



DHEEI – Mediterranean Studies

# **Railways of the MENA Region, tools of national and foreign policy**

Master's Thesis submitted by

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## **Introduction**

The research in this thesis deals with transport infrastructure and focuses on railways. Railways are a tool of public transit, where cars are pulled on rails to transport people across distances, either within cities, within countries, or even internationally. Railways are also tools of freight, used to transport goods in the same fashion as people. In this respect, rail is no different from road transport, air transport, and sea transport, which all can carry people and freight. Railways are arguably not as modern as those means of transportation, being a concept dating from the European 18<sup>th</sup> century industrial revolution. This has notably allowed cars to become the most popular and preferred means of transportation throughout the world.

However what sets rail apart is that it has arguments to be considered safer, cheaper, cleaner, and more efficient than other means of transportations, especially cars. This makes railway a competitive infrastructure, and it seems that those assets are making this “antiquated” means of transport more popular today. The ecological aspect of rail for example, fits into the current global trend to seek transport solutions that are clean and more respectful of the environment. Furthermore, as the world is becoming more globalized, interconnected and populated, finding transport solution to link an increasing amount of people becomes a global challenge. For these reasons railway infrastructures are being developed throughout the world.

This importance of railway makes it a key infrastructure for countries, offering logistical opportunities for trade and people alike, integrating trade and the population in the globalized world. Therefore this research will seek to explain the benefits of railway infrastructure. Understanding how the literature and current research see the economical and social benefits of railway will allow us to understand the objectives of states that are developing railway infrastructure on their territory as part of their national strategy. This literature is quite extensive, and the benefits of railways have been well documented.

The importance of railway as a tool of connectivity, globally or nationally, also means that it reduces geographical distances between people, making closing the distance between population easier. This also would have the added effect of reducing cultural barriers as by increasing physical exchanges between people, their ideas and knowledge integrate and become more homogenous. This coupled with the aforementioned social and economic benefits creates a mindset of common interests and unity. For this reason, we can argue

that this unifying or homogenizing effect of rail can be utilized by states for nation building at the national scale, or even region building at the international scale. This effect is not very well documented by research but can be observed by looking at historical evidence. Our first chapter will therefore focus on demonstrating how research understands the social and economic benefits of railways, and will also look at general historical and contemporary evidence of rail being used for nation and region building.

Once the theory of the general benefits of rail will be understood, we will shift our focus on how those benefits apply to middle-eastern and north-african states (MENA). Specifically we will look at Egypt, the Maghreb (Tunisia, Algeria, Morocco) and the GCC (Saudi Arabia, United Arab Emirates, Qatar, Bahrain, Oman, Kuwait). These countries will be analyzed as they all are currently developing or projecting to develop their railway sector in the near-future. Those states however differ in their existing or absence of a railway network, in their interests and motivation for rail infrastructure, or in their approach to developing it. The research will focus on seeking through official information, but also on political research and journalism, for economic and social interests, but also for possible nation-building or region building goals of those countries. By analyzing how those state motivations and the differences between the states, the second chapter should demonstrate how railway is affected by or may affect the general economic, social and political situation in the MENA region.

But if all the analyzed countries are all developing their railway infrastructures, none of them feature an actual national railway industry. All of them are dependent on foreign states building the infrastructure for them. Considering the costs of building those infrastructures, and the strategic benefits they bring (economically, socially and politically), dependence on foreign-made infrastructure could be significant. If a foreign state is supplying funds or infrastructure to build a critical tool than answers economic/social, or country or region building needs of another state, the former should gain influence over the latter. This means railways could be used as foreign policy tools. The research will therefore seek to demonstrate if foreign investments and infrastructure-building can be regarded as a tool of foreign influence. The research will then look at railway infrastructure and projects in the analyzed countries. Looking at them with the theoretical notion that they are tools of influence should give us an idea of the foreign power-dynamics in the MENA.

This analysis should demonstrate how railways in the MENA are tools of national and foreign policy.

## **Part I: Understanding the political benefits of railway infrastructures**

### **1) The economic and social benefits of rail**

*Objective of the section: In our attempt to demonstrate the role of railway in the MENA region, we must first study the theoretical benefits of Rail. The goal of this section is to demonstrate that railway infrastructures have social and economic benefits that states can seek to exploit. This section will attempt to define those benefits, and how they justify investments in railway infrastructure in general.*

#### **a) The use of Cost – Benefit analysis for rail Infrastructure**

Rail is an expensive infrastructure, it is a long-term investment that requires large amounts of money to be spent for a large amount of time by the public sector. The California railway for example is scheduled to be completed by 2029 and to cost \$77 Billion (Business Plan, 2018, p 33). Although costs and construction times vary greatly depending on geographical location (World Bank, 2014), it is necessary for state actors, and the general population, to understand the need for such investments. Cost-Benefit analysis supports decision making. In his 2009 blog posts on high-speed rail investment, Harvard economics professor E. Glaeser called cost-benefit analysis the “best tool ever created for evaluating public investment” (Glaeser, 2009). Glaeser sees cost-benefit analysis as the ultimate determiner in pursuing infrastructure investments. However, his (arguably) conservative vision places limited value on externalities as part of his analysis, and hence criticized the Obama administration for their 2009 plans to build 10 high-speed rail corridors in the USA, referring to the project as a “Boondoggle”.

Todd Litman, of the Victoria Transport Policy Institute produced a guidebook which defines the best practices for cost-benefit analysis for rail, and the importance of including externalities (Litman 2019). The guidebook outlines several costs and benefits that must be quantified and included in analysis, many more than what was included in Glaeser’s calculations. Litman explains that the selection of criteria and method of evaluation used by the analyst will have a drastic effect on the conclusion of the research, and its perception for the recipient. Often direct impacts will be

prioritized, and indirect ones will be ignored which can make a given project appear unprofitable (Wilhelms, 2014, p10). Hence, a fair and accurate analysis will seek to integrate as much data as possible, although this sharply increases the complexity of analysis. Litman also argues that not all benefits can be expressed in money, and must be expressed quantitatively, like passenger comfort, or equity. When considering costs and benefits, it is also important to consider if the infrastructure provided is equity justified, seeking to provide social benefits; or efficiency justified, seeking to provide economic benefits; or both. This distinction is important, as it determines on which criteria the infrastructure should be judged.

We will now outline the benefits and costs of rail as defined by Litman.

b) Direct Benefits

- Efficiency benefits for users: In general users of public transit like trains save money by not using a car. Users get the option to not own a car, pay insurance, repairs, parking, road use, and gas (Litman, 2019, pp29-41). In fact, there seems to be a direct correlation between transit use and gas prices (Nowak and Savage, 2013).

The presence of transit options also reduces chauffeuring activities, which may be valued as an inefficient and undesirable burden (Litman 2015, cited in Litman, 2019 p31). Rail also has a proven effect to reduce congestion on roads, which is inefficient and has a significant but variable economic effect (Litman, 2019, pp32-39 ). Use of public transit also gives users the ability to perform tasks while traveling, making their time more efficient. Also, casual interactions in public transport increase networking and knowledge exchange.

- Mobility benefits: Users of public transit gain access to public services, jobs, social events, healthcare, schools and universities. This mobility is valued by the people who use it and benefit from it (Bailey, 2004, cited in Litman, 2019, p25). Users also gain the benefit of being able to choose their preferred mode

of transport, the choice of option having a value (ECONorthwest and PBQD 2002, cited in Litman, 2019 p 26). Access depends on geographic proximity, but also on time. Individuals need time to connect to activities or each other. Rail serves this purpose by saving time, as it is faster than other means of transport as it is less congestion sensitive.

