



The impact of tertiary education on development

EVIDENCE BRIEF

The returns to tertiary education (TE) have been underestimated. TE appears to contribute substantially to both human and economic development in LLMICs.

About this brief

This evidence brief summarises the findings from a rigorous review conducted by Oketch, McCowan and Schendel (2014), entitled "[The impact of tertiary education on development](#)".

The review was produced by the Institute of Education (University of London) and funded by the Department for International Development's (DfID) Research and Evidence Division.

The review aims to assess the evidence linking TE to a wide range of economic and human development outcomes in low- and lower-middle-income countries (LLMICs).

How to use this brief

This brief is intended to assist policy-makers and other interested stakeholders by outlining the study's major findings and providing links to the individual references included in the review.

Methodology

A search of 21 bibliographic databases, 7 institutional websites, and 7 existing literature reviews identified 6,677 studies of interest published since 1990. Following screening, 147 English-language studies were identified as demonstrating empirical evidence of impact of TE in at least one LLMIC. All 147 studies were appraised for quality and methodological rigour. A

further 48 studies were excluded at this stage, leaving 99 studies in the final synthesis. Of the 99 included studies, 66 consider impact via increased earnings, 24 via improved individual capabilities, 13 via increased productivity, 13 via institutions and 8 via technological transfer. Twenty-three of the studies are global or regional in nature, while 76 focus on individual country contexts (mostly from Sub-Saharan Africa and South and South-East Asia). Most of the included studies are quantitative observational studies, although qualitative and mixed-method studies were also identified.

Key findings

The literature identified by this review is heterogeneous in terms of focus, research design and geographical context. Conclusive evidence of impact of TE is difficult to demonstrate at macro level, given inconsistencies in the use of time-lagged analysis and limitations of national datasets. Nevertheless, evidence of a range of positive outcomes and likely impacts was identified across a range of LLMICs:

- TE appears to have a stronger impact on economic growth than was previously assumed, with some studies suggesting that TE has a stronger impact than do lower levels of education.
- In addition to having a strong impact on the earnings of

graduates, there is some evidence to suggest that TE has a positive impact on productivity in the workplace, although significant barriers to impact remain.

- Studies suggest that research output in universities in LLMICs is generally low, and there is limited transfer of technology to local industries. However, the proportion of workers with higher education within a given context appears to increase the likelihood of technological uptake and adaptation.
- TE provides a range of broad, measurable benefits to graduates relating to health, gender equality and democracy, among other areas. In addition, it contributes to the strengthening of institutions, and the forming of professionals in key areas such as education and healthcare.

Research gaps

- Despite the large body of literature on TE, there is a lack of research gauging its impact on development.
- There is robust evidence of micro-level impact, but macro-level impact is harder to identify.
- Studies considering impact tend not to address the *conditions* that affect the impact of TE on development.

Summary of evidence

In preparation for synthesis, included studies were grouped by their association with the various potential ‘outcomes’ of TE outlined in the review’s conceptual framework. These outcomes were: increased earnings and externalities; increased workforce productivity; increased technological transfer; improved individual capabilities; and improved institutions. The table below summarises the available evidence of how TE appears to affect development in LLMICs via these outcomes and assesses the strength of the overall body of evidence in terms of the criteria suggested by the DfID ‘How to note’ on ‘Assessing the strength of evidence’ (DfID 2013).

For the purposes of the summary table, a grouping is referred to as ‘small’ if there are fewer than 20 studies, ‘medium’ if there are between 20 and 40 studies, and large if there are more than 40 studies. Evidence is classified as ‘consistent’ if all of the findings of the included studies suggest similar conclusions and ‘inconsistent’ if a diversity of conclusions was identified. This classification refers to evidence of positive impact. Some evidence groupings, such as the evidence around economic growth, were inconsistent in their comparative conclusions (that is, when relating TE to other levels of education), but consistent in showing some positive impact. Although some studies show limited impact, or absence of impact, very few studies show negative impact. The final column—‘Overall Strength of Evidence’—is a combined assessment, based on the size and consistency of each grouping.

A complete synthesis of the review findings can be found in the full review report.

