Dynamic Seasonal Variation
Lundbye-Christensen, Søren; Dethlefsen, Claus; Gorst-Rasmussen, Anders; Christensen, Anette Luther

Publication date:
2009

Document Version
Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

Citation for published version (APA):
Dynamic Seasonal Variation

S. Lundbye-Christensen¹, C. Dethlefsen¹, A. Gorst-Rasmussen¹, A. L. Christensen¹,²
1 Center for Cardiovascular Research, Aalborg Hospital, Aarhus University Hospital, Denmark
2 Department of Mathematical Sciences, Aalborg University, Denmark

Introduction

Time series of incidence counts often show secular trends and seasonal patterns. We present a model for incidence counts capable of handling a possible gradual change in growth rates, seasonal patterns, serial correlation and overdispersion.

Model

\[ \sum_{i=1}^{\theta} \cos \left( i \cdot \frac{2\pi}{m} t_k \right) \{ \theta_{c,k} \cos \left( i \cdot \frac{2\pi}{m} t_k \right) \} \]

Materials

Incident acute myocardial infarctions and heart arrests in the Danish population aged 20 or more, in the period of January 1980 until August 2008.

Analysis

Total number of cases 275,468
Women 100,207 (36.4%)
Age Median (25% - 75%)
Men 67 (58-76)
Women 75 (66-82)

Data.

Daily number of incident cases per 100,000 from January 1980 until August 2008.

References


Changes in the seasonality illustrated by January first every second year from 1980.