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## STUDY ON THE IMPORTANCE OF FOOD TRACEABILITY IN THE TOURISM INDUSTRY

**Abstract:** *Depending on how we take care of ourselves on a daily basis, it says a lot about us. Food can be both a medicine and a poison at the same time. The way food is used, prepared and cooked is a crucial element for daily energy levels. To achieve this goal, we need food that has been tested, approved and transported to our local markets. With the help of an appropriate traceability system, we can ensure food safety and prevent the occurrence of a critical situation during the entire process of food distribution. That is why today, more than ever, the attention of monitoring the entire distribution process in the food chain is of great importance on a global level. This paper will focus on the study/importance of traceability systems in the tourism industry, food traceability requirements and the importance of traceability itself.*

**Keywords:** *Traceability, Nutrition, HACCP, Food, Tourism.*

### Introduction

The global supply is slowly emerging as a challenge that requires greater attention and clarity (Steven, 2015; MacCarthy et al., 2016). Authorities, television, organizations and clients have shown an interest in the functioning of global supply chains, which implies a flow of messages, (Silverstro & Lustrato, 2014), element inspection (Chen et al., 2014), distributor authority (Handfield et al., 2015), prevention (Kleindorfer & Saad, 2005), and chairmanship.

Cultivation and the food chain analyze existed for many years back (Fearne, 1998; Mat-tevi & Jones, 2016). The monitoring system is important in the sectors of food preparation, tourism, retail, transport and logistics, as well as in the entire health sector. The traceability system is based on the preservation of products during transport. Today, awareness of the importance of proper nutrition is far more developed than 20 or more years ago. Gastronomy has become extremely popular and many TV shows are now about cooking.

There are even TV channels that deal exclusively with food preparation, such as 24h Kitchen. Goodies like Jamie Oliver and Gordon Ramsey have become world stars and social networks have made significant progress in this trend. Thousands of photos of delicious snacks are posted daily on Instagram, enjoyed by gourmets around the world. Food is actually considered one of the most photographed topics on social networks.

Although there is still controversy about what is actually the right diet and what can be called natural food, one thing is for sure—the importance of food safety is not questioned.

In America and Europe as well as those countries planning export activities in these markets, it is understood that all necessary steps have been taken to ensure that food is safe at every stage from sowing to dining. In short, traceability can be described as the process of controlling food, from cultivation, production to delivery, with the intention of defining and reducing hazards in order to protect health.



### The concept of traceability

The concept of traceability is gaining in popularity due to the various situations that arouse with the golden age. One of the biggest, which has become a worldwide scandal, is the epidemic of Mad Cow Disease (MCD), which appeared on farms in Great Britain the late 1980s. This disease has led to the development of Creutzfeldt-Jakob Disease (CJD), which is incurable and ultimately causes degenerative brain disease in people who have consumed contaminated cow meat/food contaminated with the disease.

In 1996, the first case of CJD in Great Britain was reported, related to the death of a nineteen-year-old, which happened a year earlier. By 2012, the CJD was responsible for the tragic deaths of 176 people in the UK and 49 people worldwide. Unfortunately, the first cow in Great Britain allegedly died from MCD in the beginning of 1985, the authorities started to understand the magnitude of the problem only in 1986. The MCD reported that 170,000 cattle were killed in Great Britain, and an additional 4.4 million destroyed as a precaution.

The United States also experienced massive food poisoning during this period. In particular, in the early 1990s, 732 people were affected by one of the most tragic cases of food poisoning in U.S. history. Jack in the Box, a fast-food chain, sold hamburgers that were not well prepared that infected many consumers with *E. coli*.<sup>1</sup> The epidemic affected more than 70 restaurants across the United States. Unfortunately, undercooked burgers resulted in the deaths of four children and serious injury to 178 other victims, including permanent kidney and brain damage. Another food safety incident that happened in Belgium, in a factory that recycles parts of old cars. Namely, the mistake of

the workers of this factory was the replacement of the oil from the transformer, which further reached the vegetable oil tank.

It was also used as a raw material and so the contaminated product entered the human food chain. It was difficult to cope with new situation due to lack of necessary information. In other words, recalling all contaminated products was certainly impossible. The situation was partially resolved by the huge number of products being withdrawn, even by those who were safe, because there was no evidence that they were safe, and human health was the number one priority.

Of course, such activities required extremely large financial resources, which was the reason for the more interested target publics and decision makers to dedicate themselves to solving such problems to take the necessary preventive measures. The solution was to establish monitoring system in order to have better food safety.

