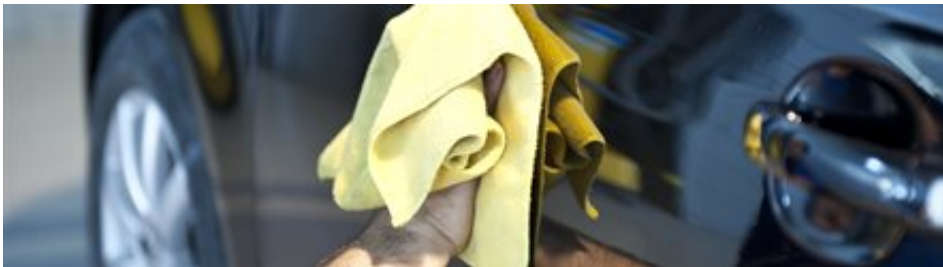# Researchers developing monitoring system to expose modern slavery

July 5 2017, by Charlotte Anscombe

Credit: University of Nottingham

The sight of people cleaning cars in disused petrol stations and by the side of the road is now a common scene in towns and cities across the country, but have you ever stopped and thought about whether the person polishing your car is being treated fairly?

Up and down the country 'cheap' car washes are being exposed as 'hives' of modern slavery. Employees are being poorly paid, are being provided with little or no protective equipment and are made to work long hours without breaks.

The UK government estimates that there are 13,000 slaves in the UK. Globally, there are 46 million slaves alive today. However, government agencies, such as the police, face barriers to the identification and prosecution of perpetrators.

However, government agencies, such as the police, are faced with barriers which can impact on how easily they can identify and prosecute the perpetrators.

"Although they might not be aware of it, people are faced with modern slavery in their everyday lives," said Dr Alexander Trautrims, an expert in supply chain management at Nottingham University Business School and the lead on the Unchained Supply, a Rights Lab project.

"The signs of labour exploitation are often hidden, and are often seen as somebody just being in a bad job, making it hard for the general public and law enforcement to identify victims.

"Whilst companies have to disclose certain information and data on their business activities, their performance and the impact they have on society, it is difficult to see whether the information they provide is always accurate."

With this in mind, Dr Trautrims and Dr Thomas Chesney, also from the Rights Lab, have developed a new computer programme which will enable government agencies to uncover businesses that are using slave labour without them ever having to step foot on the company premises.

The team of experts have created a tool which can help to verify if the data being provided by a company is accurate. To make this even easier, the programme enables interested parties, such as the police, to make these decisions, merely by observing the company's activities.

"By using this programme, we aim to scrutinise businesses or organisations by using data that is publically available, so that outsiders who have no access to company accounts can use proxies and assumptions around the business that allows them to see what is taking place within the company itself," said Dr Trautrims.

As the number of cheap car washes using modern day slaves is on the increase, the team felt that a good pilot for the programme would be a business such as this in Nottingham, to illustrate how it may be violating UK minimum wage regulations.

Dr Chesney says: "What we want from this programme is to be able to look and observe what is going on within a business and to create a model which captures the realistic behaviour behind it."

From an external perspective, Dr Trautrims and his team were able to count how many cars were being cleaned by the car wash in an hour. Using the charges per car displayed by the car wash, they were then able to calculate how much the company was making on average a day. They are also able to see how many workers are based at the business, and over the space of a month, the computer programme can use this data to determine the amount of profit the company is making.

As well as the data that the team can collect by observing the car wash, they also used Google traffic data—which is publically available, and means that they don't have to sit and count the number of cars going past.

"Whilst a car wash is relatively open and easy to observe, a lot of businesses will be behind walls, so you can't see what is going on," says Dr Trautrims.

"There are ways around this though as what we can see, is what is going in to the building, and what is coming out—like with the Google traffic data. So for example, in a factory you can see how many vans are going in and coming out. You can then make assumptions which allow you to come up with a robust statement saying that whatever they are claiming to be doing in there—cannot be true. We can prove it from our external observations, without having to raid a business or go into it.

"You could, for example scrutinise the costs the company is claiming to the tax office for personal protection equipment and then the size of the car park, and you could make the assumption that there isn't enough protection for the people who work there. Or you could do it the other way around and say that maybe there are more workers in there than you say there are—and why aren't they being accounted for?"

Dr Chesney adds: "We are not saying that all car washes are illegitimate, but we want to put a system in place which can help law enforcement agencies to uncover the ones who ARE breaking the law.

"We are now looking at a whole range of applications where this programme could be used. For example- we're reviewing harvesting fields in Spain.

"We can easily see how many workers there are and how many oranges are coming out. If you are using slaves then that means you have workers that are not accounted for in any of your records. So you could have a farmer who sells a certain amount of cabbage and declares a profit—but then they are only declaring a certain number of workers in the fields who couldn't possibly have achieved the amount of harvested produce.

"Our aim is to create a monitoring system to assist law enforcement agencies and to help expose those who aren't treating their employees in the right way."

Detective Superintendent Austin Fuller, of Nottinghamshire Police said: "We are really excited about piloting this new programme. We worked closely with Dr Trautrims and Dr Chesney to help develop it and have high hopes about what it can achieve. We're really stepping up a gear now to combat this horrific abuse and exploring all avenues to prevent it from happening in Nottinghamshire. We continue to urge people to look out for the signs of modern slavery and report any suspicions as soon as

possible."

Provided by University of Nottingham