

## REFERENCES

- Abur C. C., Ademoyewa G. R., Damkor M. "Impact of rural roads infrastructure on the income and productivity of household's farmers in North Central Nigeria". *Research Journal of Agricultural and Environmental Management*. 2015, 4(10): 451-458.
- Aderamo A. J., Magaji S. A. "Rural transportation and the distribution of public facilities in Nigeria: a case of Edu local government area of Kwara State". *Journal of Human Ecology*. 2010, 29: 171-179.
- Adukia A., Asher S., Novosad P. "*Educational Investment Responses to Economic Opportunity: Evidence from Indian Road Construction*". Becker Friedman Institute for Research in Economics, Chicago, USA. 2017.
- Aggarwal S. "Do rural roads create pathways out of poverty? Evidence from India". *Journal of Development Economics*. 2018, 133: 375-395.
- Ahmed R., Hossain, M. "*Developmental impact of rural infrastructure in Bangladesh*". International Food Policy Research Institute, Washington, D.C., USA. 1990.
- Akbulut S., Hasiloglu A. S., Pamukcu S. "Data generation for shear modulus and damping ratio in reinforced sands using adaptive neuro-fuzzy inference system". *Soil Dynamics and Earthquake Engineering*. 2004, 24(11): 805–814.
- Al-Rashdan D., Al-Kloub B., Dean A., Al-Shemmeri T. "Environmental impact assessment and ranking the environmental projects in Jordan". *European Journal of Operational Research*. 1999, 118: 30-45.
- Altaf S., *Socio-Economic Impact Evaluation of Pradhan Mantri Gram Sadak Yojana in Madhya Pradesh*. Rural Development authority Report, Bhopal, India. 2010 July.
- Analyse it. Analyse it software (version 2016), Analyse-it Software, Ltd., U K. 2016.
- Andrade K., Uchida K., Kagaya S. "Development of transport mode choice model by using adaptive neuro-fuzzy inference system". *Journal of the Transportation Research Board*. 2006, 1977: 8-16.

Ansoms A., McKay A. "A quantitative analysis of poverty and livelihood profiles: The case of rural Rwanda". *Food Policy*. 2010, 35(6): 584-598.

Asher S., Novosad P. "Rural roads and local economic development". The World Bank, Washington, D.C., USA. 2018.

Asomani-Boateng R., Fricano R. J., Adarkwa F. "Assessing the socio-economic impacts of rural road improvements in Ghana: a case study of Transport Sector Program Support (II)". *Case Studies on Transport Policy*. 2015, 355-366.

Babatunde R. O., Qaim M. "Impact of off-farm income on food security and nutrition in Nigeria". *Food Policy*. 2010, 35(4): 303-311.

Baker J. L. "Evaluating the Impact of Development Projects on Poverty: A Handbook for Practitioners". World Bank Publications, Washington, D.C., USA. 2000.

Banerjee P., Ghose M. K., Pradhan R. "Analytic hierarchy process based spatial biodiversity impact assessment model of highway broadening in Sikkim Himalaya". *Geocarto International*. 2018, 19:1-24.

Banister D., Berechman Y. "Transport investment and the promotion of economic growth". *Journal of Transport Geography*. 2001, 9: 209-218.

Banister D., Berechman J. "Transport investment and economic development". University College London Press, London. 2003.

Banjo G., Gordon H., Riverson, J. "Rural Transport: Improving its Contribution to Growth and Poverty Reduction in Sub-Saharan Africa". Sub-Saharan Africa Transport Policy Program (SSATP) working, World Bank, Washington, D. C., USA. 2012.

Barbier E. "Natural capital and the economics of environment and development" In: Investing in Natural Capital: The Ecological Economics Approach to Sustainability. (Jansson A., Hammer M., Folke C., Costanza R., Eds.), Island Press, Washington, D. C., USA. 1994, 291-322.

Barbieri C., Mahoney E. "Why is diversification an attractive farm adjustment strategy? Insights from Texas farmers and ranchers". *Journal of Rural Studies*. 2009, 25 (1): 58-66.

Barnow B. S., King C. T., “*Improving the odds: Increasing the effectiveness of publicly funded training*”. The Urban Institute, Washington, D.C., USA. 2000.

Barrett C. B., Bezuneh M., Aboud, A. “Income diversification, poverty traps and policy shocks in Côte d’Ivoire and Kenya”. *Food Policy*. 2001, 26: 367–384.

