

## Scientific report of the Short Term Scientific Mission by Özlem Karsu

### COST Action IS 1304

Dear members of the COST Action IS1304 Management Committee,

Thank you for accepting my application for a Short term Scientific Mission, under which I visited the Strathclyde Business School to work on methods for *incorporating expert judgements about equity concerns into evaluation of public health interventions*.

#### ***Purpose of the STSM***

The research topic that is explored during the mission aims to improve the decision making process of (health care) policy makers, by using systematic decision support, which explicitly handles (multi-dimensional) equity concerns and which uses expert judgement whenever necessary throughout the decision process. Equity concerns arise in various resource allocation settings, a typical example of which is health care technology assessment problem. Equity concerns are a major policy issue in public health and a key issue on which expert judgements are often sought.

This mission is motivated by my desire to propose a decision support system to the health care policy makers in Turkey, which explicitly considers multiple criteria, especially equity in multiple dimensions, and which can handle expert judgement in a structured, transparent and scientific way. As Turkey has recently changed his health system [1] there is a need to re-structure the decision making models for the new system. The changes made to the system aimed to enhance equity over different population segments in Turkey; hence the proposed decision support system should explicitly take equity concerns into account. Also, it is known that expert judgements are used during the decision making process in health care resource allocation, however there is not much transparency in how these judgements are aggregated and incorporated into the decision making process in Turkey. Similarly, there is a need to incorporate decision makers' preferences in these policy making decisions. Therefore, any decision support system should involve methods that elicit, aggregate and incorporate expert judgments and decision maker preferences.

I am currently in the Health Policies Scientific Consultancy Committee of the Social Security Institution (SSI) of the Republic of Turkey. One of the purposes of this scientific mission was to increase my knowledge about the new ways of bringing equity considerations and expert judgement into the relevant policy making problems SSI faces. I am planning to inform the policy makers in the SSI Turkey of the available scientific methods and increase their awareness of the benefits of using scientific methods while making their decisions.

#### ***Description of the work carried out during the STSM***

During this visit I learnt from the work of the members of the COST Action about new ways of bringing multi-dimensional equity concerns and expert judgement to bear in this important area.

The main activities that I performed are summarised below.

I met faculty members at the Strathclyde Business School (SBS) and learnt more about the research areas they work in. I greatly benefited from the discussions with Mrs. Abigail R Colson, Mr. Itamar Megiddo, on elicitation and use of expert judgements and on incorporating equity concerns in the health care technology assessment domain. I had several meetings with Professor Alec Morton on ways of incorporating expert judgements about equity concerns into evaluation of public health interventions.

I attended a meeting at the National Institute for Health and Care Excellence (NICE) International with Dr. Kalipso Chalkidou and Mr. Francis Ruiz. In this meeting I learnt more about NICE's role in the health care resource allocation decisions in the UK and the support they provide to other (mostly developing) countries they work with. Over the years they also had a number of interactions with Turkish colleagues from the Ministry of Health (MOH) and Social Security Institute (SSI), among others, involving short courses in Health Technology Assessment (HTA) and the development of a clinical guideline.

This meeting was valuable and will help me develop skills to act as a consultant in various policy making settings that involve the systematic use of expert judgements about uncertainty and preferences. We also had discussions on the health care system in Turkey, which helped me verify the need for more structured and transparent decision making procedures in Turkey. We talked about the important problems that arise in the Turkish health system that are to be addressed. These problems involved using expert judgement in a structured way and handling equity concerns. The meeting also helped me to extend my professional network and increased the possibility of future collaborations.

I met Dr. Nikos Argyris from the University of Loughborough, who is also a member of the COST Action. We discussed potential collaborations we can make especially in terms of handling equity concerns and incorporating decision maker preferences in resource allocation decisions. The work has the potential to build a more explicit link with inequality-aversion and risk-aversion literature (by making use of stochastic dominance concepts). We believe it should be possible to use concepts from the theory of stochastic dominance (and specifically multidimensional stochastic dominance) to develop insights and build practical procedures for decision makers to incorporate expert judgements in a systematic way.

I am going to submit a project proposal to Scientific and Technological Research Council of Turkey and initiate a research project *on developing a decision support system that uses expert judgements and incorporates equity concerns in various resource allocation settings where equity concerns on multiple dimensions exist*. The methodologies developed will be applicable to many resource allocation problems but they will be demonstrated on health care resource allocation applications. Elicitation and incorporation of expert judgment and preference information are very relevant in the health technology assessment and health care resource allocation domains [2]. Proposing structured and novel ways of using expert judgement, handling multi-dimensional equity concerns and incorporating preference information from the decision makers are the main research objectives of the project.

### ***Description of the main results obtained***

This funding gave me the opportunity to collaborate with experts in the area of expert judgement from a range of disciplines and hence it accelerated my participation in the COST Action network. I believe that the information exchange with other researchers in the host institution benefited both parties.

This visit accelerated my participation in the academic network and also helped me develop skills to act as a consultant in various policy making settings that involve the systematic use of expert judgements about uncertainty and preferences. I hope to sustain my relationship with the researchers at the Strathclyde Business School through new research collaborations. I am also planning to have future engagements with NICE International through projects on improving the decision making in Turkish health care system. I aim to increase informed decision making in resource allocation, especially in the area of health care resource allocation as this is one of the areas relevant to almost every member of the society and has significant consequences on people's wellbeing.

The main output of the visit will be the project proposal I will submit to the Scientific and Technological Research Council of Turkey. The project work has the potential to lead to publications in academic journals and presentations in academic conferences. Moreover, the project plan involves a thorough review of the state-of-the-art methods used for elicitation of preferences, which might lead to a chapter in the book, which is planned to be one of the products of this COST Action.

### **References**

- [1] R Atun, S Aydın, S Chakraborty, et al. "Universal health coverage in Turkey: enhancement of equity", *Lancet*, 382 (2013), pp. 65–99
- [2] L Bojke and M Soares, "Decision Analysis: Eliciting Experts' Beliefs to Characterize Uncertainties", in *Encyclopedia of Health Economics*, eds: A.J. Culyer, 149-154