OUTCOME	CHARACTERISTICS		
	SIZE	CONSISTENCY	OVERALL STRENGTH OF EVIDENCE
Individual earnings	Large (48)	Consistent	Strong
Economic growth	Medium (25)	Consistent	Medium
Productivity	Small (13)	Inconsistent	Limited
Technological transfer	Small (8)	Inconsistent	Limited
Capabilities	Medium (24)	Consistent	Medium
Institutions	Small (13)	Consistent	Medium

NOTES:

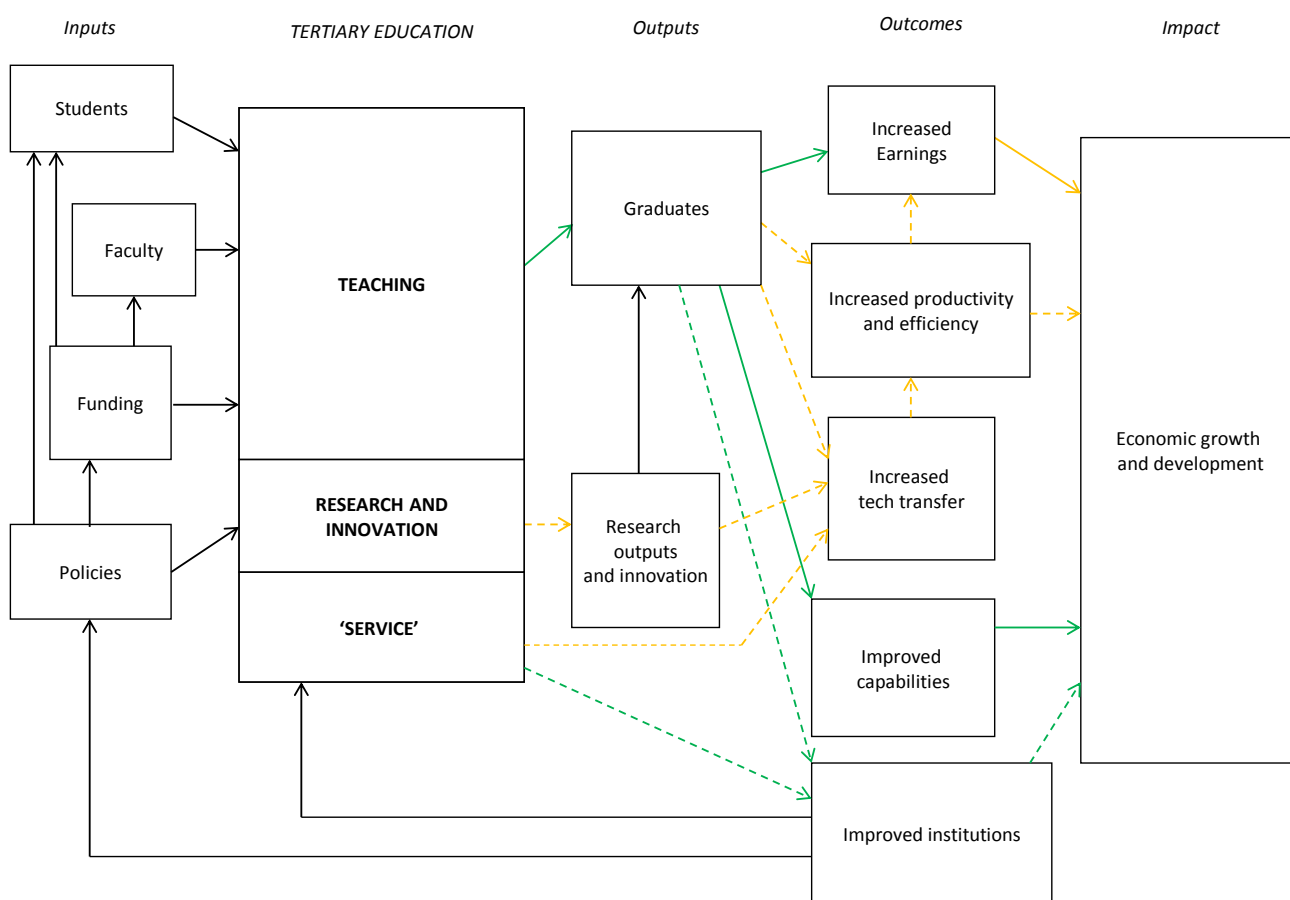
- Quality’ was not included in the summary table, as all included studies met the necessary standards assessed during quality appraisal.
- ‘Context’ was also not included, as the ‘How to note’ recommendation of classifying groups of studies as either ‘global’ or ‘context-specific’ does not fully apply to a review of this scope. Each group of studies reflects findings from a broad range of contexts, but the impossibility of identifying an effect that applies in exactly the same manner across all contexts prevents the use of the term ‘global’ when classifying this body of evidence.
- As some studies investigate multiple pathways, the frequencies in this table do not add up to 99.