Bellman R. E., Zadeh L. A. “Decision-making in a fuzzy environment”. *Management science*. 1970, 17(4).

Berg C. N., Blankespoor B., Selod H. “Roads and rural development in Sub-Saharan Africa”. *Journal of Development Studies*. 2018, 54(5): 856-874.

Binswanger H. P., Khandker S. R., Rosenzweig M. R. “How infrastructure and financial institutions affect agricultural output and investment in India”. *Journal of Development Economics*. 1993, 41(2): 337-366.

Blomquist J. “*Impact evaluation of social programs: A policy perspective*”. World Bank, Washington, D.C., USA. 2003

Bonte R. J., Janssen R., Mooren R. H., Smidt J. T., van de Burg J. J. “Multicriteria analysis: making subjectivity explicit”. *New Experiences on Environmental Impact Assessment in the Netherlands: Process, Methodology, Case studies*. 1998, 23-28.

Booth D., Hanmer L., Lovell E., *Poverty and Transport*. London: Overseas Development Institute, A report prepared for the World Bank in collaboration with DFID; 2000 Jun.

Braathen S., Hervik, A. “Strait Crossings and Economic Development – Developing Economic Impact Assessment by Means of Ex-post Analyses”. *Transport Policy*. 1997, 4: 193-200.

Bryceson D. F., Bradbury A., Bradbury, T. “Roads to poverty reduction? Exploring rural roads' impact on mobility in Africa and Asia”. *Development Policy Review*. 2008, 26: 459-482.

Caggiati P., Ragazzoni A. “*La valutazione dell’ambiente: metodologie di analisi e casi di studio*”. Bologna, Pitagora. 2000.

Chang N. B., Wei Y. L. "Siting recycling drop-off stations in urban area by genetic algorithm-based fuzzy multi-objective nonlinear integer programming modeling". *Fuzzy Sets and Systems*. 2000, 114: 133-149.

Chen S. J., Hwang C. L. "Fuzzy multiple attribute decision making methods". In: Fuzzy multiple attribute decision making. Springer, Berlin, Heidelberg, 1992, 289-486.

Chen S. H. Hsieh C. H. "Representation, ranking, distance, and similarity of LR type fuzzy number and application". *Australian Journal of Intelligent Information Processing Systems*. 2000, 6(4): 217-229.

Chen X., Hellinga B., Chang C., Fu L. "Optimization of headways with stop-skipping control: a case study of bus rapid transit system". *Journal of advanced transportation*. 2015, 49(3): 385-401.

Cloquell-Ballester V. A., Monterde-Diaz R., Santamarina-Siurana M. C. "Indicators validation for the improvement of environmental and social impact quantitative assessment". *Environmental Impact Assessment Review*. 2006, 26:79-105.

Copestake J., Remnant F. "Assessing rural transformations: Piloting a qualitative impact protocol in Malawi and Ethiopia". In: Mixed Methods Research in Poverty and Vulnerability. Palgrave Macmillan, London, 2015, 119-148.

Creswell J. W. "Research design. Qualitative, quantitative, and mixed methods approaches". Sage, Thousand Oaks, CA. 2006.

Daigle P. "A summary of the environmental impacts of roads, management responses, and research gaps: A literature review". *Journal of Ecosystems and Management*. 2010, 10(3).

Dalkey N., Helmer O. "An experimental application of the Delphi method to the use of experts". *Management Science*. 1963, 9: 458-467.

Dehejia R. H., Wahba S. "Propensity score-matching methods for nonexperimental causal studies". *Review of Economics and statistics*. 2002, 84: 151-61.

Deininger K., Okidi J. "Growth and poverty reduction in Uganda, 1999–2000: Panel data evidence". *Development policy review*. 2003, 21(4): 481-509.

Desapriya E., Kerr J. M., Hewapathirane D. S., Peiris D., Mann B., Gomes N., Peiris K., Scime G., Jones J. "Bull bars and vulnerable road users". *Traffic Injury Prevention*. 2012, 13: 86-92.

Devkota J. U., Singh S., Prajapati C., Hada B., "Principal components analysis of the socioeconomic conditions of biogas users-with example from Nepal". *International Journal of Renewable Energy Research (IJRER)*. 2014, 4(3): 655-664.

Dey P. K., Hariharan S. "Integrated approach to healthcare quality management: a case study". *The TQM Magazine*. 2006, 18(6): 583-605.