- Community Cohesion: Research indicates that community quality and safety is improved by various factors, including public transit (Kamruzzaman et al., 2014, cited in Litman 2019, p 45). It is hard to value, but in general is applied in property values.
- Direct employment: The rail infrastructure itself directly create employment. In the EU, rail operators employed +1 million people in 2012 producing an added value of €66 billion, representing 0.5% of the EU GDP (Molemaker and Pauer, 2014, p20). In the US, access to transportation, which reduces neighborhood segregation, causes an average 7% increase in future expected wage for its inhabitants. (Chetty and Hendren, 2015, p70).
- Air and noise pollution: and energy consumption reductions: Environmental factors are a major social benefit, and a strong argument in favor of rail in an environmentally concerned world. Rail is considered a clean mode of transport (Jehanno, Palmer and James, 2011). Rail transport releases on average 3 to 10 times less CO<sub>2</sub> than road or air transport, is less energy consuming, and makes better land use than cars (UIC, 2015). A 2009 study by CE Delft commissioned by UIC demonstrated that rail transport represents only 2% (€10 billion) of all external costs from transportation in Europe (which in 2008 amounted to €500 billion) (Essen et al. 2011, p5). Cars represented 93% of that amount, and airplanes 5%, sea freight has not been included.
- Health and wellbeing benefits: Less pollution makes a healthier population, also use of a transit system tends to increase physical activity and health. Rail is also very safe compared to road transport and therefor reduces the chance of injury or death (Devries et al., 2018 cited in Litman 2019, p42).



- Equity: Rail provides mobility and opportunities to economically, socially, or physically disadvantaged people who are dependent on public forms of transit to access jobs, institutions, healthcare, and social life (Allen 2008, CTS 2010, cited in Litman 2019, p26)
- Integration: Railway transport is the most equitable mode of transport, hence the most integrative (Litman, 2019, p5). Lack of transportation can even have segregation effects as there is a strong correlation between urban sprawl, which is caused by lack of transit options, and neighborhood segregation and poverty (Chetty and Hendren, 2015).

c) Indirect Benefits

- Benefits for businesses: Owing to better connectivity businesses gain better access to customers and job candidates. This is because businesses tend to agglomerate around places of transit. The improved traffic from reduced congestion and reliability of transportation also allows for less delays for employees and deliveries, and better moral, all of which improves productivity. Improved access to education also boosts productivity (Porter et al, 2015, cited in Litman, 2019, p63). The comparatively low costs of transit use, and the savings on car, road, and parking costs improves the purchasing power of households, which increases consumption for businesses.

In general, these economic effects are well documented. According to the California High-Speed Rail Authority Draft 2018 Business Plan high-speed rail investment made from 2006 to 2017 generated between \$5 billion and \$6 billion in total economic activity in California (Business Plan, 2018).

This effect is not just observed in California, in the EU a total of 1.8 million people are employed indirectly by the railway sector and produce €119 billion in added value (Molemaker and Pauer, 2014). Considering all direct and indirect economic benefits, the rail sector accounts for 1.1% of the EU economy. Hence the benefits are significant as their removal would have a

“comparable economic effect of a major economic recession.” (Molemaker and Pauer, 2014)

A study by (Vickerman and Ulied, 2009, cited in Molemaker and Pauer, 2014, p28) on high-speed rail lines in Europe found that economic effects of HSR infrastructure vary strongly however, observing 0% to 30% of increased benefits from connecting smaller cities to larger ones (Paris-Lyon, Rome-Milan, Manchester-London, Goteborg-Hinterland).

- Benefits to the government: Transit is equitable and allows people with lower income to gain access to jobs, which reduces welfare dependency. Hence government social spending is reduced (Multisystems et al, 2000, cited in Litman, 2019, p26). In addition, due to the health benefits of cleaner transportations, and because they produce less fatalities and injuries than cars, healthcare spending is further reduced.

Reduced congestion and vehicle use also means a reduction in wear and tear of roadways, which incurs a reduced cost for the state (Litman, 2019, p48).

Real estate and land also generally increase in value around transit lines (Nelson, and al., 2013, cited in Litman 2019, p64). This results in greater local wealth in the area, and greater tax revenues for the state. States may also support rail to support their urban planning efforts.

Finally, we could extrapolate that due to a cumulation of social and economic benefits, state stability and cohesion is increased, which benefits the state’s stability, an effect we will study further in the next section.

#### d) Costs

Costs of building railway infrastructure will vary greatly depending on geographical location. For example, we can compare construction costs for a mile of rail in Europe: \$25-\$39 million/mile; Japan \$82-\$143 million/mile; US \$56 million a mile; China \$17-\$22 million/mile (World Bank, 2014, Government accountability office

2009). Other costs for rail operations are material, equipment, rolling stock, costs of construction externalities (accidents, delays, legal expenses), maintenance, operation, interest rates, development costs, marketing costs, subsidies costs (Litman, 2019). We could also argue that the reduction in car or plane use from switch to rail will have an impact on automotive and airplane industries. In addition, public transit costs are subject to scale economies (Vickrey, 1994, cited in Litman, 2019, p75), so the more people use the system, the most cost effective it becomes. Also costs of development of an existing system will be lower than costs of creating a new system.

### Conclusion

We have demonstrated that rail, as a transit infrastructure, has clear economic and social benefits, sometimes outclassing other means of transportation. Those benefits have a direct effect on the well-being of the population of a country and its economy. However, those benefits are often hard to measure accurately or objectively. The difficulty to accurately assess the cost-benefit analysis means that rail is also often underestimated as an infrastructure that can bring progress and development to a country.

The next section focuses on researching a political benefit of railway infrastructures, their hypothetical capacity to assist in nation-building.

## **2) Rail as a nation building infrastructure**

Objective of the section: Having demonstrated in the previous section the social and economic benefits of railways, we will now look at how railway infrastructures can be used as tools of nation-building. Our analysis will first look at the theory, and then focus on historical and contemporary practical examples.

### a) Theories of Nation building

According to Miroslav Hroch, there is an “overproduction of theories” on nation building (Hroch, 1998, p1) so for our purpose, instead of delving into the various theories we will follow the definition given by Alesina and Reich in their study called “Nation building” as it fits perfectly with our infrastructure-focused analysis. Nation building is a process whose goal is to achieve the formation of a country where citizens are sufficiently motivated to remain united. The key tool of nation building is homogenization, which are policies or technologies that will either reduce distances between people, or distances to the government. Distance can be geographical, cultural or ideological, for example language is a form of distance which can be reduced through imposing a common language. Homogenization is a process that incurs costs, hence the decision to homogenize rests upon a cost-benefit analysis by the ruling elite or majority, where marginal benefits must outweigh marginal costs. State building is a different process that relies on building institutions to ensure proper state function. (Alesina & Reich, 2015).

Therefore according to this definition, if railway can be used to reduce geographical and cultural distances between the people or between the people and the government, and offer high marginal benefits, then railway infrastructure is a tool of homogenization for Nation Building. From this we can look at concrete examples of this process of railway-driven national homogenization.

## b) Historical examples of the role of rail in nation building

### **France** (Wolmar, 2019)

France was a late bloomer in European railway development. After the French Revolution the newly constituted regime then sought to nationalize the country for stability. This was mostly done through education and unification of language as a homogenization technology. Roads were already well developed throughout the country, and lack of state funds and political will meant major railroad constructions could not be done until mid-19th century. Napoleon III orderd many lines to be built from Paris to the rest of France. Historian Jules Michelet called it a grand tool of unification.

After the 1850's railway mania hit the French population which requested the government to build a large number of them, which were then built out of political necessity to satisfy the people. However most of those railways were unprofitable, so private companies refused to manage them. This led to mass nationalization by the government. The profitable railways could expand and went on to stretch internationally. To the North a Rothschild-build network linking Paris to Belgium, to the south the Paris-Lyon-Mediterranean line which developed the south economically, eventually linked to Switzerland and Italy. This also expanded Paris's reach to the middle east and north Africa with rail leading to the Marseille port. Which as a logistical advantage during the height of French colonization in North Africa.

Rail also played a large role in French (and British) colonization of Africa. France built railways throughout the North-African colonies to better assert its power on the colonized land. Construction of railways in the colonies was associated with a "civilizing mission" (Conklin, 1997, pp 38-72). Trade of resources were not the initial goal, but railways were then used to reap economic benefits.

After the second world war, France restored and modernized their railway system. Due to the 1973 oil shock France developed high-speed trains as an alternative to cars and planes. In 2009 Lord Adonis, UK transport minister called it "a force for national integration and regeneration and a source of intense national pride". The

line was also a commercial success. Renewing the appeal of rail in the face of cars and airplanes which had dethroned railroads as a main means of transportation.

### **Germany (Wolmar, 2009)**

Contrary to France, Germany was quicker to develop their railway system, starting in 1835, with the goal of uniting then-divided Germany. The growing interconnections and interdependencies of rail-borne trade between the states forced the state to standardize the network. The railways became a nationalist argument supported by economic benefits. In 1871, Germany was united in a Federation, owing in great part to the railway.

