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HOW TO CITE:
Lues JFR, Visser M. Will Sam report the drain? Food safety culture perspectives and considerations for continuous improvement. S Afr J Sci. 2025;121(7/8), Art. #22458. https://doi.org/10.17159/sajs.2025/22458

ARTICLE INCLUDES:
☐ Peer review
☐ Supplementary material

KEYWORDS:
food safety, organisational culture, sustainability, food handler behaviours, continuous improvement

PUBLISHED:
11 August 2025

Will Sam report the drain? Food safety culture perspectives and considerations for continuous improvement

Significance:

Food safety culture (FSC) has emerged as a pivotal food safety determinant, with added benefits to broader organisational culture and overall performance. In recent years, FSC has been incorporated into a number of global standards and has moved stakeholders to engage with the implementation and conformance protocols. With the evolution of FSC, the realisation emerged that it encompasses multiple interdisciplinary concepts that introduce new best-practice requirements in risk mitigation, the validity and reliability of assessments, and the effectiveness of interventions. In addition to the extensive standards in the public domain that respond to, and guide, FSC components, this Perspective aims to provide additional context and contribute to the body of knowledge regarding FSC. The information should benefit industry in particular, by providing food for thought and practical solutions and advancing continuous improvement through empowerment and capacity.

What would Sam do?

Samantha (Sam) is a food handler at a chicken processing facility. Her primary function is trimming off-cuts from chicken portions. She works 10-hour shifts standing upright, with 15-minute morning and afternoon breaks and a 30-minute lunch break. On a typical day, she handles about 7000 chicken portions per shift. Travel from her home to her workplace is an hour's drive using public transport and requires walking to and from the taxi ranks; she allows about 2 hours for travel daily.

One day, as she finishes her shift and hurries to catch her taxi home, she notices an unpleasant, pungent odour from a drain in an adjacent processing area. Knowing that this location is outside her area of responsibility and lacks monitoring systems, she is well aware that if she ignores the odour, her behaviour is unlikely to be detected, nor have any consequences. In this scenario, Sam is unlikely to reflect on standards and compliance protocols, quality control measures, organisational performance or reputation. Rather, her thoughts are likely to be on her fatigue, whether her ride home will be safe and on time, how she will make ends meet, and her family's well-being.

One may argue that in situations like this, food safety management systems should prevail, as they are intended to address food safety risks through monitoring and testing procedures, standards and policies, compliance schedules, audits and the like. Such systems should effectively trigger responses and corrective actions when deviations occur. However, reality has taught that no system is foolproof (in the Sam analogy, for example, the system failed to monitor and maintain the drains effectively). Seeing that food safety and spoilage incidences occur continuously, in situations in which the processes fall short, the remaining risk mitigation prospect is the human element, necessitating considerations that will encourage the correct human response. The Sam analogy highlights that our thoughts determine our actions, and to influence and direct behaviours, it is essential to address the issues that occupy food handlers' minds and sentiments. Ultimately, in the workplace, the thoughts that drive actions beyond key performance indicators are not primarily policy or process driven, but informed by subjective considerations such as belonging and ownership, respect, trust and loyalty.

An interdisciplinary concept

Informed by current-day developments in technology, applied knowledge and interdisciplinary approaches, service providers and regulatory bodies have increasingly realised that the food continuum consists of multi-faceted components wherein the humanities play an integral part. The farm-to-fork pipeline boasts a plethora of entities in which agriculture, primary and secondary processing, packaging, distribution, wholesale and retail, and hospitality are integral and where human behaviour is profound. Food-related risks, whether biological, chemical or physical, can be introduced during any step in the mentioned pipeline, and, therefore, to fully understand and mitigate food-borne risk, an understanding is needed of the multifaceted composition of food production and provision. This has brought about a unique interplay among disciplines such as organisational psychology, food safety, consumer sciences, public health and the like.

Apart from consumer sciences, the social sciences and humanities have not had much reflection within the food safety discipline, with the latter historically regarded as a natural science field. Food scientists, technologists and microbiologists are not usually versed in the social sciences and psychology, nor are they officially registered to engage in mainstream industrial psychology and organisational culture interventions. The emergence of food safety culture (FSC) has brought with it a novel narrative in which the human facet of food production, distribution and service has been acknowledged, along with the intermingling of the natural and social disciplines. This combination encompasses multi-, inter- and transdisciplinary considerations, which are peripheral to the specialist foci of educational- and industry-related food science and technology. In order not to infringe on the mandates of portfolios such as human resources (HR), FSC interventions should be unambiguously acknowledged as food-safety-focused interventions with likely secondary benefits for the broader organisational culture, and not vice versa.

