

# **Branching stochastic processes as models of Covid-19 epidemic development**

**Maldives - 20201214**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Maldives - 20201214**

### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Maldives. The data comes from European Centre for Disease Prevention and Control available at <https://opendata.ecdc.europa.eu/covid19/casedistribution/csv>.

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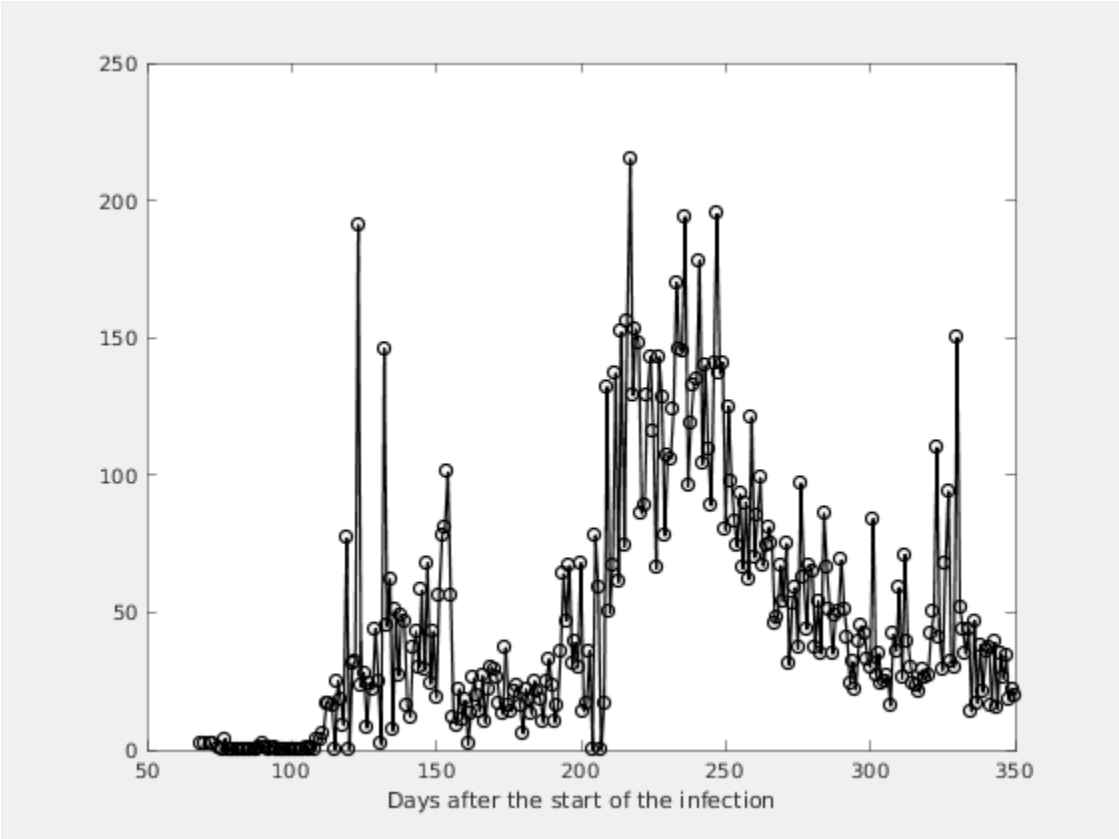
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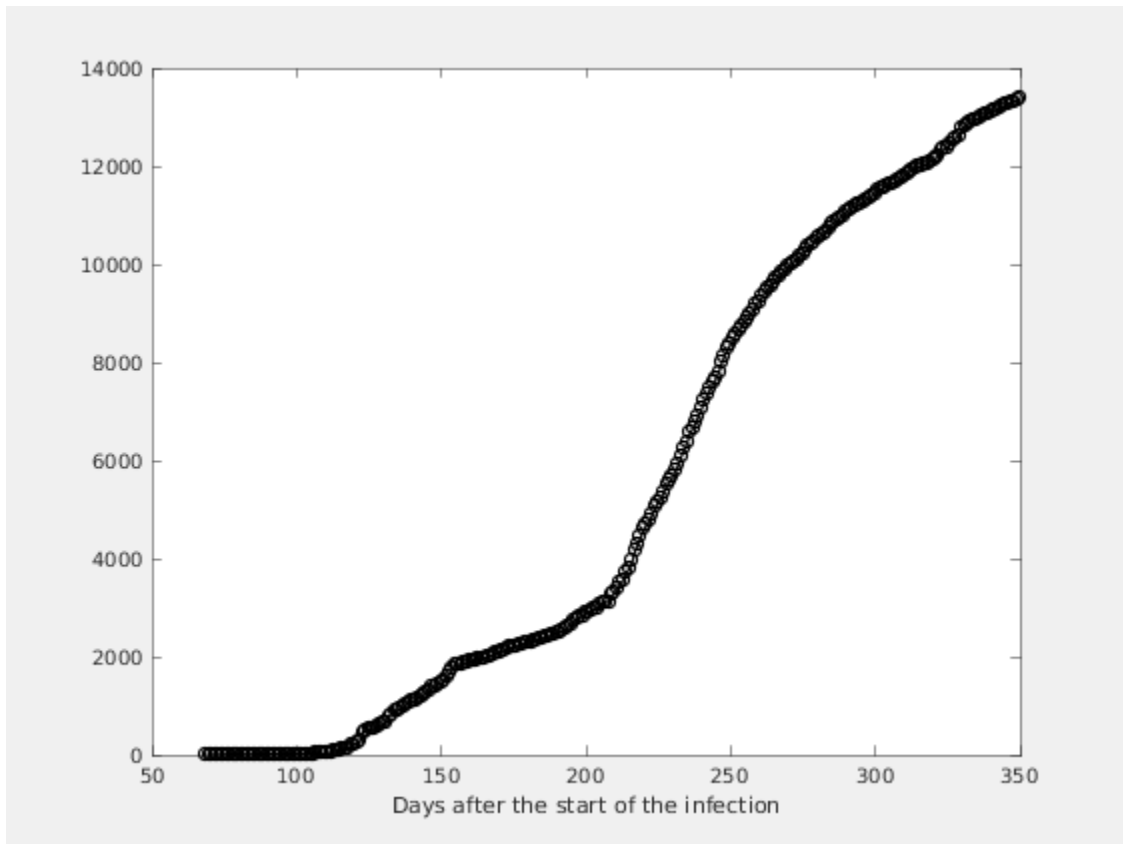
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the daily reported laboratory-confirmed cases



