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UCT researcher questions high-tech policing tools amid Cape Flats gun violence



Grant Oosterwyk

Photo: Supplied

The University of Cape Town (UCT)'s Grant Oosterwyk, a lecturer and PhD candidate in Information Systems at UCT's [Faculty of Commerce](#), is driving an important conversation on the role of technology in addressing violence in South Africa's most vulnerable communities.

In Cape Town's communities of Manenberg, Hanover Park, Lavender Hill, Nyanga and Elsies River the sound of gunfire is no stranger. Families huddle inside their homes at night,

children are walked to school with anxiety shadowing every step, and communities carry the heavy weight of trauma woven into daily life.

Against this backdrop, the City of Cape Town has invested heavily in ShotSpotter, a high-tech gunshot detection system. Sold as a modern policing tool, ShotSpotter promises to detect the location of gunfire within seconds. But for many who live on the Cape Flats, technology alone feels disconnected from the deeper social realities on the ground.

"The technology tells us when and where a gun is fired, but people in communities already know where the shootings are happening. What it doesn't do is prevent violence or address why shootings happen in the first place," said Oosterwyk.

Oosterwyk's research investigates how emerging technologies, like ShotSpotter, impact and shape responses to violence in marginalised communities, drawing on critical research to question whether they address root causes or deepen systemic gaps. Technology can play a role in improving response times and gathering data. However, Oosterwyk argues that "without integration into a wider social strategy, its impact will remain limited."

"Right now, gang violence is surging in areas like Elsies River, Mitchells Plain and Hanover Park. Families live with gunfire almost daily. We're dealing with communities that face some of the highest levels of unemployment, poverty and gang violence in the country. These issues drive the violence, and no microphone or algorithm can solve that. By pouring millions into this technology, the City risks looking like it's "doing something" while sidestepping the hard, long-term work of addressing inequality, poor housing conditions and the lack of opportunities that fuel crime," he said.

According to the City's figures, the first rollout of ShotSpotter between 2016 and 2019 in Hanover Park and Manenberg cost R32 million over three years. The current expansion to Hanover Park, Manenberg and Lavender Hill comes with a budget of R30 million over the next three years. Currently, the service costs the City approximately R832 500 per month, with a rate of R92 500 per square kilometre per month.

"While claims of R110 million being spent are exaggerated, the reality is still that the City is committing tens of millions of rand in taxpayer money to this system, and those funds are locked in over several years," said Oosterwyk.

According to Oosterwyk, gun violence isn't abstract for communities; it's a lived experience. "These communities have deep knowledge of what drives the violence and what might stop it. Communities are not passive recipients of crime; they hold deep knowledge and innovative ideas for building safety. Policymakers must partner with them rather than imposing one-size-fits-all fixes."

Oosterwyk cautions that while technology can help law enforcement react more quickly, it cannot replace long-term investment in communities. "If the City only imposes top-down solutions, people feel excluded, and trust in the system erodes even further. However, interventions are more likely to succeed if communities are part of the conversation. Co-creating solutions with communities doesn't just build trust; it ensures responses are grounded in reality. Gun violence isn't solved by technology or police alone; it takes collaboration, social investment and listening to the people most affected."

Oosterwyk said not all police officers are aware of the deployment of the technology. "This shows us a real disconnect. When frontline officers, the very people expected to respond to

gunfire alerts, aren't fully aware of how the system works or why it's there, the technology cannot achieve its purpose. It's almost like building a bridge but not telling drivers how to use it."

He added: "I am aware that at this stage, Leap Officers and/or Metro Police are the only officials using the technology, but I think collectively, politics plays a big part in why it has not been integrated into the entire national security strategy."

"Everyone must pull together to fight gun violence, which is, in most cases, caused by rival gang violence. However, this also comes down to gaps in communication and training within law enforcement. Technology can only work if the people using it understand it. That means proper training, clear strategies and ensuring every officer knows how this fits into broader policing. If not, you end up with a system that looks good on paper but fails in practice. This isn't about blaming officers; it's about making sure the systems they're asked to use are properly explained and integrated."

Oosterwyk said gun violence in Cape Town is about far more than crime, adding that it's tied to structural inequalities – joblessness, a lack of educational opportunities, generational poverty and the normalisation of gangs.

"Technology reacts to violence after it happens; it cannot stop the root causes. If we want real change, we need a layered approach: law enforcement, yes, but also serious investment in youth programmes, sports and cultural initiatives, job creation schemes, education, help those with alcohol and drug challenges and mental health services. These create alternatives for young people who might otherwise be drawn into cycles of violence. If there is one, the real "silver bullet" is long-term social development, not just a high-tech alert system."

Communities like those on the Cape Flats are not just facing crime, said Oosterwyk, they're facing layers of hardship. "Overcrowded housing, historical marginalisation, lack of access to jobs and broken social systems create conditions where violence becomes embedded. When police look only at the symptom, in this case, gun violence and gang violence, they miss these deeper drivers. Not to mention one of the biggest reasons we are sitting in this mess, apartheid."

He further said: "Law enforcement needs to shift its lens. Gun violence cannot be treated as an isolated crime issue; it's a social issue with criminal outcomes. Addressing it means collaboration across government departments: housing, education, health, social development and economic planning. Until policing is integrated with those broader efforts, we'll continue treating symptoms without curing the illness."

Oosterwyk said many young people in Cape Town see gangs as their only path to belonging, income, protection and falling victim to gang recruitment, which is on an all-time high. If that's the only option available, he said, then violence will continue.

"Social development offers other paths: better schools, skills training, sports and arts programmes, safe public spaces and jobs. These may not sound as flashy as gunshot detection technology, but they are what break the cycle of violence. A teenager on a soccer field or in a job training programme is less likely to pick up a gun. Over time, these investments reduce violence far more effectively than technology ever could," he said.

He concluded: "People are desperate for solutions that actually make them safer. We must ask whether investing millions into ShotSpotter is the best possible use of scarce resources, or whether that money could have a more lasting impact if redirected toward social and community development. The bigger question we should be asking is not just how much it costs, but also, is this the best way to spend scarce public money to actually make communities safer?"

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