Considering the general human behavioural determinants widely published and debated in the literature, such as emotion, need, consequence, environment, competency and the like, why elevate organisational culture in particular to influence behaviour? Literature on FSC offers a multitude of theories and models[1-5], with a simple reason being: "We do what other people do." Yiannas pointed to this as being "homophily" – the concept describing our tendency to associate with, and mimic similar others.[6] An intriguing demonstration of this is the Joshua Bell Subway Violin Experiment conducted in January 2007, when *The Washington Post* led a social experiment featuring renowned violinist Joshua Bell.[7] Known for performing in prestigious concert halls, Bell played in a busy subway station (L'Enfant Plaza) in Washington, D.C., dressed casually and without recognition. He played six classical pieces on an expensive Stradivarius violin during the morning rush hour. Despite his virtuosity, very few commuters stopped to listen and only a handful of people noticed the music, with even fewer taking the time to engage. The experiment highlighted how society often overlooks aspects with potential importance, in the absence of associated human interest or support. If people were observing and creating hype around Bell, he would likely have received significantly more attention.

Getting the boss on board

Considering that people tend to mimic other people's behaviours, one would expect this to be even more the case with leadership.[8] Although organisational leadership may be accommodating and amenable to participating in food safety intervention activities such as interviews, surveys or focus groups, one should acknowledge that the measure of authority and responsibility of the managing director, chief executive officer or general manager extends significantly wider than only food safety assurance. When engaging leadership, traits such as competence, experience, respect and diplomacy demonstrated by internal as well as third-party food safety assurance representatives are pivotal. Occasionally, an atmosphere of petulance arises when the leadership collective is summoned to participate in food safety assessments and are asked to respond to questions during which the organisation's best and worst are laid bare for scrutiny. The interchange with the regulatory representatives can be complex; on the one hand, management holds the line function authority and ultimate operational accountability, and on the other, the perceived veto power is held by the regulator or auditor which may, in a worst-case scenario, result in non-conformances, termination of pivotal contracts, reputational damage and financial consequence. Management is known for sometimes considering product safety as a necessary evil intended to mitigate risk, rather than contributing to output and financial viability, and regard regulations and standards as enablers to absolve them of food-safety-related consequences only. To the contrary, recent food-safety-related litigation arguments have considered aspects broader than only compliance, with the required standards prompted by, for example, consumer protection and related legislation, asserting that food-safety-related incidences may have originated from food handlers who were ill informed, ignorant or hesitant to look out for and report risks beyond their primary function. The terminology that alludes to this is "duty of care", defined as: "A moral or legal obligation to ensure the safety or well-being of others by maintaining a reasonable standard of care."[9] Increasingly, the FSC narrative has promoted the principle that the food industry has an obligation to apply its mind to ensure safe products beyond only the set limits and standards. This requires the involvement of organisational departments and reporting levels broader than only the safety and quality assurance portfolios.

"In the bigger scheme of things, the average piece of junk is probably worth more than our criticism designating it so" (Anton Ego in the 2007 animated film *Ratatouille*; Bird and Pinkava, 2007). This metaphor proposes sparing a thought for the leadership of the multitude of food production and distribution businesses, from small- to medium-sized enterprises to multinationals, that must balance compliance with keeping the company afloat amidst pandemics, trade wars, labour demands and economic fluctuations. In a way, it is conceivable that management prioritises financial sustainability in times of economic difficulty. Fortunately, the benefits of a conducive and mature FSC and its effect on the broader organisational culture and performance have been clearly demonstrated, justifying FSC interventions beyond only a conformance-led and resource-tapping exercise.[1,5,10,11]

Evolution of the standards

Food safety standards and certification systems are rolled out globally for good reason, with clearly demonstrated benefits being the unequivocal kerbing of food-safety-related outbreaks, losses and mortalities. Therefore, the principle of a conducive FSC 'beyond' and not 'instead of' systems needs to be acknowledged and reiterated. The dichotomy in formalising FSC principles has been that a concept promoted as 'doing something because it's the way we do things around here, even with no one watching', has been incorporated into the standards. To navigate the process, one should consider this seeming contradiction as a measure to introduce and impart a concept that is still relatively novel in the food production continuum, with a fair amount of uncertainty still surrounding it.

