

EVALUATING FACTORS OF GOVERNMENT INVESTMENT IN NEW INDUSTRIAL PARKS

Sizwe Mkwanazi

Research Associate

University of Johannesburg

Faculty of Engineering and the Built Environment, Johannesburg.

ABSTRACT

There are factors to consider in investment decisions that include the potential *Return on Investment* (ROI) and value creation. Government authorities have a responsibility to create an investment friendly climate and attract new business into their countries. In South Africa government has taken a step to build industrial parks to attract new investment. In order to achieve sustainable industrial development the government and other actors need to increase their investment in building of accessible and equipped industrial parks. On this paper, we use a multiple objective criterion to evaluate the factors of government's investment in new industrial parks. The problem investigated on this paper is that conflicting political preferences which dominate economic advances regarding industrialisation. This paper identifies key factors essential for consideration in government decisions when investing in industrial park developments. The implications of industrial development for the developing world includes improvement of livelihoods for citizens and the youth that is actively seeking job opportunities. However, it is not a straightforward path and it is for this reason on the paper we use MOCDM to understand the issues that require attention in order to achieve economic development that is sustainable.

© Ideal True Scholar

KEYWORDS: MOCDM, Investment, Industrialisation, Government and Development

INTRODUCTION

Government investment decisions in industrial park development in South Africa seek to address the immediate challenges of unemployment, slow economic activity and to attract international investments (Buchanan, 1942). Investment decisions are often derived through growth forecasting techniques such as MAPE and Grey model which focuses on the increase of managerial competitiveness (Xie, Zhou, Huang, & Xia, 2017). Government also plays the role of identifying suitable land to construct industrial zones and facilitates additional Foreign Direct Investment (FDI) (Shen, Chen, Li, Wei, & Ren, 2018).

Why Government Investment into Industrial Parks?

The overreliance of government of private investments has seen a decline in economic activity and employees laid off from factory floors due to cost savvy automation. In response to this characteristic of western industrialisation governments have taken it to themselves to invest in industrial parks, develop industrialists and equip them with resources to thrive with the industrial park infrastructure (Aubrey, 1955). The further reasons of investment into industrial parks development by government is to create sustainable jobs, create efficiency in flow of goods, having an up-to-date industrial sector and achieving economic growth (McDonald, 1976). Government intervention in industrial development also has the potential to prevent collusive tendencies of private firms and better equip excluded enterprises to be competitive industrial enterprises (Bowden & Higgins, 2015).

Issues and Challenges in Government Investment Decisions

Government investment alone is insufficient in developing industrial infrastructure such as parks and it is necessary to appeal to other partners in a form of private public partnership (Kuvshinov, Kalacheva, & Butrin, 2017). This decreases the risk associated with changing political preferences and government policies which may leave industrial developments incomplete when government changes hands (Hung, Mithulananthan, & Bansal, 2014). An issue that requires attention of government officials involved in the facilitation of industrial parks development is to have an in depth understanding of cost-benefit analysis measures, accurate measurement of Return on Assets (ROA) and Net Present Value which condenses the available information to explain how the industrial parks will create an economic value (Magni, 2015). Government investment is also informed by which industry is profitable in a country and how it would be complimented with an additional infrastructure such as industrial parks (Alexiou & Nellis, 2016). In South Africa the agricultural sector's move to agro-processing has received attention of government and has been identified as an industry with a potential for growth.

Research Question and Objectives

The use of Value Stream Map (VSM) may create value for all stakeholders in understanding the sourcing of raw materials, assembling, packaging and distribution within the government constructed industrial parks (Ravenscraft, 2016). The objectives of this paper are to unpack the value of industrial parks that are developed in South Africa and to share ideas of how these parks can further add value to the improvement of industry competitiveness in the country. This is based on the understanding that South Africa is low

in the rankings as a manufacturing country while it has a big population of consumers that rely on imported products. The question is what kind of value can government developed industrial parks add on industrial competitiveness and improvement of livelihoods?

Potential Challenges to the Realisation of the Potential Value Add Through Industrial Parks

These challenges include lack of proper management and governance of the industrial parks and poor planning during construction (Zhou et al., 2015). If there is lack of technological resources this will also impact negatively on efficiency and on the ability to attract skilled human capital (Escribá & Murgui, 2009). There has to be institutional quality in a form of reliable agencies that can facilitate tenancy in the industrial parks and offer reliable support to enterprises operating from the infrastructure (Lim, 2014). The failure of government industrial parks may further tarnish its reputation and chase away foreign direct investment which may be required in the future of the industrial parks development (Taylor, 2000).