The pathways to impact

A conceptual framework was developed in order to structure the review of literature. Drawing on theories relating TE to human-capital development, endogenous development, capabilities and institutional growth, multiple potential pathways to impact were identified.

At the end of the review process, the conceptual framework was revisited, in order to examine the applicability of the framework to LLMIC contexts. The reviewed evidence suggests that the conceptual framework is broadly applicable to lower-income contexts. The review did, however, expose some areas of inconsistency in the literature, as well as a significant lack of evidence around certain pathways.

The review findings are represented by the colour-coding on the diagram below. Consistent evidence of impact is represented by a green arrow, while inconsistent evidence is represented in yellow. The pathways to impact around which there is limited evidence (that is, from fewer than 20 studies) are highlighted with dashed (as opposed to solid) arrows on the diagram.



It is crucial to note that the pathways to impact identified in the framework rest on certain assumptions, including: sufficient primary and secondary education; sufficient quality of research, teaching and learning; academic freedom; and equality of access and opportunities within TE. As these conditions rarely hold in LLMICs, the lack of impact observed in some studies may not indicate a lack of validity of the pathway in question, but may be the result of certain barriers within the system, such as poor-quality teaching and curricula, or lack of a conducive research environment. While there is a large body of literature that analyses these barriers (517 were identified by this study), additional research is needed showing how impact (or lack of it) is linked to changes in these potentially limiting factors.

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References

This evidence brief summarises: Oketch, M., McCowan, T. and Schendel, R. (2014). *The impact of tertiary education on development: A rigorous literature review*. Department for International Development.