Bismarck saw the strategic and nation building benefits of railway as a military transport. The railways ended up playing a massive role in World War 1. Between the wars Nazi Germany would go to make great progress in railway technology. This progress would be used by Hitler to boast nationalism and German greatness. The Nazi government would however end up preferring cars to trains and developed the autobahn for strategic and connectivity purposes.

After the war, West Germany used Marshall plan money to rebuild and modernize the railways, but the car market surged at the same time. The German preference shifted to cars and trucks. With the advent of high-speed trains in the 1960's and new environmentally considerations, Germany shifted its focus to developing its railways to become a European railway powerhouse.

### **Italy (Wolmar, 2009)**

Italy's development of railroads became motivated by goals of unification in the second half of the 19th century. Investing in railway was used to unite the country (Schram, 1997, cited in Wolmar, 2009 p 277).

The Italian war of 1859 saw strategic use of Trains to move troops and resources. France even using the Paris-Marseille line to move troops quickly by the sea to help Italy fend-off the Austrians in northern Italy. Italian railways eventually expanded internationally to France and to Germany via Switzerland. Opening new markets and granting Mediterranean access to German goods. This link created strong economic interdependences between Italy and Germany.

Like in France, most railways in Italy were state-sponsored and unprofitable, but due to their effects on political unity and economic development, and their strategic advantage in war, the Italian government was forced to support and subsidize the lines (Susan A. Ashley, 2003, cited in Wolmar, 2009 p310). After the First world war fascist Italy became the first country to electrify most of its railway network, a great point of national pride boasted by Benito Mussolini. Just like with Hitler, modernization of railway technology was used as a matter of nationalism for dictators. After the war, Italy kept developing its rail network, according to Bryan Morgan Italy “not only has trains it believes in trains” (Morgan 1963, cited by Wolmar, 2009, p826).

#### **USA (Wolmar 2009)**

For the USA railroads were key to building the US superpower. In Europe rail was used to connect existing population centers. In the US rail was used to spread development and create population centers. „The American railroad, in short, was a vehicle of territorial conquest and nation-building. “ (Marx, 1988, cited in Binded, no dates). This was however not out of a particular political desire or plan as US railway development was uniquely “bottom-up”.

During the 1861 Civil War railroads were developed to an entirely new use, warfare. The Northern government made better use of this technology than the south, which contributed in part to the Union’s victory.

President Lincoln was a major supporter of railroads for westward, transcontinental expansion. This extremely costly endeavor was purely politically motivated

for nation building. The commercial interest, mostly from land use, were not immediately clear. Such a grand project was expected to have a strong psychological effect on the US population (Martin, 1991, cited in Wolmar, 2009, p657). The railway combined with the telegraph and postal services gave more power to the central government in Washington DC.

Historian David Nye cites railroads as one of several examples of the American technological “sublime” (Nye, 1994, cited in Brinded, no dates) which is to say “a source of patriotism” for (Miller, 2007, cited in Brinded, no dates). This fervor however stopped after the first world war, as cars, trucks and later planes became more competitive.

In recent years the Obama administration tried to develop high-speed railways due to their social and economic benefits. Those efforts were however shut down due to the perceived cost. California is the only state currently building a high-speed railway.

### **Russia (Wolmar, 2009)**

Russia initially feared railways would be a democratizing force. Russia purposely chose a 5ft gauge for its railways to isolate itself from the rest of Europe, and to protect itself from western invasions. Tsar Alexander II pushed for development and modernization of the state, including railways. But not many were built, and most were not profitable.

The Trans-Siberian pushed by Tsar Alexandre III was a purely political and nation building initiative to consolidate power over Siberia by integrating it, and to protect the country from Eastern invasions. The Trans-Siberian was not project meant to draw economic benefits. It eventually did when vast amounts of resources were discovered in Siberia, after the railway’s completion. The infrastructure was low quality, slow, and un-reliable. It failed to integrate Siberia completely. It also failed to stop



the Japanese invaded Manchuria in 1904. The USSR eventually improved the Trans-Siberian and managed to reinforce Moscow's grasp on Siberia.

During the 2nd world war the Germans struggled to invade the USSR as the track gauge, chosen more than a 100 years earlier, worked for its intended purpose of restricting foreign railway military advance. A demonstration of the geostrategic role of railways. After the war, the USSR renovated most of the destroyed lines and electrified the network. Railways were used as a propaganda tools by the soviets. They also spanned the entire communist bloc, centralizing satellite communist states around Moscow's rule.

### **India** (Wolmar, 2009)

Indian railway development started during British rule. Initially built to move cotton, the British Raj quickly figured out that a passenger railway network could be very profitable. The railway also gave Britain a lot of power and control over India, using it to transport troops to put down mutinies. The railway was called "Great Indian Peninsular Railways" revealing the unifying and regional scope of the ambition. Today India still has largest network and largest transportation output in the world and is considered the "lifeline of the nation". Hence it is still expanding and modernizing (Indian railways, 2016).

### **China** (Wolmar, 2009)

China was very slow in adopting railway. In the 19th century the country was strongly opposed to any form of modernization or Occidentalism. However, the Boxer Rebellions in 1900 demonstrated to china the benefit of having railroads to transport troops to quell rebellions. During Mao's reign, trains were considered better suited to the communist model than cars. Hence railways saw massive development, and still do today.

Indeed, China went on to be the country with the largest high-speed network in the world, by far in just 10 years (The Economist, 2017). The heavy expenses are justified by various factors. Some routes are profitable. However, some routes are very unprofitable and only make sense for political benefits. For example, the 1600km railway from Lanzhou to Urumqi in Uighur is extremely unprofitable. But it was built with the intention of integrating the Uighur Xinyang province (Denyer, The Guardian, 2014). A railway also links Beijing to Lhasa in Tibet for the same reason.

### **Conclusion:**

These case studies allow us to see the political appeal of Railway for Nation Building. These examples, though different, help us visualize how the cost-benefit approach to nation building is the common denominator in railway. If analyzed from a purely economic standpoint, few of the railway experiences described above make sense. The large infrastructural costs make railway an inherently political affair. These investments place economic stress on states, which should in theory be detrimental to nation building. Yet, the capacity of trains to integrate or extend the power of states by homogenizing or reducing geographical and cultural distances extracts a positive effect on nation building, and thus justifies the investment.

We can however ask ourselves is this proven nation-building aspect of rail scales to region building as well, which the next section will explore.

### **3) Rail as a region building infrastructure, a tool of integration**

*Objective of the section: Having demonstrated in the previous section that there is a historical precedent in using railway as a nation building tool, we will now see if the same rules apply to region building, by studying the case of Europe and the European Union.*

#### **a) Theory of Regionalism and region building**

In international relations, regionalism is traditionally understood as cooperation (or integration/amalgamation/unification) among social units (like states) to promote regional development in the economics, political, social, or cultural sphere (Ferabolli, 2015). IR scholars interpret different levels of regionalism. “Cooperation” for example implies a much looser partnership than “Integration”. Authors also have differing definitions of regions, regionalism and regionalization. For our purpose we will follow the definition of regionalism as a policy implemented by actors to build a region, and regionalization as the undirected process of cooperating among social units.

Bela Balassa’s teleological vision of regionalism from an economic perspective has it develop through stages. First a region emerges as a free trade area, then it becomes a customs union, then a common market, then an economic and monetary union, and finally it reaches a stage of complete economic integration. (Belassa, 1961, cited in Ferabolli, 2015). Though we could seek to analyze the role railway played in this teleological building process of a European union, this would drive us into an awkward and complicated historiographic analysis.

In opposition to the teleological vision, we can look at the Post structuralist vision. For post-structuralists, region building is not seen as a set pre-determined process but a continuous one. Regions are constructed by interpretation of symbols and discourses that realize the region in the mind of the people. It is a set of reiterative practices that make the region exist. For Alan Finlayson and Jeremy Valentine (2002, 2014, cited in Ferabolli, 2015) the reiterative practices are not indissociable from the political agenda, political actors being capable of creating reiterative practices to

achieve their agenda. Regions can be made by region builders who inspire a regional identity to others (Neumann, 1994, cited in Ferabolli, 2015). However reiterative practices may also influence the agenda followed by political actors in the first place. Post structuralist regionalism can therefore be seen as a process that can be both top-down or bottom-up where both the role of discursive and non-discursive approaches plays a mutual role (Dylan Evans, 1996, cited in Ferabolli, 2015). For our research, this methodology of looking for both bottom-up or top-down reiterative practices gives us much more freedom in analysis. Thus, we will choose this approach to demonstrate the role played by railways in European regionalism before applying the same framework to the Middle East and North Africa (MENA).

b) Social-constructivist Regionalization of Europe and the role of technology.

