

IMPLEMENTATION STUDY OF FOOD SAFETY IN MSMES AND STREET FOOD BUSINESSES IN THE APEC REGION

Deri Siswara

Materials: derisiswara.art/apec-2025

Why Food Safety Matters for MSMEs in APEC Region?



Source: bakingworld.id

Food safety is critical for public health, especially as urban populations increasingly rely on ready-to-eat foods, restaurants, and street vendors. Poor food handling practices, contaminated ingredients, cross-contamination, excessive preparation times, and improper storage create risks of foodborne illnesses and nutrient loss.

This study evaluates food safety implementation among MSMEs and street food businesses in the APEC region, identifying appropriate methods based on international standards (ISO, HACCP, and GMP) to ensure safe food practices across the supply chain.

- **98% of APEC businesses are MSMEs**, with approximately half operating in the food sector (Hredzak, 2020).
- **Culinary tourism significance:** Food businesses serve as cultural ambassadors, showcasing unique local varieties and traditions that attract tourists.
- **Quality and cleanliness concerns:** Many food MSMEs face challenges in maintaining proper hygiene standards and food safety protocols due to resource constraints.

RESEARCH DESIGN

Background

We conducted a survey using criteria from the ISO Food Safety Management System, HACCP, and GMP. The elements included in the questionnaire are relevant and have the potential to guarantee food safety based on the literature study conducted. The questionnaire aims to capture the experiences, obstacles, and challenges faced by MSME and street food business operators in order to increase knowledge and understanding of food safety based on international standards.



Respondents



Actors

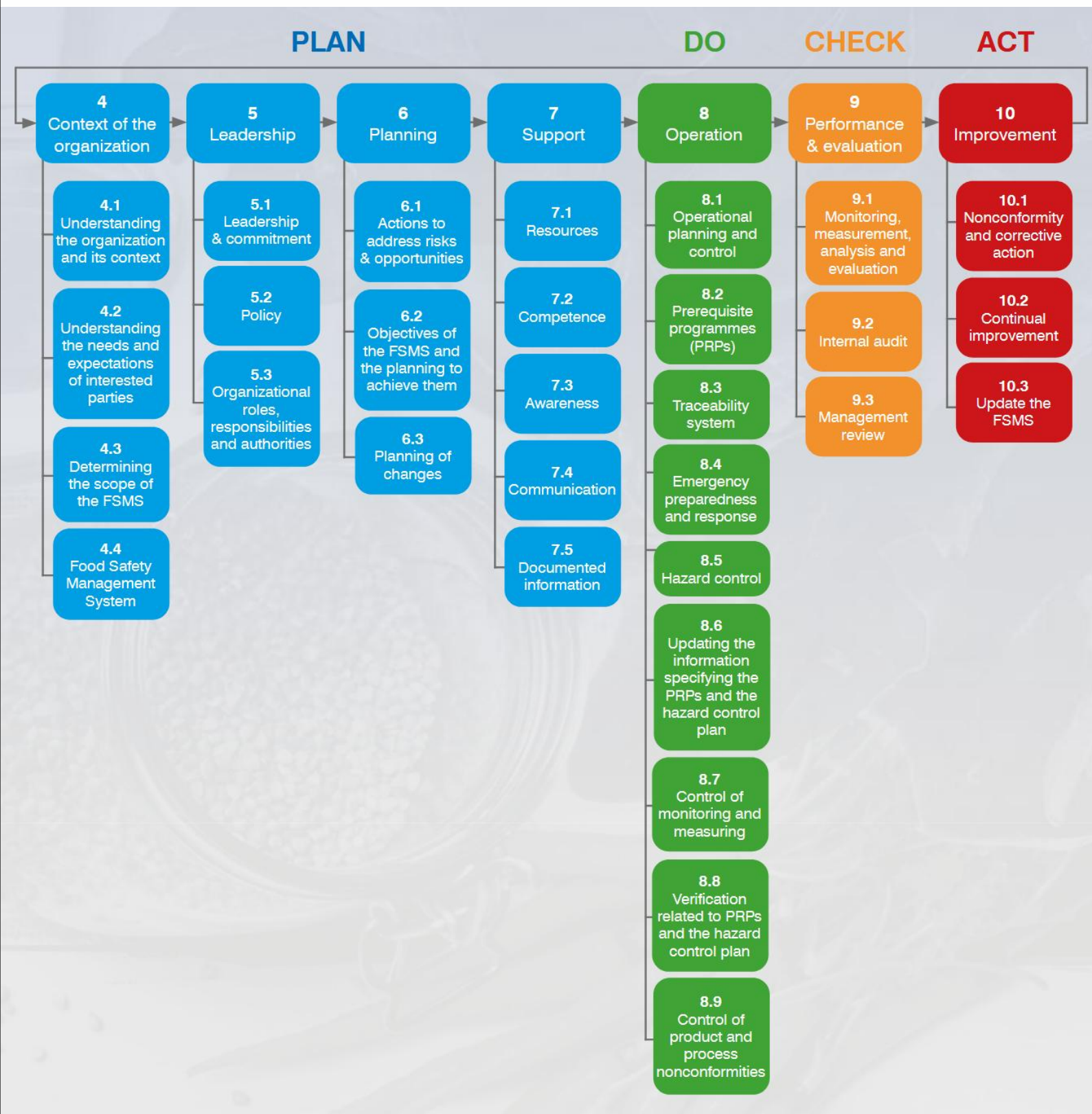


Regulators

This study surveyed 59 participants across the APEC region: approximately 50 MSME and street food business actors, and 9 government regulators. Business respondents included food processors, restaurants, street vendors, and catering services of various scales and experience levels, representing diverse APEC economies from local to export-oriented operations.

