2020 BSI Student Research Programme Case Study

Measuring soil health for sustainable agriculture

How to develop an evaluation framework

bsi.

University of Strathclyde Glasgow

The continuity of our food supply is linked to soil quality, while soil also captures carbon – facts that have led the UK Government to identify soil as a strategic national asset. Accordingly, UK farmers are now incentivized to promote soil health. But actually, how should that be measured? Jatin Patidar sought answers in his master's dissertation, as part of BSI's 2020 Student Research Programme.

BSI runs a Student Research Programme because each year we want to support a number of postgraduate students to conduct research in areas that interest us for future standardization work.

In 2020, Jatin was studying for an MSc in Data Analytics at Strathclyde University. His academic supervisor, Matthew Hutcheson, suggested the topic of soil health for his dissertation. Jatin was immediately interested because of the importance of the subject, and because soil health analysis was also something he'd studied before. Matthew asked BSI if it was a topic that we'd want research on. We said yes, because this is an area of knowledge that we'd like to use as the basis for future work on innovative agricultural practices.

Best practice recommendations

Jatin then set out to write a dissertation that would review and compare current methods of soil health measurement; evaluate the usefulness of various soil health metrics; and make recommendations for soil health measurement best practice.

Sara Walton, BSI's Sector Lead Food, along with BSI Education's Matthew Chiles made themselves available to Jatin throughout the project. They gave him the freedom to refine the scope, but also guidance at regular bi-weekly and monthly meetings, and they suggested changes to the final draft of his dissertation.

Real world experience

One of the key reasons that Strathclyde arranges summer projects with external bodies is for students to gain real world experience. They learn what it's like to have a client wanting answers and needing to meet objectives. They learn what BSI as a business is looking for and develop key skills such as project management, client communication and report writing.

Jatin speaks of gaining a better understanding of how standardization works, learning a lot about data evaluation and how to read research papers. He also enjoyed working on a real-life challenge. "One of my key motivations," he says, "was that the dissertation will be used by BSI. I worked hard to achieve a good result because of that."

Jatin adds that he also sees the immediate value to him of being able to say he's worked with BSI. "They also did an excellent job in managing the meetings and providing timely updates to help me stay on schedule." He summarizes the SRP as a fantastic experience and a great opportunity that he would recommend.

About BSI's student research programme

BSI's Student Research Programme exists to match postgraduate students with a BSI research need. We gain valuable information about an area of interest to our standardization work, while the students benefit from business mentorship and the chance to gain knowledge and exposure that may increase their future employability.

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