### The importance of traceability system in tourism

It's no surprise that sometimes something goes wrong. In December 2008, in the Irish pork crisis, infected meat was sent across Europe with total cost over 200 million euros. Moreover, in February 2013, there is now-legendary scandal with horse meat, which hit numerous houses that bear the names of retailers and food producers.

In fact, the food recalls increase by 78% in 2015. The recalls cost is also rising with news spreading rapidly on social media. To avoid all these situations, companies in tourism sector need a traceability system—meaning that each source of the batch process, place of delivery of ingredients can be tracked. Waste is reduced, capacity is optimized, all thanks to traceability system.

<sup>1</sup> *Escherichia coli* (*E. coli*) is one of the major bacterial species living in the lower part of the mammalian digestive tract (<https://www.sciencedirect.com/book/9780123970480/escherichi>).

Within the tourism industry (hotels, restaurants, bars, motels, etc.) traceability advantages worth mentioning relate to:

- Customer Safety - Food & beverage (transparency in all aspects of supply chain)
- Long-term business success
- Preventing potential problems that might arise with food and beverages

The food processing sector consider the food monitoring system to be an important segment of the organization along with product distribution, including relevant monitoring data (Bosona & Gebresenbet, 2013; Kumar et al., 2015).

Everyone can benefit from traceability, starting from stakeholders, consumers, local community, hotel management professionals, manufacturers involved in food chain, in terms of products history. It allows companies to constantly maintain complete control and accuracy of business records, which is really important to all tourist while traveling. Travel & Tourism sector are the best GDP ally for generating jobs.

It could be painful for big hotel chains, motels, restaurants, bars, if traceability is not fully present in terms of supply chain activity. Companies with less focus on food monitoring have greater challenges in distribution, scheduling tasks, and therefore have unfavorable business situations (Charlier & Valceschini, 2008), situations where customer needs cannot be met, all due to poorly organized business involving planning and delivery of goods, including any changes that may occur (Lee & Ozer, 2007). Traceability, also as a big quantitative support assisting companies in their daily business. With this in mind, there is a sense of stability, which is needed in case something goes not as planned. In the Republic of Serbia, traceability is defined under the Food Safety Act, Article 4.<sup>2</sup>

<sup>2</sup> **Food Safety Law** was adopted by the National

“Traceability is the ability to monitor food, feed animals, used for food production, raw materials or substances intended or expected to be incorporated into food or feed through all stages of production, processing and marketing.”

Term “food” can mean anything that, if consumed daily, does not adversely affect human health.

### Food traceability and its components

The traceability system aims to rigorously gather all information related to the movement of the different products along the supply chain, which is crucial when food safety crises occur and require efficient management of product recall activities. Traceability, in the supply chain is possible if all partners work synergistically, regardless of their roles, to achieve internal and external traceability.

Internal traceability takes place within the control process, until the samples of the test unit do not see a possible way out. Here, the traceable unit is a monitored item, where there are doubts about its use. They can be of different levels, e.g. they can represent a truck with cargo, a container, a box or a bag and even individual products that go through POS, such as chips.

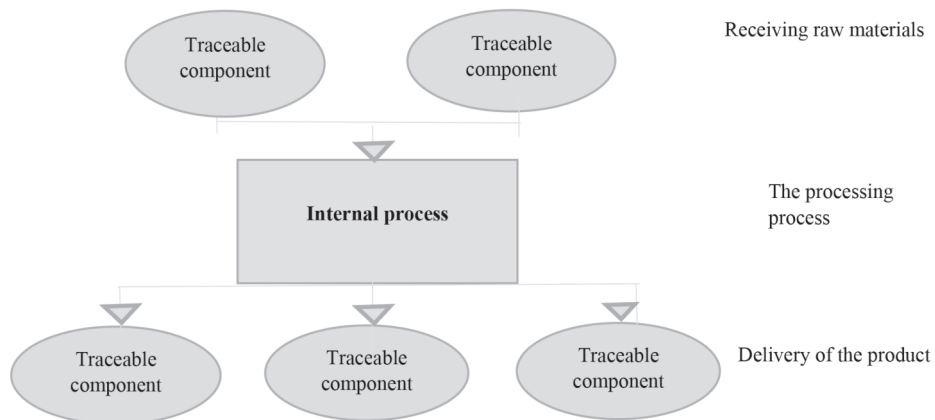
Food producers can maintain their production thanks to implementations of traceability system which allow them to:

- Concentrate on course of actions instead of reaction on new challenges
- Set up control system
- Cut down already existing expenses
- Diminish reply rate if food complication occur
- Build up client trust

Parliament of the Republic of Serbia on May 29, 2009 and published in the Official Gazette of the Republic of Serbia No. 41/09.