The European integration, in the vision of Robert Schuman and Jean Monnet, was implemented by the creation of political institutions, and the signing of treaties which allowed for the formation of international organizations. A form of “hard” regionalism that seeks to create a European identity from the top-down. The European coal and steel community (ECSC) had a clear objective of integrating key economic interests of the EU to foster peace and integration.

Later the European Economic Community (EEC) and even later European Union launched several large projects for integration: CERN, EURATOM, ESA, Airbus and Ariane, were initial politically motivated projects to promote European cooperation through science and technology. In the 1980's a European culture started to emerge, but we cannot consider this the existence of a European identity. The EU kept integrating over the years, but the people were losing interest in that process (Schot and Misa, 2005, p4). For this reason, European politicians came up with symbols, which we could define as elements of reiterative discourse. The Flag, the anthem, the passports, festivals contributed to giving a presence in the people's minds. This failed to have a significant impact however, judging from increasingly low turnouts in EU parliamentary elections. So, despite the EU's political and economic success, the

cultural aspect was initially a failure (Schot and Misa, 2005, p4). With this in mind, EU officials included in the Maastricht treaty a legal basis to “contribute to the flowering of the culture of the member states (...) bringing the common heritage to the fore” (Maastricht treaty for the European Union, 1992, p48). This enabled the EU to make conservation and preservation efforts on European cultural heritage and to promote non-commercial exchanges (mostly of art and literature). Officials also created the notion for EU citizenship, an EU common currency, educational initiatives, media presence... (Schot and Misa, 2005) These elements are part of people’s daily lives, and hence are part of a reiterative process which integrates people in a European identity. Looking at the latest Eurobarometer on European citizenship shows that a majority of people living in the EU now feel attached to the EU (Eurobarometer, 2018, p15) which could be due to this reiterative process.

Analyzing the role of technology and infrastructure in the integration process means that we need to demonstrate that they are part of a reiterative process, top down or bottom-up, which reinforces the region’s existence. The literature usually gives technology an important role as an “agent of change” (Schot and Misa, 2005, p7). Researchers in path dependence claim that technology, when reinforced by social mechanism it creates, has a significant effect in time and space. Therefore there is precedent in hypothesizing that technology can influence integration.

According to Schot and Misa, the integrative effects of technology must be analyzed through elements of linkage, circulation and appropriation. Linking (and de-linking) applies to structures and infrastructures that create physical connections (railways, roads, energy systems, communication networks). Not only does their physical existence and use (or suppression in the case of de-linking) affect the lives of the people, it also affects the people who do not use it, creating exclusion effects. Circulation represents the movement of technology, people, or knowledge. Circulation is paired with appropriation, which is the use that is made from of this circulation. The hypothesis of Schot and Misa is that linkage, circulation and appropriation create changes in social dynamics, leading to ties and relationships between users and between non-users, which then creates communities and identities as users and

non-users. To illustrate this Schot and Misa use the example of the de-linking and re-linking of Western Europe and Eastern Europe during the cold war. The Iron curtain removed linkages and circulation between the two Europe. This resulted in the creation of different communities and identities. After 1989 links and circulation were re-established, allowing Eastern Europe to be integrated in the European Union in the 2000s. This demonstrates the integrative power of linkage, circulation and appropriation (Schot and Misa, 2005).

If we make the conclusion that linkage, circulation and appropriation are part of a reiterative process, we can therefore work with the assumption that railway, as a linkage infrastructure, has a significant effect on regional integration.

#### c) The use of Railway in European integration

Considering our previous conclusion that linkage, circulation and appropriation play a role in European integration, and considering infrastructure linkage started in Europe in the 19<sup>th</sup> century through telegraph and Railways, we can deduce that the European integration process started in the 19<sup>th</sup> century. We will seek to understand how European actors contributed to the rise of international railways in Europe. However, very little literature exists on the internationalization of European railways. If the political, national unity building, aspect of Railway is well understood in literature, little work is dedicated to transnational networks (Carreras, Giuntini and Merger, 1994, cited in Anastasiadou, 2011, p20).

In Europe, internationalization of railways started in the 19<sup>th</sup> century, mostly through the standardization of the 1435mm rail gauge, now called the international standard gauge (David Puffert, 2009, cited in Anastasiadou, 2011, p15), and through bilateral and multilateral agreements (Anastasiadou, 2011, p16) The most noteworthy agreement was the 1890 Berne agreement on the transport of goods by rail, which established standards and rules for rail freight traffic between countries. 19<sup>th</sup> century international railway developments is an example of linkage, which as Tissot puts it “was the first step in the internationalization of society as a whole” (Tissot, o

date, cited in Anastasiadou, 2011, p251), but it must be understood that this was a bottom-up process. Thus, any European integrative effects they had were unintended. As Vleuten and Kaijsen put it, 19<sup>th</sup>- early 20<sup>th</sup> century linkages had a “hidden integration” effect (Vleuten and Kaijsen, 2006, cited in Anastasiadou, 2011, p22). At the time national interests were the primary focus of railway developments, railways were private ventures meant to make profits for the benefit of the nation state. European countries competed in building transnational railway corridors to gain the advantage over one another by controlling key trade routes for example. There were no top-down efforts made to foster European cooperation and integration, and this attitude would continue well into the inter-war period. (Anasasiadou, 2011, pp245-249)

Interwar Europe was the period where most international railways emerged. This not only inspired novelists; like Agatha Christie for *Murder on the Orient Express*; but also, politicians. According to League of Nation (LN) archives, Railway was considered an important part of its peace-keeping agenda. In 1930 the director of the International Labor Office (ILO) of the LN suggested that trans-European infrastructures, like railways, should be built to solve unemployment and foster a spirit of community among Europeans. During the same period an Italian lawyer named Carlo Barduzzi suggested the ILO and LN should unify Europe by constructing international Railways (Anastasiadou, 2011)

Most of these plans did not come to fruition at the time but the *zeitgeist* of integration through railway was present. The European nation states were too focused on their national interests and did not think in European terms. Indeed, as Anastasiadou points out, international railway projects of the post-World War I era mostly focused on creating linkage between allied countries. Even initial UIC goals were meant to exclude Germany from International networks. As Anastasiadou concludes, a European agenda through integration was pushed by international actors, but states remained focused on their interests, and thus regarded internationalization of railway as a nation-building tool. First and foremost, we could also formulate it like this: there were top-down intentions to foster European integration through

railway, but the prevalence of national interests meant that any region-building effects from the internationalization of railways in the inter-war period were unintended, and therefore bottom-up (Anastasiadou, 2011).

Very little literature could be found in the internationalization of European railways after WWII. Hence, we will jump further in time and focus on European Union actions to foster European integration through rail. Large efforts are currently made by the European Union to develop further European railway links. In 1996 Council Directive 96/48/EC defined the goals for a Trans-European railway network as part of the Ten-T project to define international standardized transportation corridors (Directive 96/48/EC, 1996). The European Commission, who has been given a stronger role on transport issues by the Lisbon Treaty, makes the clear claim that “good transport connections are vital for a functioning, integrated economic area and for its social and territorial cohesion. A truly integrated single market would not be possible without a seamless connection between all its component parts” (EU Commission, no dates). To achieve this goal, the Mobility and Transport Directorate of the EU has been active for 25 years on developing railway networks, interoperability and competitiveness in Europe. The European Railway Agency opened in 2006 also seeks to improve interoperability of European railway networks. In 2018 the EU Commission even offered free Interrail passes for 18-year-old Europeans. The Commission openly states that “the action is expected to give 20k-30k young people a travel experience that would help foster a European identity, reinforce common values and promote the discovery of European sites and cultures” (EU Commission, 2018). The Commission also intends to extend international railway development to European Neighborhood Policy (ENP) countries.

However, European rail networks are still not fully interoperable due to a lack of common vision on a common network (Bryan Stone, 2003, cited in Anastasiadou, 2011, p18) and differences in technological path dependent processes. The clearest example is Spain, which does not use the same standard gauge, which restricts transnational railway developments with France, leading to additional costs in traveling by rail.



