Transit-Infrastructure Costs in the Arab World

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Research by: Dr. Eric Goldwyn and Dr. Alon Levy
Setting up the picture

22 countries

423M
Population 2015 estimate

21 currencies

$3.5tr
GDP - Nominal 2011 estimate
**Setting up the picture**

*Motor vehicles per 1K people (2014)*

- Bahrain (27)
- Qatar (29)
- Kuwait (32)
- Lebanon (41)
- Saudi Arabia (51)
- United Arab Emirates (55)
- Libya (59)
- Oman (67)
- Jordan (83)
- Tunisia (97)
- Algeria (100)
- Syria (116)
- Morocco (121)
- Iraq (130)
- Egypt (131)
- Palestine (132)
- Yemen (138)
- Djibouti (144)
- Sudan (147)
- Somalia (186)
Setting up the picture

Sum of Motor vehicles per 1K people (2014) for each Country broken down by Region. Color shows details about Region. The marks are labeled by Country.
A Bit of history…

• The first railway in the Arab World was opened in the 1850s in Egypt. Railways were subsequently built in Morocco, Algeria, Tunisia, Sudan, Syria, Lebanon, and Iraq.

• The most important railway at that time was the Hejaz Railway, linking Medina in Saudi Arabia with Damascus in Syria, via Palestine, and Jordan. The railway was opened in 1908 and was closed in 1920.
A Bit of history...
What were we looking for?

- **Location**
  State, region, city

- **Duration**
  Years from announcement until project’s delivery

- **Stations**
  Amount and type

- **Phases and Lines**
  Specification on the transit lines and construction phases/extensions

- **Network Length**
  Track length by lines and extensions

- **Contractors**
  Managing, design, and construction

- **Coverage Type**
  National, regional, or urban

- **Tunneling**
  Type and length of tunnels (if exists)

- **Costs**
  Converted by year and currency
## Collected data

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries</td>
<td>16</td>
</tr>
<tr>
<td>Projects</td>
<td>72</td>
</tr>
<tr>
<td>Progressed</td>
<td>38</td>
</tr>
<tr>
<td>Postponed</td>
<td>30</td>
</tr>
<tr>
<td>Valid Entries</td>
<td>90</td>
</tr>
</tbody>
</table>
Collected data

Networks under construction works per country

Number of networks where works were initiated
Number of networks that construction works were announced in regard to
Qualitative insights

- Unsurprisingly, transit infrastructure construction is much related to geo-political and global economic trends. Examples for that are: Syria, GCC project, Saudi Arabia, and Qatar.

- Syria, who had a decent railway infrastructure and relevant bodies (Arab Union of Railways), has almost completely vanished from the map of running projects and operating systems.
Arab Railway Network (Arab League Study)
<table>
<thead>
<tr>
<th>Country</th>
<th>Line length</th>
<th>Local Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
<td>145</td>
<td>511-574</td>
</tr>
<tr>
<td>Bahrain</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>283</td>
<td>400</td>
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<tr>
<td>Saudi Arabia</td>
<td>663</td>
<td></td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>684</td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>306</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative insights

• Transparency and accessible official information are NOT widespread among official leaders and entities. Often, they themselves are “fed” by state officials or executing contractors.

• Most detailed information was found in Western media outlets, or contractors’ websites.
Qualitative insights

• Inter-urban or regional systems’ costs per KM are generally lower than urban systems’ costs.

• Gulf countries and North African countries had the most significant number of transit construction projects in the last two decades. Algeria, UAE, and Saudi Arabia stand at the top of the table in terms of transit projects.

• There are almost no projects in the Levant region.
Qualitative insights

• Roughly speaking, costs for North African countries were lower than the costs of the Gulf countries.

• Many reasons can be attributed to this difference. Such as the characteristics of the projects, the local topographies, the past-experience, and relations.

• This also can raise questions about post-colonial relations, projects’ “necessity” and demands, and willingness to pay.
Qualitative insights

• Some European enterprises operate on the local-national level in North African countries, most notably, in Algeria as the example of Alstom Algerie SPA has been operating in Algeria since 2002. This, in contrast to the ad-hoc consortiums’ establishment in Gulf countries.

• The involvement of the French government and European banks is also noteworthy in the context of Morocco, Tunisia, and Algeria.
### Featured projects’ comparison

<table>
<thead>
<tr>
<th>Name</th>
<th>al-Haramain, KSA</th>
<th>al-Boraq, MR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration (years)</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Network (KM)</td>
<td>453</td>
<td>363</td>
</tr>
<tr>
<td>Tunneling (%)</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Stations</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Construction/KM</td>
<td>0.077478</td>
<td>0.016601</td>
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</table>
## Featured projects’ comparison

<table>
<thead>
<tr>
<th>Name</th>
<th>Lusail LRT, QA</th>
<th>Algiers Tramway, AL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration (years)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Network (KM)</td>
<td>18</td>
<td>16.2</td>
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<tr>
<td>Tunneling (%)</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Stations</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Construction/KM</td>
<td>0.277778</td>
<td>0.076167</td>
</tr>
</tbody>
</table>
Thank you!

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