The development of the various standards that address FSC are rooted in HACCP and related risk assessment, management and mitigation systems created in the 1960s, with the subsequent milestones being: the ISO standard followed the Codex Alimentarius principles related to food hygiene (1969); HACCP was incorporated into the European Union regulations (1991) and adopted globally; the ISO 22000 1st Issue was released (2005); it was incorporated into the FSSC 22000 certification scheme; ISO 22000:2018 was published (2018) and, most recently, FSSC 22000 V6.0 (2023).[12] In terms of the BRC standard, components such as continuous improvement (2010), the introduction of an FSC module in 2018, and formal integration into the BRCGS standard (2022)[13] have guided the development. The SQF and IFS systems also recognise FSC components, which are enhanced through GFSI benchmarking.[5] The respective standards continue to evolve, focusing on how FSC is implemented and maintained in diverse and multifaceted food manufacturing and processing environments and cultures. Ultimately, the standards aim at holistic food safety assurance through developing organisational cultures that promote food safety performance.[2,5,10]

Integrity of the process

Often, during FSC interventions, respondents and staff from portfolios not directly involved with the physical handling of products question the reasons for having to participate in the process. The principle that employees on all levels should understand and embrace their roles in the organisation, as they relate to food safety, is grippingly demonstrated by the anecdote of John F. Kennedy and the janitor[14]: During a visit to the NASA space centre in 1962, JFK was touring the facility when he came across a janitor sweeping the floors. JFK, curious about the man's role, asked him what he did at NASA. The janitor, without hesitation, responded, "I'm helping put a man on the moon". In the context of food safety, it is essential that all employees on all levels acknowledge that they have an important role to play in ensuring safe and wholesome products for customers.

In addition to ensuring broad participation and representation, reliable and valid data collection, processing and interpretation are essential for informed decision-making during FSC interventions: 'You can't improve what you can't measure.' When engaging a food production facility across its various levels and portfolios, moral and ethical considerations are key to minimising risk and harm while ensuring the validity and reliability of assessments and interventions. Avoiding activities that could harm participants physically, emotionally, or psychologically is crucial, because when respondents are unsure about the anonymity of their responses, they may not be entirely honest, impacting the accuracy of the data. Several best practices have been documented and recommended to promote respondent well-being and engagement, such as informed consent and voluntary participation. These should ensure that participants are fully informed about the purpose, potential risks and benefits of their engagement, allowing them to decide freely whether to participate. Permissions should also include organisational authorisations and buy-in from stakeholders such as labour unions and support departments, in order to provide access, foster trust and goodwill, and improve response rates. Local and regional acts and regulations, such as those protecting personal information (e.g. GDPR, POPIA) should

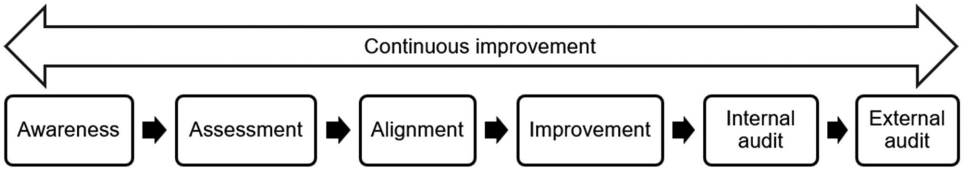

Figure 1: The food safety culture improvement value chain (based on data from Thorsen et al.[15]).

also be considered and adhered to. Using aggregated data can further assist in maintaining anonymity in small departments and sections, and circumvent the involvement of internal staff in the assessment process, which may introduce a conflict of interest. Providing options for written reactions in focus groups can further protect participants' identities in cases where respondents may consider fellow focus group members to not be trustworthy.

Let's do this

With the exception of organisations with a proven record of FSC advancement, scientists or organisational culture experts who may be interested in FSC assessment findings, and perhaps human resources departments looking to optimise strategies and systems, the industry food safety and quality representatives and leadership are likely to be interested in only the bottom-line findings, whether they are accurate, and how to respond and ultimately comply. However, in situations in which the FSC assessment and intervention process is being questioned (e.g. in cases of underperformance and non-compliance), it is pivotal that the process be defendable, secure and logical.

Figure 1 offers a FSC improvement pipeline, proposing six steps: (1) the awareness phase constitutes activities to foster ownership and buy-in on all levels; (2) assessment entails the measurement and interpretation of the prevailing FSC; (3) alignment involves the identification of gaps and linking findings with standard-guided interventions and solutions; (4) improvement constitutes the mapping, ranking and roll out of interventions; (5) internal audit refers to second-party developmental assessments to determine alignment with the standard assessment, and if needed, revisiting of the improvements process to ensure compliance; concluding with (6) independent third-party auditing and certification.

Conclusion

Ultimately, FSC is a means to an end – a strategy to enforce additional risk-mitigation behaviours beyond compliance. Nevertheless, limiting the FSC intent to only compliance and not acknowledging its benefits for broader organisational culture and well-being, would be unfortunate. Embarking on a FSC journey as a means to an end only, while discounting its benefits for overall performance, economic gains and a conducive organisational environment, would be to lose out on its strongest selling points.

Declarations

We have no competing interests to declare. We have no AI or LLM use to declare. Both authors read and approved the final manuscript.

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