Regulatory respondents comprised food safety inspectors, policy makers, and standards officers from health departments, food safety authorities, and trade ministries across different jurisdictional levels. This balanced composition ensures comprehensive insights from both implementation challenges (business perspective) and regulatory expectations (government perspective) across diverse APEC regulatory environments.

ISO22000:2018

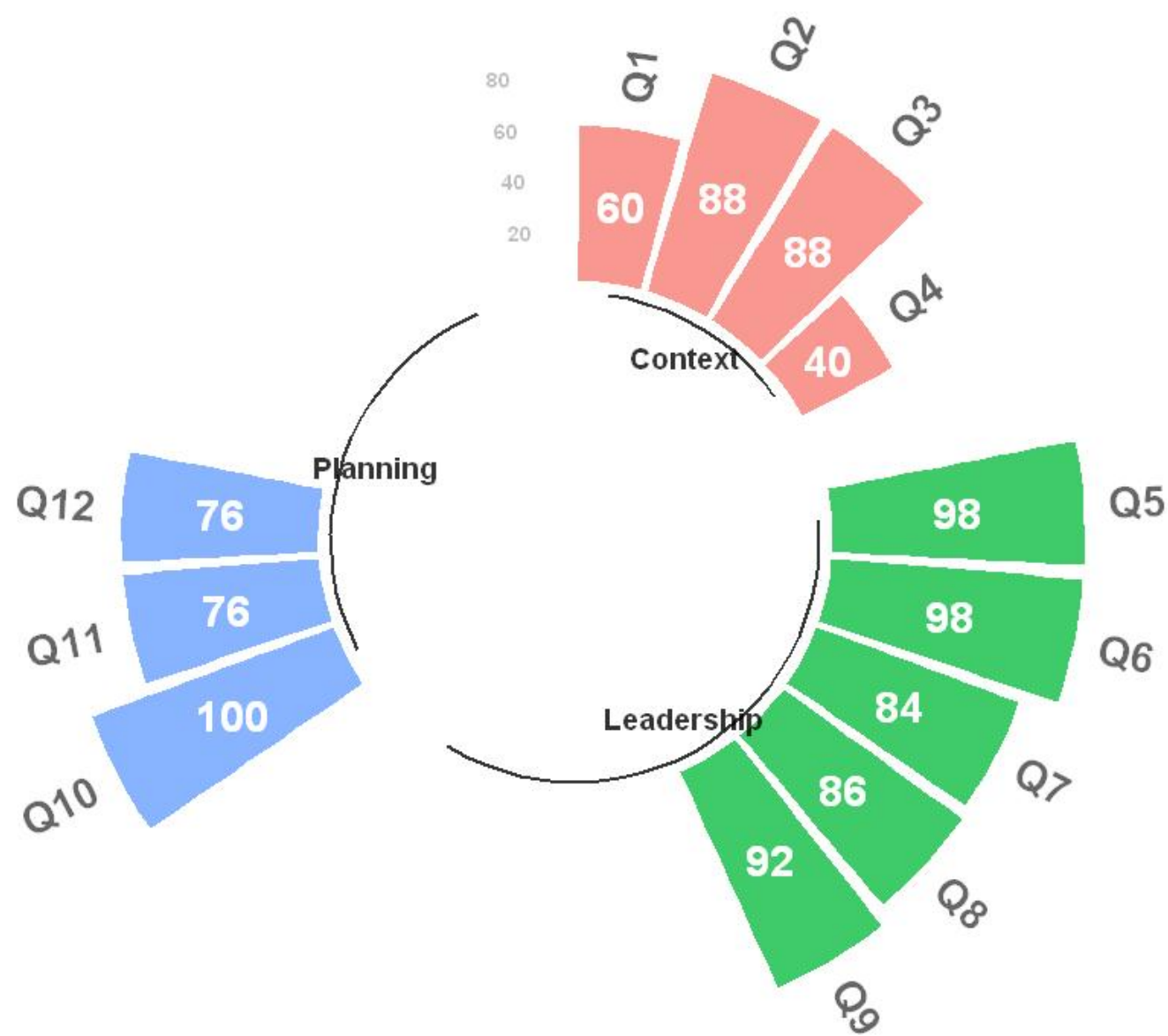


ISO 22000:2018 establishes a systematic approach to food safety through the Plan-Do-Check-Act (PDCA) cycle, fully incorporating HACCP principles while integrating Good Manufacturing Practices within its framework.

For our study of food safety in MSMEs and street food businesses across the APEC region, this standard provides an ideal structure to evaluate existing practices and implement improvements. The PDCA methodology allows us to assess current conditions, apply adapted protocols suitable for small operations, measure compliance through appropriate metrics, and continuously refine our approach based on regional findings.

