Online shopping has an increasing impact on the environment in terms of the related ‘last mile’ processes, which lies in the CO2 emissions. Thus, this study compares transport-related CO2 emissions of online and conventional shopping in terms of supply, home delivery and travel data from consumers to a physical store branches in the capital of Jordan “Amman”. Real data were collected from consumers and analyzed to highlight the different factors that affect CO2 emissions, such store supply, consumer trip distance to physical store, first-attempt failed delivery, returns. The results show that online shopping play an important role in minimizing CO2 emissions including all the related processes to such shopping mode. However, conventional hopping can be more environmentally friendly shopping mode in case the store distance to travel is short. In addition, the use of public transport mode for traditional shopping and the shopping behavior of the consumers are considered as advantages for such shopping mode.

38.
39.

**Index Terms**

Computer Science
Information Sciences

**Keywords**

Online shopping, Conventional shopping, CO2 emissions, Emission factors, Amman