

Funded PhD positions in Logistics

The section of Supply Chain Management at the department of Technology & Operations Management seeks an enthusiastic and talented candidate for a PhD positions in logistics. The PhD candidates will work on a funded project, which is described below. The research environment and required profile of the candidate is given below as well.

1 Description of the research project

Sharehouse: Human-Technology interaction in warehouse environments

Human behavior has been demonstrated to be very influential in determining performance outcomes of logistical processes. At the same time, existing research has only lifted a small part of the veil on the interactions between human behavior and the design and outcomes of operational processes. A particular challenge in the field is posed by the rapid development of automation and robotization in logistics and manufacturing operations. Complete automation of the most essential tasks is technically often still impossible, and for the large majority of companies financially unfeasible. The fact that in these sectors many jobs are being replaced by robots, does therefore not mean that behavioral research in this context is obsolete. Instead, the nature and importance of the remaining jobs changes drastically, as workers will be required to closely cooperate with robots and automated systems. Recent studies explore the potential and pitfalls of robotization from the perspective of human factors. For example, the variety and physical nature of a job might change completely if a robot takes over a part of an employee's tasks, which will impact the motivation, job satisfaction, and ergonomics experienced by workers. From the perspective of behavioral operations management, of which the scope explicitly includes the operational performance outcomes of the studied processes, the robotization development creates innovative research opportunities at the interface between normative automated procedures and employee behavior. Identifying the optimal conditions for cooperation between employees and robots is not only required to achieve short term performance objectives, but also from the perspective of achieving sustainable operations in the long run. These objectives will be addressed using experimental research in a real-life warehouse environment that allows to test human-robot collaboration in various setups. Applying for this project requires a background in quantitative empirical research and statistical techniques. Experience with experimental research is desirable.

Additional information about the project can be obtained from dr. Jelle de Vries (jvries@rsm.nl) or prof.dr. René de Koster (rkoster@rsm.nl)

2 Research environment

Department of Technology & Operations Management

The position is in the department of Technology & Operations Management (section SCM, Supply Chain Management). Within this department, we have a strong tradition in conducting research that is inspired by business challenges and is often carried out in close cooperation with companies. The SCM Section of the Department of Technology & Operations Management at Rotterdam School of Management offers a high-profile MSc Program in Supply Chain Management, one of the world's

best ranked master programs in Supply Chain Management. The SCM section has a large, young, and highly international faculty.

The research team in Supply Chain Management and Logistics is at the forefront of the developments in its domain. Therefore, it plays an important influential role in large networks, both in the academic world and in industry. Examples of partner companies are Philips, DHL, DSM, Port of Rotterdam, Albert Heijn, and Netherlands Railways. These networks provide ample opportunities for cooperation. Ph.D. students are encouraged to make a research visit to one of the top universities in the group's network, such as MIT, University of Bologna, and HEC Montreal.

ERIM-LIS

The ERIM-LIS (Business Processes, Logistics, and Information Systems) research program consists of three main research themes: *(i)* Supply Chain Management; *(ii)* Business Information Management, and *(iii)* Innovation Management. The reader of this project description on Supply Chain Management is encouraged to visit the other project descriptions within the LIS-program as well.

The aim of the ERIM-LIS research group is to be at the forefront of the developments in its domain and to make major contributions both to management science and to management practice. The research aims to contribute significantly to the leading role of the Netherlands as a gateway to Europe and as an innovative country. Much of the research is inspired by business challenges, and by the new opportunities of innovative information and communication systems, and technologies.

The research in the ERIM-LIS program is inter-disciplinary, integrating both quantitative and empirical research methods. Around the main research themes several research centres have been built (e.g. Smart Port, Behavioural Operations, Closed Loop Supply Chains, Optimization in Public Transport, Procurement, and Future Energy Business), which are used to focus the research, to acquire external funding, and to disseminate the research findings.

Expected output

The research team in Supply Chain Management and Logistics focuses on research that leads to publications in highly ranked scientific journals such as Production and Operations Management, Journal of Operations Management, and Transportation Science. The research in this Ph.D. project also aims at several highly ranked publications. Moreover, the open Ph.D. project should lead to the publication of a Ph.D. thesis after 4 years. Nowadays it is usual that a Ph.D. thesis consists of a number of high-quality papers that have been published already or that have been accepted for publication.

Scientific relevance

The aim of the research in the area of Supply Chain Management and Logistics is to be at the forefront of the developments in its domain and to make major contributions to management science. The research aims to contribute significantly to the leading role of the Netherlands as a gateway to Europe and as an innovative country. Much of the research is inspired by business challenges in Supply Chain Management and Logistics, and by the opportunities of innovative information and communication systems, and new technologies. The research group aims at carrying out high quality research that can be published in highly ranked scientific journals. The research group has an excellent publication track record in these journals.

Societal relevance

Supply Chain Management and Logistics are important to the Netherlands. It is ranked 4th worldwide according to the Logistics Performance Index of the Worldbank. Due to its natural geographical location, the Netherlands and in particular Rotterdam serve as gateway to Europe. A large part of American and Asian multi-national companies have their European distribution centers in the Netherlands. The importance of research in Supply Chain Management and Logistics has been recognized by the Dutch Government, as Logistics is currently one of the nine top sectors that will benefit from research stimulation funds. Also at the European level, Logistics and Transportation are considered as highly relevant areas for research.

3 Required profile of a candidate

Candidates applying for the current Ph.D. position should:

- Ideally have a background in business/management studies or economics. In terms of methodological skills, candidates preferably have proven expertise and interest in empirical research methods (experiments, surveys, data-analysis)
- Meet the ERIM Admission requirements (<https://www.irim.eur.nl/doctoral-programme/phd-in-management/admissions/admission-requirements/>), particularly in terms of GMAT/GRE and TOEFL/IELTS scores.