FINDINGS

Clause 4,5, and 6

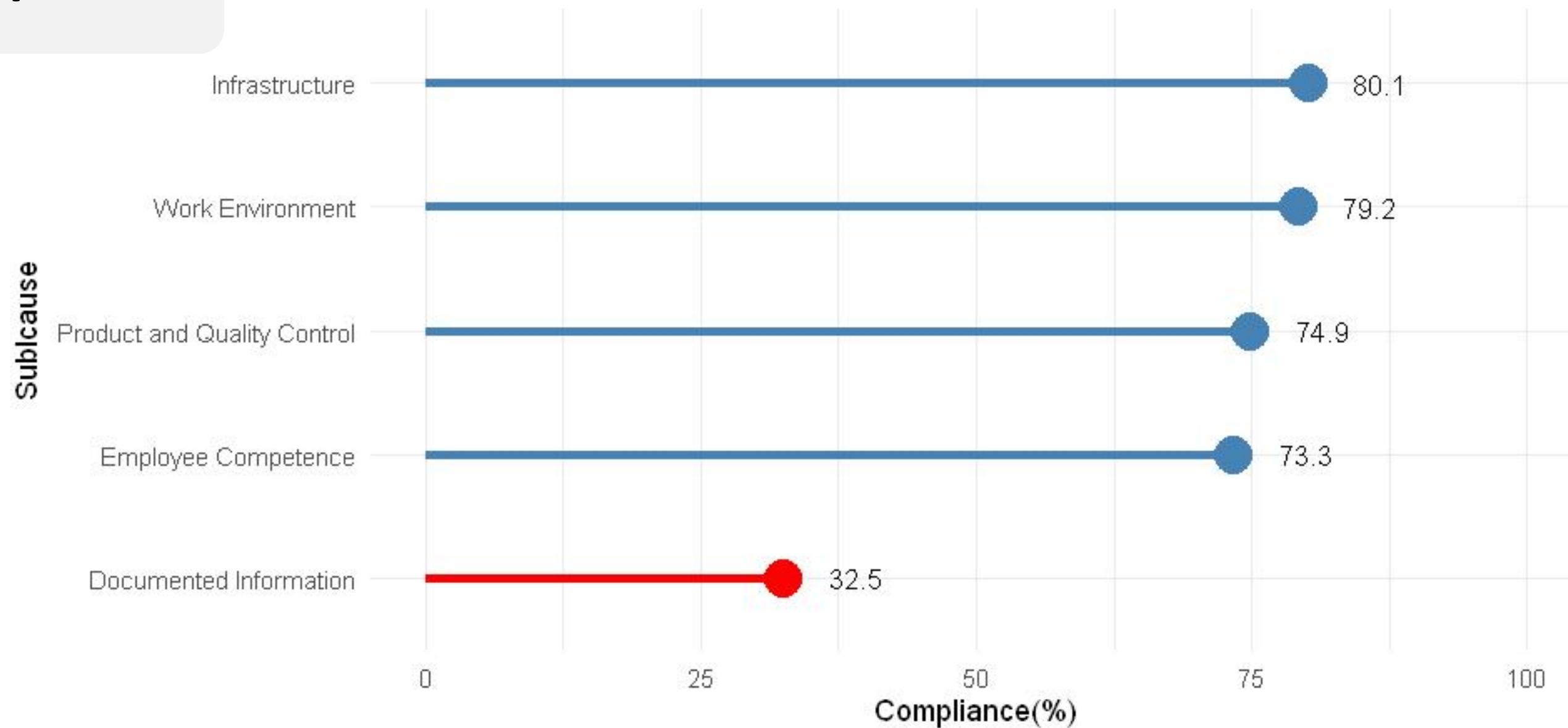


Clauses 4, 5, and 6 constitute the essential PLAN segment of the PDCA cycle in ISO 22000:2018. Our assessment indicates that most vendors successfully meet the general criteria requirements within these clauses. However, a significant compliance gap exists as **less than 50%** of vendors possess proper **product distribution permits**.

Question	Definition
Q1	Status in business [Owner]
Q2	Venture type [Own Capital]
Q3	Business license/legality
Q4	Product distribution permit
Q5	Person in charge of business operation
Q6	Responsible for food quality and safety
Q7	Responsible for raw material suppliers
Q8	Quality guidelines and procedures
Q9	Provisions for unsuitable raw materials/products
Q10	Attention to food cleanliness
Q11	Follow up on customer feedback
Q12	Conduct annual/periodic evaluations