Edelman M. J. "The symbolic uses of politics". University of Illinois Press Urbana-Champaign, USA. 1985.

Ehrlich A., Ross W. "The significance spectrum and EIA significance determinations". *Impact Assessment and Project Appraisal*. 2015, 33(2): 87-97.

Ellis F. "Household strategies and rural livelihood diversification". *Journal of Development Studies*. 1998, 35: 1–38.

Ellis F. "The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*. 2000, 51(2): 289-302.

Elmqvist B., Olsson L. "Livelihood diversification: continuity and change in the Sahel". *GeoJournal*. 2006, 67(3): 167-180.

Esteves A. M. "Mining and social development: Refocusing community investment using multi-criteria decision analysis". *Resources Policy*. 2008, 33: 39-47.

Esteves A. M. "Evaluating community investments in the mining sector using multi-criteria decision analysis to integrate SIA with business planning". *Environmental Impact Assessment Review*. 2008, 28: 338-48.

Esteves A. M., Vanclay F. “Social Development Needs Analysis as a tool for SIA to guide corporate-community investment: Applications in the minerals industry”. *Environmental Impact Assessment Review*. 2009, 29(2): 137-45.

Feldacker C., Ennett S. T., Speizer I. “It’s not just who you are but where you live: an exploration of community influences on individual HIV status in rural Malawi”. *Social Science & Medicine*. 2011, 72(5): 717-725.

Ferraro P. J., Pattanayak, S. K. “Money for Nothing? A Call for Empirical Evaluation of Biodiversity Conservation Investments”. *PLoS Biology*. 2006, 4(4). <https://doi.org/10.1371/journal.pbio.0040105>.

Ferraro P. J. “Counterfactual Thinking and Impact Evaluation in Environmental Policy”. *New Directions for Evaluation*. 2009, 122: 75–84.

Figueira J., Greco S., Ehrgott M. (Eds.) “*Multiple criteria decision analysis: state of the art surveys*”. State of the Art Surveys, Springer, New York, USA. 2005.

Forman R. T., Alexander L. E. “Roads and their major ecological effects”. *Annual Review of Ecology and Systematics*. 1998, 29: 207-231.

Frondel M., Schmidt C. M. “Evaluating Environmental Programs: The Perspective of Modern Evaluation Research”. *Ecological Economics*. 2005, 55(4): 515–26.

Gachassin M., Najman B., Raballand G. “The Impact of Roads on Poverty Reduction: a case study of Cameroon. World Bank, Washington D.C., USA. 2010.

Gautam Y., Andersen P. “Rural livelihood diversification and household well-being: Insights from Humla, Nepal”. *Journal of Rural Studies*. 2016, 44: 239-249.

Grootaert C., Calvo, C. M., *Socioeconomic impact assessment of rural roads: methodology and questionnaires*. Washington, D.C.: Impact Evaluation report, World Bank; 2002 Mar.

Guvele C. A. “Gains from crop diversification in the Sudan Gezira scheme”. *Agricultural Systems*. 2001, 70: 319–333.

Habibi A, Jahantigh FF, Sarafrazi A. "Fuzzy Delphi technique for forecasting and screening items". *Asian Journal of Research in Business Economics and Management*. 2015, 5(2): 130-143.

Haggblade S., Hazell P., Reardon T. "The rural non-farm economy: Prospects for growth and poverty reduction". *World Development*. 2010, 38(10): 1429–1441.

Hair J. F., Black W. C., Babin B. J., Anderson R. E., Tatham R. L. "Multivariate data analysis" 4th ed. Prentice hall, Upper Saddle River, New Jersey, USA. 1995.

Hammersley M. "What is qualitative research?". MPG Books Group, Bodmin, Cornwall. 2013.

Heckman J. J., LaLonde R. J., Smith J. A. "The economics and econometrics of active labor market programs". In: *Handbook of labor economics*. (Ashenfelter O., Card D., Eds), Elsevier, Holland. 1991, 3: 1865-2097.

Hosseini Lou M. H., Sohrabi M. "Predicting and identifying traffic hot spots applying neuro-fuzzy systems in intercity roads". *International Journal of Environmental Science & Technology*. 2009, 6: 309-314.

Hsu Y. L., Lee C. H., Kreng V. B. "The application of Fuzzy Delphi Method and Fuzzy AHP in lubricant regenerative technology selection". *Expert Systems with Applications*. 2010, 37(1): 419-25.

