

## Report on the outcomes of a Short-Term Scientific Mission<sup>1</sup>

Action number: CA21129

Grantee name: Cengiz Erisen

### **Details of the STSM**

Title: **Building Computational Social Science Capacity: A Collaborative Initiative**

Start and end date: **28/08/2024 to 04/09/2024**

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

**Exchange of information on the current standing of the field:** During my discussion with Dr. Weber at Rutgers, we explored the positioning of Computational Social Science (CSS) within broader academic fields. Dr. Weber emphasized that CSS integrates data science, social sciences, and political science, using computational methods to tackle complex social phenomena. We discussed how CSS serves as a bridge, combining data science's technical expertise with social sciences' theoretical insights. Dr. Weber noted that CSS is may advance scholarly research, particularly in analysing large datasets to study public opinion, misinformation, and social networks. Our conversation also touched on network science's role in CSS, highlighting its tools for mapping social interactions and understanding digital communication flows. We agreed that CSS's integration of survey data with digital big data represents a transformative approach to studying human behaviour.

**Establishment of the Labs:** Dr. Weber provided valuable insights into the establishment of the CSS Lab at Rutgers, describing it as a key hub for interdisciplinary research. The lab is (although virtually) equipped with advanced computing facilities that support data analysis, simulation, and modeling, creating an environment conducive to collaborative work among researchers from various fields, particularly communication and information sciences. We also discussed the role of the Comm Lab (led by Dr. Weber as well), which complements the CSS Lab. Dr. Weber emphasized the virtual aspects of both labs, which enable remote collaboration, data sharing, and access to computational resources, fostering partnerships. We reviewed the essential software used, including R, Python, and Gephi, which are critical for conducting high-level computational research. These discussions provided a strong foundation for considering similar lab setups at Yeditepe University.

**Course content and principles:** Our discussions about the CSS course at Rutgers revealed that the course, initially for communication students, is expanding to a broader audience, reflecting CSS's interdisciplinary nature. Dr. Weber explained that Rutgers offers both undergraduate and graduate courses, with advanced classes for PhD students focusing on hands-on data analysis and computational methods. I will receive further course details from Dr. Ognyanova and an ICPSR syllabus from Dr. Shugars,

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<sup>1</sup> This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.

both of whom are faculty members at the CSS Lab and the Communication Department at Rutgers. Dr. Weber's insights into the course structure will help shape a similar curriculum at Yeditepe University.

**Meet up with the COST OPINION Member Dr. Zelenkauskaitė in Philadelphia:** After my visit to Rutgers, I traveled to Philadelphia, where I met Dr. Zelenkauskaitė at Drexel University. This meeting greatly enhanced my understanding of CSS. We discussed the need to develop CSS courses at Yeditepe University at both undergraduate and graduate levels. Dr. Zelenkauskaitė highlighted CSS's relevance to the COST action, emphasizing its role in advancing research and capacity-building goals. We also explored how CSS could be adapted for teaching in developing countries, aligning with Yeditepe's mission to expand computational skills among its students. This exchange underscored the importance of building a robust CSS framework at Yeditepe, drawing on the elements observed at Drexel.

**Connections with the MoU objectives of OPINION:** The STSM visit primarily aligns with the Research Coordination objective 1 involving the exchanges I had with Dr. Weber at Rutgers and Dr. Zelenkauskaitė at Drexel. Also, within the same objective, exploration of the integration of CSS in Turkish academia and at Yeditepe addresses the need for a common understanding of opinions and their expressions in digital environments. Plus, in line with Research Coordination objective 2 and Capacity Building objective 3, the insights into interdisciplinary research and the potential development of a similar lab at Yeditepe aims to facilitates knowledge exchange across fields and institutions. Within the Capacity Building objective 1, my discussions on CSS course development and the importance of adapting CSS teaching methods for diverse educational contexts potentially expands the network's educational and training missions.

### **Description of the STSM main achievements and planned follow-up activities**

During the STSM, my discussions with Dr. Weber at Rutgers highlighted CSS as a vital intersection of data science and social sciences, with potential to transform research on public opinion, misinformation, and social networks. Insights from the CSS Lab at Rutgers, including its virtual capabilities and use of software, provided a strong model for establishing a similar lab at Yeditepe University. Additionally, the CSS courses at Rutgers, expanding beyond communication students to include broader audiences, offered valuable guidance for curriculum development at Yeditepe. With that regard, the STSM visit achieved all that it aimed for. Equally important was that the meeting with Dr. Zelenkauskaitė at Drexel further enriched my understanding of CSS (and its applications in scholarly research) and the goals of the STSM visit. We identified the need for CSS course at Yeditepe and discussed adapting CSS teaching methods for developing countries, aligning with the COST action's goals. This exchange reinforced the importance of building a robust CSS framework at Yeditepe University. Both of these achievements particularly contribute to OPINION's Capacity Building Objective 3.

With regards to research engagement and collaboration, in our research discussions with Dr. Weber (and Dr. Ognyanova and Dr. Shugars), we explored the diverse sources of data in CSS, primarily focusing on social media platforms. The data can vary significantly depending on the platform -- Twitter and Reddit generally offer more accessible data through APIs, making them popular choices for research. In contrast, platforms like YouTube, TikTok, and especially WhatsApp pose more challenges due to restricted access, varying data formats, and privacy concerns. Extracting data from platforms with open APIs, such as Twitter, is relatively straightforward compared to closed or semi-closed platforms like TikTok, where scraping or more complex methods might be required. Despite these challenges, we discussed the potential for collaborative research projects and publications, recognizing that future discussions would be necessary to outline specific opportunities and areas of joint work.

Similarly, during my meeting with Dr. Zelenkauskaitė, we discussed our personal research orientations within the realm of CSS. Dr. Zelenkauskaitė shared insights into her work, which focuses on analyzing digital communication patterns and the impact of technology on social behavior. This aligns closely with my own research interests, particularly in studying misinformation and conspiracy theory beliefs. We explored how computational methods can be applied to analyze these phenomena, examining how misinformation spreads across social media platforms and its influence on public opinion. Our conversation highlighted the complementary nature of our research areas and the potential for collaborative studies, particularly in understanding the dynamics of belief formation in digital spaces.

Also, I have already shared a paper with the scholars that I have met during the visit. I hope to develop research collaboration with these scholars and will keep in touch with them for opportunities of exchange in the near future.