



Doctoral course: Advanced Spatio-temporal analysis: Methods in understanding tourists' behavior, 7.5 ECTS

Background and aim of the course

Understanding spatio-temporal behaviour is central for a number of fields related to business studies ranging from consumer behaviour, service marketing, destination organization to mobility and sustainability issues. Understanding how, why and where individuals move in a certain context provide insights into and an understanding of behaviour in relation to spatial patterns, i.e. considering place, space and time.

Using GPS data combined with open data sources and questionnaires, provides a good understanding of how space and time affect individual's behaviour. As the area of research is broad, this course draws on a multi-disciplinary research field where the spatio-temporal analysis are used. By building on research from different areas, such as consumer behaviour, marketing, urban and rural planning, tourism management, cultural geography, the course offers a good insight into different research designs, methods for collecting data, ethical considerations in collecting data on individual mobility, and advanced analysis methods. In the course, both mobile phone data and GPS tracker data will be discussed.

This doctoral course "Advanced Spatio-Temporal analysis" links research on consumer behaviour in general, using tourist behaviour as an example, with spatio-temporal analysis to create an understanding of how place, space, and time influence individuals' and groups of individuals' behavior. The aim of the course is to introduce different methods related to spatio-temporal analysis providing insights into research design, ethical aspects of data collection, methods for analysing GIS data combined with open source street maps.

Learning objectives

The course will enable the student to:

- compare and discuss theoretical grounds and assumptions related to tourists' behaviors and movement patterns
- analyze and reflect on how sociocultural, demographic and psychographic factors affect spatio-temporal behaviours,
- understand how the geographies and range of activities of tourist destinations affect tourists' spatiotemporal behaviour.
- be able to design survey methods for collecting spatiotemporal behavior patterns
- be able to use different analytical methods related to spatiotemporal data.

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Course participants

The ideal course participant is a PhD candidate in service marketing, consumer behavior, tourism geography, destination organization management, who is looking for a method course in big data analysis, or who wants to learn more about spatio-temporal methods. We also invite PhD candidates that wish to broaden their knowledge related to research topics in other management areas or economics. The course takes the point of departure in spatio-temporal analysis in general with examples from research on tourist behavior.

Learning material

The course will be based on journal articles that are discussed at seminars throughout the course. PhD candidates will have access to large data sets that will be used in the laboratory experiment teaching element, where participants will work with the different data sets.

Method of examination

The course will be examined through seminars (mandatory), laboratory teaching elements during the running of the course and a final course paper. The seminars involve discussing and applying literature related to each module of the course. The final course paper aims to relate to course material and further reading to the research interest of the PhD candidate.

Course organization

The course will be given by Uppsala University, Sweden in collaboration with Copenhagen Business School (CBS), Denmark. The following persons are involved as teachers of the course:

- Sabine Gebert Persson, associate professor in marketing, Uppsala University, Sweden (*head of course*)
- Szilvia Gyimóthy, associate professor in tourism marketing, Copenhagen Business School (CBS), Denmark

In the course the following researchers will be participating as guest lecturers:

- Marina Toger, senior lecturer in culture geography, Uppsala University, Sweden
- Mikael Gidhagen, senior lecturer in marketing, Uppsala University, Sweden
- John Östh, professor in urban analytics, OsloMet, Norway
- Noam Shoval, professor in geography, Institute for urban and regional studies, Hebrew University, Israel
- Mauro Ferrante, professor, Dipartimento di Culture e Società, Università degli Studi di Palermo

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Course outline

The course will be divided into three parts, where the emphasis of the last part will be on publication and a discussion on special issues. It will run as a hybrid course during the spring of 2022 and fall 2022, with different themes for each meeting. The parts are as follows (incl. readings)

Part 1 (April 27-28, between 10-16): Research situation in tourism research – meeting with international tourism researchers, workshop – ONLINE

- Historical development of research in the field
- Theoretical perspectives and assumptions related to tourists' spatio-temporal behaviors
- The importance of a geographical characteristics on behaviour, where tourists' and destinations characterized by urban and rural environments will be the focus.
- Introduction to advanced methods and design of spatio-temporal data collection and analysis

Literature for Part 1:

Ahas, R., Aasa, A., Mark, Ü., Pae, T., & Kull, A. (2007). Seasonal tourism spaces in Estonia: Case study with mobile positioning data. *Tourism Management*, 28(3), 898-910.