**Figure 1.2. Number of the total registered cases**



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# Chapter 2. Estimating of the main parameter and some predictions

Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate

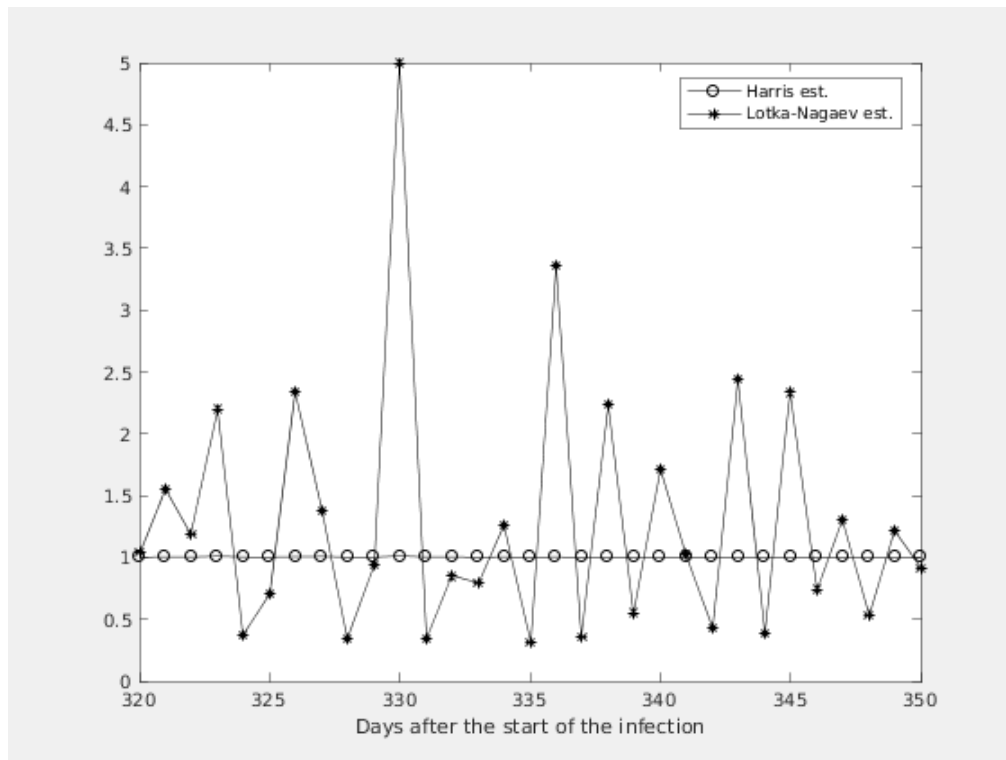
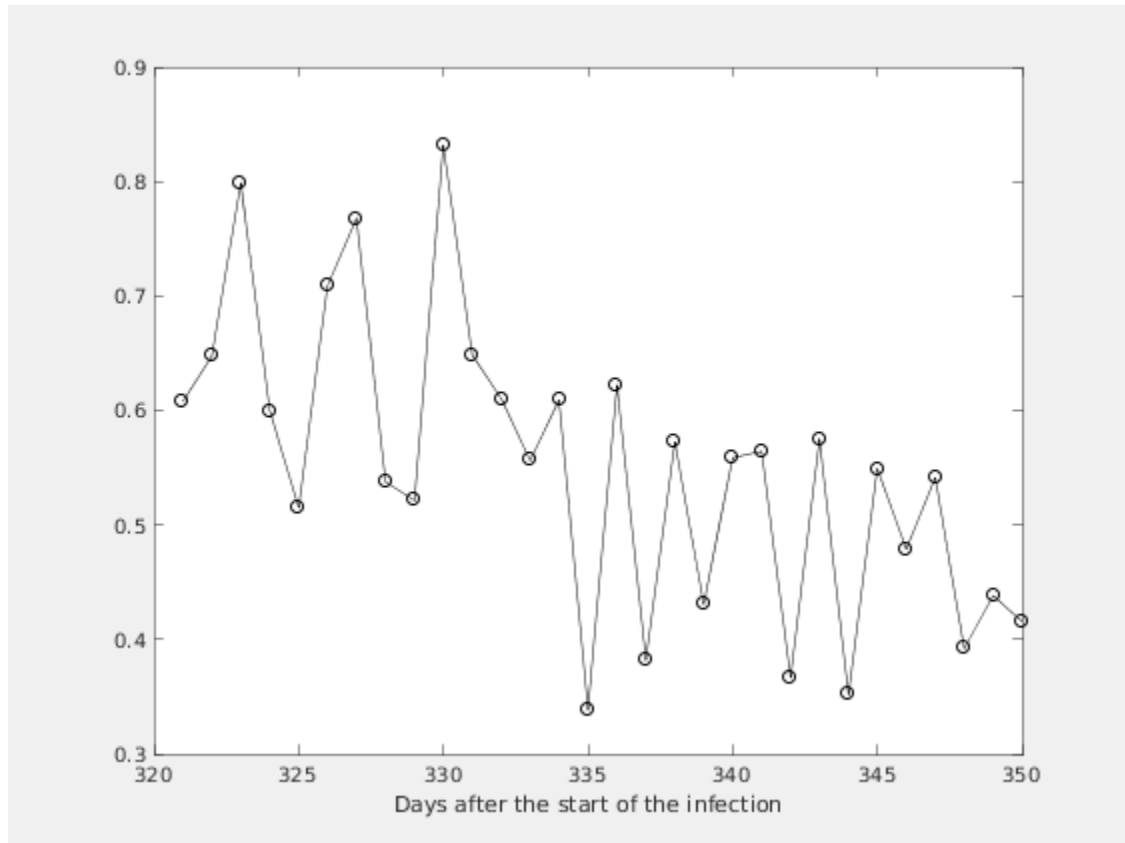
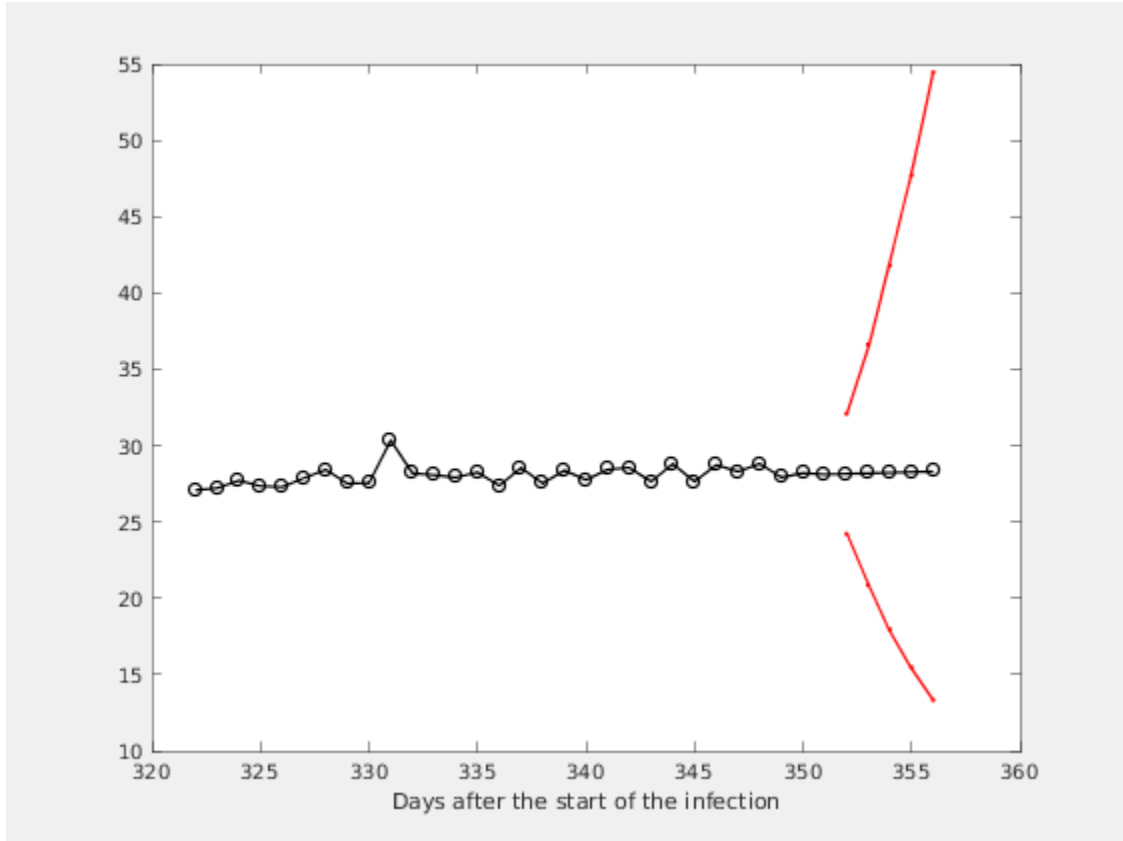