Hussein K., Nelson J. "Sustainable Livelihoods and Livelihood Diversification". Institute of Development Studies, Sussex. 1998.

Isgut A. E. "Non-Farm Income and Employment in Rural Honduras: Assessing the Role of Locational Factors". *Journal of Development Studies*. 2004, 40: 59-86.

Islam R., Musabbir S. R. Ahmed I. U., Hadiuzzaman M., Hasnat M., Hossain S. "Bus service quality prediction and attribute ranking using probabilistic neural network and adaptive neuro fuzzy inference system". *Canadian Journal of Civil Engineering*. 2016, 43: 822-829.

Jang J. S. "ANFIS: adaptive-network-based fuzzy inference system". *IEEE Transactions on Systems, Man, and Cybernetics*. 1993, 23: 665-685.

Jalan J., Ravallion M. "Are there dynamic gains from a poor-area development program?". *Journal of Public Economics*. 1998, 67(1): 65-85.

Janssen R. "On the use of multi-criteria analysis in environmental impact assessment in The Netherlands". *Journal of Multi-Criteria Decision Analysis*. 2001, 10(2): 101-109.

Joshi P. K., Gulati A., Birthal P. S., Twari L. "Agricultural Diversification in South Asia: Patterns, Determinants, and Policy Implications". Markets and Structural Studies Division, International Food Policy Research Institute, Washington, D. C., USA. 2005.

Junior F. R., Osiro L., Carpinetti L. C. "A comparison between Fuzzy AHP and Fuzzy TOPSIS methods to supplier selection". *Applied Soft Computing*. 2014, 21: 194-209.

Katchova A. L. "The farm diversification discount". *American Journal of Agricultural Economics*, 2005, 87: 984-94.

Kahraman C., Yasin Ateş N., Çevik S., Gülbay M., Ayça Erdoğan S. "Hierarchical fuzzy TOPSIS model for selection among logistics information technologies". *Journal of Enterprise Information Management*. 2007, 20(2):143-68.

Kahraman C., Onar S. C., Oztaysi B. "Fuzzy multicriteria decision-making: a literature review". *International Journal of Computational Intelligence Systems*. 2015, 8(4):637-66.

Khandker S., B. Koolwal G., Samad H. "Handbook on impact evaluation: quantitative methods and practices". The World Bank, Washington D.C., USA. 2009.

Kim K., Park K. S. "Ranking fuzzy numbers with index of optimism". *Fuzzy Sets and Systems*. 1990, 35(2): 143-150.

Kanuganti S., Sarkar A. K., Singh A. P. "Evaluation of access to health care in rural areas using enhanced two-step floating catchment area (E2SFCA) method". *Journal of Transport Geography*. 2016, 56: 45-52.

Kanuganti S., Dutta B., Sarkar A. K., Singh A. P. "Development of a need-based approach for rural road network planning". *Transportation in Developing Economies*. 2017, 314.

Keshavarzi A., Sarmadian F., Shiri J., Iqbal M., Tirado-Corbalá R., Omran E.S.E. "Application of ANFIS-based subtractive clustering algorithm in soil cation exchange capacity estimation using soil and remotely sensed data". *Measurement*. 2017, 95: 173-180.

Khandker S. R., Bakht Z., Koolwal G. B. "The poverty impact of rural roads: evidence from Bangladesh". *Economic Development and Cultural Change*. 2009, 57: 685-722.

Khandker S. R., Koolwal G. B. "Estimating the long-term impacts of rural roads: a dynamic panel approach". World Bank Publication, Washington, D.C., USA. 2011.

Kiker G. A., Bridges T. S., Varghese A., Seager T. P., Linkov I. "Application of multicriteria decision analysis in environmental decision making". *Integrated Environmental Assessment and Management: An International Journal*. 2005, 95-108.

Kaufmann A., Gupta M. M. "Fuzzy mathematical models in engineering and management science". Elsevier Science Publishers, North-Holland. 1988.

Leech N. L., Onwuegbuzie A. J. "A typology of mixed methods research design". *Quality and Quantity*. 2009, 43: 265–275.

Lee S., Wong S. C., Li Y. C. "Real-time estimation of lane-based queue lengths at isolated signalized junctions". *Transportation Research Part C: Emerging Technologies*. 2015, 56: 1-17.

Liang G. S. "Fuzzy MCDM based on ideal and anti-ideal concepts". *European Journal of Operational Research*. 1999, 112(3): 682-691.

