

Institution: University of Central Lancashire
Unit of Assessment: C16
Title of case study: Sustainable Public-Private Partnerships
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Governments and major construction clients face significant challenges procuring and delivering large infrastructure projects. Robust and defensible infrastructure procurement is therefore increasingly important for addressing these challenges to deliver value (at minimum risk). Public-Private Partnership (PPP) research within the Grenfell-Baines School of Architecture, Construction and Environment (the unit of assessment, UoA) is led by Akintoye and Liyanage. Their work has made a direct positive impact on some of these issues, the extent of which has benefited several sectors - from construction and transportation, through to the water industry (e.g. Naismiths, iBE Partnerships; WDA Project Ltd; Navigant Consulting); and its <i>reach</i> and <i>significance</i> is evidenced through international engagement at the highest levels (e.g. Queensland Government Australia; Constructing Excellence; CIB; University of Hong Kong China).</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Earlier EPSRC and RICS funded research led by Akintoye produced a standardised private finance initiative (PFI) project framework, extant in the seminal works: <i>Public Private Partnerships: Managing Risks and Opportunities</i> (2003) and <i>Policy, Management and Finance for Public-Private Partnerships</i> (Akintoye and Beck, 2008). Fertile progression of this formative research, project-managed by Akintoye at the UoA, was further crystallised through a 'COST EU' Networking Grant Project TU1001: <i>'Public Private Partnerships in Transport: Trends and Theory'</i>¹. The project started in 2010, and brought together international research partners from 17 European and four non-European countries (Australia, Hong Kong, Albania and USA). It developed a PPP knowledge base for the transport sector by uniquely employing theories drawn from other fields, including social exchange theory, real option theory, incomplete contract theory and knowledge transfer on organisational theory. Additionally, Akintoye and Liyanage as lead investigators, completed a related project that identified critical success factors and tested knowledge base criteria, for improved PPP performance.</p> <p>This world-leading research has uniquely substantiated how integrated construction procurement (including, joint ventures, partnering, project/strategic alliances and prime contracting), along with its associated framework agreements and supply chain management opportunities, can yield innovative construction delivery and tangible process improvement. This has been demonstrated not only within mainstream construction conduits; but also, among diverse areas such as water governance (Akintoye, and Renukappa, 2013) and transport (see also impact evidence later). The research also identified critical success factors such as partners' commitment to adequate resources, equitable relationships and recognition of non-financial benefits; while principal failure mechanisms were found to include lack of trust/consolation, inexperience and poor business fit. In advancing these findings for the benefit of end users, the UoA designed approaches for capturing and prioritising collaborative drivers in such areas as: relationships, trust, risk allocation, legal and regulatory requirements, and market maturity criteria (Adetola et al., 2011).</p> <p><i>Construction Innovation and Process Improvement</i> (Akintoye et al., 2012), further complemented and consolidated this research, with contributions from esteemed international academics and practitioners from Australia, Egypt, Hong Kong, Malaysia, The Netherlands, Turkey, UK, and the USA. This peer-reviewed seminal text brought PPP to forefront of public and practitioner awareness. In recognition of the UoA's seminal work, the CIB Programme Committee established a new Task Group <i>TG72 Public Private Partnership</i> in 2008, which is led by Akintoye and Kumaraswamy. TG72 continues to internationally inform and positively impact PPP through this leading forum to facilitate effective knowledge-exchange for core PPP issues.</p> <p>The UoA's PPP research also informs society through numerous conduits, including industry workshops and dedicated conference forums such as Constructing Excellence; The International</p>

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Conference on PPP Body of Knowledge, Preston, UK (2013) in collaboration with *European Cooperation in Science and Technology*; *CIB TG72*; and the *University of Hong Kong, China*. Outreach is also complemented through specialist workshops (e.g. **Akintoye et al.**, 2011), and cognate outputs (**Akintoye et al.**, 2012; Brown et al., 2013) as key components of the impact process.

¹ Accessed at: http://www.cost.eu/domains_actions/tud/Actions/TU1001 (October, 2013).