### Internal & External traceability

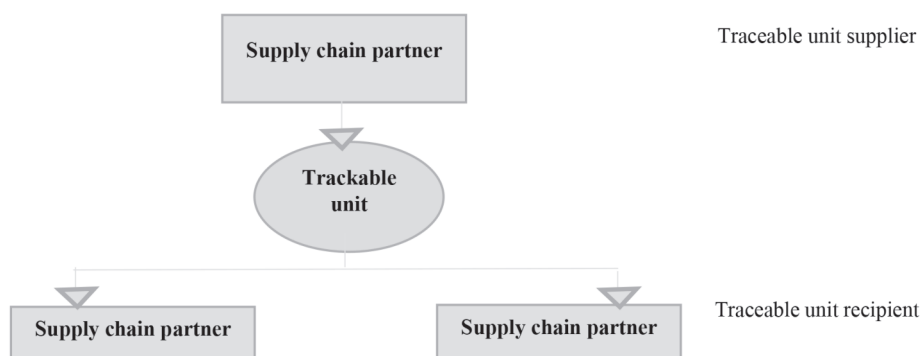
Table 1: Internal traceability process



Source: Authors' findings

**External traceability** means monitoring a product, process in which the traceable component is physically handed over to suppliers.

Table 2: External traceability process



Source: Authors' findings

In the process of food traceability, the ability to check traceable component is extremely important. Traceability, of course, does not mean that all partners in the food chain share all information with each other.

Moreover, inside and outside connections must exist in supervision department for delivering goods, together with operations in-between client/distributor who share liabilities (Kelepouris et al., 2007; Merminod & Pasche, 2011). The minimum amount of traceability data includes information that answers the following questions:

- Who is my traceability partner?
- What is a traceable unit/item being tracked?
- Where was it shipped from and where was the traceability unit shipped from?
- When is the traceable unit received/dispatched?

In order for all information to be accessible to everyone in the chain, participants in the traceability process should apply external and internal controls.

#### **Participants in the traceability process**

Supply chain partners can have different roles, such as:

- Creator of a traceable component
- Attendant of the traceable component
- Traceable component downloader
- Supplier (usually only temporarily own or controls the traceable unit, rarely own the traceable unit).

#### **Methodology**

In this paper, information is collected by data collection methods, online survey research and analysis. Focus group in the survey applies to hotels in The Republic of Serbia and Montenegro.

The survey was conducted in February 2020, with 10 hotels in Belgrade, 6 in Novi sad, 2 in Niš, 2 in Podgorica, 2 in Budva, 1 in Kotor and 1 in Tivat. Close-type questions were sent to electronic addresses: How important is a food traceability system to your company? Does your company do business with no-ISO certificate suppliers? Response rate was 75%. Respondents were able to add extra comments (statement), next to questions asked related to food traceability in their business. The answers and graphs are presented in research result section.

#### **Research result section**

First question: How important is a food traceability system to your company?

The answer to this question is quite simple. In the first survey question (Graph 1), we can see that 80% hotels have very high opinions regarding the importance of food traceability, and 20% of hotels don't. The management team from companies answered the questions similarly.

First question answered, relate to importance of food traceability system as vast and undeniable, simply because it gives a sense of control and security which we all crave. From the answers we can see that almost all companies have high opinion on the importance of traceability, which should be maintained throughout the year. In order to have profitable and safe business, as the companies stated, everything needs to be constantly monitored, otherwise relying on business happiness is not a good idea. In addition to hotel rooms, hotels generally generate significant revenue thanks to the food products that guest enjoy every day.

Therefore, the food traceability system cannot be neglected at any cost. Hotels build connections, trust, with their guest over a long period of time and can't afford to lose

it all, if they fail to complete tasks. A food traceability system helps them to fulfil those high hopes. In addition to simple answers, some respondents posted more comments on this topic:

- *As a general manager and highly educated hospitality worker, I am fully aware of the processes involved in the traceability system and it's very importance.*
- *We do our best to meet consumer demand/needs in everything we do. Guests become more educated, more aware of what's happening in the industry and they require a lot of attention. It's important to recognize that food safety can never be compromised. The food traceability system is one of the key elements of our success that we proudly use, so our guests don't need to worry about food & beverage safety.*

Second question: Does your company do business with no-ISO certificate suppliers?

The second question (Graph 2), related to a hotel that does a business with supplier without ISO certificate show us that 83.3% hotels do business with ISO suppliers, and 16.7% don't. That's obvious and understandable, given the fact that health and safety is

something we must constantly pay attention to, especially in the tourism industry.