Caldeira, A. M., & Kastenholtz, E. (2020). Spatiotemporal tourist behaviour in urban destinations: A framework of analysis. *Tourism Geographies*, 22(1), 22-50.

De Cantis, S., Ferrante, M., Kahani, A., & Shoval, N. (2016). Cruise passengers' behaviour at the destination: Investigation using GPS technology. *Tourism Management*, 52, 133-150.

Domènech, A., Gutiérrez, A., & Anton Clavé, S. (2020a). Cruise passengers' spatial behaviour and expenditure levels at destination. *Tourism Planning & Development*, 17(1), 17-36.

Domènech, A., Gutiérrez, A., & Clavé, S. A. (2020b). Built environment and urban cruise tourists' mobility. *Annals of Tourism Research*, 81, 102889.

Hall, C. M. (2015). On the mobility of tourism mobilities. *Current Issues in Tourism*, 18(1), 7-10.

Lew, A., & McKercher, B. (2006). Modeling tourist movements: A local destination analysis. *Annals of Tourism Research*, 33(2), 403-423.

McKercher, B. (2018). The impact of distance on tourism: a tourism geography law. *Tourism Geographies*, 20(5), 905-909.

McKercher, B., Hardy, A. & Aryal, J. (2019) Using tracking technology to improve marketing: insights from a historic town in Tasmania, Australia, *Journal of Travel & Tourism Marketing*, DOI: 10.1080/10548408.2019.1580243

Rather, R. A., Hollebeek, L. D. & Islam, J. U. (2019). Tourism-based customer engagement: the construct, antecedents, and consequences. *The Service Industries Journal*, 39(7-8), 519-540.

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Shoval, N., & Ahas, R. (2016). The use of tracking technologies in tourism research: the first decade. *Tourism Geographies*, 18(5), 587-606.

Xiao-Ting, H., & Bi-Hu, W. (2012). Intra-attraction tourist spatial-temporal behaviour patterns. *Tourism Geographies*, 14(4), 625-645.

Recommended readings (optional):

Casado-Díaz, A. B., Navarro-Ruiz, S., Nicolau, J. L., & Ivars-Baidal, J. (2021). Expanding our understanding of cruise visitors' expenditure at destinations: The role of spatial patterns, onshore visit choice and cruise category. *Tourism Management*, 83, 104199.

Grinberger, A. Y., & Shoval, N. (2019). Spatiotemporal contingencies in tourists' intradiurnal mobility patterns. *Journal of Travel Research*, 58(3), 512-530.

Jaakson, R. (2004). Beyond the tourist bubble? Cruiseship passengers in port. *Annals of Tourism Research*, 31(1), 44-60.

Shoval, N., Kahani, A., De Cantis, S., & Ferrante, M. (2020). Impact of incentives on tourist activity in space-time. *Annals of Tourism Research*, 80, 102846.

Part 2 (May 16-17, between 10-16): Method discussion and supervision, publication strategies I - at campus Uppsala University



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- Advanced geo-data processing methods
- Methods for design and analysis of survey studies related to geo-data processing
- Laboratory experiment teaching elements
- Ethical considerations
- Publication strategies, part I

During part 2, PhD candidates will present a synopsis based in data/method, research mode/literature. Teaching in the form of seminars and workshop where participants will use data sets to test different ways of analyzing the data.