Included studies on earnings and externalities

- Abbas, Q. and Foreman-Peck, J. (2008). 'The Mincer Human Capital Model in Pakistan: Implications for education policy.' *South Asia Economic Journal*, 9 (2): 435–462.
- Afzal, M. (2011). 'Microeconomic analysis of private returns to education and determinants of earnings.' *Pakistan Economic and Social Review*, 49 (1): 39–68.
- Afzal, M., Rehman, H. U., Farooq, M. S. and Sarwar, K. (2011). 'Education and economic growth in Pakistan: A cointegration and causality analysis.' *International Journal of Educational Research*, 50 (5): 321–335.
- Agesa, R. U., Agesa, J. and Dabalén, A. (2013). 'Sources of the persistent gender wage gap along the unconditional earnings distribution: Findings from Kenya.' *Oxford Development Studies*, 41 (1): 76–103.
- Agiomirgianakis, G., Asterious, D. and Monastiriotes, V. (2002). 'Human capital and economic growth revisited: A dynamic panel data study.' *International Advances in Economic Research*, 8 (3): 177–186.
- Akita, T. and Miyata, S. (2008). 'Urbanization, educational expansion, and expenditure inequality in Indonesia in 1996, 1999, and 2002.' *Journal of the Asia Pacific Economy*, 13 (2): 147–167.
- Al-Samarrai, S. and Bennell, P. (2007). 'Where has all the education gone in Sub-Saharan Africa? Employment and other outcomes among secondary school and university leavers.' *The Journal of Development Studies*, 43 (7): 1,270–1,300.
- Al-Samarrai, S. and Reilly, B. (2008). 'Education, employment and earnings of secondary school and university leavers in Tanzania: Evidence from a tracer study.' *The Journal of Development Studies*, 44 (2): 258–288.
- Amaghionyeodiwe, L. A. and Osinubi, T. S. (2007). 'Do higher levels of schooling lead to higher returns to education in Nigeria?' *Applied econometrics and international development*, 7 (1): 159–166.
- Asghar, Z. and Zahra, M. (2012). 'A benefit incidence analysis of public spending on education in Pakistan using PSLM data.' *Lahore Journal of Economics*, 17 (2): 111–136.
- Asiedu, E. and Nandwa, B. (2007). 'On the impact of foreign aid in education on growth: How relevant is the heterogeneity of aid flows and the heterogeneity of aid recipients?' *Review of World Economics*, 143 (4): 631–649.
- Azam, M. (2010). 'India's increasing skill premium: Role of demand and supply.' *The B E Journal of Economic Analysis & Policy*, 10 (1): 1–28.
- Azam, M. (2012). 'Changes in wage structure in urban India, 1983-2004: A quantile regression decomposition.' *World Development*, 40 (6): 1,135–1,150.
- Bloom, D., Canning, D. and Chan, K. (2006). *Higher education and economic development in Africa*. Washington, D.C.: World Bank.
- Born, J. A., McMaster, J. and De Jong, A. B. (2008). 'Return on investment in graduate management education in the South Pacific.' *International Journal of Management in Education*, 2 (3): 340–355.
- Dahal, M. P. (2010). 'Higher educational enrollment, school teachers and GDP in Nepal: A causality analysis.' *Economic Journal of Development Issues*, 11 and 12 (1-2): 69–91.
- Deolalikar, A. B. (1993). 'Gender differences in the returns to schooling and in school enrollment rates in Indonesia.' *The Journal of Human Resources*, 28 (4): 899–932.
- Diagne, A. and Diene, B. (2011). 'Estimating returns to higher education: A survey of models, methods and empirical evidence.' *Journal of African Economies*, 20 (3): iii80–iii132.
- Doan, T. and Stevens, P. (2011). 'Labor market returns to higher education in Vietnam.' *Economics-the Open Access Open-Assessment E-Journal*, 5: 1–21.
- Duraisamy, P. (2000). *Changes in returns to education in India, 1983-94: By gender, age-cohort and location*. Economic Growth Center Discussion Paper 815. New Haven, C.T.: Yale University.
- Dutta, P. V. (2006). 'Returns to education: new evidence for India, 1983-1999.' *Education Economics*, 14 (4): 431–451.
- El-Hamidi, F. (2006). 'General or vocational schooling? Evidence on school choice, returns, and "sheepskin" effects from Egypt 1998.' *The Journal of Policy Reform*, 9 (2): 157–176.
- Fasih, T., Kingdon, G., Patrinos, H. A., Sakellariou, C. and Soderbom, M. (2012). *Heterogeneous returns to education in the labor market*. Washington, D.C.: World Bank.
- Fonkeng, G. E. and Ntembe, A. N. (2009). 'Higher education and economic development in Africa: The case of Cameroon.' *Educational Research and Review*, 4 (5): 231–246.
- Frisancho Robles, V. C. and Krishna, K. (2012). *Affirmative action in higher education in India: Targeting, catch up, and mismatch*. NBER Working Paper 17727. Cambridge, M.A.: National Bureau of Economic Research.
- Ganegodage, K. R. and Rambaldi, A. N. (2011). 'The impact of education investment on Sri Lankan economic growth.' *Economics of Education Review*, 30 (6): 1,491–1,502.
- Glewwe, P., Gragnolati, M. and Zaman, H. (2002). 'Who gained from Vietnam's boom in the 1990s?' *Economic Development and Cultural Change*, 50 (4): 773–792.

