Public perceptions and willingness to pay for cultural ecosystem services from urban forests

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Public perceptions and willingness to pay for cultural ecosystem services from urban forests

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Abstract

Urban forests provide diverse cultural ecosystem services such as leisure, aesthetic pleasure, physical and psychological benefits, and spiritual experience. As cultural ecosystem services are non-material values, limited research has measured and analyzed public perceptions of cultural ecosystem services. This talk presents a monetary valuation to assess the factors influencing public perceptions of cultural ecosystem services provided by urban forests. The presentation suggests that the willingness to pay survey results can show the relations between the valuation of cultural ecosystem services and variables including gender, income, education level, age, familiarity with forest, and willingness to pay. Moreover, it addresses that citizens' perspectives and their demands, willingness, and involvement in cultural ecosystem services can be analyzed which can be reflected in urban forest management.

Keywords

Cultural ecosystem services, urban forests, stakeholders' perceptions, sociodemographic determinants, willingness to pay, nonmaterial values

Figures and tables

Figure 1. Ecosystem Services (Source: Own illustration)

Figure 2. Cultural Ecosystem Services (Source: Own illustration)

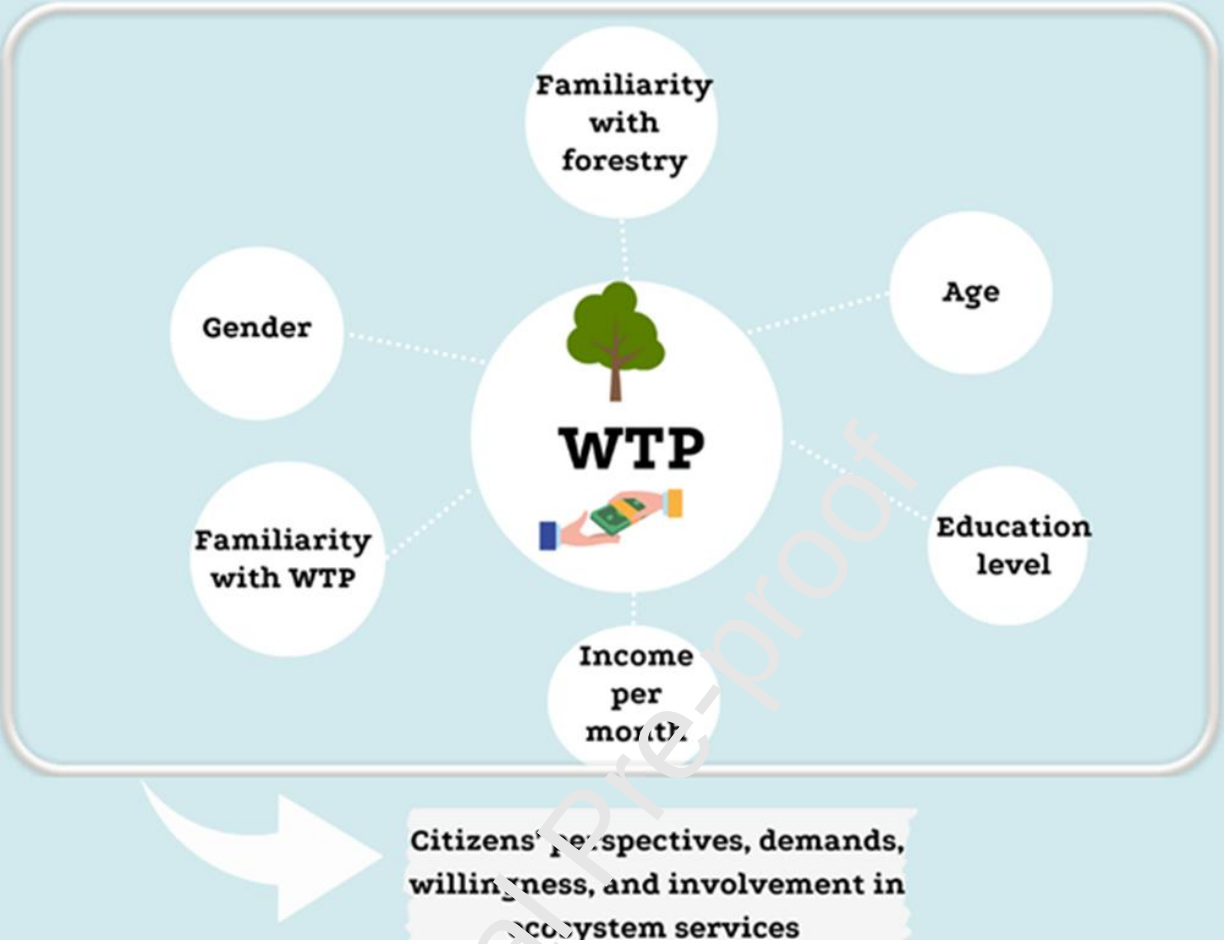

Figure 3. Variables and outcomes from willingness-to-pay (WTP) (Source: Own illustration)

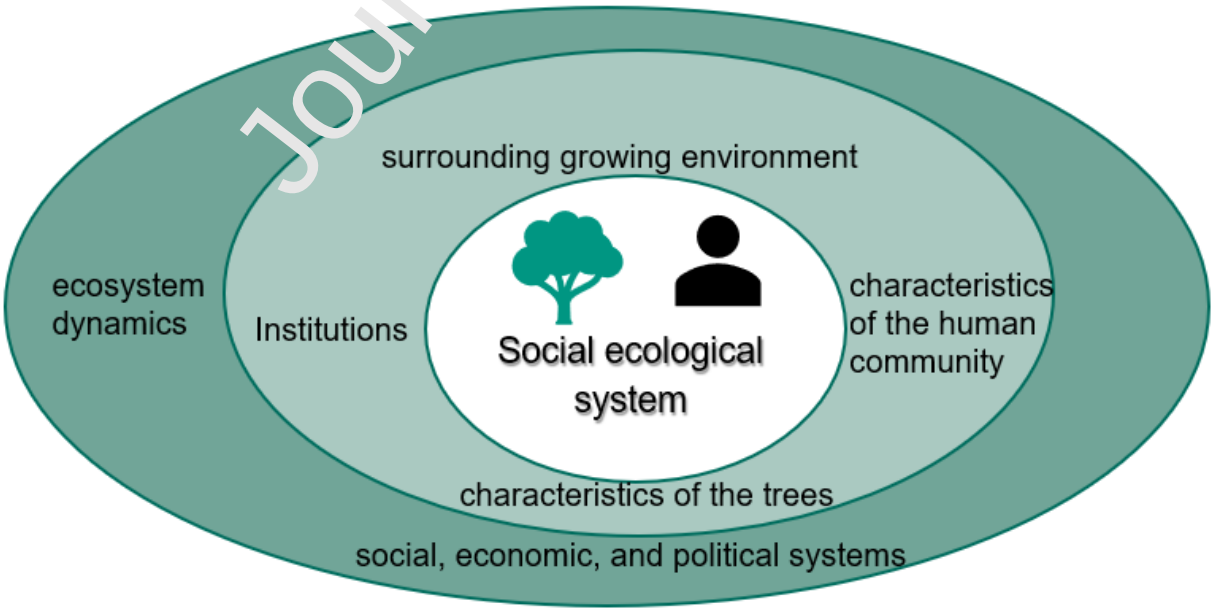

Figure 4. Urban forest as a social-ecological system (Source: Own illustration)

CRediT author statement

Jaewon Son: Conceptualization, Methodology, Writing- Original draft preparation, Visualization
Somidh Saha: Validation, Writing- Review & Editing, Supervision

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Declaration of interests
☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.
☐ The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

References
Andersson, Erik, Maria Tengö, Timon McPhearson, and Peleg Kremer. "Cultural ecosystem services as a gateway for improving urban sustainability." Ecosystem Services 12 (2015): 165-168.