FINDINGS

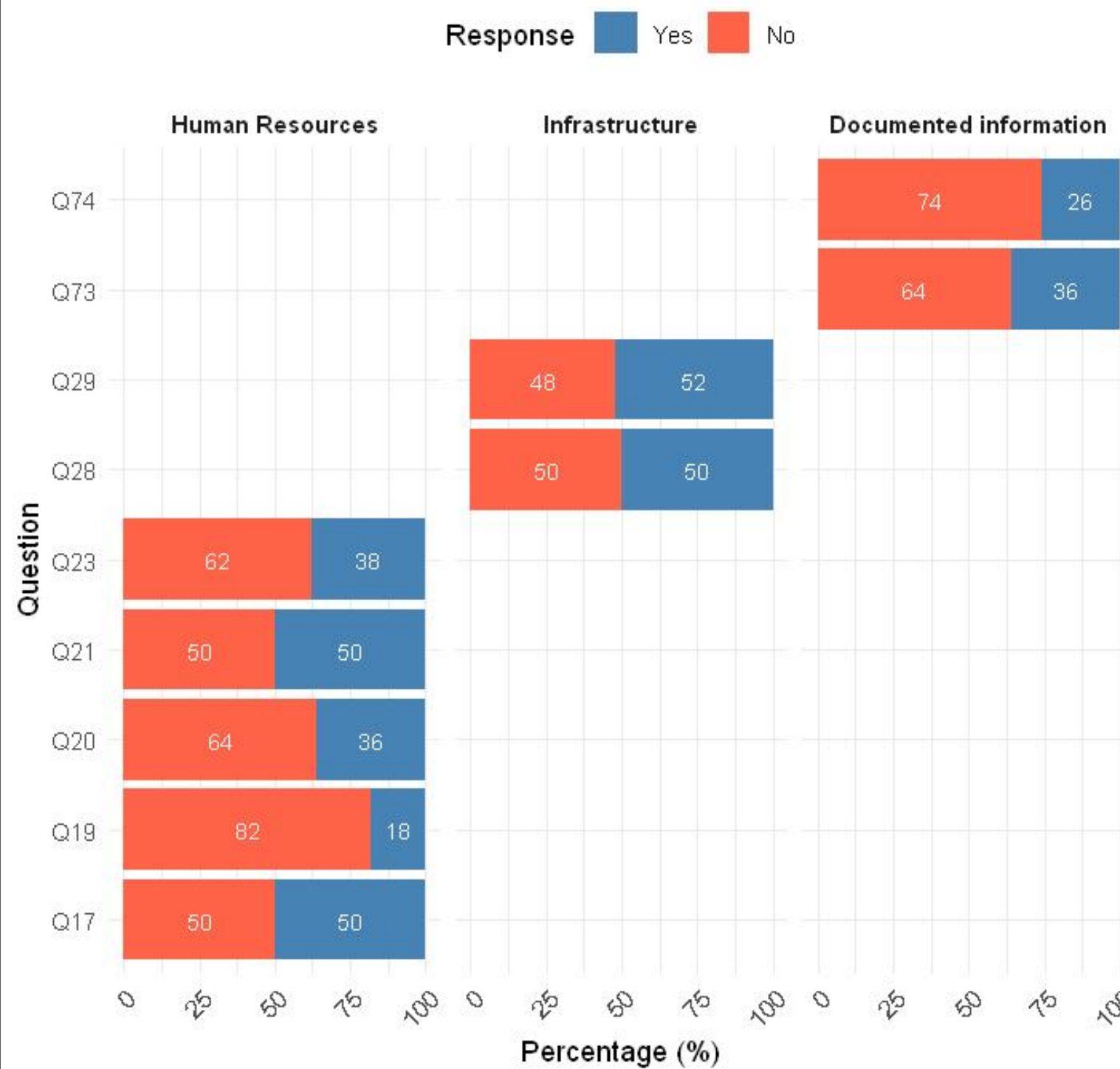
Clause 7



Last, the essential **PLAN** segment of the PDCA cycle in ISO 22000:2018 is Clause 7. This looks at the resources, competence, awareness, communication, and documentation of a FSMS. Overall **good except** documented information.

FINDINGS

Clause 7



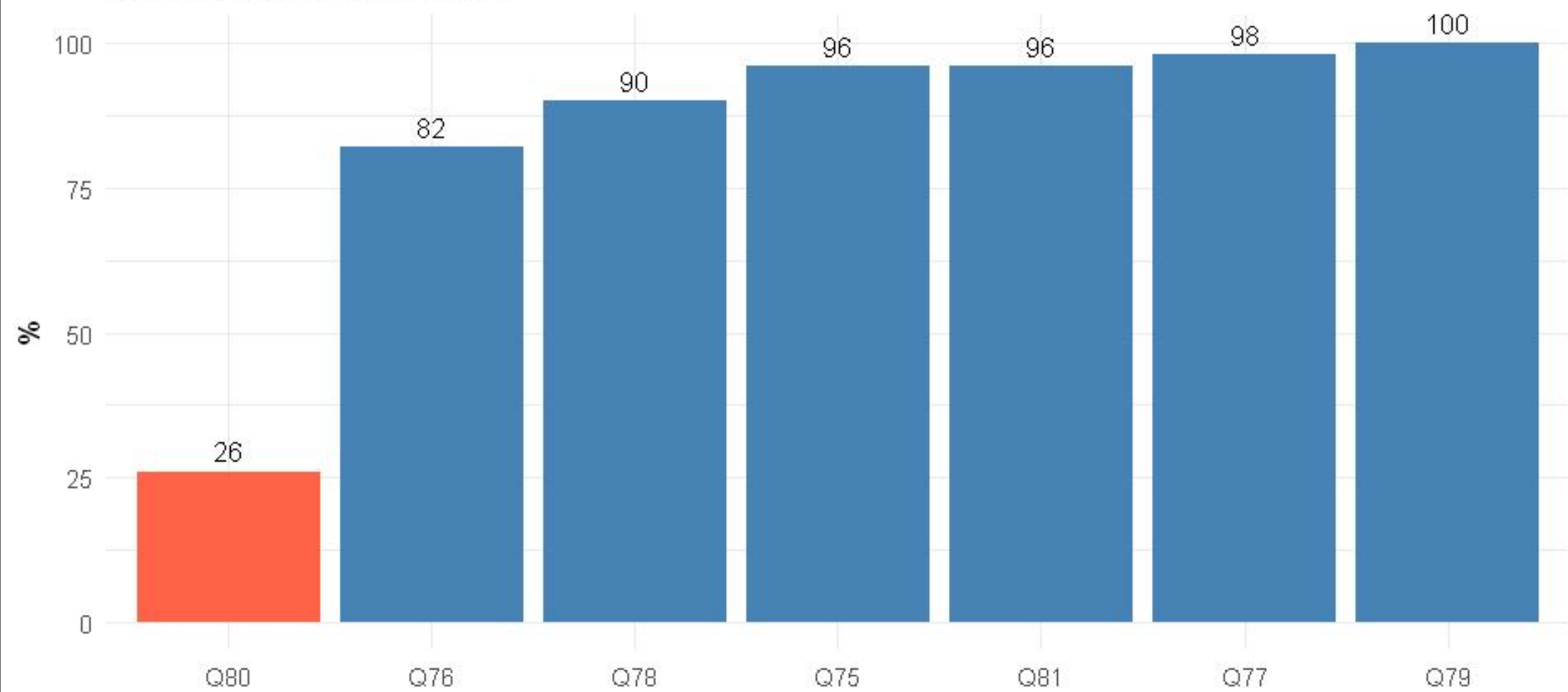
Clause 7 of ISO 22000:2018 highlights key compliance gaps in SMEs and street food vendors, particularly in human resources, infrastructure, and documentation. Many vendors **lack proper worker health checks, food safety training, and hygiene practices**, increasing contamination risks. Issues like inadequate pest control and poor cleanliness also persist. Additionally, a **failure to document raw materials, processes, and employee health makes compliance difficult to prove**. Addressing these gaps through training, health monitoring, improved infrastructure, and proper documentation is essential to ensure food safety and compliance.

