Food supply chain traceability: A multiple case study from Alto Tietê Region, Brazil

Lucas Era [1], Sivanilza Machado [2,*], and Luiz Kawamoto Jr. [2]

[1]Postgraduate in Logistics and Operation, Federal Institute of São Paulo; lucashideoera@hotmail.com
[2] Management and Business Department, Federal Institute of São Paulo; teruo@ifsp.edu.br

* Corresponding author: sivanilzamachado@ifsp.edu.br

INSTITUTO FEDERAL
São Paulo
Câmpus Suzano

Abstract: The traceability is one way to food supply chain transparency. However, when the food is produced by family farmers, considering in communities with low levels of education and lack of TI infrastructure, traceability becomes a major challenge. This article verified the adequacy of the family farmer to the traceability of the food production chain, through the application of a multiple case study in Alto Tietê region, Brazil. The results showed that most farmers have incomplete elementary education (55%), work practically alone in production and they are unable to carry out traceability due to the lack of pesticide registration, which makes implementation unfeasible even if the community has IT infrastructure

Keywords: food safety; production control; process quality; supply chain transparency.

This paper aims to investigate the adequacy of the family farmer to the traceability process to guarantee the food supply chain transparency from farm to fork.

Materials and Methods

- All family farmers should answered about social economics and productions process aspect, as well as food supply chain traceability and the governments requirements.

- The data was collected in March 2021 following the design of interview

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Results and Discussion

Table 1. Highlighted results on socioeconomic variables, values in%.

Socioeconomics variables	Highlighted results	Values in %
Gender	Male	80
Age	Above 46 years old	55
School	Elementary school	55
Family income	From 3 to 7 basic salary	67
Family size	From 3 to 4 people	55
Legal condition of farmer	Independent farmer	67
Work experience, in years	Above 31	55
Production system	Conventional production	89
People out of family working in farm	No, just family members	67

Results and Discussion

Just one farmer applied the traceability, but in 1% of all production area, so the 99% of production is not traced.

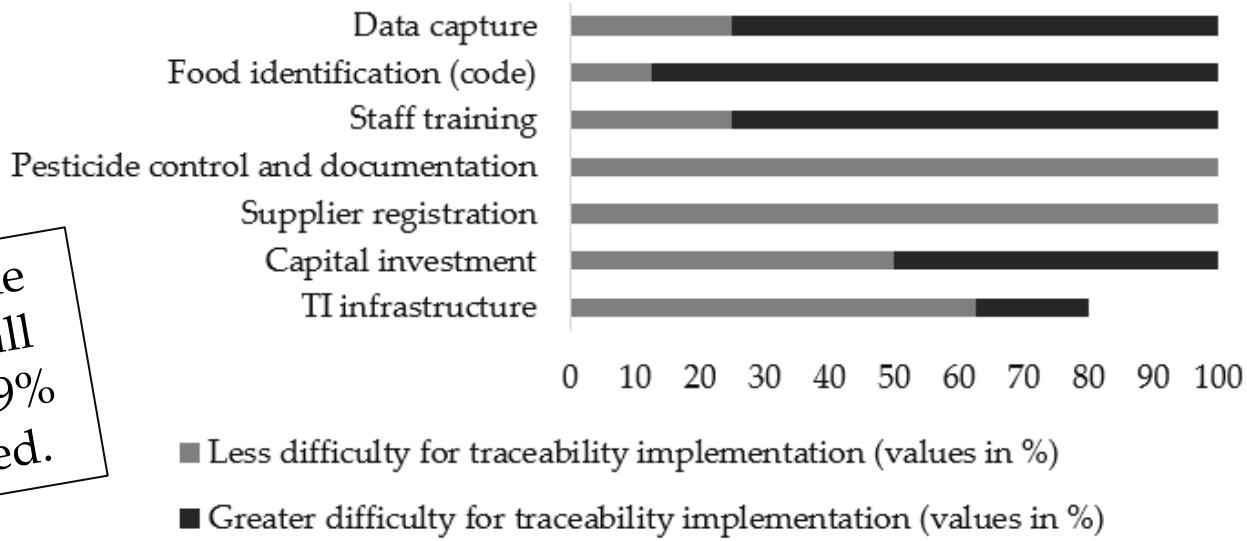
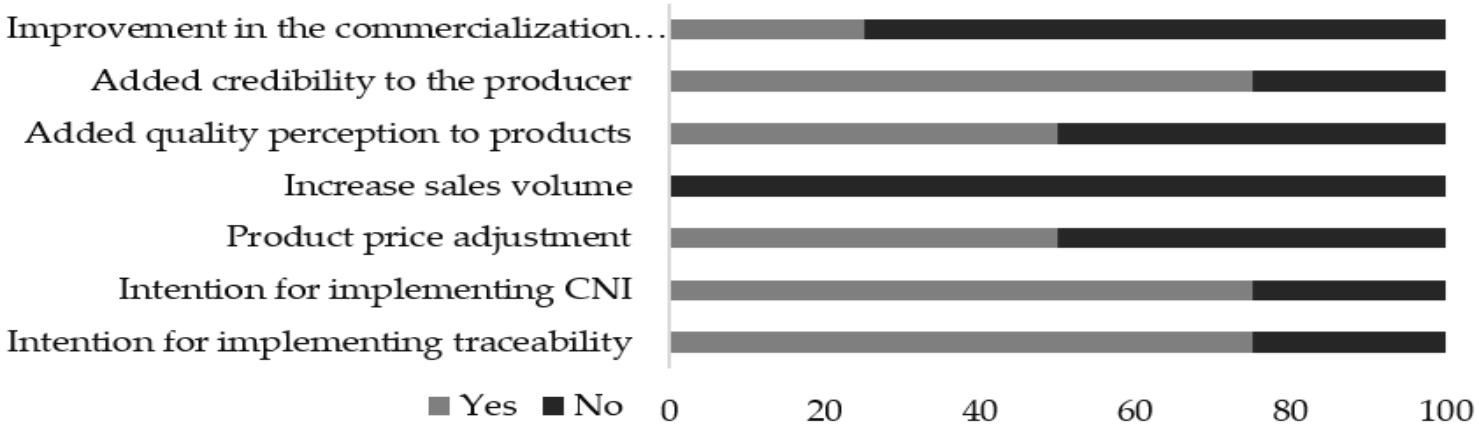


Figure 2. Degree of difficulty to traceability system implementation.



$\chi^2 = 16.0$; $p = 0.0137$

Figure 3. Traceability criteria implementation and farmers perception.

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Conclusions

1) lack of pesticide registration to use in agricultural production;

2) current commercialization design that allow lots product merge and this is inconsistent with traceability premise;

3) lack of government support and training people; and

4) high investment by family farmer and no payback expectative, in other words, the costs is not transfer to the market.

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Acknowledgments

Family farmers

Contact:
Lucas Era
E-mail: lucashideoera@hotmail.com

Contact of Supervisor:
Sivanilza Machado
E-mail: sivanilzamachado@ifsp.edu.br

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