Daniel, Terry C., Andreas Muhar, Arne Arnberger, Olivier Aznar, James W. Boyd, Kai MA Chan, Robert Costanza et al. "Contributions of cultural services to the ecosystem services agenda." *Proceedings of the National Academy of Sciences* 109, no. 23 (2012): 8812-8819.

Haines-Young, Roy, and Marion Potschin. "The links between biodiversity, ecosystem services and human well-being." *Ecosystem Ecology: a new synthesis* 1 (2010): 110-139.

Jorgensen, Erik. Towards an urban forestry concept. Environment Canada, 1974.

Khan, Imran, Hongdou Lei, Gaffar Ali, Shahid Ali, and Minjuan Zhao. "Public attitudes, preferences and willingness to pay for river ecosystem services." International Journal of Environmental Research and Public Health 16, no. 19 (2019): 3707.

Konijnendijk, Cecil C., Robert M. Ricard, Andy Kenney, and Thomas B. Randrup. "Defining urban forestry–A comparative perspective of North America and Europe." Urban forestry & urban greening 4, no. 3-4 (2006): 93-103.

Liu, Yanxu. "The willingness to pay for ecosystem services on the Tibetan Plateau of China." Geography and Sustainability 1, no. 2 (2020): 141-151.

Milcu, Andra Ioana, Jan Hanspach, David Abson, and Joern Fischer. "Cultural ecosystem services: a literature review and prospects for future research." *Ecology and society* 18, no. 3 (2013).

Ostrom, Elinor. "A general framework for analyzing sustainability of social-ecological systems." Science 325, no. 5939 (2009): 419-422.

Pregitzer, Clara C., Mark S. Ashton, Sarah Charlop-Powers, Anthony W. D'Amato, Brent R. Frey, Bram Gunther, Richard A. Hallett, Kurt S. Pregitzer, Christopher W. Woodall, and Mark A. Bradford. "Defining and assessing urban forests to inform management and policy." Environmental Research Letters 14, no. 8 (2019): 085002.

Reid, Walter V., Harold A. Mooney, Angela Cropper, Doris Capistrano, Stephen R. Carpenter, Kanchan Chopra, Partha Dasgupta et al. Ecosystems and human well-being-Synthesis: A report of the Millennium Ecosystem Assessment. Island Press, 2005.

Rolando, Jose L., Cecilia Turin, David A. Ramírez, Victor Mares, Jorge Monerris, and Roberto Quiroz. "Key ecosystem services and ecological intensification of agriculture in the tropical high-Andean Puna as affected by land-use and climate changes." *Agriculture, Ecosystems & Environment* 236 (2017): 221-233.

Salzman, James, Genevieve Bennett, Nathaniel Carroll, Allie Goldstein, and Michael Jenkins. "The global status and trends of Payments for Ecosystem Services." Nature Sustainability 1, no. 3 (2018): 136-144.

Tacconi, Luca. "Redefining payments for environmental services." Ecological economics 73 (2012): 29-36.

Tsujimoto, Masaharu, Yuya Kajikawa, Junichi Tomita and Yoichi Matsumoto. "A review of the ecosystem concept—Towards coherent ecosystem design." Technological forecasting and social change 136 (2018): 49-58.


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Biography

Jaewon Son is a Ph.D. candidate in Geography at the Institute for Technology Assessment and Systems Analysis (ITAS), Karlsruhe Institute of Technology (KIT). She is a German Academic Exchange Service (DAAD) Doctoral Scholarship holder and was awarded a Green Talents Award by the German Federal Ministry of Education and Research (BMBF) for sustainability research. She holds a master's degree in International Development and Cooperation from Korea University.

Dr. Somidh Saha is a senior scientist and research group leader at the Institute for Technology Assessment and Systems Analysis (ITAS), Karlsruhe Institute of Technology (KIT). He searches for solutions to increase the social-ecological resilience of forests to climate change impact through inter- and transdisciplinary approaches. He focuses on understanding the patterns and processes behind the trade-offs between ecosystem services and involving multiple stakeholders to co-create resilient future forests.