3. References to the research (indicative maximum of six references)

1. **Adetola, A., Goulding, J.S. and Liyanage, C.** (2011). Collaborative Engagement Approaches for Delivering Sustainable Infrastructure Projects in the AEC Sector: A Review. *International Journal of Construction Supply Chain Management*. Vol. 1, No. 1, pp. 1-24. Accessed at: http://www.ijcscm.com/sites/default/files/issue/nid-6/abadetola@yahoo.co.uk_1324336887.pdf (October, 2013).
2. **Akintoye, A., and Beck, M.,** (Eds.). (2008). *Policy, Management and Finance for Public-Private Partnerships*. West Sussex: John Wiley and Sons Ltd. ISBN: 978-1-4051-7791-7.
3. **Akintoye, A., Liyanage, C., and Renukappa, S.,** (2011). *Proceedings of the Public-Private Partnerships: CIB TG72 ARCOM Doctoral Research Workshop*. 12 October, 2011, University of Central Lancashire, Preston, UK. Accessed at: <http://clock.uclan.ac.uk/2986/> (October, 2013).
4. **Akintoye, A., Goulding J.S., and Zawdie, G.** (2012). *Construction Innovation and Process Improvement: Theory and Practice*. Wiley-Blackwell, UK, ISBN: 9781405156486; DOI: 10.1002/9781118280294
5. **Akintoye, A. and Renukappa, S.** (2013). The UK water industry: infrastructure, governance and procurement. In Gunawansa, A. and Bhullar, L. (Eds.). *Water Governance: An Evaluation of Alternative Architectures*. Edward Elgar, Cheltenham, UK. pp. 81-118. ISBN 978-1-78100-641-2
6. Brown, M., **Akintoye, A., and Goulding, J.S.,** (2013), *Public Private Partnerships: Towards New Innovative Collaborations*, Centre for Sustainable Development, Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire, Preston, UK ISBN: 978-1-901922-93-6

4. Details of the impact (indicative maximum 750 words)

This research has positively impacted the way in which public, private and third sectors specifically approach PPP procurement at the following levels:

Impact level 1: Economic, commercial and organisational - through improving processes; increasing effectiveness of practice; and the governance of private business entities.

Impact level 2: Public policy - through helping shape public sector PPP procedures, thereby improving infrastructure delivery to the benefit of society.

Impact level 3: Environment - through positive influence on professional practice to inform PPP guidelines and shape future service provision.

4.1 Evidence

The above three levels of impact are verified in the following five evidence descriptors. In order to aid clarity, each descriptor is cross-referenced with 'sources to corroborate each impact' (Section 5) along with their associated 'impact levels'. This correlation is presented in parentheses form at the end of each descriptor.

- 1) UoA research continually and directly influences international and organisational industrial

practice. Examples of this include:

- a) National Public Private Partnership Guidelines (Queensland Government, 2009). The PPP research report by **Akintoye** on '*VfM and Risk Allocation Models in Construction PPP Projects*' informed the development of the risk allocation element, of the High Level Value Drivers of an Abridged Partnership Model within the Queensland Guidelines. (**Impact levels 1 and 2; Corroborative source 1**).
 - b) The Asian Development Bank (ADB) report '*Public Private Partnership Infrastructure Projects: Case Studies from the Republic of Korea*' (Asian Development Bank, 2011) relied extensively on the PPP research products of **Akintoye**. The ADB report informed development of institutional arrangements and performance for the Republic of Korea, to underpin development of an institutional PPP framework and regulatory PPP reforms. (**Impact level 2; Corroborative source 2**).
- 2) Internationally, CIB TG72 has positively impacted on understanding, awareness and the practical application of PPP. For example, in 2009, Kumaraswamy and **Akintoye** led the CIB TG72 Conference, "Revamping PPPs: From 'Revisiting and Rethinking' to 'Revamping and Revitalising' PPPs". Participants included government bodies, contractors and consulting firms in stakeholder management engaging in: benchmarking for Private Finance Initiative (PFI) risk assessment; the production of PFI risk management case studies; and direct knowledge diffusion through industry engagement. (*Viz. Revamping PPPs*, University of Hong Kong, February 2009, >200 international industrial delegates; and *Major Infrastructure Procurement Addressing the Constraints*, Queensland University of Technology, December 2010, >70 delegates from the construction, public and financial sectors). (**Impact levels 1, 2 and 3; Corroborative sources 1 and 3**).
 - 3) The International Conference on PPP Body of Knowledge (March 2013) co-hosted by the Centre for Sustainable Development (within the UoA), built on earlier **Akintoye** research to actively engage prestigious, international academics and industry leaders from across construction in debates around contemporary PPP practices (>80 delegates from the construction, public and financial sectors). Resulting outcomes were formalised for professional practice adoption within an industry guidance document by the Constructing Excellence Lancashire Best Practice Club (**Impact levels 1, 2 and 3; Corroborative source 4 and 7**).
 - 4) Ongoing engagement with industry continues to shape knowledge and performance at the workforce through formal workshops, seminars, keynote addresses, technical guidance publications and policy influence. The textbook '*Public Private Partnership: Managing Risks and Opportunities*' (*op. cit.*) – the first definitive reference source on this subject – has complemented this engagement and has directly influenced approaches to construction risk allocation. (**Impact levels 1 and 2; Corroborative source 4**).
 - 5) Outcomes of the COST project have permeated industry and professional practice at the highest levels, particularly through the *Transport Research Arena* conference in April 2012 and the International Conference on PPP Body of Knowledge in March 2013. Outcomes were also evidenced in the TG72 Doctoral Research Workshop (**Impact levels 1 and 3; Corroborative sources 5, 6 and 7**). The UoA's benchmarking protocol for transport sector PPPs actively employed multidisciplinary partners and cross-sector collaboration to help shape PPP selection, implementation and operation among EU transport projects. Outcomes are also positioned within extant knowledge in a textbook. (**Impact levels 1, 2 and 3; Corroborative sources 6 and 8**).

5. Sources to corroborate the impact (indicative maximum of 10 references)

Impact case study (REF3b)

1. Queensland Government, Australia (2009). National Public Private Partnership Guidelines. Work used in the Development of an Abridged Partnership Model. Department of Infrastructure and Planning. Accessed at: <http://www.treasury.qld.gov.au/projects-queensland/policy-framework/public-private-partnerships/> (September, 2013).
2. Asian Development Bank (2011). *Public–Private Partnership Infrastructure Projects: Case Studies from the Republic of Korea, Vol. 1 Institutional Arrangements and Performance*. Accessed at: <http://www2.adb.org/documents/books/ppp-kor-v1/ppp-kor-v1.pdf> (September, 2013).
3. Centre for Infrastructure and Construction Industry Development, (2009). *CIB TG72 on PPP Revamping PPPs from 'Revisiting and Rethinking' to 'Revamping and Revitalising' PPPs*. Symposium Proceedings. Accessed at: http://www.civil.hku.hk/cicid/3_events/78/78_PPPs_2009_proceedings.pdf (September, 2013).
4. Brown, M., **Akintoye**, A., and **Goulding**, J.S., (2013). *Public Private Partnerships: Towards New Innovative Collaborations*. Centre for Sustainable Development, Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire, Preston, UK ISBN: 978-1-901922-93-6
5. **Akintoye**, A., **Liyanage**, C., and Renukappa, S. (2011). Public-Private Partnerships: CIB TG72 ARCOM Doctoral Research Workshop. 12 October, 2011, University of Central Lancashire, Preston, UK.
6. Dealing with Public-Private Partnerships for Transport in Times of Economic Uncertainty. 26th of September 2012, Colegio Nacional de Ingenieros de Caminos, Canales y Puertos, Madrid. Accessed at http://www.foroinfra.com/JORNADAS/Jornada%20Foro%20de%20Infraestructuras_2012_s_ept_26.pdf (September, 2013).
7. PPP Body of Knowledge International Conference (2013). 18th- 20th March, University of Central Lancashire, Preston, UK. Accessed at: <http://be2camp.com/page/pppconf2013> (September, 2013)
8. **Akintoye et al.**, (2012). As per reference (4), section (3) above.