Liang X, Meng X. "An extended FTOPSIS method for freeway route selection in the pre-feasibility study stage". *Physica A: Statistical Mechanics and its Applications*. 2019, 526: 120871.

Litman T. "Developing Indicators for Comprehensive and Sustainable Transport Planning". *Journal of Transportation Research Record*. 2007, 2017: 10-15.

Liu C., Golding D., Gong G. "Farmers' coping response to the low flows in the lower Yellow River: a case study of temporal dimensions of vulnerability". *Global Environmental Change*. 2008, 18 (4): 543-553.

Liu W. K. "Application of the Fuzzy Delphi Method and the Fuzzy Analytic Hierarchy Process for the Managerial Competence of Multinational Corporation Executives". *International Journal of e-Education, e-Business, e-Management, and e-Learning*. 2013, 3: 313.

Lokesha M. N., Mahesha M. "Impact of Road Infrastructure on Agricultural Development and Rural Road Infrastructure Development Programs in India". *International Journal of Humanities and Social Science Invention*. 2016, 5(11): 1-7.

Lokshin M., Yemtsov R. "Has rural infrastructure rehabilitation in Georgia helped the poor?". *The World Bank Economic Review*. 2005, 19(2): 311-333.

Losch B., Freguin-Gresh S., White E. T. "Structural transformation and rural change revisited: Challenges for late developing countries in a globalizing world". Agence Française de Development and the World Bank, World Bank, Washington, D.C., USA. 2012.

Louwa E., Leijtenb M., Meijersa E. "Changes subsequent to infrastructure investments: Forecasts, expectations and ex-post situation". *Transport Policy*. 2013, 29: 107-117.

Luce C. H., Wemple B. C. "Introduction to special issue on hydrologic and geomorphic effects of forest roads". *Earth Surface Processes and Landforms: The Journal of the British Geomorphological Research Group*. 2001, 26: 111-113.

Madej M. A. "Erosion and sediment delivery following removal of forest roads". *Earth Surface Processes and Landforms: The Journal of the British Geomorphological Research Group*. 2001, 26:175-190.

Majumdar R., *Infrastructure and Economic Development: A Regional Analysis*, [PhD Thesis], Jawaharlal Nehru University, New Delhi, India, 2002.

Mamdani E. H., Assilian S. "An experiment in linguistic synthesis with a fuzzy logic controller". *International Journal of Man-Machine Studies*. 1975, 7: 1-13.

Mashiri M., *Community responses to HIV/AIDS along transit corridors and areas of intense transport operations in eastern and southern Africa*. Karen Nairobi, Kenya: IFRTD/CSIR Transportek, Reports to the UK Department for International Development (Transport Knowledge and Research program); 2004 Apr.

MATLAB and Statistics Toolbox Release. The MathWorks, Inc., Natick, Massachusetts, USA. 2016.

Mele V, Belardinelli P. "Mixed Methods in Public Administration Research: Selecting, Sequencing, and Connecting". *Journal of Public Administration Research and Theory*. 2018, 29: 334-347.

Mehta R. "Rural livelihood diversification and its measurement issues: focus India". Second Meeting, Wye City Group on Statistics on Rural Development and Agricultural Household Income, Rome, Italy, 2009, Jun 11-12.

Millward H., Spinney J. "Time use, travel behavior, and the rural–urban continuum: results from the Halifax STAR project". *Journal of Transport Geography*. 2011, 19: 51-58.

Mishra A. K., El-Osta H. S., Johnson J. D. "Factors contributing to earnings success of cash grain farms". *Journal of Agricultural and Applied Economics*. 1999, 31: 623–637.

Mohapatra J. K., Chandrasekhar B. P., *Rural Roads*. New Delhi: Oxford University Press, India Infrastructure Report 2007; 2007 Feb.

Mohr L. B. "The qualitative method of impact analysis". *American Journal of Evaluation*. 1999, 20(1): 69-84.

Morgan D. L. "Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods". *Journal of Mixed Methods Research*. 2007, 48–76.

Morimoto R. "Incorporating socio-environmental considerations into project assessment models using multi-criteria analysis: A case study of Sri Lankan hydropower projects". *Energy Policy*. 2013, 59: 643-653.

Morris C. N., Ferguson A. G. "Estimation of the sexual transmission of HIV in Kenya and Uganda on the trans-Africa highway: the continuing role for prevention in high risk groups". *Sexually Transmitted Infections*. 2006, 82(5): 368-371.