- Grootaert, C. (1990). 'Returns to formal and informal vocational education in Cote d'Ivoire: The role of the structure of the labor market.' *Economics of Education Review*, 9 (4): 309–319.
- Grootaert, C., Kanbur, R. and Oh, G-T. (1995). *The dynamics of poverty: Why some people escape from poverty and others don't: An African case study*. Washington, D.C.: World Bank.
- Gyimah-Brempong, K. (2011). 'Education and economic development in Africa.' *African Development Review*, 23 (2): 219–236.
- Gyimah-Brempong, K., Paddison, O. and Mitiku, W. (2006). 'Higher education and economic growth in Africa.' *Journal of Development Studies*, 42 (3): 509–529.
- Heaton, C. (1999). 'The equity implications of public subsidisation of higher education: A study of the Fijian case.' *Education Economics*, 7 (2): 153–166.
- Kahyarara, G. and Teal, F. (2008). 'The returns to vocational training and academic education: Evidence from Tanzania.' *World Development*, 36 (11): 2,223–2,242.
- Keller, K. R. I. (2006). 'Investment in primary, secondary, and higher education and the effects on economic growth.' *Contemporary Economic Policy*, 24 (1): 18–34.
- Kimenyi, M. S., Mwabu, G. and Manda, D. K. (2006). 'Human capital externalities and private returns to education in Kenya.' *Eastern Economic Journal*, 32 (3): 493–513.
- Kingdon, G. G. and Unni, J. (2001). 'Education and women's labour market outcomes in India.' *Education Economics*, 9 (2): 173–195.
- Kristensen, N. and Verner, D. (2008). 'Labor market distortions in Cote d'Ivoire: Analyses of employer-employee data from the manufacturing sector.' *African Development Review*, 20 (3): 343–377.
- Kyaw, K. S. and Macdonald, R. (2009). 'Capital flows and growth in developing countries: A dynamic panel data analysis.' *Oxford Development Studies*, 37 (2): 101–122.
- Lassibille, G. and Tan, J-P. (2005). 'The returns to education in Rwanda.' *Journal of African Economies*, 14 (1): 92–116.
- Loening, J. L. (2005). *Effects of primary, secondary and tertiary education on economic growth: Evidence from Guatemala*. Washington, D.C.: World Bank.
- Manda, D. K., Mwabu, G. and Kimenyi, M. S. (2002). *Human capital externalities and returns to education in Kenya*. Discussion Paper 13. Nairobi: Kenya Institute for Public Policy Research and Analysis.
- McMahon, W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press.
- McMahon, W. (2003). 'Investment criteria and financing education for economic development.' In J. B. G. Tilak (ed.), *Education, society, and development* (pp 235–256). New Delhi: A.P.H. Publishing Corporation.
- Moock, P. R., Patrinos, H. A. and Venkataraman, M. (2003). 'Education and earnings in a transition economy: The case of Vietnam.' *Economics of Education Review*, 22 (5): 503–510.
- Ndiyo, N. A. (2007). 'A dynamic analysis of education and economic growth in Nigeria.' *Journal of Developing Areas*, 41(1): 1–16.
- Nsawah-Nuamah, N., Teal, F. and Awoonor-Williams, M. (2012). 'Jobs, skills and incomes in Ghana: How was poverty halved?' *Comparative Education*, 48 (2): 231–248.
- Nyarko, Y. (2011). *The returns to the brain drain and brain circulation in Sub-Saharan Africa: Some computations using data from Ghana*. Working Paper 16813. Cambridge, MA: National Bureau of Economic Research.
- Obwana, M. and Ssewanyana, S. N. (2007). *Development impact of higher education in Africa: The case of Uganda*. Kampala: Economic Policy Research Centre.
- Psacharopoulos, G. (1994). 'Returns to investment in education: A global update.' *World Development*, 22 (9): 1,325–1,343.
- Psacharopoulos, G. and Patrinos, H.A. (2004). 'Returns to investment in education: A further update.' *Education Economics*, 12 (2): 111–134.
- Psacharopoulos, G., Velez, E. and Patrinos, H.A. (1994). 'Education and earnings in Paraguay.' *Economics of Education Review*, 13 (4): 321–327.
- Ramos, C. G., Estudillo, J., Sawada, Y. and Otsuka, K. (2012). 'Transformation of the rural economy in the Philippines, 1988–2006.' *The Journal of Development Studies*, 48 (11): 1,629–1,648.
- Rolleston, C. and Oketch, M. (2008). 'Educational expansion in Ghana: Economic assumptions and expectations.' *International Journal of Educational Development*, 28 (3): 320–339.
- Rugar, T. O., Ayodo, T. M. O., and Agak, J. O. (2010). 'Rate of financial return to university schooling among lecturers in two public universities in Kenya.' *Educational Research and Reviews*, 5 (3): 130–148.
- Schady, N. R. (2003). 'Convexity and sheepskin effects in the human capital earnings function: Recent evidence for Filipino Men.' *Oxford Bulletin of Economics and Statistics*, 65 (2): 171–196.
- Schultz, T. P. (2004). 'Social value of research and technical skills: Does it justify investment in higher education for development?' *Journal of Higher Education in Africa*, 2 (1): 92–134.
- Self, S. and Grabowski, R. (2004). 'Does education at all levels cause growth? India, a case study.' *Economics of Education Review*, 23 (1): 47–55.
- Soderbom, M., Teal, F., Wambugu, A. and Kahyarara, G. (2006). 'The dynamics of returns to education in Kenya and Tanzanian manufacturing.' *Oxford Bulletin of Economics and Statistics*, 68 (3): 261–288.
- Stengos, T. and Aurangzeb, A. (2008). 'An empirical investigation of the relationship between education and growth in Pakistan.' *International Economic Journal*, 22 (3): 345–359.
- Teal, F. (2011). 'Higher education and economic development in Africa: A review of channels and interactions.' *Journal of African Economies*, 20 (AERC Supplement 3): iii50–iii79.

