

STUDY ON THE INFLUENCE OF METEOROLOGICAL ENVIRONMENT ON THE INFECTION RISK OF FOODBORNE DISEASES IN THE CATERING INDUSTRY IN ZHEJIANG PROVINCE

Bachelor's thesis

Performed by: Siyi YANG, student of the 4th year, group GK-42

Scientific supervisor: PhD, assoc. prof. Natalia BUBYR

V.N. Karazin Kharkiv National University, 2024

Specialty: 106 Geography

Educational program: Cartography, Geoinformatics and Cadastre

ABSTRACT

The relevance of the research lies in foodborne diseases are diseases that enter the human body through ingestion and are caused by various pathogenic factors, usually with the nature of infection or poisoning. This not only directly endangers human life and health, but also has a huge impact on society, economy and politics, and seriously hinders social development. At present, foodborne diseases have been regarded as a major global public health problem, and paraolysin, Samana and Noros are the three most typical viruses in foodborne diseases. Zhejiang Province is located in the southeast coast of China, is a subtropical area, aquatic products are diverse, suitable for the growth of microorganisms, in recent years, the incidence of food-borne diseases has been high. Nowadays, more and more people go to eating places to eat, so all kinds of places are likely to be the main location of foodborne disease outbreaks, and restaurant food is considered to be the most likely source of foodborne disease outbreaks. The influence of meteorological environment on foodborne diseases has also been proved in various studies. Meteorological environment and restaurant environment are important factors affecting foodborne disease outbreaks, however, few studies have targeted both factors at the same time.

The object of this study is the incidence of foodborne diseases under different climatic conditions, and **the subject of the study** is the foodborne diseases in Zhejiang Province.

The purpose of this qualification work is based on the case data of foodborne diseases in Zhejiang Province, the incidence of foodborne diseases in different food consumption places, especially in the catering industry, was studied according to the spatial distribution pattern of the positive detection rate of common pathogens, and the incidence of foodborne diseases under different climatic conditions was analyzed:

1. Statistics of epidemiological characteristics of foodborne diseases. Based on the data of foodborne disease surveillance and reporting system, the epidemiological analysis of foodborne diseases was carried out according to the catering places and disease severity, taking *Vibrio parahaemolyticus*, *Salmonella* and norovirus as examples.

2. Analysis of spatial distribution pattern of foodborne diseases. The incidence rate of foodborne diseases and the detection rate of three positive pathogens in Zhejiang Province were analyzed by map visualization and spatial distribution pattern, and the possible potential influencing factors were explored and analyzed by visualization.

3. Modeling of influencing factors and risk analysis of the incidence of foodborne diseases. From the perspective of climate factors and POI distribution in catering industry, the correlation between typical foodborne diseases and climate was analyzed, and the regression model of influencing factors for the incidence and detection rate of foodborne diseases was established. The confidence interval of the influencing factors is further estimated by Bayes.

Structure of the work. The thesis consists of an introduction, three chapters, and conclusions. The work is laid out on 49 pages, includes 24 figures, 9 tables. The reference list includes 50 sources.