



Multi-actor design of low-waste food value chains through the demonstration of innovative solutions to reduce food loss and waste

**LOWINFOOD**

## PRACTICE ABSTRACT No: 11

### Predicting Food Demand with Mitakus

**The Mitakus is a forecasting software that is used in the out-of-home-sector, such as in business or university canteens, to predict sales, i.e., the number of guests buying meals. Mitakus helps food service businesses to improve their planning and forecasting by producing the right amount of food and lowering food waste in the process.**

The food service businesses provide Mitakus with historical sales data of their different menu lines. Mitakus then cleans the data and uses AI to identify patterns. Variables such as the season, weather, menu line, and day of the week are taken into consideration. Based on the algorithms derived by Mitakus, forecasts for sales are made. This enables decision makers to better adjust the production volume to the actual demand.

The forecast provided by Mitakus can be accessed online and can be used as a planning tool. Chefs and supervisors can compare tool predictions for specific meals and even ingredients, to their own planning. Usually, users work on a weekly basis with the tool, viewing the forecast and making adjustments if necessary. These can involve changing the purchase volume or making short-term adjustments to cooking volumes on a specific day. If the purchase volume can be reduced due to more accurate planning, food cost may be lowered.

While an innovation can save a company money by producing just the right amount of food and wasting less, Mitakus may also reduce stress. With a reliable forecast, the decision of whether the food will suffice for everyone or if more should be produced (and possibly wasted) becomes easier.

In the LOWINFOOD project, we test and evaluate Mitakus in two university canteens and two business canteens. We expect that Mitakus will reduce food waste, because the volume of food needed can be predicted better. We are still testing the innovation right now.

#### Author(s)

Paula Gerwin,  
Christina Strotmann  
(ISUN)

#### Contact

Clara Cicatiello  
cicatiello@unitus.it

#### Country/region

Germany



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### Additional information: Data requirements

To work properly, Mitakus needs clean and reliable sales data to build a forecast on. Using Mitakus has become more challenging because of the pandemic – the historical data used to calculate the forecast may be from lockdowns or before the pandemic. Since then, many restaurants have changed their approach, menu, or pricing. The costumers also may be more likely to work from home, use canteens less or prefer different hours than before.

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### ABOUT LOWINFOOD

The LOWINFOOD project, launched in 2020 and coordinated by the University of Tuscia, Italy, is working to deploy and improve a set of 14 innovative solutions to the food waste problem, by demonstrating their effectiveness and market potential. The core activities of the project are all focused on the evaluation of the efficacy of these innovations in reducing food losses and waste, in terms of the amount of food waste avoided as well as their environmental and socio-economic impact.

### CONSORTIUM



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### Die Nachfrage vorhersagen mit Mitakus

**Die Innovation Mitakus wird in der Außer-Haus-Verpflegung genutzt, zum Beispiel in der Studierenden- oder Betriebsverpflegung, um die Nachfrage der Gäste vorherzusagen. Somit unterstützt Mitakus die Betriebe darin, ihre Planung zu verbessern und dabei Lebensmittelabfälle zu reduzieren.**

Die Betriebe senden Mitakus Verkaufsdaten der letzten Monate oder Jahre. Mitakus bereinigt die Daten anschließend und nutzt künstliche Intelligenz, um Muster zu identifizieren. Dabei werden Variablen wie der Wochentag, die Jahreszeit, die Menüzusammenstellung oder das Wetter in Betracht gezogen. Durch die von Mitakus bereitgestellten Vorhersagen können Entscheidungsträger in den Betrieben in ihren Planungsaktivitäten entlastet werden.

Die Vorhersagen von Mitakus können online über ein Dashboard verfügbar sein. Küchenleitungen können ihre eigene Planung für Gerichte oder sogar Zutaten mit den Mitakus-Werten vergleichen. Üblicherweise nutzen die Betriebe Mitakus wöchentlich, um die prognostizierten Verkaufszahlen einzusehen und ihre Planung entsprechend anzupassen. So kann z.B. die Einkaufsmenge lang- oder kurzfristig verändert werden, wodurch der Wareneinsatz der Betriebe sinken kann. Kurzfristig können Betriebe ihre Produktionsmenge an die vorhergesagte Verkaufsmenge anpassen.

Die Innovation Mitakus kann dabei helfen, Kosten zu reduzieren, da passgenau eingekauft und Überstände und Abfälle vermieden werden. Zusätzlich lässt sich so ggf. auch Stress im Arbeitsalltag reduzieren: Die Entscheidung, ob Essen kurzfristig nachproduziert werden muss, fällt durch Mitakus leichter.

Im LOWINFOOD-Projekt testen und evaluieren wir Mitakus in zwei Universitätsmensen und zwei Betriebsrestaurants. Wir erwarten, dass weniger Essen weggeworfen wird und sind aktuell dabei, die Innovation zu testen.

This Practice abstract reflects only the author's view. The LOWINFOOD project is not responsible for any use that might be made of the information it contains.



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