- Tilak, J. B. G. (2003). 'Higher education and development in Asia.' *Journal of Educational Planning and Administration*, 17 (2): 151–173.
- Tilak, J. B. G. (2010). 'Higher education, poverty and development.' *Higher Education Review*, 42 (2): 23–45.
- Uwaifo Oyelere, R. (2011). 'Have returns to education changed in Nigeria? Uncovering the role of democratic reforms.' *Journal of African Economies*, 20 (5): 737–780.
- Vijverberg, W. P. M. (1993). 'Educational investments and returns for women and men in Cote d'Ivoire.' *Journal of Human Resources*, 28 (4): 933–974.
- Wolff, E. N. and Gittleman, M. (1993). 'The role of education in productivity convergence: Does higher education matter?' In A. Szirmai, B. van Ark and D. Pilat (eds), *Explaining Economic Growth* (pp 147–166). Amsterdam: North-Holland.
- World Bank. (2010). *The education system in Malawi*. World Bank Working Paper 182. Washington, D.C.: World Bank.

Included studies on productivity

- Abbas, Q. and Foreman-Peck, J. (2008). 'The Mincer Human Capital Model in Pakistan: Implications for education policy.' *South Asia Economic Journal*, 9 (2): 435–462.
- Al-Samarrai, S. and Bennell, P. (2007). 'Where has all the education gone in Sub-Saharan Africa? Employment and other outcomes among secondary school and university leavers.' *The Journal of Development Studies*, 43 (7): 1,270–1,300.
- Bloom, D., Canning, D. and Chan, K. (2006). *Higher education and economic development in Africa*. Washington, D.C.: World Bank.
- De Ferranti, D., Perry, G. E., Gill, I., Guasch, J. L., Maloney, W. F., Sanchez-Paramo, C., and Schady, N. (2003). *Closing the gap in education and technology*. Washington, D.C.: World Bank.
- Di Gropello, E., Tandon, P. and Yusuf, S. (2012). *Putting higher education to work: Skills and research for growth in East Asia*. Washington, D.C.: World Bank.
- Diagne, A. and Diene, B. (2011). 'Estimating returns to higher education: A survey of models, methods and empirical evidence.' *Journal of African Economies*, 20 (3): iii80–iii132.
- Larbi-Apau, J. A. and Sarpong, D. B. (2010). 'Performance measurement: Does education impact productivity?' *Performance Improvement Quarterly*, 22 (4): 81–97.
- Loening, J. L. (2005). *Effects of primary, secondary and tertiary education on economic growth: Evidence from Guatemala*. Washington, D.C.: World Bank.
- McMahon, W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press.
- McMahon, W. (2003). 'Investment criteria and financing education for economic development.' In J. B. G. Tilak (ed.), *Education, society, and development* (pp 235–256). New Delhi: A.P.H. Publishing Corporation.
- Ndiyo, N. A. (2007). 'A dynamic analysis of education and economic growth in Nigeria.' *Journal of Developing Areas*, 41(1): 1–16.
- Teal, F. (2011). 'Higher education and economic development in Africa: A review of channels and interactions.' *Journal of African Economies*, 20 (AERC Supplement 3): iii50–iii79.
- Wolff, E. N. and Gittleman, M. (1993). 'The role of education in productivity convergence: Does higher education matter?' In A. Szirmai, B. van Ark and D. Pilat (eds), *Explaining economic growth* (pp 147–166). Amsterdam: North-Holland.

