

## Graduation Project Abstract

Department Name: Industrial Engineering

Project Name: Feasibility Study to Establish a Cloud Kitchen in West Bank

Academic Year: 2022/2023

Group Members:

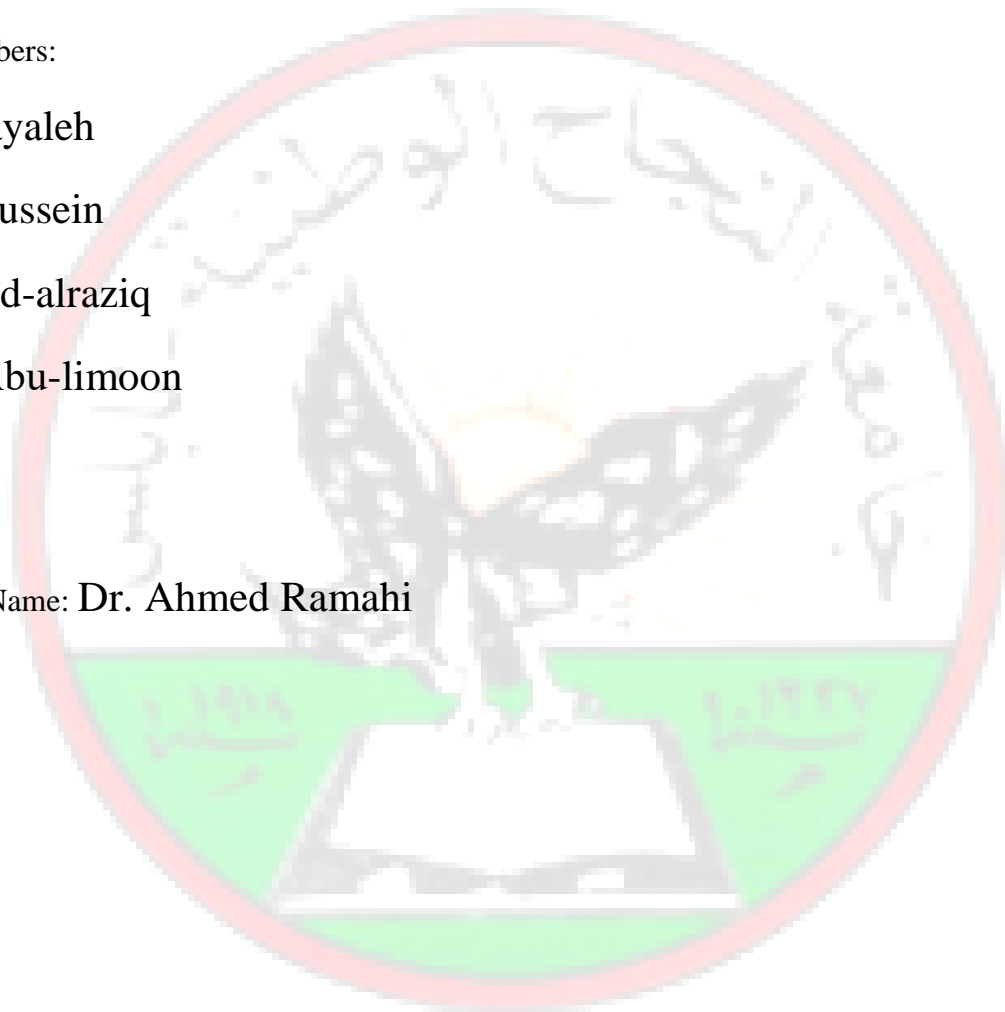
Aseel Mayaleh

Rawan Hussein

Linda Abd-alraziq

We'am Abu-limoon

Supervisor Name: **Dr. Ahmed Ramahi**



## **Background**

The restaurant sector in the West Bank is constantly increasing, as there are more than 5,000 restaurants and cafes in Palestine, and the reason for this increase is that the capital to establish the restaurant returns quickly, due to the increasing demand for this service investors prefer to invest in the restaurant sector, in addition to the fact that this sector has become linked Significantly to the delivery sector, where most restaurants provide takeaway service.

Customers go to restaurants not only for the purpose of food, they also go to enjoy the place, which makes the owners choose places for their restaurants with a distinctive location, well-known in the area, and a comfortable interior decoration which increases the fixed cost. With the increase in delivery requests and the lack of coordination between restaurants, as meals from different restaurants going to the same area are not delivered together, this leads to pressure on the traffic system and thus the delay in food delivery. Because the two types of customers (restaurant customers and delivery customers) share the same kitchen that prepares the food for them, they face the problem of delays in receiving food; i.e. longer lead time.

The solution is to establish a central cloud kitchen divided into small spaces; each space is allocated for certain restaurant name to prepare the requests of delivery customers. The proposed kitchen is based on the idea of having all the restaurants in this cloud sharing one mobile application; so that customer orders can be received simultaneously by the different member restaurants, orders are then to be prepared by the corresponding member restaurants in the cloud kitchen, then orders sharing nearby address are to be delivered together by a delivery company; which of course reduces the pressure on the traffic system.

The presence of such a cloud kitchen reduces the load on the main restaurant branch, as well as reducing the fixed cost in the delivery branch located in the Cloud Kitchen, thus reducing the price of the meal for delivery customers; this leads to an increase in sales and productivity. On both branches, main and cloud, the time between ordering and receiving the meal (i.e. lead time) will be reduced.

## **Objective**

### **Main goal**

- To study the feasibility of establishing a cloud kitchen in West Bank.



### **Sub goals**

- Assess willingness of large/brand restaurants to join the Cloud Kitchen.
- Determine best location for the Cloud Kitchen (Facility location)
- Develop a proper layout for the Cloud Kitchen and present it with VR technology.
- Investigate whether the Kitchen owner would provide raw materials to restaurants, or each restaurant would be responsible for its needs.
- Investigate the best delivery model; i.e. would Cloud Kitchen be owned by a delivery company, or independent investor who may own the cloud kitchen and leave the delivery service open for different delivery companies to co-operate in delivering the orders. Delivery companies participating in this private application are to be charged for each delivery by the Cloud Kitchen owner.
- Develop an application that simulates and proves the basic concept of the model.

### **Methodology**

- Review the previous literature to benefit from the information presented there on the topic and the published data.
- Design Study Tools: Surveys, or structured Interviews to collect data
- Collect relevant data from restaurants, Palestinian Center Bureau of Statistics and related parties.
- Conduct a market study to determine demand on such a kitchen.
- Make a technical study to determine the location, lay-out, equipment, resources, software, storage.... etc.
- Implement financial study to verify indicators of project success or failure.
- Develop procedure that facilitate the process of ordering and delivery in the application, such as the short route.
- Make legal study to clarify the possibility of establishing this business in terms of property rights.

### **Outcoming**

A report documenting experience gained and the results of the study.