LITERATURE REVIEW

Factors influencing government investment into new industrial parks can be described as an economic pressure to provide sustainable work opportunities, industrial regeneration and the need to improve living conditions of their societies (Beekmans, Ploegmakers, Martens, & van der Krabben, 2016). The investment decisions of government are based on the fundamental need to localise economic development by regions and creation of industrial symbiosis (Nel, 2015). This literature review inquires into possible and well established reasoning factors of government investment into industrial development in their countries which include regaining societal trust for developing and politically struggling countries. The following figure is a theoretical base and structure of this literature review.

The success of industrial investment initiatives are systems that enable entrepreneurial activity to thrive and produce tangible outputs in a form of products and solutions which contribute to sustainable economic development (Pereira, 2004). Government industrial decision making and investment also entails the repurposing of existing but less productive industrial parks for instance in the United States former shipyards were converted into industrial parks (Borchardt, 2012).

Decision Making Models

There are numerous decision-making methods applied in settings where there are resource constraints. The MCDM and MOCDM are decision-making models used in manufacturing to allocate resources and activity time to strike balance among various development goals under consideration subject to resource, market and ecological constraints (El-Gayar & Leung, 2001). The models used for decision making can be described as linear as they consider multiple factors at a same level and seek to produce a most rational decision (Pajala, Korhonen, & Wallenius, 2017). One decision making model is incomplete on its own. In order to make rational investment decisions into manufacturing other models are used as complementary tools such as AHP, COP, MOP and WGP which explain any gaps associated with interdependence of information when making decisions (Liou & Tzeng, 2012).

Factors Influencing Government Investment

The first contributor to driving government investment into industrial revival is the need for local economic development (LED) (Rogerson & Rogerson, 2010). LED is described as an government driven intervention of attracting economic investment and creation of opportunities that promote socio-economic betterment of local residents and business by a way of improving quality life and standard of living (Reese, 2014). Based on this definition it is hard to achieve LED in a short period of time and especially if the only incentives for private investors are only tax based than geo-economic people’s standard of living LED programmes often create employment, access to products and their development brings infrastructure that can be broadly shared such as roads, water supply and electrification (Robbins, 2010). The challenges of LED include lack of funding for its programmes which is linked to gaps that exist in LED practice, drastic differences in the implementation of LED in cities and towns, and failure of some municipalities to account about their LED performance (Rogerson, 2010). Political mandate is a factor of promise for a better life for voters and instruments used to bring better life include social grants, government investments into housing infrastructure and also development of industry which all of this is interwoven as a network of activities (Ha, Lee, & Feiock, 2016). Industrial investment has a potential to improve the production output of a country and bring it up the rankings as an output producing state which is the desire of many economic blocs (Jesuit & Sych, 2012).

Outcome from Programmes of Action

Government planning of industrial investment and application of decision making models as applicable to