Included studies on technological transfer

- Ca, T. N. (2006). *Universities as drivers of the urban economies in Asia: The case of Vietnam*. World Bank Policy Research Working Paper 3949. Washington, D.C.: World Bank.
- Collins, C. S. (2012). 'Land-grant extension as a global endeavor: Connecting knowledge and international development.' *The Review of Higher Education*, 36 (1): 91–124.
- De Ferranti, D., Perry, G. E., Gill, I., Guasch, J. L., Maloney, W. F., Sanchez-Paramo, C., and Schady, N. (2003). *Closing the gap in education and technology*. Washington, D.C.: World Bank.
- Di Gropello, E., Tandon, P. and Yusuf, S. (2012). *Putting higher education to work: Skills and research for growth in East Asia*. Washington, D.C.: World Bank.
- Gondo, T. and Dafuleya, G. (2010). 'Technical vocational education and training for micro-enterprise development in Ethiopia: A solution or part of the problem?' *Industry and Higher Education*, 24 (5): 381–392.
- Loening, J. L. (2005). *Effects of primary, secondary and tertiary education on economic growth: Evidence from Guatemala*. Washington, D.C.: World Bank.
- Magara, E., Bukirwa, J. and Kayiki, R. (2011). 'Knowledge transfer through internship: The EASLIS experience in strengthening the governance decentralisation programme in Uganda.' *African Journal of Library Archives and Information Science*, 21(1): 29–40.
- McMahon, W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press.

Included studies on capabilities

- Agrawal, J., Murthy, P., Philip, M., Mehrotra, S., Thennarasu, K., John, J. P., Girish, N., Thippeswamy, V. and Isaac, M. (2011). 'Socio-demographic correlates of subjective well-being in Urban India.' *Social Indicators Research*, 101 (3): 419–434.
- Ahmed, H. M. S. (2010). 'Non-market returns to women's education in Sudan: Case of fertility.' *Journal of Comparative Family Studies*, 41(5): 783–798.

- Akin, M. S. (2005). 'Education and fertility: A panel data analysis for Middle Eastern countries.' *Journal of Developing Areas*, 39 (1): 55–69.
- Akinyemi, A. I. (2012). 'Assessment of the influence of socio-economic status on aging males' symptoms in Ijesaland, South-Western Nigeria.' *Journal of Men's Health*, 9 (1): 51–57.
- Al-Samarrai, S. and Bennell, P. (2007). 'Where has all the education gone in Sub-Saharan Africa? Employment and other outcomes among secondary school and university leavers.' *The Journal of Development Studies*, 43 (7): 1,270–1,300.
- Burchi, F. and De Muro, P. (2007). *Education for rural people: A neglected key to food security*. Working Paper 78. Rome: Università degli Studi Roma Tre.
- Dalal, K. (2008). *Causes and consequences of violence against child labour and women in developing countries*. Stockholm: Karolinska Institutet.
- DeRose, L. F., Dodoo, F. N-A. and Patil, V. (2002). 'Fertility Desires and Perceptions of Power in Reproductive Conflict in Ghana.' *Gender & Society*, 16 (1): 53–73.
- Gyimah-Brempong, K. (2011). 'Education and economic development in Africa.' *African Development Review*, 23 (2): 219–236.
- Luescher-Mamashela, T. M., Kiiru, S., Mattes, R., Mwollo-ntallima, A., Ng'ethe, N. and Romo, M. (2011). *The University in Africa and Democratic Citizenship: Hothouse or Training Ground?* Wynberg: Centre for Higher Education Transformation.
- Malik, S. and Courtney, K. (2011). 'Higher education and women's empowerment in Pakistan.' *Gender and Education*, 23 (1): 29–45.
- Mattes, R. and Mughogho, D. (2009). *The limited impacts of formal education on democratic citizenship in Africa*. Centre for Social Science Research Working Paper 255. Cape Town: University of Cape Town.
- McMahon, W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press.
- McMahon, W. (2003). 'Investment criteria and financing education for economic development.' In J. B. G. Tilak (ed.), *Education, society, and development* (pp 235-256). New Delhi: A.P.H. Publishing Corporation.
- Müller, T. R. (2004). "'Now I am free"—Education and human resource development in Eritrea: Contradictions in the lives of Eritrean women in higher education.' *Compare: A journal of comparative and international education*, 34 (2): 215–229.
- Mwaipopo, R. N., Lihamba, A. and Njeweje, D. C. (2011). 'Equity and equality in access to higher education: The experiences of students with disabilities in Tanzania.' *Research in Comparative and International Education*, 6 (4): 415–429.
- Omotara, B. A., Padonu, M. O. and Yahya, S. J. (2004). 'Assessment of the impact of community-based medical education of the University of Maiduguri on communities in three local government areas of Borno State, Nigeria: Community Leaders' Perspectives.' *Education for Health*, 17 (1): 6–16.
- Raghbendra, J. and Dang, T. (2012). 'Education and the vulnerability to food inadequacy in Timor-Leste.' *Oxford Development Studies*, 40 (3): 341–357.
- Sansone, G. C., Raute, L. J., Fong, G. T., Pednekar, M. S., Quah, A. C. K., Bansal-Travers, M., Gupta, P. C. and Sinha, D. N. (2012). 'Knowledge of health effects and intentions to quit among smokers in India: Findings from the Tobacco Control Policy (TCP) India Pilot Survey.' *International Journal of Environmental Research and Public Health*, 9 (2): 564–578.
- Singh, R., Thind, S. K. and Jaswal, S. (2006). 'Assessment of marital adjustment among couples with respect to women's educational level and employment status.' *Anthropologist*, 8 (4): 259–266.
- Thomas, K. J. A. (2008). 'Return migration in Africa and the relationship between educational attainment and labor market success: Evidence from Uganda.' *International Migration Review*, 42 (3): 652–674.
- Tilak, J. B. G. (2003). 'Higher education and development in Asia.' *Journal of Educational Planning and Administration*, 17 (2): 151–173.
- Tilak, J. B. G. (2010). 'Higher education, poverty and development.' *Higher Education Review*, 42 (2): 23–45.
- Utomo, A. J. (2012). 'Women as secondary earners: Gendered preferences on marriage and employment of university students in modern Indonesia.' *Asian Population Studies*, 8 (1): 65–85.

