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Hyperlink connectivity of WA tourism websites

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What is this research about?

- A tourism destination is an amalgam of different tourism products, services, and stakeholders.
- On the internet, a tourism destination is a collection of websites representing the organisations and businesses.
- This study investigates the hyperlink network of the tourism industry in Western Australia.
- The main aim of this research is to present a comprehensive understanding of tourism industry’s website connectivity in WA.
- The research questions are:
  - What are the structural properties of the WA tourism industry hyperlink network?
  - What structural patterns does this network present?

Ok! Why are Hyperlinks important?

- are crucial to the Visibility of tourism businesses websites.
- are crucial to the Visibility of the whole tourism destination on the internet.
- can increase the chance of selection of the destination.
- Tourism industry lacks understanding about the importance and benefits of hyperlinks.

Got it! How was the data collected?

1. A primary list of tourism organisations and businesses in WA was obtained from the Australian Tourism Data Warehouse (ATDW).
2. The list was updated by finding and adding organisations’ websites, region, and sector (WA is divided into five tourism regions and the organizations were also grouped under 12 sectors).
3. The websites were ‘crawled’ using VOSON, a web-based tool designed for hyperlink data collection and analysis.
4. After the crawl, data was cleaned. The irrelevant discovered websites were removed.

The resulting network comprised: 1,515 nodes (websites) and 6,059 directed links (hyperlinks between websites).

1515 websites!

How was the data analysed?

The network is analysed at three levels: global, sectoral, and individual. UCINET, Geph, and Pajek were used for the network visualisation, measuring basic network properties and conducting some general analyses. For more sophisticated analyses, we used NetworkX which is a Python language library package.

Cool! and the Results?

- Here is a summary of the characteristics of tourism websites connectivity in WA:
  - Highly clustered
  - Low mutual acknowledgement
  - Very low connectivity
  - Few large hubs, many small peripheries
  - Tendency to link to geographically close organisations

- Only 5% of website pairs have mutual links to each other. It shows that tourism
  organisations are not particularly interested in acknowledging each other.

- Out of 1,980 possible links in the network, only 4 links actually exist.
- 200 (27%) websites have no links at all to other websites in the network.
- WA tourism network is composed of a small number of highly central hubs and a large number of peripheral websites.
- The hubs are predominantly information services and public tourism bodies.
- The existence of hubs can improve the quicker diffuses of information through the network. But the network is more
  vulnerable to targeted attacks.
- Websites tend to form quite dense clusters and neighbourhoods around them.
- It can be an indicator of local specialisation in tourism organisations.
- Websites prefer to link to organisations working in their physical proximity.
- It can be a sign of local collaboration between tourism organisations and
  also of high competition between similar businesses.

- These two graphs visualise the network based on two attributes of the websites:
  - Tourism Regions (Fig 1)
  - Tourism Sectors (Fig 2)
  - Websites colors clearly show that tourism websites connect based on their
    geographical location rather than their tourism sector.

Any Message for the Tourism Industry?

- Connectivity of the network needs to be increased by creating more hyperlinks.
- Businesses need to be educated on the importance of hyperlinks and encouraged to create more links to other tourism websites in the destination.