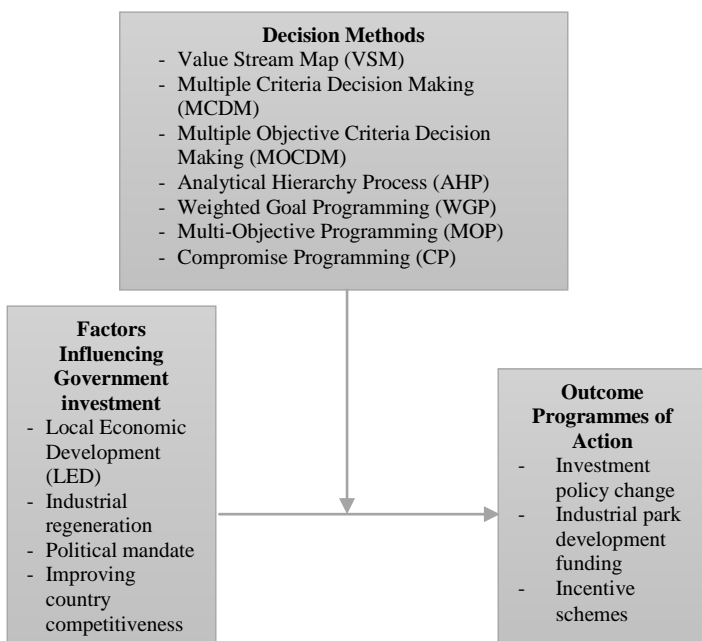


Figure 1 Theoretical Framework and Bases of the study

manufacturing related investments gives rise to outcomes such as investment policy change, funding and deployment of incentive schemes (Barberia & Biderman, 2010). Attracting investment from government fiscus and private firms by established government development agencies require the policy changes that embrace innovation in industrial development strategies and innovative ways of management and leadership of proposed developments (Morgan, 2010). Funding of industrial development is an outcome of the decision making processes and government factors of consideration during investment which go onto land resource allocation, spatial management in cities and repurposing obsolete industrial sites (Rodríguez-Pose & Palavicini-Corona, 2013). Incentive schemes include tax rebates, financing for small enterprises seeking to occupy industrial parks and government procurement from firms within their locality (Kaye Nijaki & Worrel, 2012). This literature provides detailed insight on the process matters of investment decisions by government and its partners in advancing LED and industrial development. The next section is the research design section of this paper.

Research Design and Procedure

This study has considered the industrial parks development plan of a South African province which is regarded as a city region and an economic hub. The national industrial revitalisation programme document is also considered to balance the studies’ validity (Welman & Kruger, 2001). The plan was accessed from the Gauteng Department of Economic Development and it is compared to other proposed industrial development plans. This paper uses a desk review approach which seeks to explore existing records on the question and objectives of this study (Thorpe & Holt, 2008).

Data collection

This research paper is based on secondary data that is the industrial development plans and documents which are analysed to understand the factors driving the development of industrial parks by government. MOCDM model is used

to illustrate the different objectives driving investment of government towards the industrial parks revitalisation (Pajala et al., 2017). Reference is made to Gauteng City Region and to the intervention of the South African government’s report on revitalisation of industrial parks. These documents are selected by year and based on their availability from the Gauteng Department of Economic Development website.

Validity

The Gauteng department of economic development is tasked with the responsibility to oversee industrial development in the region. Therefore, it is accurate to use their research-based reports and development plans to analyse the sought-after value of the industrial parks contrasting it with relevant theories (Sekaran & Bougie, 2016). The reports analysed on this report were published by the South African Department of Trade and Industry (DTI) and the Gauteng Department of Economic Development. The title of the DTI report is Industrial Parks Revitalisation Programme and the GDED document is titled 2018/19 Annual Performance Plan.

FINDINGS, ANALYSIS AND DISCUSSION

The research objectives of this paper are (1) to explore the factors considered by government when investing in industrial development and (2) use the South Africa case study to explain the Multiple-Objective Criteria Decision Making (MOCDM) process involved in making investment decisions in the instance of industrial revitalisation. After a careful breakdown of the Department of Trade and Industry Report on Industrial Parks revitalisation we use theories in decision making as explained in the literature review to illustrate the goal of the government programme.

MOCDM Analysis

Factors driving investment as discussed on the reports are identified and alternatives are pointed out on the following MOCDM diagram. This diagram shows a national level focus on industrial parks development and a provincial case is also tabulated following this diagram.