Question	Definition	Subclause
Q17	Workers change clothes/wear special attire	Human Resources
Q19	Periodic health checks for workers	Human Resources
Q20	Employees as cashiers	Human Resources
Q21	Cashier allowed to process food	Human Resources
Q23	Prohibition on jewelry/watches	Human Resources
Q28	Food pests seen at business location	Infrastructure
Q29	Personal items in processing areas	Infrastructure
Q73	Records on raw materials/operations	Documented information
Q74	Records on worker health/training	Documented information

FINDINGS

Clause 8

Operational Performance



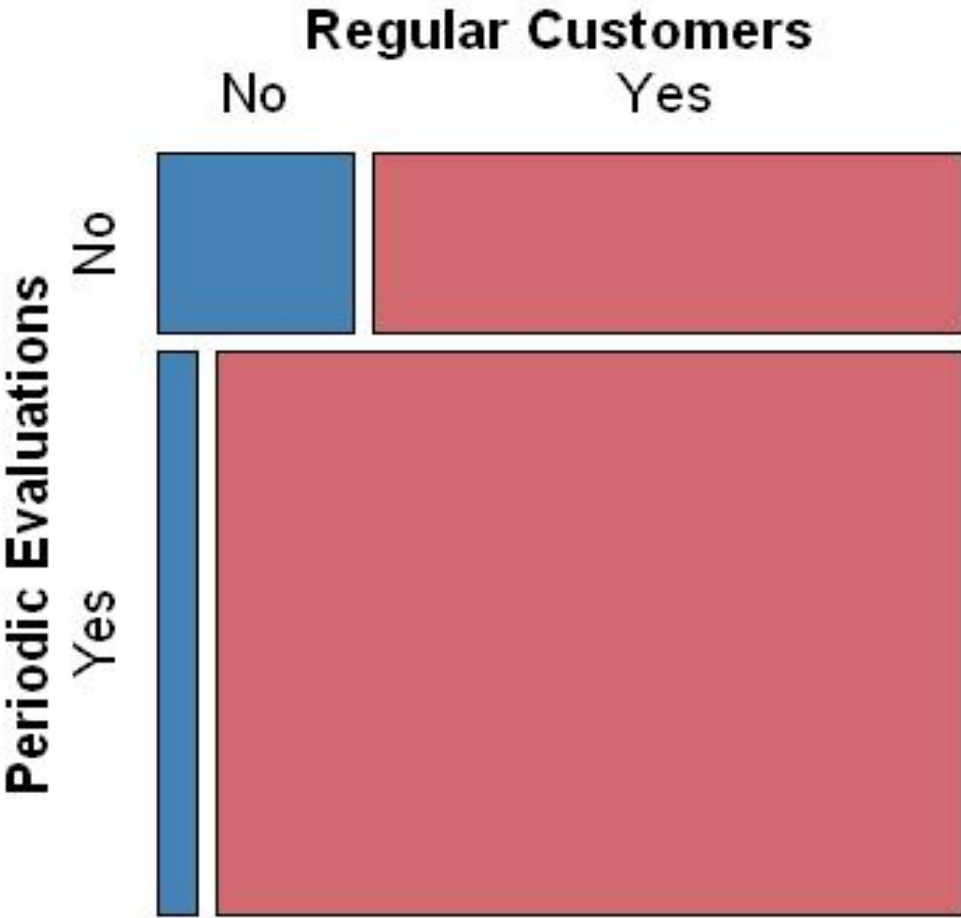
Question	Definition
Q75	Materials and products stored in good conditions to avoid quality decrease
Q76	Storage marked with dates and using First In First Out system
Q77	Ingredients that absorb water stored in a dry place
Q78	Hazardous materials stored separately to avoid contamination
Q79	Cleaned machines/equipment stored properly to avoid contamination
Q80	Food packaging clearly labeled for consumer ease
Q81	Person in charge overseeing production process for quality control

This is the core of a Food Safety Management System (FSMS), where the integration of most HACCP principles takes place, and execution becomes crucial after the system has been planned. Evaluation shows that many businesses **fail to clearly label food packaging for consumer ease**. This is likely due to many ready-to-eat products lacking proper packaging.

