**Ph.D. in Data Analytics and Decision Science:**

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**"Data sharing: an enabling factor for the development of data driven services in the emergency context"**

Abstract

The increasing volume of data generated by individuals and organizations combined with the technological development of storing and processing data systems provide significant growth and innovation potential. Data-driven innovations have the potential of generating enormous benefits by enabling several applications in different fields. For example, data data-driven services can improve healthcare through personalized medicine, create new mobility solutions and improve sustainability and efficiency.

The growing attention towards the opportunities provided by data led organizations to explore the possibility of accessing other sources of data seeking new untapped potential deriving from the combination of different data sources. The relevance of data sharing if further exacerbated in emergency context characterized by profound and rapid transformation. The recent COVID-19 outbreak highlighted the importance of data for increasing situational awareness, hence enabling effective and timely decision-making. However, despite the undergrounded optimisms around data sharing practices, these initiatives often fail. Several sources of concern, indeed, arise when data sharing initiatives are undertaken, including the loss of control of data, privacy or security violation. The need of promptly implement data sharing initiatives during the emergency also posed new challenges, for example, the need of integrating heterogeneous sources of data and the lack of resources for collecting, structuring and managing data.

Mitigating the potential risks while untapping the potential of data sharing became fundamental for the development of data-driven services and products. Addressing this need, the aim of the study is to analyse data sharing processes in the context of the emergency with a view to identifying opportunities provided by data sharing and major challenges to be faced. The thesis comprehends four chapters dedicated to the analysis of data sharing, considering the extended definition of the concept. Considering the entire life cycle of data flow, data sharing includes three phases: deposition, integration and translation. The first phase refers to the provision of data made accessible to other organizations. Secondly, the integration consists in combining different data sources. Thirdly, the data translation refers to the translation of data into actionable information. The four chapters are dedicated to different organizational and data settings to gather insights on specific dynamics that characterize diverse contexts. From an organizational perspective, three different settings are defined according to the actors involved in the process: i) intra-organizational, ii) inter-organizational, and iii) social data sharing. From the data perspective, two different data settings were analysed: i) time and position-dependent data and ii) time,

position and identity-dependent data. It is worth mentioning that specific research questions addressed in each chapter were motivated by real-world problems that emerged during the COVID-19 pandemic. Aside from the theoretical contributions of the thesis, the definition of research questions stemming from real-world problems contributed to the achievement of findings with proven practical implications.