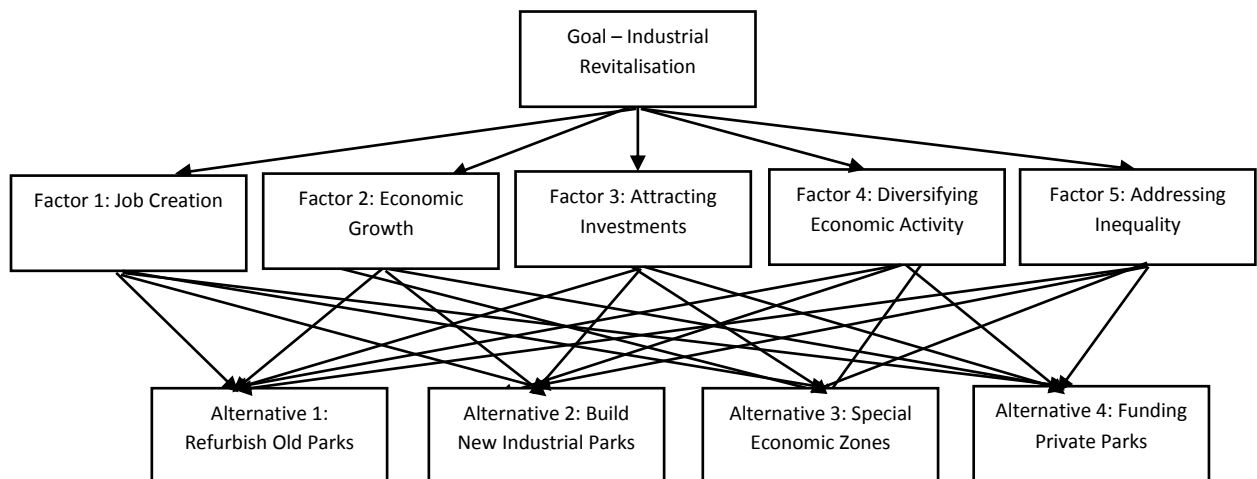


Figure 2 Multi-Objective Decision Making in Government Industrial Parks Programme in South Africa

The revitalisation project began in 2015 with 10 identified industrial parks. Little is known about the criteria used to select the first 10 industrial parks to refurbish and improve. However, the above MOCMD model shows that the government decisions on industrial parks need to not isolate the different existing alternatives such as building new industrial parks that support 21st century manufacturing, establishing special economic zones such as high tech and agro-processing parks. Industrial parks run by private sector should also be supported through infrastructure and incentives to realise a fully developed industrial sector. In consideration the alternatives as part of the bigger plan the Department of Trade and Industry in South Africa can reduce duplicate planning and achieve an investment synergy.

Provincial Dominant Factors into Investment: Case Of Gauteng City Region – South Africa

Following the qualitative MOCMD analysis of the South African Government’s factors and decisions for industrial revitalisation further description of the factors of government investment in industrial parks is done using Gauteng City Region as an example (Gauteng Department of Economic Development, 2017). South Africa has 9 provinces and Gauteng is considered to be having the most economic activity and a city region (Gauteng Department of Economic Development, 2014). The following table shows the factors considered at a provincial level when making investment into industrial parks using Gauteng as an example.

Table 1 Provincial Considerations in industrial parks revitalisation programme: Example of Gauteng City Region

Province and Plan/Report Title	Characteristics of the province	Factors driving industrial investment (Industrial Parks)
Gauteng Province of South Africa Referral Document: 2018/2019 Annual Performance Plan of the Gauteng Department of Economic Development	<ul style="list-style-type: none"> - Economic Hub of the Country (City of Johannesburg) - A well-established City Region. - Growing population and continued migration of people into the region - Growing unemployment - Five regions within the province - Manufacturing, Mining, Construction and Trade sectors 	<ul style="list-style-type: none"> - <u>Job creation</u> (aligned to the national aim) - <u>Attracting investment</u> into the province - Becoming an <u>industrially competitive</u> region in comparison to similar regions around the world - <u>Regulation</u> of sectors to benefit the previously disadvantaged groups - Accelerating <u>sustainable economic development</u> of the region

The regional focus on revitalisation of the industrial parks encompasses all issues of sustainable economic development in that it encourages self-sufficiency, empowerment of local enterprises and support of groups that had been excluded in the industrial processes before 1994(Samuel, 2016). The holistic economic development approach is complex in terms of trying to address social issues associated with industrial development and at the same time addressing economic viability. The proposed recommendations provide ideas on how this complexity can be better handled in other similar cases in development countries.

IMPLICATIONS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

The implications of industrial development for the developing world include improvement of livelihoods of citizens and the youth that is actively seeking job opportunities. However, it is not a straightforward path and it is for this reason on the paper we use MOCMD to understand issues that require attention. Responsible, eco-friendly and sustainable industrial development is a must in the 21st century. Implications of industrial revitalisation for government include renewal of a failing economy, a resolve on the looming and growing problem of youth unemployment and government self-introspection on issues of poor governance. The programme of industrial revitalisation calls for synergistic collaboration between government departments, agencies and private sector through transparent negotiations and application of appropriate decision-making models which had been proposed on this paper. It is recommended that public participation and information sharing with entrepreneurs aspiring to be industrialist be made accessible about the industrial revitalisation programme. In conclusion factors that play a key role in decision making about industrial revitalisation investment had been successfully addressed on this paper and application of decision making models has been recommended on this paper. Further studies may be based on primary data to provide a different insight.