Mu R., Van de Walle D. "Rural roads and local market development in Vietnam". *The Journal of Development Studies*. 2011, 47(5): 709-734.

Mukherjee M., *Do Better Roads Increase School Enrollment? Evidence from a Unique Road Policy in India*, 2012 Aug.

Available from: <http://dx.doi.org/10.2139/ssrn.2207761>. Accessed on 14 Jan 2018.

Mucsi K., Khan A. M., Ahmadi, M. "An adaptive neuro fuzzy inference system for estimating the number of vehicles for queue management at signalized intersections. *Transportation Research Part C: Emerging Technologies*". 2011, 19: 1033-1047.

Muralidharan K., Prakash N. "Cycling to school: Increasing secondary school enrollment for girls in India." *American Economic Journal: Applied Economics*. 2017, 9(3): 321-350.

Nirban V. S., Metri B. A., Singh A. P., Sandra A. K., Sarkar, A.K. "Socio-economic Benefits of PMGSY Projects: Perceptions of Rural Community". Proceedings of a Seminar on Integrated Development of Rural and Arterial Road Network for Socio-Economic Growth, New Delhi, India, 2003, Dec 5-6, 166-173.

Orr L. L. "Social experiments: Evaluating public programs with experimental methods". Sage, Thousand Oaks, USA. 1999.

Ortiz G., Domínguez-Gómez J. A., Aledo A., Urgeghe A. M. "Participatory multi-criteria decision analysis for prioritizing impacts in environmental and social impact assessments". *Sustainability: Science, Practice and Policy*. 2018, 14: 6-21.

Pamučar D., Lukovac V., Pejčić-Tarle S. "Application of adaptive neuro fuzzy inference system in the process of transportation support". *Asia-Pacific Journal of Operational Research*. 2013, 30.

Pan L., He C., Tian Y., Su Y., Zhang X. "A region division-based diversity maintaining approach for many-objective optimization". *Integrated Computer-Aided Engineering*. 2017, 24(3): 279-96.

Palinkas L. A., Horwitz S. M., Green C. A., Wisdom J. P., Duan N., Hoagwood K. "Purposeful sampling for qualitative data collection and analysis in mixed method implementation research". *Administration and Policy in Mental Health and Mental Health Services Research*. 2015, 42(5): 533-44.

Pedrycz W. "Why triangular membership functions?". *Fuzzy Sets and Systems*. 1994, 64(1): 21-30.

PIB. *Press information Bureau, New Delhi*. 2019

Available from: <http://www.pib.nic.in/PressReleseDetailm.aspx?PRID=1578180>. Accessed on 15 July 2019.

Phogat M. V., Singh A. P. "Selection of equipment for construction of a hilly road using multi criteria approach". *Procedia-Social and Behavioural Sciences*. 2013, 104: 282-91.

Porter G. "Reflections on a century of road transport developments in West Africa and their (gendered) impacts on the rural poor". *EchoGeo*. 2012, 20: 1-14.

Porter G. "Transport services and their impact on poverty and growth in rural Sub-Saharan Africa: a review of recent research and future research needs". *Transport Reviews*. 2014, 34: 25-45.

Pribyl O., Goulias K. G. "Application of adaptive neuro fuzzy inference system to analysis of travel behavior". *Journal of the Transportation Research Board*. 2003, 1854: 180-188.

Ramanathan R. "A note on the use of the analytic hierarchy process for environmental impact assessment". *Journal of Environmental Management*. 2001, 63: 27-35.

Rand J. "Evaluating the employment-generating impact of rural roads in Nicaragua". *Journal of Development Effectiveness*. 2011, 3(1): 28-43.

Reardon T., Taylor J. E., Stamoulis K., Lanjouw P., Balisacan A. "Effects of nonfarm employment on rural income inequality in developing countries: an investment perspective". *Journal of Agricultural Economics*. 2000, 51(2): 266-288.

Relich M., Pawlewski P. "A Multi-agent Framework for Cost Estimation of Product Design". In: Highlights of Practical Applications of Scalable Multi-Agent Systems, The PAAMS collection. (Bajo et al. Eds.), Communications in Computer and Information Science, Springer, Cham. 2016.

Riverson J., Gaviria J., Thriscutt, S., Rural roads in sub-Saharan Africa: lessons from World Bank experience. Washington, D.C.: World Bank; 1991 July. Report No.: WTP 141.

