Case Study
Exam Call 24.06.2025 – Travel Reimbursement

Description

In many organizations, staff members travel for work. They travel to customers, to conferences or to project meetings and these travels are sometimes expensive. As an employee of an organization, you do not have to pay for your own travel expenses, but the company takes care of them.

At Eindhoven University of Technology (TU/e), this is no different. The TU/e staff travels a lot to conferences or to other universities for project meetings and/or to meet up with colleagues in the field. And, as many companies, they have procedures in place for arranging the travels as well as for the reimbursement of costs.

On a high level, we distinguish two types of trips, namely domestic and international.

For domestic trips, no prior permission is needed, i.e. an employee can undertake these trips and ask for reimbursement of the costs afterwards.

For international trips, permission is needed from the supervisor. This permission is obtained by filing a travel-permit and this travel permit should be approved before making any arrangements.

To get the costs for a travel reimbursed, a claim is filed. This can be done as soon as costs are actually payed (for example for flights or conference registration fees), or within two months after the trip (for example hotel and food costs which are usually payed on the spot).

The data is split into travel permits and several request types, namely domestic declarations, international declarations, prepaid travel costs and requests for payment, where the latter refers to expenses which should not be related to trips (think of representation costs, hardware purchased for work, etc.).

The data is available for download here: (and is available as a collection in the 4TU center for research data: https://doi.org/10.4121/uuid:52fb97d4-4588-43c9-9d04-3604d4613b51)

- Requests for Payment (should not be travel related): 6,886 cases, 36,796 events: RequestForPayment.xes
- Domestic Declarations: 10,500 cases, 56,437 events: DomesticDeclarations.xes
- Prepaid Travel Cost: 2,099 cases, 18,246 events: PrepaidTravelCost.xes
- International Declarations: 6,449 cases, 72151 events: InternationalDeclarations.xes
- Travel Permits (including all related events of relevant prepaid travel cost declarations and travel declarations): 7,065 cases, 86,581 events: PermitLog.xes

An explanation on the data attributes can be downloaded here: Explanation TRX records EN

Assignment

Describe the Knowledge Uplift Trail that allows you to provide answers to the analytical goals.

In particular, define:

- Filtering steps to remove noise or irrelevant data.
- Segments of the log distinguishing cases based on different cost centers/departments/projects etc.
- Compare the segments to verify their significant correlations with properties that may be connected to effectiveness (case size, case duration, reworked activities).
- Assess whether the process minimizes complications (e.g., unnecessary delays, high rejection rates).
- Identify potential improvements (e.g., automation, reordering steps) to enhance efficiency.