FINDINGS

Clause 9 and 10

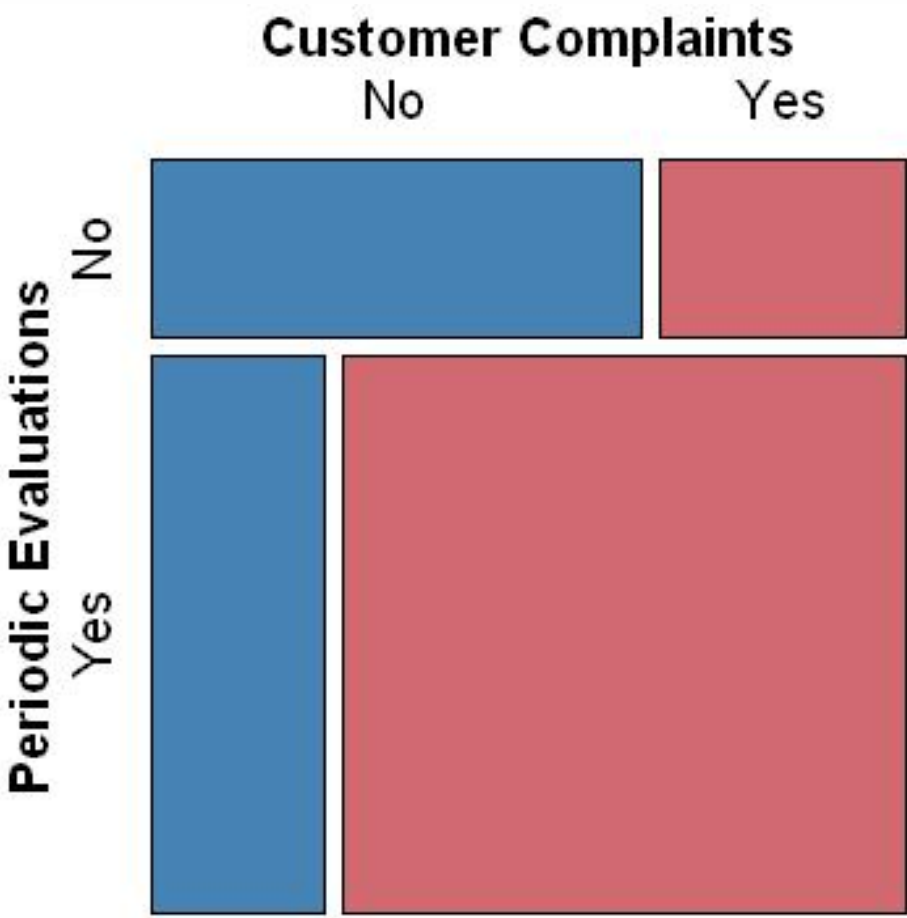
FSMS performance is evaluated through process monitoring, internal audits, and management review to ensure product objectives, meet customer expectations, prevent undesired effects, and drive continual improvement. Some businesses (24%) do not conduct periodic evaluations. These businesses also do not ask for customer feedback, and interestingly, most of them do not receive customer complaints. Their business processes tend to remain the same each day, without regular evaluation or feedback-driven adjustments.