Robinson S. "Measuring service quality: current thinking and future requirements". *Marketing Intelligence & Planning*. 1999, 7(1): 21-32.

Rogers M., Bruen M. "Choosing realistic values of indifference, preference and veto thresholds for use with environmental criteria within ELECTRE". *European Journal of Operational Research*. 1998, 107(3): 542-51.

Ross J., Approximate Reasoning in Hydrogeological Modeling, [PhD. Thesis], University of Vermont, USA, 2008.

Rowan M. "Refining the attribution of significance in social impact assessment". *Impact Assessment and Project Appraisal*. 2012, 27(3): 185-191.

Saaty T. L. "*The Analytic Hierarchy Process*". McGrawHill, New York, 1980.

Saaty T. L. "*Fundamentals of decision making and priority theory with the analytic hierarchy process*". RWS publications, Pittsburgh, USA. 2000.

Schneider E. C., Zaslavsky A. M., Epstein A. M. "Use of high-cost operative procedures by Medicare beneficiaries enrolled in for-profit and not-for-profit health plans". *New England Journal of Medicine*. 2004, 350:143-150.

Schoonenboom J, Johnson R. B. "How to construct a mixed methods research design". *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*. 2017, 69(2):107-131.

Scoones I. "*Sustainable Rural Livelihoods: A Framework for Analysis*". Institute for Development Studies, Brighton, UK. 1998.

Singh A. P., Vidyarthi A. K. "Optimal allocation of landfill disposal site: A fuzzy multi-criteria approach". *Journal of Environmental and Health Science and Engineering*. 2008, 5: 25-34.

Singh A. P., Chakrabarti S., Kumar S., Singh A. "Assessment of air quality in Haora River basin using fuzzy multiple-attribute decision making techniques". *Environmental Monitoring and Assessment*. 2017, 189(8): 373.

Singh A. P., Dhadse K., Ahlawat J. "Managing water quality of a river using an integrated geographically weighted regression technique with fuzzy decision-making model". *Environmental monitoring and assessment*. 2019, 191(6): 378.

Smajgl A., Ward J. "Evaluating participatory research: framework, methods and implementation results". *Journal of Environmental Management*. 2015, 157: 311-319.

SPSS. Statistical Package for Social Sciences (SPSS), IBM, USA. 2015.

Stern E., Stame N., Mayne J., Forss K., Davies R., Befani B. "*Broadening the range of designs and methods for impact evaluations*". DIFD, London. 2012.

Stewart T. J. "Dealing with uncertainties in MCDA". In: Multiple criteria decision analysis: state of the art surveys. (Figueira J., Greco S., Ehrgott M., Eds.), Springer, New York, USA. 2005, 445-466.

Suresh K. P. "An overview of randomization techniques: an unbiased assessment of outcome in clinical research". *Journal of Human Reproductive Sciences*. 2011, 4: 8-11.

Tahriri F., Mousavi M., Haghghi S. H., Dawal S. Z. M. "The application of fuzzy Delphi and fuzzy inference system in supplier ranking and selection". *Journal of Industrial Engineering International*. 2014, 10(3): 66.

Takagi T., Sugeno M. "Fuzzy identification of systems and its applications to modelling and control". *IEEE Transactions on Systems, Man, and Cybernetics*. 1985, 15: 116-132.

Tanle A. "Assessing livelihood status of migrants from northern Ghana resident in the Obuasi Municipality". *GeoJournal*. 2014, 79(5): 577-590.

Tortum A., Yayla N., Gökda M. "The modelling of mode choices of intercity freight transportation with the artificial neural networks and adaptive neuro-fuzzy inference system". *Expert Systems with Applications*. 2009, 36: 6199-6217.

Trombulak S. C., Frissell C. A. "Review of ecological effects of roads on terrestrial and aquatic communities". *Conservation Biology*. 2000, 14:18-30.

Tsunokawa K., Hoban C. (Eds.). “*Roads and the environment: a handbook*”. The World Bank, Washington, D.C., USA. 1997.

Tunde A. M., Adeniyi E. E. “Impact of road transport on agricultural development: a Nigerian example”. *Ethiopian Journal of Environmental Studies and Management*. 2012, 5: 232-238.

Uchida E., Rozelle S., Xu J. “Conservation payments, liquidity constraints, and off-farm labor: impact of the Grain-for-Green Program on rural households in China”. *American Journal of Agricultural Economics*. 2009, 91: 70-86.

