 - Piechucka, J. (2020) “Cost Efficiency and Endogenous Regulatory Choices: Evidence from the Transport Industry in France,” *Discussion Papers of DIW Berlin 1851*, DIW Berlin, German Institute for Economic Research. Available at: <https://doi.org/10.2139/ssrn.3556386>.
 - Poliak, M., Semanová, Š. and Kiliánová, K. (2013) “The Risk Analysis in Public Passenger Transport,” *Transport and Communications*, 1(1), pp. 21–24. Available at: <https://doi.org/10.26552/tac.c.2013.1.5>.
 - Preston, J. and Almutairi, T.M. (2013) “Evaluating the long term impacts of transport policy: An initial assessment of bus deregulation,” *Research in Transportation Economics*, Volume 39, Issue 1, 2013, Pages 208–214, Available at: <https://doi.org/10.1016/j.retrec.2012.06.015>.
 - Preston, J. and Almutairi, T.M. (2014) “Evaluating the long term impacts of transport policy: The case of bus deregulation revisited,” *Research in Transportation Economics*, Volume 48, 2014, Pages 263–269, Available at: <https://doi.org/10.1016/j.retrec.2014.09.051>.
 - Rybnicek, R., Plakolm, J. and Baumgartner, L.M. (2020) “Risks in Public–Private Partnerships: A Systematic Literature Review of Risk Factors, Their Impact and Risk Mitigation Strategies,” *Public Performance & Management Review*, 43(5), pp. 1174–1208. Available at: <https://doi.org/10.1080/15309576.2020.1741406>.
 - Stanley, J. and Van De Velde, D. (2008) “Risk and reward in public transport contracting,” *Research in Transportation Economics*, 22(1), pp. 20–25. Available at: <https://doi.org/10.1016/j.retrec.2008.05.006>.
 - Stefanikova, L. et al. (2013) “The Impact of Procurement Method of the Transport Services to the Financial Requirement of Performance Contracting Entity,” *Transport Problems*, Volume 8, Issue 4, 2013, pp. 67 – 76.
 - Transport for London (2015) “London’s Bus Contracting and Tendering Process,” *Transport for London*, April 2015, Available at: <https://content.tfl.gov.uk/uploads/forms/lbsl-tendering-and-contracting.pdf>
 - van de Velde, D. (2008) “A new regulation for the European public transport,” *Research in Transport Economics*, Elsevier, vol. 22(1), pages 78–84, January.
 - van de Velde, D. et al. (2008) “Contracting in urban public transport,” *Amsterdam: European Commission*. 2008.

123 p.

- van De Velde, D. et al. (2008) Contracting in urban public transport. Available at: https://www.researchgate.net/publication/259900353_Contracting_in_urban_public_transport.
- van de Velde, D. M. (1999) "Organisational forms and entrepreneurship in public transport: classifying organisational forms," *Transport Policy*, Elsevier, vol. 6(3), pages 147-157, July.
- Van De Velde, D., Veeneman, W. and Schipholt, L.L. (2008) "Competitive tendering in The Netherlands: Central planning vs. functional specifications," *Transportation Research Part A-policy and Practice*, 42(9), pp. 1152–1162. Available at: <https://doi.org/10.1016/j.tra.2008.05.008>.
- van der Ploeg, R., Geier, T., and Bouma F. (2016) "Profiling of PT Authorities & Operators and Analysis of their Needs: Typologies and Parameters," *Collective Innovation for Public Transport in European Cities*, EMTA, MOBYCON.
- Vigen, A. and Pyddoke, R. (2020) "The impact on bus ridership of passenger incentive contracts in public transport," *Transportation Research Part A-policy and Practice*, 135, pp. 144–159. Available at: <https://doi.org/10.1016/j.tra.2020.03.003>.
- Walters, J. (2018) "Potential cost implications of contracting risks – the views of bus operators in South Africa," *Research in Transportation Economics*. Available at: <https://doi.org/10.1016/j.retrec.2018.03.009>.
- Zatti, A. (2011) "Organizational models in European local public transport: is the new paradigm really dominant," *Departmental Working Papers 2011-29*, Department of Economics, Management and Quantitative Methods at Università degli Studi di Milano.
- Zatti, A. (2012) "New organizational models in European local public transport: From myth to reality," *Annals of Public and Cooperative Economics*, 83(4), pp. 533–559. Available at: <https://doi.org/10.1111/j.1467-8292.2012.00476.x>.