Pearson's Chi-squared test, $p = 0.1513$
Note: *, significant, $p < 0.05$



Pearson's Chi-squared test, $p = 0.01072^*$

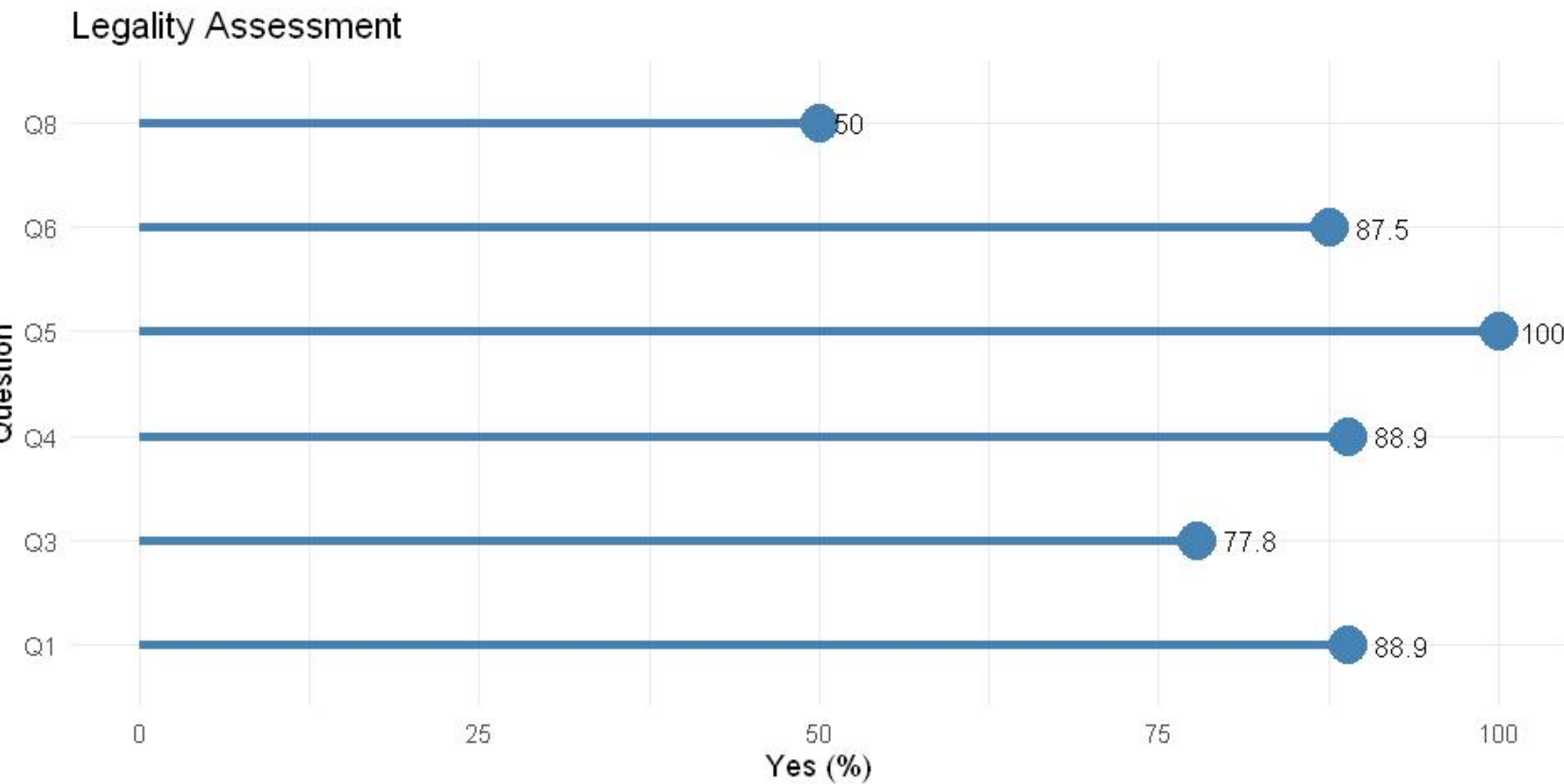


Pearson's Chi-squared test, $p = 0.01682^*$



FINDINGS

Regulators Assessment



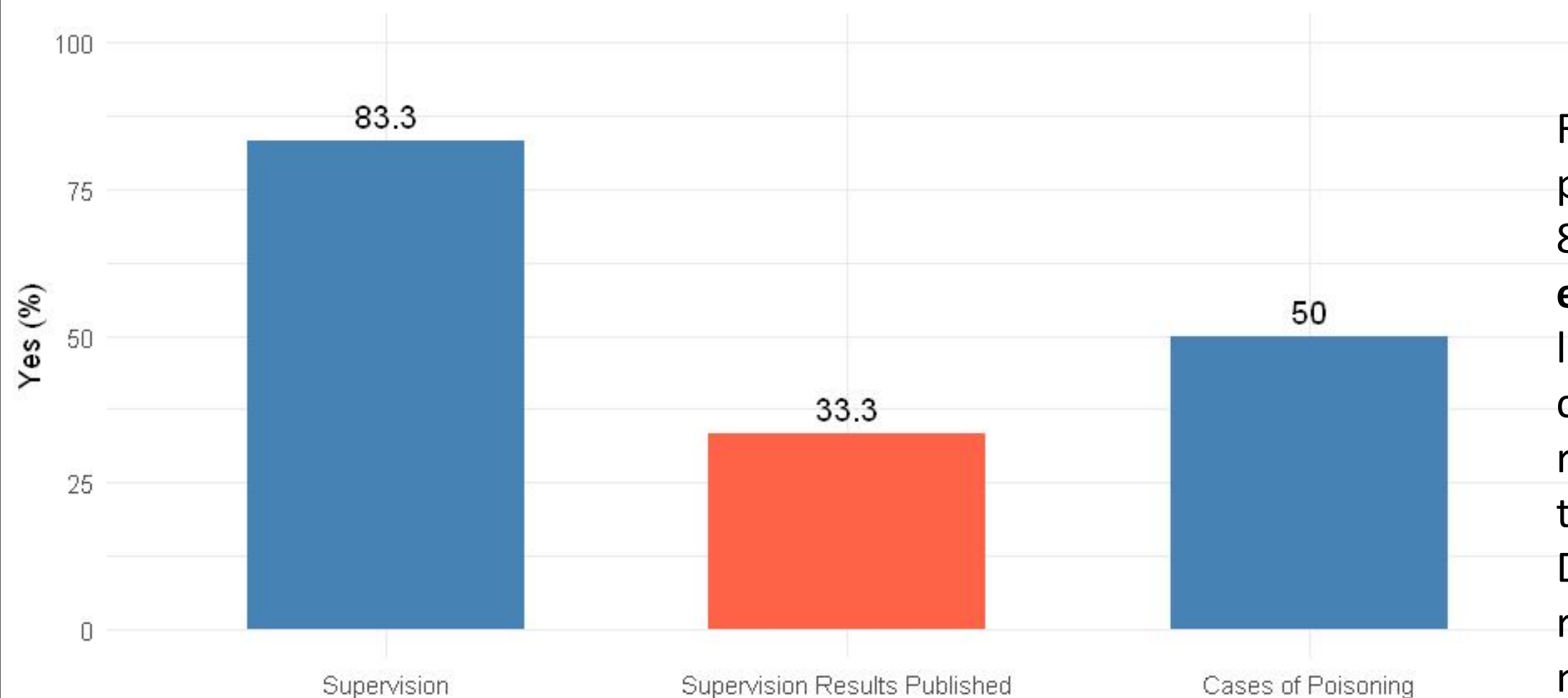
Question	Definition
Q1	Existence of local regulations for MSME/street food supervision
Q3	Permit or registration requirement for MSMEs/street food
Q4	Availability of business registration permit service
Q5	Systems/procedures for granting permits
Q6	Complaint service for business registration certificates
Q8	Cost to register a business license

On Clause 4.2 and 4.3 regarding legality and regulatory requirements, most regulators in the APEC region **have established** regulations that require business licensing, registration, and reporting mechanisms for street food and MSME businesses.

However, one notable difference is **the cost structure**: about half of the regions impose a fee for obtaining a business license, while the other half provide the licensing service free of charge.