We can therefore see that the post-WWII, European Union era has a much more top-down approach to European integration through railway.

Conclusion:

We saw in this chapter that Region building rests on the concept, either emerging from political actors (top-down) or from the social actors (bottom-up), of creating reiterative discourse or elements that influence the daily lives of actors, and homogenizes them into an integrated culture or identity. We now understand that technologies and infrastructures are elements of that reiterative discourse that have a significant influence over creating a regional identity or culture. We also demonstrated that there is historical precedent in Europe of using international infrastructure for the purpose of integrating the region. This was however not always a politically-decided top-down process, being a “hidden influence” in European politics. The European Union however, has been very open about pursuing top-down regionalism to foster European integration.

In the next chapter the research will focus on the MENA region. Specifically, the countries of Egypt, Morocco, Tunisia, Algeria, Saudi Arabia, United Arab Emirates, Qatar, Kuwait, Bahrain, Oman. Those countries are all planning major railway projects for the next decade. Some countries have pre-existing infrastructure, others do not. This makes those countries a very interesting area of analysis since the projects are ongoing, hence we can look at the rhetoric defending the utility of those projects in those countries, and also look at their interests for developing rail infrastructures.

The research will look for economic and social interests, and also nation-building and region building interests of those countries, and how railways plays into these goals.

## **Part II: Railway infrastructure in the MENA region. A tool of Development and Integration?**

### **1) Egypt**

*Objective of the section: Egypt is an interesting case as the country was the first ever African country to develop a railway and a metro system. Today rail appears to play an important role in the country, but the network is in dire need of improvement. For this reason, the Egyptian government has recently made several railway projects. We will look at those projects and how they play in the national agenda nationally and internationally.*

#### **a) A tool of Economic and Social development**

Historically Egypt is the first African country to get a Railway. Linking Alexandria to Cairo, it served as a trade route before the Suez Canal. The route was a main source of revenue for Egyptian state before the Suez Canal opened in 1869 (Wolmar, 2009). More lines were then opened as they were key tools of modernization for the Egyptian State. However, the Government ran on heavy debt to build the railways and they were and still are unprofitable. But since they play a significant role in the economy and is essential for low income travel with 500 trips per year, the government keeps the prices low for social purposes. This low profitability has led to poor track and rolling stock management and maintenance, which leads to slow, uncomfortable, overburdened trains that are often delayed and often have fatal accidents (13,539 accidents from 2004-2016, the most recent one being in February 2019 with 25 deaths). This naturally has a large social and economic cost for the Egyptian government.

According to a JICA study of the Egyptian Railway system, ENR has been failing in operating the national railway in a way that it provides benefits (environmental, economic, social). This failure has caused a net drop in use of 40% from 2005 to 2015, despite a net population increase. This defeats the purpose of having a railway entirely (JICA, march 2012). The Freight railway is also very lackluster in quality, output,

and reliability, which is detrimental to its economic advantages. Therefore to solve those problem the Egyptian government has been active in planning overhauls, expansions, and modernization of the system. Let’s look at a couple of case studies to understand their expected economic and social benefits.

**Cairo Metro:**

The Cairo Metro was the first ever Metro system in Africa, opened in 1987 (Figure 1). According to the National Authority for Tunnels (NAT), the metro was and is intended to relieve the record high congestion in Cairo, which is so severe it costs Egypt 4% of their GDP annually (World Bank, no dates). Conveniently the Cairo Metro website includes the expected financial benefits from the current development project. The expected reduction in congestion is expected to save about two billion Egyptian Pounds/Year. The total amount saved annually is estimated at 2,7 billion Egyptian Pounds is we factor in environmental and other benefits (Cairo Metro, no dates). The NAT, which operates the Cairo metro, also mentions on its website the benefits of the Metro as increased living standards and wealth for transit areas, economic benefits from reduction of congestion, environmental considerations from clean electricity use, job creation and (quite originally) agricultural benefits from the use of the soil extracted after tunnel boring (NAT, no dates).

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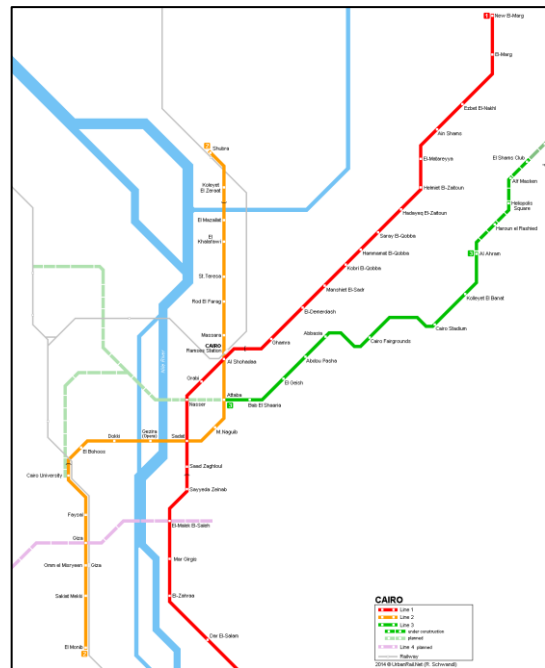


Figure 1: Cairo Metro Map  
Source: 2014, UrbanRail.Net, R.Swandl

environmental considerations from clean electricity use, job creation and (quite originally) agricultural benefits from the use of the soil extracted after tunnel boring (NAT, no dates).

## Cairo-Alexandria High-Speed link:

Cairo and Alexandria are Egypt's largest cities and the current rail link represents about 30% of all rail travel volume in Egypt (Figure 2). According to a JICA study the line's maximal capacity has been reached and therefore a high-speed link has been proposed (JICA, March 2012). The study claims the project would be successful in mitigating congestion and in providing high quality service. The initial funding of the project is estimated at €1,65 billion, hence the project would represent a very significant investment for the Egyptian government. A study by M.A.M Ali, K. Osra & J. Siegmann estimates that based on a cost-benefit analysis from direct and indirect social, economic and environmental benefits, the high-speed link would be a viable investment, more profitable than a road or conventional rail link could offer (Ali, Siegmann and Osra, April 2016).

These examples allow us to understand how Egypt's failing railway system is detrimental to social and economic benefits of railway, but that improvements and network extensions in metro and high speed could have a positive impact, as we theorized in the previous chapter.

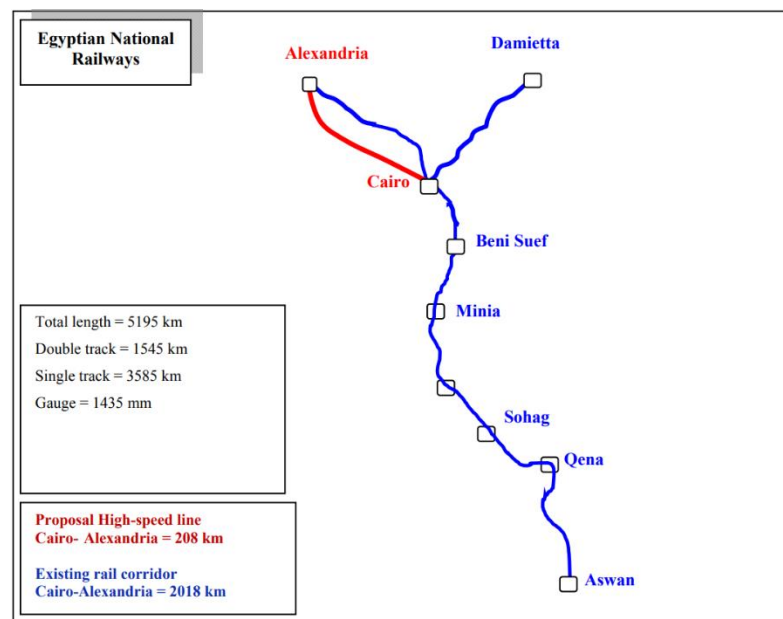


Figure 2: Cairo-Alexandria HSR

Source: Mahmoud Ali, Khalid Osra & J. Siegmann "Proposed High-Speed Rail Line between Cairo-Alexandria: Cost-Benefit Analysis", April 2016, p.6.