REFERENCES

Alexiou, C., & Nellis, J. G. (2016). Investment decisions within the context of financialization: Cointegration evidence from the UK economy. *Panoeconomicus*, 63(1), 113–133. <https://doi.org/10.2298/PAN1601113A>

Aubrey, H. G. (1955). Industrial Investment Decisions: A Comparative Analysis. *The Journal of Economic History*, 15(4), 335–351. <https://doi.org/10.1017/S0022050700056515>

Barberia, L. G., & Biderman, C. (2010). Local economic development: Theory, evidence, and implications for policy in Brazil. *Geoforum*, 41(6), 951–962. <https://doi.org/10.1016/j.geoforum.2010.07.002>

Beekmans, J., Ploegmakers, H., Martens, K., & van der Krabben, E. (2016). Countering decline of industrial sites: Do local economic development policies target the neediest places? *Urban Studies*, 53(14), 3027–3047. <https://doi.org/10.1177/0042098015603289>

Borchardt, J. K. (2012). Defense Cutbacks Lead to Novel Industrial Parks. *Area Development Site and Facility Planning*, 47(1), 27–28.

Bowden, S., & Higgins, D. M. (2015). Investment decision-making and industrial performance: The British wool industry during the interwar years. *Business History*, 57(2), 224–240. <https://doi.org/10.1080/00076791.2014.898632>

Buchanan, N. (1942). Anticipations and Industrial Investment Decisions. *The American Review*, 32(1), 141–155.