FINDINGS

Regulators Assessment



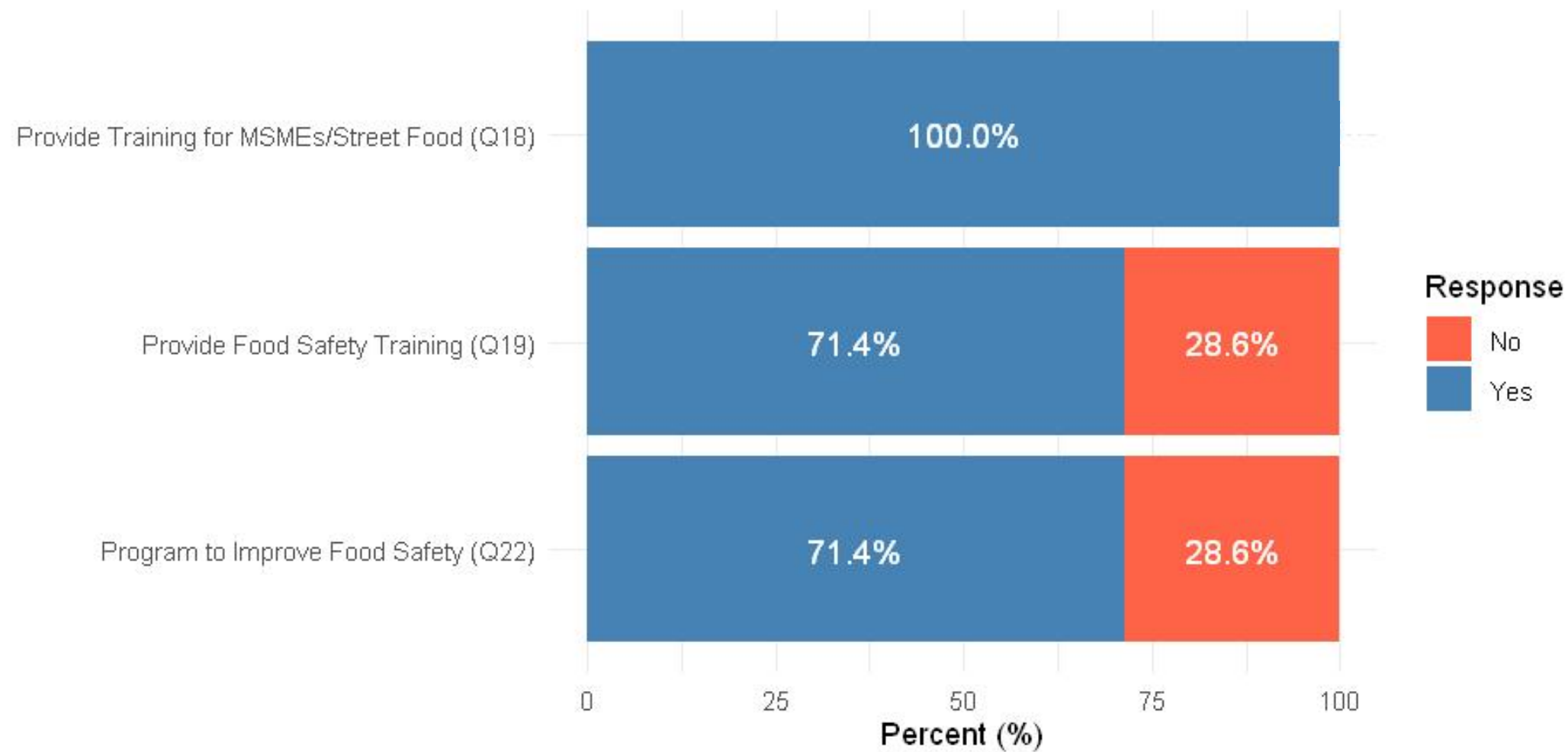
Regulatory control and supervision are critical points in ISO 22000:2018 (notably clauses 8.4, 8.8, 9, and 10), with regulators having **established supervision** plans, conducting at least annual inspections, and performing contaminant testing. However, supervision results are generally **not published**, limiting transparency for businesses and the public. Despite these efforts, **food poisoning** cases remain common in the street food sector, mainly due to persistent issues with **cleanliness** and hygiene among vendors.

cleanliness

competence
management
waste

FINDINGS

Regulators Assessment



Foster of street vendors is covered under Clause 7: Support (especially 7.1, 7.2, and 7.4) of ISO 22000:2018. Most institutions/agencies provide **general training** for MSMEs and street food businesses; however, fewer offer specific food safety training. **Not all** institutions/agencies have dedicated programs to improve **food safety**, suggesting there is room for more proactive initiatives.



CONCLUSION AND RECOMMENDATION

1. Most street food vendors and MSMEs meet the general PLAN requirements (Clauses 4, 5, 6, and 7) of ISO 22000:2018, but often lack proper product distribution permits and documented information—both of which are commonly exempted in street food regulations. Many vendors also lack proper worker health checks, food safety training, and hygiene practices, increasing the risk of contamination. Issues such as inadequate pest control and poor cleanliness persist, and the failure to document raw materials, processes, and employee health makes compliance difficult to demonstrate.
2. Operationally (Clause 8), many businesses fail to clearly label food packaging for consumer ease, likely because many ready-to-eat products are sold without proper packaging.
3. In terms of performance and improvement (Clauses 9 and 10), some businesses do not conduct periodic evaluations. Their business processes tend to remain unchanged, without regular evaluation or feedback-driven adjustments—reflecting the typical character of street food businesses that do not aim to expand.
4. Most institutions have adequate legal frameworks, though mechanisms vary. Cleanliness remains a critical issue among street vendors. Not all regulators have dedicated food safety programs, indicating there is room for more proactive initiatives.