b) A tool of nation building

As Herodotus put it “Egypt is the Nile and the Nile is Egypt”. Indeed, 95% of Egypt’s population lives along the river, which means about 90 million people live on 4% of the Egyptian territory (CIA factbook, 2019, Egypt). This is a dense population which always had a direct geographical link to the rest of the population and the government by the river. The Egyptian road and railroad network therefore follow the same path as the Nile to connect the population through Land paths (fig 1&2). It is difficult to argue here that Railway plays a particularly strong country-building



Figure 4: Railway map of Egypt  
Source: Karla Koopman, modified by Camilla Trigona, July 16, 2018 “Egypt Railway Assessment”. Logcluster.org

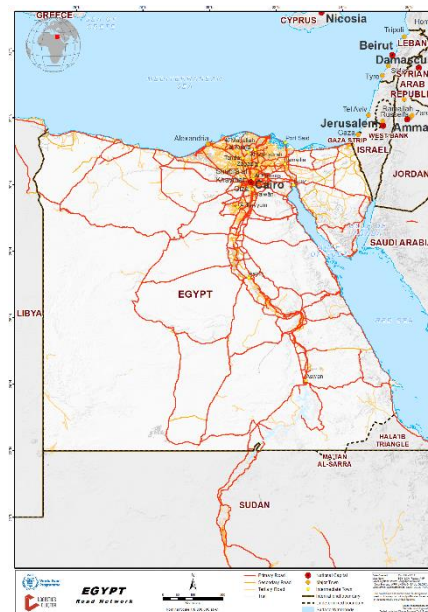


Figure 3: Road map of Egypt  
Source: Karla Koopman, modified by Camilla Trigona, July 16, 2018 “Egypt Road Network”. Logcluster.org

role.

In fact, in this research only one source could be found attributing Railway a Country-building role in Egypt. According to Amr Emam in an article for “the arab weekly”, Egypt intends to build a Railway tunnel crossing the Suez Canal to integrate the Sinai Peninsula. This is a \$1billion investment that intends to integrate the Sinai by making it a trade hub (Emam, 2019). Up until now the Sinai had been separated

from the central government and been a hotbed for terrorism. So, there is possible precedent of using Railway for nation-building in Egypt.

We could also look at the broader picture of state infrastructure projects in nation-building. Al-Sisi's government seem to be keen on grand infrastructure projects, like the El Farag Bridge which is a record-breaking hanging bridge, or the new Administrative Capital project that aims to build a new megacity from the ground up. Since the Egyptian population is increasing unsustainably fast, which puts a strain on the economy, living areas, Nile use, and transportation networks, the government is struggling to respond to the economic and infrastructural needs of the population (CIA Factbook, 2019, Egypt). Infrastructural projects in general, including Railways, could be interpreted as a necessity to maintain the government in power by appearing active in answering popular needs, and literal country-building.

Another interpretation would be to look at military involvement in the building process. The Egyptian military plays a key political role in the country, being involved politically, having deposed previous presidents Mubarak and Morsi and put General Al-Sisi in power. The military also reportedly holds key infrastructures and the construction sector (Colombo, 2014). Hence, we could interpret infrastructure projects in Egypt as a way to keep the military on the government side, thus helping keep power and order stable. If these last two interpretations are true, then Railway projects could be seen as an indirect tool to maintain governmental power.

We could therefore see through these examples how Railways can play a nation-building role in Egypt. Either directly by integrating population centers or secluded regions, or indirectly by ensuring government stability. This however remains hypothetical as no official sources could be found confirming those goals.

c) A tool of Region Building

Currently Egypt has no international Railways. One link used to exist with Libya but was closed. Another link to Palestine/Israel and Lebanon used to exist, mostly for war supply-line logistics, but the link and Suez bridge was destroyed after the wars against Israel and were never re-built. A Railway link does exist to Sudan, but it is only a small portion of a former colonial British railway, which uses a narrow gauge, unusable due to Egypt's use of standard gauge.

Egypt does plan to renew those links however. Starting from the Sudan link, president Al-Sisi has reportedly expressed wishes to Link Egypt's Railway to Sudan's via Aswan, the current terminus (Egypt today 2018). This project arrives as Egypt will take on the presidency of the African Union in 2019. The AU has defined the creation of a High-Speed Trans-African Railway network as their first goal as part of the Africa 2063 framework. The goal being to integrate the African continent economically and socially through transnational infrastructure. The Egypt-Sudan link could be interpreted as a demonstration of political will to realize the AU's vision.

As for a renewed link to Israel and the Arab Gulf, according to Amr Emam in a 2018 Article by the Arab Weekly, a project does exist to link the Egyptian Red Sea Region to the Mediterranean via Rail, offering a route for tourists, and an alternate route bypassing the Suez Canal for freight. The link would act as a "nucleus" for a future railway link between North Africa and the Gulf (Emam, 2018). More recently in 2019, another article by Amr Emam in The Arab Weekly explains that the Tunneling under the Suez Canal to build a Railway link to Sinai is reportedly part of a larger project to link Egypt to the Persian Gulf, Jordan, Syria and Iraq. Reportedly a \$15 billion investment was put forward by Egypt to develop the Sinai, to which Saudi Arabia, UAE and Kuwait are contributing (Emam, 2019). A JICA study from 2012 also points out the interest of an Egyptian Mediterranean Railway link connecting to Palestine, and a renewed link to Libya (JICA, March 2012).

We can understand from these projects that there might be a desire for Egypt to use rail to integrate internationally. This could be as part of the African Union

framework, or out of desire to integrate to Gulf state allies. What appears is a potential desire for Egypt to take a more proactive goal internationally through economic and political interconnexions that will give Egypt a stronger position in the MENA region.

Conclusion:

From our research it appears that it is difficult to understand Egypt's priority in building a railway network. Social and economic considerations are clearly understood as stated by railway operators and authorities. Nation building did not appear as a particular goal, although it would fit into Egypt's history of using infrastructure development to ensure national stability or to integrate remote areas. As for Region-building interests, though Egypt is not engaged in a particular regionalization process, rail appears to be intended as a tool to integrate the country politically and economically to Africa and the Gulf countries.



## **2) the Maghreb**

*Objective of the section: We will look at how Maghreb states individually present their interests in railway infrastructures, and how the interests are presented at the regional level. The Maghreb is an interesting case study being a sub-region that is poorly integrated but composed of countries which share a history of colonization from France, which as we mentioned in the first chapter, built the foundations for their present railway networks.*

### **a) A tool of Economic and Social Development?**

#### **Algeria:**

Algeria has many railway projects. The ANESRIF website details that the network should almost triple its current size when completed (ANESRIF, no dates). Projects seek to link population and industrial centers and create mining and freight corridors. For example, Algeria has been pushing for investment in the improvement and expansion of the “east mining line” to encourage phosphate mining and trade. This seems to be motivated by a Chinese mining consortium which invested \$6 billion in 2018 to exploit phosphate deposits (Doepgen, 2019). According to Anesrif director M. Hassene Saidi, railway plans are intended for economic and social development of Algerian regions (liberté algerie, no dates). It is however difficult to find clearly defined state objectives pertaining to rail in Algeria.

For urban rail a Metro does exist in Algiers, the second ever built in Africa after Cairo. Construction started in 1985 but was stopped due to falling oil prices which restricted public investments, and the 1991 civil war. The project was revived in 2003 and finished in 2011. Some developments are planned for the Algiers Metro, though official information only mention the goal of improving traffic, facilitating mobility, and linking to dense population areas (entreprise metro d'alger, no dates, b). Another Metro is planned in Oran, but once again no official information is provided on the intended benefits. Fifteen Algerian cities are also building or considering building Tramway links, mentioning bringing added value to transit locations and benefiting social and economic structures, quality of life, and giving a modern aspect

to the cities. There is therefore a slightly clearer vision of the social and economic benefits expected of urban railways in Algeria.

**Morocco:**

Morocco has made its railway objectives very clear in the Morocco 2040 Rail Strategy. The country intends to extend and improve the railway network linking to population and logistical centers, creating an estimated 300,000 jobs and linking 87% of the population by Rail (ONCF, no dates, b). The most recent development in this framework is the Tangier-Casablanca high speed train project proposed in 2011 and opened in 2018. According to the ONCF website, this link aims to “connect the two big economic enters of the nation, to meet ever-growing transport needs, to free up capacity to transport freight and to contribute to developing the areas involved”. The website also conveniently states the direct and indirect benefits of the project (fig 5) (ONCF, no dates, a). This is a very clear example of a Railway intended for social, ecological, and economic development.