Figure 2.2. Figure

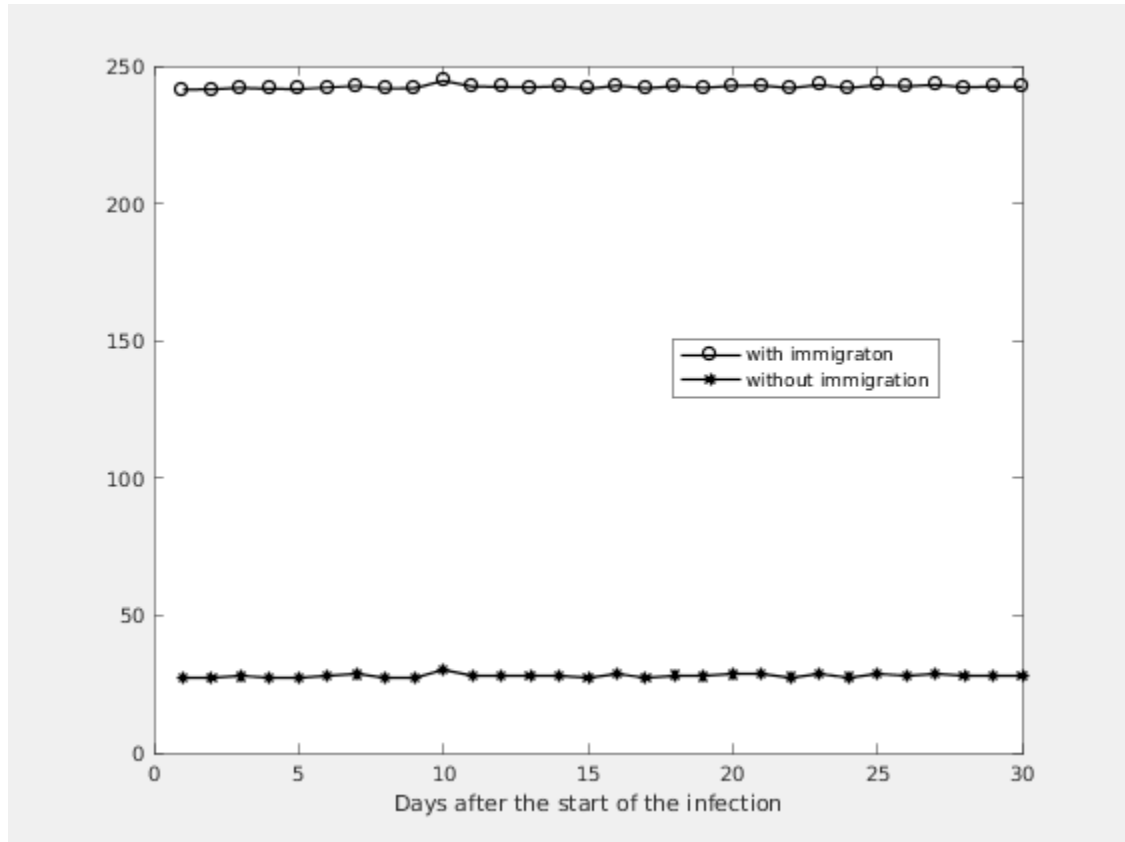




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



**Figure 2.4. Expected number of the nonregistered infected individuals with immigration**



**Estimation of the model parameters.**

| k | m      | ci              | alpha  | M1 | A1  |
|---|--------|-----------------|--------|----|-----|
| 4 | 1.0018 | 0.8594 - 1.1442 | 0.3517 | 28 | 242 |
| 3 | 1.0024 | 0.8603 - 1.1445 | 0.5491 | 29 | 243 |
| 2 | 1.0012 | 0.8595 - 1.1429 | 0.4788 | 28 | 243 |
| 1 | 1.0015 | 0.8602 - 1.1428 | 0.5413 | 29 | 243 |
| 0 | 1.0013 | 0.8605 - 1.1422 | 0.3920 | 28 | 242 |