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Navigating trade-offs in food supply chain: SME study in food supply chain based in North-West UK

*Dr Santosh Salunkhe (s.salunkhe@mmu.ac.uk),
Manchester Metropolitan University*

*Dr Roula Michaelides (r.michaelides@mmu.ac.uk),
Manchester Metropolitan University*

*Dr Zenon Michaelides (z.michaelides@mmu.ac.uk),
Manchester Metropolitan University*

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Abstract:

As the world is overcoming the ripple effects of the pandemic, SMEs who are primarily dependent on logistics, are now faced with rising fuel costs and the Government's environmental regulations [1]. Climate change has endangered the balance of natural ecosystems and threatened the human food supply and living environments and thereby has become an essential concern for the international community [2]. Greenhouse gas emissions produced globally cause 4.2 million deaths owing to chronic diseases caused by air pollutants [3]. Consequently, reducing emissions has become one of the most significant international discussions and responsibilities and is being shared between regions, countries and individuals [4]. Notably, the global transition for cleaner air and low-carbon economies is firmly embedded in the UN. Sustainable Development Goals (SDGs), thereby offer a shared blueprint for people, the planet, prosperity, peace and partnership.

Many major economies the US, EU and UK have committed to net zero GHG emissions by 2050. Current commitments are, however, unmatched by action. The UK government for example, though among the first to set a legally binding target of net zero by 2050 has implemented only 11 of the 92 policy recommendations from its climate change committee and is not on track to meet the net zero or the medium-term carbon budgets. Similarly, the authors feel that attaining carbon net zero or following regulations of the government for SMEs is unrealistic. To overcome this scenario, researchers are setting achievable goals and realistic feasible action plan.

In this research, we focus on the transport sector, a significant and stubborn emitter. Decarbonization of transport has wider ramifications beyond the sector as large amounts of society depend on transport to function. There are umpteen numbers of research published and several solutions available to offset the carbon footprint. Often the solutions like investment in green projects namely solar and planting trees are not feasible for the business for two reasons.

Firstly, they are expensive. Secondly, they are not effective for the effort and finances involved. As per the data, offsetting carbon of one car requires 730 trees equivalent to 7 acres of plantation. Especially for SMEs in the supply chain or logistics sector who run on low margins, this may be even more challenging. Typically, they have a large fleet primarily dependent on fossil fuels.

This study is based on research done in an SME based in one of the deprived areas of the UK offering employment to nearby residents. This SME offers food products to local and regional educational and social organizations. So this is a piece of the first stage of research where synergy, trade-offs and conflicts between supply chain and sustainability were studied. In the second stage, this would further be tested at other major wholesale suppliers based in other regions of the country.

This research attempts to provide a framework for SMEs primarily offering logistics services. The framework and actions related to routing factors could be implemented to reduce fuel consumption. This approach is more relevant in the current scenarios where the global pandemic has challenged all organizations financially and the political situations have resulted in a substantial rise in fuel costs. This approach of focusing on low-hanging fruits would ultimately help the SMEs to start their journey towards sustainability relatively more realistically and feasibly.

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