Valadez J., Bamberger M. “*Monitoring and evaluating social programs in developing countries: A handbook for policymakers, managers, and researchers*”. The World Bank, Washington, D.C., USA. 1994.

Van de Walle D. “Choosing Rural Road Investments to Help Reduce Poverty”. *World development*. 2002, 30: 575-589.

Van de Walle D. “Impact evaluation of rural road projects”. *Journal of Development Effectiveness*. 2009, 1: 15-36.

Velasquez M., Hester P. T. “An analysis of multi-criteria decision-making methods”. *International Journal of Operations Research*. 2013, 10(2): 56-66.

Vyas S., Kumaranayake L. “Constructing socio-economic status indices: how to use principal components analysis”. *Health Policy and Planning*. 2006, 21(6): 459-468.

Vyas V., Singh A. P., Srivastava, A. “A Decision Making Framework for Condition Evaluation of Airfield Pavements Using Non-Destructive Testing”. In: Airfield and Highway Pavements 2019: Innovation and Sustainability in Highway and Airfield Pavement Technology. (Al-Qadi I. L., Ozer H., Loizos A., Murrell S., Eds.), ASCE, Chicago, Illinois, USA. 2019, 343-353. <https://doi.org/10.1061/9780784482476.034>.

Wagale M., Singh A. P., Singh, A. “Neural networks approach for evaluating quality of service in public transportation in rural areas”. Information Processing (IICIP), 1st India International Conference, New Delhi, India, 2016, Aug 12-14, IEEE, 2016,1-5.

Wagale M., Singh A. P., Sarkar A. K. "Impact of rural road construction on the local livelihood diversification: Evidence from Pradhan Mantri Gram Sadak Yojana in Jhunjhunu district, India". *GeoJournal*. 2019, 1-18. <https://doi.org/10.1007/s10708-019-10007-3>.

Wagale M., Singh A.P., Sarkar A.K. "Exploring Rural Road Impacts Using Fuzzy Multi-criteria Approach" In: Advances in Transportation Engineering. (Pulugurtha S., Ghosh I., Biswas S. Eds), Lecture Notes in Civil Engineering, Springer, Singapore. 2019, 34: 1-12.

Wang Y. M., Chin K. S., Poon G. K., Yang J. B. "Risk evaluation in failure mode and effects analysis using fuzzy weighted geometric mean". *Expert Systems with Applications*. 2009, 36(2): 1195-1207.

Weitzen S., Lapane K. L., Toledano A. Y., Hume A. L., Mor V. "Principles for modeling propensity scores in medical research: a systematic literature review". *Pharmacoepidemiology and Drug Safety*. 2004, 13(12): 841-53.

Wondemu K A., Weiss J. "Rural roads and development: evidence from Ethiopia". *European Journal of Transport and Infrastructure Research*. 2012, 12(4).

Ye F., Li Y. "An extended TOPSIS model based on the possibility theory under fuzzy environment". *Knowledge-Based Systems*. 2014, 67: 263-269.

Yoon K., Hwang C. L. "Multiple attribute decision making: methods and applications". Springer, Heidelberg, Berlin. 1981.

You H., Ma Z., Tang Y., Wang Y., Yan J., Ni M., Cen K., Huang Q. "Comparison of ANN (MLP), ANFIS, SVM, and RF models for the online classification of heating value of burning municipal solid waste in circulating fluidized bed incinerators". *Waste Management*. 2017, 68: 186-97.

Zadeh L. A. "Fuzzy sets as a basis for a theory of possibility". *Fuzzy Sets and Systems*. 1978, 1: 3-28.

Zarghami M., Szidarovszky F. "Revising the OWA operator for multi criteria decision making problems under uncertainty". *European Journal of Operational Research*. 2009, 198: 259-265.

Zhang G., Lu J. “An integrated group decision-making method dealing with fuzzy preferences for alternatives and individual judgments for selection criteria”. *Group Decision and Negotiation*. 2003, 12(6): 501-15.

Zhao Y. “Causes and consequences of return migration: recent evidence from China”. *Journal of Comparative Economics*. 2002, 30(2): 376-394.

Zhao J., Barry P. J. “Income diversification of rural households in China”. *Canadian Journal of Agricultural Economics*. 2014, 62(3): 307-324.

Zimmermann H. J. “Fuzzy set theory”. *WIREs. Computational Statistics*. 2010, 2(3): 317-332.