Package 'roroph'

May 9, 2026

Title Philippine Roll-on/Roll-Off (RoRo) Connectivity and Transport Data

Version 0.1.1

Description Provides the first standardized dataset of the Philippines' Roll-on/Roll-off (RoRo) shipping network, reflecting the 2024-2026 operational state. It digitizes fragmented records from the Maritime Industry Authority (MARINA) and Philippine Ports Authority (PPA) into a unified framework for transport modeling. The package includes 108 bidirectional provincial links across the Western, Central, and Eastern Nautical Highways, complete with GADM-standardized naming, geospatial coordinates, and metrics such as distance, travel time, and vessel frequency. Methodology follows Anselin (1988, ISBN:9024737354) and LeSage and Pace (2009) <doi:10.1201/9781420064254> for spatial weight construction. Data sources include ``MARINA Inventory of RoRo Routes'' <https://marina.gov.ph> and ``PPA Port Statistics'' <https://www.ppa.com.ph/ppa_statistics>. Designed to support research in economic geography and disaster-response logistics.

License MIT + file LICENSE

URL https://github.com/njtalingting/roroph

BugReports https://github.com/njtalingting/roroph/issues

Depends R (>= 3.5.0)

Imports ArchipelagoEngine, dplyr, ggplot2, sf, spdep

Suggests knitr, rmarkdown, rnaturalearth, rnaturalearthdata, ggrepel, ggspatial

VignetteBuilder knitr

Encoding UTF-8

LazyData true

RoxygenNote 7.3.3

Language en-PH

NeedsCompilation no

Author NJ Talingting [aut, cre] (ORCID:
<https://orcid.org/0009-0003-7245-874X>)

Maintainer NJ Talingting <ninotalingting77@gmail.com>

Repository CRAN

Date/Publication 2026-04-16 18:20:02 UTC

Contents

`roro_routes` *Philippine RoRo Connectivity Network*

Description

A comprehensive dataset of the Philippine Strong Republic Nautical Highway (SRNH) and Missionary Routes (2024-2026).

Usage

```
roro_routes
```

Format

A data frame with 108 rows and 16 variables:

from_prov Origin province name, GADM-standardized

to_prov Destination province name, GADM-standardized

route_name The official name of the ferry connection

dist_nm Distance in nautical miles

avg_time_hrs Average travel time in hours

freq_daily Average daily frequency of trips (The Weight)

pax_cap Estimated passenger capacity

cargo_cap Estimated truck units (Logistical Flow)

marina_code Official MARINA classification code

highway_type Western, Central, Eastern, or Missionary

from_lat Origin Latitude

from_lon Origin Longitude

from_region Luzon, Visayas, or Mindanao

to_lat Destination Latitude

to_lon Destination Longitude

to_region Destination Region

Source

Philippine Ports Authority (PPA) and MARINA (2024-2026).

Examples

```
library(roroph)
library(dplyr)

# Load the network data
data(roro_routes)

# Example 1: Basic Analysis of Connectivity
# Calculate the average passenger capacity per highway system
roro_routes %>%
  group_by(highway_type) %>%
  summarise(mean_pax = mean(pax_cap, na.rm = TRUE))

# Example 2: Spatial Adjacency Logic (Anselin/LeSage framework)
# Filter for the Western Nautical Highway (WNH) hubs
wnh_hubs <- roro_routes[roro_routes$highway_type == "Western", ]

# Simple validation check of coordinates for spatial weight construction
if (requireNamespace("sf", quietly = TRUE)) {
  library(sf)
  # Check if coordinates are within the Philippine bounding box
  bbox_check <- all(wnh_hubs$from_lat > 4 & wnh_hubs$from_lat < 21)
  message("Coordinate validity: ", bbox_check)
}
```

Index