Further remarks on these issues are promising, as these organizations are constantly educating their members and advancing towards the best possible traceability in food practice. The diversity of hotels requires suppliers to constantly use an appropriate quality management system.

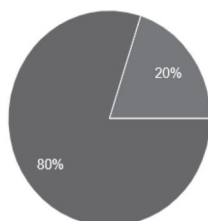
Some hotel policies do not require to be suppliers to be ISO certified, because they do not believe that system could help them get better products, but they agree that it is easier to find a problem when something goes wrong.

Hotels point out that having ISO certificate cannot harm any supplier, especially if they are focusing on long-term success. Many of these hotels operate through the year, so it's important to maintain the quality of service and products. Furthermore, some respondents posted more comments on this topic:

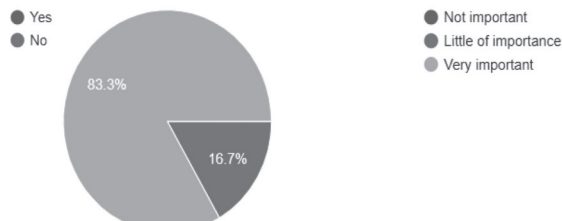
- *It is not a legal obligation for a hotel to work with ISO certified suppliers. That being said, it's smart to collaborate with ISO certified supplier. This simply tells us that they care about products and services and that's really important to us. That doesn't mean other vendor doesn't care as much, but ISO works better for us.*

**Graphs 1 and 2.** Importance and usage of food traceability system in hotel industry

How important is a food ISO traceability system to your company?



Does your company do business with no-certificate suppliers?



Source: Authors' findings

**Food safety standards and systems**

In terms of traceability, it is worth mentioning GS1 standard - the traceability standard. The role is to determine the business model of the rules and the necessary conditions that must be applied during the design and implementation of the food quality monitoring system.

The traceability standard is very useful. The not-for-profit organization GS1 has existed for more than 40 years and is present in 145 countries.

The GS1 standard requires the use of globally established and applied GS1

network tools that uniquely identify the next component to be tracked, provide a description of several of these transmissions, and allow for the rapid exchange of useful data. Based on this, it is very easy to track traceable component of each step during the distribution process, without taking into account the number of partners, phases and countries involved.

The GS1 standard exist today through systems and standards (Graph 3), with the aim of providing customers with safe and healthy products.

**Graph 3: Food safety standards and systems**

No.	STANDARD/SYSTEM	DESCRIPTION
1.	<b>IFC</b>  (International Food Standard)	Quality food & safety form. A widely applied international standard based on the principle of traceability.
2.	<b>HACCP</b>  (Hazard Analysis Critical Control Points)	HACCP is a system for finding, testing and checking for any potential food hazard.
3.	<b>ISO 22000</b>	ISO 22000 - among the first established standard to ensure food safety.
4.	<b>GLOBAL GAP</b>	This standard has benefits in primary and secondary agricultural production. Global GAP tells the consumer where the product comes from
5.	<b>The BRC Global</b>	The BRC World Food Standard serves as a retailer's tool to evaluate distributors and products.
6.	<b>ISO 9001</b>	A standard that includes precise needs that organizations should meet, in order to align their operations with established benchmarks.

Source: Authors' findings



### Conclusion

Given the current situation when globalization is in full swing, when we import raw materials and eat products from all over the world, ensuring safe and healthy food is imperative.

These activities are facilitated by the traceability system, whose greatest advantage lies in the ability to locate defective or unsafe foods, and the ability to quickly and easily withdraw these units. Companies around the world face supply-chain difficulties due to complexity.

The Republic of Serbia has enforced the Law on Security, which clearly requires that from the production to the processing and delivery of food, there is a need for overall traceability. The application of the HACCP system is also mandatory.

In order to monitor traceability globally, standards have been defined as a prerequisite for exports to many foreign markets. These are, among other things, IFS, ISO 22000, ISO 9001. Larger companies tend to go with suppliers who are ISO certified.

The aim of this paper is related to the importance of traceability system in the tourism industry, which is necessary for business efficiency and proper functioning of hotel. From the research we can conclude that hotels in The Republic of Serbia and Montenegro are aware of the importance of food monitoring. They also carefully chose their distributors which is very smart business policy.

The task of everyone in the food chain is to standardize their products and/or services, to continuously inform, educate and consistently strive for the full implementation of traceability, to maximize measures, to ensure the safety of food and beverages that we bring to customers every day. Only this way we can ensure bright future in food supply chain in tourism industry.

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