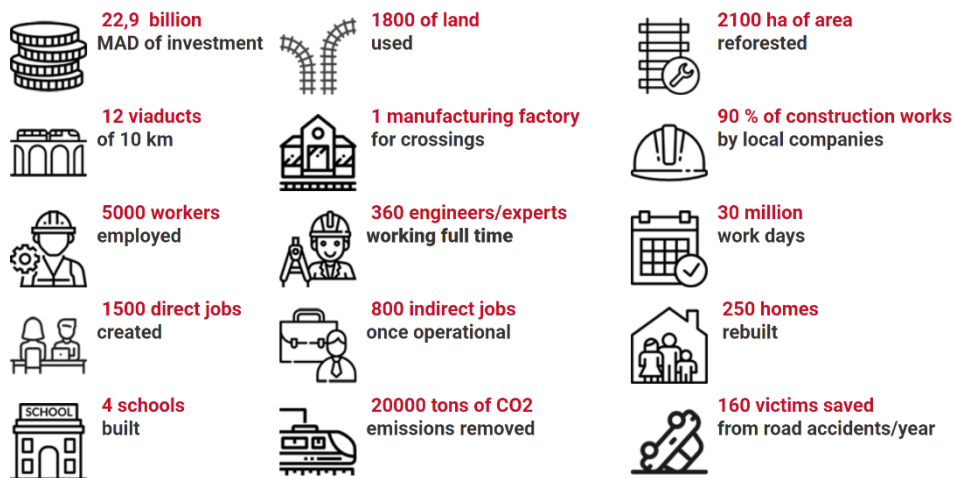


Figure 5: Direct and Indirect benefits of the Tangier-Casablanca high speed link

Source: <https://www.oncf.ma/en/Development/Main-projects/High-speed-line-tangier-casablanca2>

**Tunisia:**

Tunisia very recently announced its Horizon 2040 plan for transport, which includes 19 Railway projects for the cost of 28 billion Tunisian Dinar (Ilie, 2017). Currently the Tunisian railways and the rolling stock are old and poorly maintained due

to lack of public resources. To improve the situation and increase transportation of phosphate new rolling stock was purchased, and in 2017 the European Bank for Reconstruction and Development (EBRD) loaned €160 million to upgrade two railways. The improvements are expected to relieve congestion and improve services. According to the EBRD the Railway improvements should push economic growth and national inclusion forward. According to the Tunisian Minister of Development, Investment and International Cooperation, the development projects supports the government strategy to integrate the country, strengthen the economy, and social development by improving the quality of life (Zghieb, 2017). Another 2012 report by the African Development Bank (AfDB) analyzing the rationale of Tunisian railway infrastructure-building projects mentions Tunisia making the case that developing their railway network would enable social and economic growth for the country. The AfDB report puts forward the added competitiveness of Tunisian firms gained from an efficient railway service (AfDB, 2012)

For Urban Railways, the major project is the “Reseau Ferroviaire Rapide” (RFR) in Tunis. The RFR website mentions that economic, social and environmental challenges are covered by the RFR (RFR, no dates, b). An article by Railwaypro mentions that the urban rail projects “contribute significantly to the development and structuring of the Grand Tunis and at the same time to the improvement of the living conditions for the citizens”. The same paper mentions that adding to this, the delays in transport-infrastructure projects that followed the political and economic instabilities of Tunisia have a significant cost, and hence the need to fulfil those rail projects (Ilie, 2017)

Looking at the Maghreb states therefor gives us more examples of how social and economic benefits brought by railway infrastructures determine their implementation in state policy. We will now look to see if Maghreb states also consider the country-building benefits of Rail.

## b) A tool of nation building?

### **In Algeria**

The Railway network in Algeria was initially built starting in 1860 by the French colonial forces with the intention of pacifying the colony. The network was then used to transfer goods resulting from French exploitation of the territory. A 2018 study by Laura Buckwalter demonstrates that those railways had a noticeable effect in integrating parts of the Algerian territory (Buckwalter, 2018). After independence the Algeria took over the network, but mostly focused on road development. Since the 2000's however Algeria has shifted its focus and has invested heavily in railways and urban rail. The most recent railway developments intend to reduce travel times between cities and villages (liberté algerie, no dates), though specific country-building or homogenizing effect are not stated.

### **In Morocco**

Morocco got a Railway in 1908, quite late compared to Algeria and Tunisia. It was built by the French to transport the foreign legion from Algeria to quell rebellions in the protectorate. The Rail links also extended through the Maghreb borders linking Algiers and Tunis to the Atlantic Ocean, a strategic freight route for colonial trade (Wolmar, 2009).

Having inherited the Railway at the end of the French protectorate, developments were initially intended for phosphate exploitation, and not for public transport (ipemed, 2014). Since 2004 though Morocco has developed the public transport network and (fig 7). The ONCF website mentions the network development goal is to connect 87% of the population by Rail, and "bringing cities closer together" (ONCF, no dates, b). Just like for Algeria this could be understood as a nation-building intention.

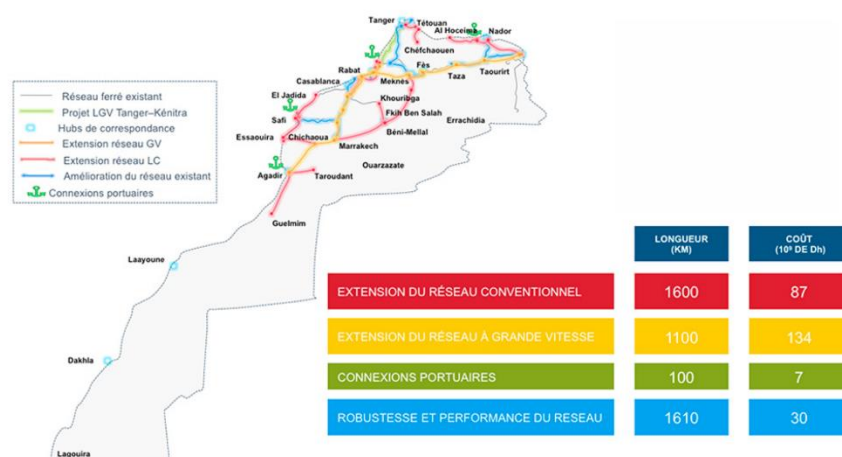


Figure 6: Railway network development in Morocco  
 Source: <https://www.oncf.ma/fr/Developpement/Strategie/Plan-rail-maroc>

Another example of nation-building could be interpreted from information of the ONCF website, in a speech given on the 6<sup>th</sup> of November 2015 the King Mohammed VI mentioned a “dream” to connect Tangier to La Guera by train, as part of the network to link Morocco to the rest of Africa (ONCF, no dates, b). La Guera being the southernmost city in contested Western Sahara. Considering Morocco has been urbanizing and immigrating its population in Western Sahara to alter the ethnic profile and integrate the region (CIA factbook, 2019, Morocco), this railway could be interpreted as part of the goal to integrate Western Sahara to Morocco.

We can therefore more or less clearly see that for the Moroccan government, Railway infrastructure do act as a nation-building tool.

### In Tunisia

Just like Morocco and Algeria, Tunisia got its first railway during the French Protectorate in 1876. The railway was initially a way to exploit resources, like Lead and Phosphates, but private initiatives from Europeans also allowed for the development of public transportation (SNCTF, no dates). This trend has continued and according to an EBRD report, railway developments in Tunisia are defined as a part of a key initiative of national inclusion and integration, like the region of Kasserine which will

see its link to Tunis improved (Zghieb, 2017). This example demonstrates a clear political will to use railway as a nation-building tool in Tunisia.

We can therefore see that in addition to social and economic consideration, Maghreb states are likely to also make use of Railway infrastructures to fulfil political goals of nation building through its integrative power.