Literature for Part 2:

Abbruzzo, A., Ferrante, M. & De Cantis, S. (2021). A pre-processing and network analysis of GPS tracking data. *Spatial Economic Analysis*, 16 (2), 217-240.

Ellegård, K. (2018). *Thinking Time Geography: Concepts, Methods and Applications*. (1st ed.) Routledge. <https://doi.org/10.4324/9780203701386>

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Eccleston, R.E., Hardy, A. & Hyslop, S. (2020). Unlocking the potential of tracking technology for co-created tourism planning and development: insights from the Tourism Tracer Tasmania project, *Tourism Planning & Development*, 17:1, 82-95, DOI: 10.1080/21568316.2019.1683884

Ferrante, M., De Cantis, S., & Shoval, N. (2018). A general framework for collecting and analysing the tracking data of cruise passengers at the destination. *Current Issues in Tourism*, 21(12), 1426-1451.

Gong, L., Sato, H., Yamamoto, T., Miwa, T., & Morikawa, T. (2015). Identification of activity stop locations in GPS trajectories by density-based clustering method combined with support vector machines. *Journal of Modern Transportation*, 23(3), 202-213.

Han, Y., Yang, G., & Zhang, T. (2021). Spatial-temporal response patterns of tourist flow under entrance tourist flow control scheme. *Tourism Management*, 83, 104246.

Hardy, A., Birenboim, A., & Wells, M. (2020). Using geoinformatics to assess tourist dispersal at the state level. *Annals of Tourism Research*, 82, 102903.

Hardy, A., Vorobjovas-Pinta, O., Wells, M., Grimmer, L., Grimmer, M. (2021). Measuring cruise passenger dispersal through technology, *Annals of Tourism Research*, 103319, DOI: 10.1016/j.annals.2021.103319.

Hardy, A., Hyslop, S., Booth, K., Robards, B., Aryal, J., Gretzel, U., & Eccleston, R. (2017). Tracking tourists' travel with smartphone-based GPS technology: a methodological discussion. *Information Technology & Tourism*, 17(3), 255-274.

Lau, G., & McKercher, B. (2006). Understanding tourist movement patterns in a destination: A GIS approach. *Tourism and Hospitality Research*, 7(1), 39-49.

Lewis, G. K., Hardy, A., Wells, M. P., & Kerlake, F. L. (2021). Using mobile technology to track wine tourists. *Annals of Tourism Research Empirical Insights*, 2(2), 100022.

Navarro-Ruiz, S., Casado-Díaz, A. B., & Ivars-Baidal, J. (2020). Modelling the intra-destination behaviour of cruise visitors based on a three-dimensional approach. *Journal of Destination Marketing & Management*, 18, 100470.

Vanhoof, M., Hendrickx, L., Puussaar, A., Verstraeten, G., Ploetz, T., & Smoreda, Z. (2017). Exploring the use of mobile phone data for domestic tourism trip analysis. *Netcom. Réseaux, Communication et Territoires*, 31(3/4), 325-372.

Zoltan, J., & McKercher, B. (2015). Analysing intra-destination movements and activity participation of tourists through destination card consumption. *Tourism Geographies*, 17(1), 19-35.

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Part 3 (September 20-22 10-16): Workshop course paper and publication strategies II – HYBRID: at Copenhagen Business School or ONLINE (participant chooses)



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- Course paper presentation and seminar discussion
- Publication strategies, part II

During Part 3, PhD candidates will present own research design, data collection and analysis. In relation to presentation of course papers, there will be an opportunity to contribute to a special issue in a journal.

IT solutions

In the course programs for running GIS analysis will be used. This is also why Part II of the course need to be taking place at the campus at Uppsala University where the program is available. Furthermore, Studium (also called Canvas) is the LMS used for the course. For the online occasion (Part I) and the HYBRID occasion, the communication tool Zoom will be used.

How to apply

If you want to participate in the course, you send an e-mail to Golondrian Janke, Golondrian.janke@fek.uu.se.

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