- El-Gayar, O. F., & Leung, P. (2001). A multiple criteria decision making framework for regional aquaculture development. *European Journal of Operational Research*, 133(3), 462–482. [https://doi.org/10.1016/S0377-2217\(00\)00183-1](https://doi.org/10.1016/S0377-2217(00)00183-1)
- Escribá, F. J., & Murgui, M. J. (2009). Government policy and industrial investment determinants in Spanish regions. *Regional Science and Urban Economics*, 39(4), 479–488. <https://doi.org/10.1016/j.regsciurbeco.2009.02.005>
- Gauteng Department of Economic Development. (2014). *Gauteng Township Economy*.
- Gauteng Department of Economic Development. (2017). *Annual Performance Plan 2018/19*. Retrieved from www.gauteng.gov.za
- Ha, H., Lee, I. W., & Feiock, R. C. (2016). Organizational Network Activities for Local Economic Development. *Economic Development Quarterly*, 30(1), 15–31. <https://doi.org/10.1177/0891242415614100>
- Hung, D. Q., Mithulananthan, N., & Bansal, R. C. (2014). An optimal investment planning framework for multiple distributed generation units in industrial distribution systems. *Applied Energy*, 124, 62–72. <https://doi.org/10.1016/j.apenergy.2014.03.005>
- Jesuit, D. K., & Sych, L. (2012). Local economic development and cross-border networks. *International Journal of Public Sector Management*, 25(6/7), 473–482. <https://doi.org/10.1108/09513551211260667>
- Kantemeridou, C., Tsantopoulos, G., Tampakis, S., & Karanikola, P. (2013). Participatory Planning and Local Economic Development: A Case Study of Northeast Halkidiki. *Procedia Technology*, 8(Haicta), 459–464. <https://doi.org/10.1016/j.protcy.2013.11.059>
- Kaye Nijaki, L., & Worrel, G. (2012). Procurement for sustainable local economic development. *International Journal of Public Sector Management*, 25(2), 133–153. <https://doi.org/10.1108/09513551211223785>
- Kuvshinov, M., Kalacheva, A., & Butrin, A. (2017). Assessment of investment appeal of industrial enterprises, *01001*, 1–6.
- Lim, J. J. (2014). Institutional and structural determinants of investment worldwide. *Journal of Macroeconomics*, 41, 160–177. <https://doi.org/10.1016/j.jmacro.2014.05.007>
- Liou, J. J. H., & Tzeng, G.-H. (2012). Comments on “Multiple criteria decision making (MCDM) methods in economics: an overview.” *Technological and Economic Development of Economy*, 18(4), 672–695. <https://doi.org/10.3846/20294913.2012.753489>
- Magni, C. A. (2015). Investment, financing and the role of ROA and WACC in value creation. *European Journal of Operational Research*, 244(3), 855–866. <https://doi.org/10.1016/j.ejor.2015.02.010>
- McDonald, I. D. (1976). Role of information in planning industrial investment. *Aslib Proceedings*, 28(2), 96–101. <https://doi.org/http://dx.doi.org/10.1108/MRR-09-2015-0216>
- Morgan, J. Q. (2010). Governance, Policy Innovation, and Local Economic Development in North Carolina. *PSJ, Policy Studies Journal*, 38(4), 679–702. <https://doi.org/10.1111/j.1541-0072.2010.00379.x>
- Musso, F. (2013). Is industrial districts logistics suitable for industrial parks? *Acta Universitatis Danubius. OEconomica*, 9(4), 221–233. Retrieved from http://search.proquest.com/docview/1463034732?accountid=10297%5Cnhttp://sfx.cranfield.ac.uk/cranfield?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ:ibssshell&atitle=Is+industrial+districts+logistics+suitable+for+
- Nel, E. (2015). Evolving regional and local economic development in New Zealand. *Local Economy*, 30(1), 67–77. <https://doi.org/10.1177/0269094214564833>
- Pajala, T., Korhonen, P., & Wallenius, J. (2017). Road to robust prediction of choices in deterministic MCDM. *European Journal of Operational Research*, 259(1), 229–235. <https://doi.org/10.1016/j.ejor.2016.10.001>
- Pereira, A. A. (2004). State entrepreneurship and regional development: Singapore’s industrial parks in Batam and Suzhou. *Entrepreneurship and Regional Development*, 16(2), 129–144. <https://doi.org/10.1080/08985620410001677844>
- Ravenscraft, B. (2016). See It To Believe It: Using a Vsm To Understand Manufacturing and Make Better Capital Investment Decisions. *Cost Management*, (April), 16–23.
- Reese, L. A. (2014). The Alchemy of Local Economic Development. *Economic Development Quarterly*, 28(3), 206–219. <https://doi.org/10.1177/0891242414534727>
- Robbins, G. (2010). Beyond local economic development? Exploring municipality-supported job creation in a South African city. *Development Southern Africa*, 27(4), 531–546. <https://doi.org/10.1080/0376835X.2010.508584>
- Rodríguez-Pose, A., & Palavicini-Corona, E. I. (2013). Does local economic development really work? Assessing LED across Mexican municipalities. *Geoforum*, 44, 303–315. <https://doi.org/10.1016/j.geoforum.2012.07.010>
- Rogerson, C. M. (2010). Local economic development in South Africa: Strategic challenges. *Development Southern Africa*, 27(4), 481–495. <https://doi.org/10.1080/0376835X.2010.508580>
- Rogerson, C. M., & Rogerson, J. M. (2010). Local economic development in Africa: Global context and research directions. *Development Southern Africa*, 27(4), 465–480. <https://doi.org/10.1080/0376835X.2010.508577>
- Samuel, S. (Department of T. and I.-R. of S. A. (2016). *Industrial Parks Revitalization Programme*.
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business* (7th Editio). Sussex: John Wiley & Sons.

- Shen, L., Chen, Y., Li, H., Wei, X., & Ren, Y. (2018). Development orientations for attracting investments - A perspective of less-developed townships in China. *Cities*, 76(174), 84–95. <https://doi.org/10.1016/j.cities.2018.01.011>
- Taylor, C. T. (2000). *The Impact of Host Country Government Policy on US Multinational Investment Decisions*. Blackwell Publishers Limited.
- Thorpe, R., & Holt, R. (2008). *The SAGE Dictionary of Qualitative Management Research* (First Edit). London: SAGE.
- Welman, C., & Kruger, F. (2001). *Research Methodology* (2nd Editio). Oxford: Oxford University Press. <https://doi.org/10.3794/johlste.41.res>
- Xie, B., Zhou, W., Huang, J. L., & Xia, M. (2017). Using goal facilitation theory to explain the relationships between calling and organization-directed citizenship behavior and job satisfaction. *Journal of Vocational Behavior*, 100, 78–87. <https://doi.org/10.1016/j.jvb.2017.03.001>
- Zhou, Z., Zhang, S., Wang, C., Zuo, J., He, Q., & Rameezdeen, R. (2015). Achieving energy efficient buildings via retrofitting of existing buildings: a case study. *Journal of Cleaner Production*, 112, 3605–3615. <https://doi.org/10.1016/j.jclepro.2015.09.046>