Included Studies on Institutions

- Ehrhardt-Martinez, K. (1998). 'Social determinants of deforestation in developing countries: A cross-national study.' *Social Forces*, 77 (2): 567–586.
- Gyimah-Brempong, K. (2011). 'Education and economic development in Africa.' *African Development Review*, 23 (2): 219–236.
- Harris, S. and Lewer, N. (2005). 'Post-Graduate Peace Education in Sri Lanka.' *Journal of Peace Education*, 2 (2): 109–124.
- Keller, K. R. I. (2006). 'Investment in primary, secondary, and higher education and the effects on economic growth.' *Contemporary Economic Policy*, 24 (1): 18–34.
- Magara, E., Bukirwa, J. and Kayiki, R. (2011). 'Knowledge transfer through internship: The EASLIS experience in strengthening the governance decentralisation programme in Uganda.' *African Journal of Library Archives and Information Science*, 21(1): 29–40.
- Mattes, R. and Mozaffar, S. (2011). *Education, legislators and legislatures in Africa*. Wynberg: Centre for Higher Education Transformation.
- McMahon, W. (1999). *Education and development: Measuring the social benefits*. Oxford: Oxford University Press.

- McMahon, W. (2003). 'Investment criteria and financing education for economic development.' In J. B. G. Tilak (ed.), *Education, society, and development* (pp 235-256). New Delhi: A.P.H. Publishing Corporation.
- Oman, K. M., Moulds, R. and Usher, K. (2009). 'Specialist training in Fiji: Why do graduates migrate, and why do they remain? A qualitative study.' *Human Resources for Health*, 7 (9): 1–10.
- Shafiq, M. N. (2010). 'Do education and income affect support for democracy in Muslim countries? Evidence from the "Pew Global Attitudes Project".' *Economics of Education Review*, 29 (3): 461–469.
- Truex, R. (2011). 'Corruption, attitudes, and education: Survey evidence from Nepal.' *World Development*, 39 (7): 1,133–1,142.
- Urdal, H. (2006). 'A clash of generations? Youth bulges and political violence.' *International Studies Quarterly*, 50 (3): 607–629.
- Wright, L-A. and Plasterer, R. (2010). 'Beyond basic education: Exploring opportunities for higher learning in Kenyan Refugee Camps.' *Refuge: Canada's Periodical on Refugees*, 27 (2): 42–56.