COVID-19 can speed up the use of technology in supply-chain sustainability audits

The COVID-19 crisis has disrupted supply chains around the world. The last several months have seen massive drops in industrial production, widespread export restrictions, and renewed discussions on the need to rethink supply chain business models. Travel restrictions, lockdowns, and facility closures have also prevented certification of supplier practices and products. Our research has studied how technology can be used to reinforce the cracks in the foundation of supply chain risk management.

Customers interested in securing sustainable products, for example, rely on suppliers possessing certifications to voluntary sustainability standards (VSS). VSS are widely-used for products such as bananas, coffee, and palm oil, as well as in sectors such as forestry and fisheries. For instance, about 11% of the world's forest area is certified under a sustainable forestry standard, notably the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC).

Supply chain certifications, including for VSS, are granted following a rigorous audit by trained third-party auditors. Most audits have traditionally been conducted on-site, and are heavily reliant on direct inspections and observations by the auditor. COVID-19, however, has severely limited the completion of on-site audits. This has the potential to accelerate the uptake of technology-enhanced auditing (TEA) practices in global supply chains.

In a recent paper, we defined TEA as "employing technologies for the purposes of audit data collection, recording and sharing, and analysis." These technologies can include sensors, chemical fingerprinting, blockchain, and advanced machine learning, to name but a few. Global Forest Watch, for example, uses satellite imaging, cloud computing, and social media to monitor deforestation, fires, and unsustainable activities. Such technology could be used to support auditing of VSS, such as the FSC's Forest Management or Chain of Custody certifications. FSC, in fact, has been active in exploring the use of satellite analysis and blockchain in their certification services.

In another recent paper, we investigated how 21 different VSS responded to the early days of the COVID-19 crisis, with an emphasis on how they used technology to maintain their certification services. We found a substantial uptake of remote auditing practices amongst the studied VSS. Remote auditing refers to "the use of ICT [information and communication technologies] to gather information, interview an auditee, etc., when face-to-face methods are not possible or desired." The use of remote auditing in VSS was, however, permitted only with a number of caveats, including documented changes to auditing protocols, enhanced provisions for data security, and being applicable to only certain types of audits. All VSS responses to COVID-19 also initially assumed these modifications would be temporary.

The FSC provides an illustrative example of VSS responses to the pandemic. Like many other VSS, it has been active in issuing derogations and interpretations related to COVID-19. These include identifying the conditions for conducting remote audits, when audits should be postponed, and when existing certifications can be temporarily extended. The FSC has also made temporary modifications to its Forest Management and Chain of Custody certifications, as well as auditor requirements, in order to accommodate remote auditing.

Many certification bodies have shown that they are open to using more technology in the certification of their requirements. This openness, however, has been provisional and the crisis highlights the need to rethink the use of TEA practices. While some benefits of on-site auditing, such as interpersonal behaviour, are difficult to replicate with technology, TEA can be used to increase the veracity and timeliness of data collection and analysis. Increased use of blockchain, for example, could improve tracking of product provenance, while big data applications could assist in identifying patterns and making predictions.

TEA can help make supply chain certification more resilient to current and future disruptions. Any potential benefits, however, must be considered in light of the many remaining questions on the use of TEA in supply chains, such as finding the appropriate balance of traditional and technology-enhanced auditing techniques, setting new expectations on auditor competencies, resolving issues around data sharing and data privacy, and addressing the costs of implementing new technologies. The increased adoption of TEA might even lead to a re-evaluation of requirements that are used for supply chain audits, such as for measuring real-time performance.

The ongoing COVID-19 pandemic has highlighted many vulnerabilities in global supply chains. Notably, the heavy reliance on on-site supplier auditing has been revealed as untenable. Technology can be used to mitigate the risks of limited or no on-site auditing, but remote auditing is just a start. There is a need to embrace TEA beyond remote auditing in order to ensure the continuity and credibility of supplier certifications. More broadly, technological advances need to be embedded in quality infrastructure and conformity assessment across the globe.

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Notes:

- *This blog post draws on two academic journal articles, Technology-enhanced auditing: Improving veracity and timeliness in social and environmental audits of supply chains. in the Journal of Cleaner Production; and Technology-Enhanced Auditing in Voluntary Sustainability Standards: The Impact of COVID-19, in Sustainability.*
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