### c) A tool of Region Building

The Maghreb is arguably a poorly integrated region. An attempt was made to regionalize through the Marrakech summit of February 1989, where representatives of Morocco, Algeria, Tunisia, Libya, and Mauritania signed a treaty to create the “Arab Maghreb Union” or AMU. The Union seeks to consolidate social, political, and economic integration of the member states by creating a free trade area, a customs union and a common market with free movement of people goods and services. But the Union was unable to reach any goals due to economic and political disputes between the member states, most notably on Western Sahara. To illustrate the AMU failure, looking at inter-regional trade shows only 4% of total foreign trade being made within AMU states. (BIC, 2019)

Due to the Western Sahara crisis, which mostly causes tensions between Morocco and Algeria, the border with Morocco has remained closed since 1994, despite a railway link being present at the border. This leaves little hope for regional integration. However there does seem to be political will to integrate, for example the Moroccan ONCF website directly mentions on the Tangier-Casablanca page that the high-speed link should be “catalyst” to “facilitate regional and international integration” (ONCF, no dates, a). The Morocco 2040 Rail strategy also makes a clear mention of the intent to link Morocco to the rest of Africa (ONCF, no dates, b). For Tunisia, the previously mentioned AfDB report does mention Tunisian interests in a Railway link to Libya and to Algeria to support regional integration. No information could be found on Algerian region-building interests through Rail (AfDB, 2012).

Most notably however, in March 2019 the UMA announced that a Trans-Maghreb Rail project was being revived. The idea is to provide a high-speed link from Casablanca to Tunis, and that should extend to Tripoli. The project was initially put forward in 2014 but cancelled due to diplomatic tensions between Morocco and Algeria. The AMU website states that a feasibility study was presented on the 27<sup>th</sup> of March, and that the project was backed up by the African Development Bank (AMU, 2019). The Railway is intended to improve economic and social integration in the Maghreb by favoring commercial and social exchanges, job creation, and local and the regional economy. The project should last until 2060 and cost \$40 billion. The Chinese CCCC is currently doing technical studies to construct the Railway project. The timeframe of 2060 seems to fit the Africa 2063 project of building a Trans-African railway connecting all African capitals, adding another regional layer to the Trans-Maghreb railway project (African Union, no dates).

We can therefore see that if regional intentions are not clear at the national level in the Maghreb, at the supranational level clear goals only recently (re-)emerged for regional integration through transnational railway infrastructures.

### Conclusion:

Looking at agendas for railways in the Maghreb allows us to see that the focus stands mostly on economic and social expectations. The colonial era railways they share arguably had a nationalizing impact in the past, but this has not been made clear, and that goal is not clearly stated in contemporary agendas. The regionalizing effect seems to be understood, but the political will to incorporate it in national agendas only appeared recently, and it is too soon to tell if the AMU will succeed in integrating its member states with a transnational railway.

### **3) The GCC**

*Objectives of the section: We will now shift our attention the GCC and its member states. The GCC is less than a perfectly integrated region, but arguably a more accomplished one than the AMU. GCC member states are also oil rent countries where cars were long the sole means of transport, yet those countries have now shifted their focus and are building railways from the ground up. We will look at the interests behind this shift, and how they play in regional and national integration.*

#### **a) A tool of economic and social development?**

##### **Saudi-Arabia:**

Saudi Arabia has been aggressively developing its Railway infrastructures. Several national freight and high-speed railways are planned. In addition, subway and light rail lines are planned in major cities.

The Vision 2030 framework proposed by Saudi Arabia offers an insight in the government's national interests. It includes various references to transportation issues and their strategic value for the kingdom (Vision 2030, no dates).

A key pillar of Saudi Arabia's strategy is to consolidate their "pre-eminent position as a major trade hub" by streamlining logistical and trade exchanges. Aligning the Railway network to national strategy is a part of that strategy and use of high speed further addresses logistical challenges, most notably the dependence on access through the Iranian-controlled Strait of Hormuz.

The national transformation program includes the development of transportation to develop living standards and safety in the country, allowing better labor market accessibility and attractiveness, urban planning and reduction of pollution. Transportation of tourism also comes into economic improvements considerations (National Transformation Program, no dates).

Railway development would allow for linking of economic activity centers and allow for increased transportation of mining products. According to SAR's website,



Mining is a key economic pillar in the Kingdom and Railway is the best supporting infrastructure. SAR also mentions having been founded to provide a link between the northern, eastern, and central regions of Saudi Arabia. SAR states that “Railways will play a prominent role in supporting the progress of the nation and diversifying sources of income” (SAR, no dates)

The quality of life initiative mentions the capacity of transportation infrastructure to increase social equity. Metro projects, like the Riyadh Metro, are considered key to reduce high congestion and traffic related deaths. Transportation would also be used to ensure higher social participation of people in activities. The quality of life initiative is regarded as a key priority by the kingdom due to expected social and economic outcomes (quality of life program, no dates)

The railways are also intended to “enrich the Hajj and Umrah experience” by giving better access and services to pilgrims. The Mecca-Medina high speed link opened in 2018 is said to be an asset to increase tourism revenue from pilgrims, and to attract businesses to the King Abdullah Economic City. Thus, contributing to economic diversification (Reuters Jeddah, 2018)

#### **UAE:**

The UAE is making strong strides in Railway infrastructure. Seven Metro and Light Rail lines are planned in Abu Dhabi, and 5-7 metro lines and a light rail line in Dubai.

Etihaad Rail mentions the railway network will “act as a catalyst for economic growth and sustained social development”. As part of UAE Vision 2021 and Abu Dhabi Economic vision 2030, Railway will be used as a tool of economic growth, and diversification, and social development by connecting population and economic centers, even linking remote and suburban communities (Etihaad Rail, no dates, c).

The Etihaad Rail website even has dedicated pages focusing on Social, economic and environmental benefits of Railways.

Social: enhance accessibility to al Adfra region by developing population, tourism and industry. Also creating an efficient link between Abu-Dhabi and Dubai to facilitate tourism development across the nation (Etihad Rail, no dates, d).

Environmental: Etihad expects their freight network to reduce greenhouse gas emissions by 2.2 million tons per year (Etihad rail, no dates, b). The Dubai Metro is also estimated to create a reduction of daily emission of 943 tons of CO<sub>2</sub> per day (vjcyber, 2018).

Economic: Development of Freight solutions and development of economic accessibility for people (Etihad Rail, no dates, a). The tourism impact from Rail is expected to amount to an additional 23 billion Dinar (€5,5 billion at time of writing) over the next 40 years. The railway network is also expected to foster investment, income, job and economic opportunities, and those benefits to be shared across the UAE. The Dubai Metro is estimated to return 60% of its investment cost in 10 years (vjcyber, 2018).

### **Qatar:**

Qatar has a strong focus on Urban Railway. 4 Metro lines in Doha and a light rail in Lusail are planned, all to be completed before the 2022 World Cup which the country will be hosting.

The Qatar national vision 2030 aims to diversify the economy by developing Economic, Environmental, human, and social pillars. The development of railway in Qatar is expected to contribute to all those pillars. Those pillars mention objectives of Economic growth, social equity and equality. Strong considerations are given to environmental protection, for example in reducing pollution, environmentally sound technologies, and a sustainable and green approach to urban expansion and development. Qatar also wishes to focus on giving the population better access to welfare, healthcare, and education (Qatar national vision 2030, 2008). We can deduce

that the proposed railway projects in Qatar are a tool to realize those national objectives.

**Bahrein:**

The ministry of transportation of Bahrein mentions its national objective to become a major logistics hub by linking all its transport infrastructure (port, air, and road) through rail (MTT, no dates). The King Fahd Causeway project will connect Bahrein to Saudi Arabia as part of the GCC railway project. As for urban rail a subway system is planned for Bahrein, the ministry of transportation and telecommunication mentions its purpose will be to relieve current congestion issues. A video released by the ministry calls the railway project a catalyst for development, mentioning social connectivity aspects, and environmental considerations (MTT, 2018)

**Kuwait:**

According to the Kuwait authority for partnership projects, The Kuwait National Railroad is a major project for the Kuwaiti government. The Railway would link Kuwait City to the airport, ports, and to other GCC countries through Saudi-Arabia. This would make Kuwait a logistics HUB and increase Kuwait's trade, and create employment (KAPP, no dates). A subway system is also planned to relieve congestion and reduce traffic related accidents which are reportedly increasing with car use (Railway-technology, no dates, a).

**Oman:**

Oman currently has no railways; however, plans exist to develop a railway system across the country and a light rail system in Muscat. The ministry of transportation and communication website describes the project as being vital and strategic to the country's development and economy. Major logistics and development points will be connected. The railway also plays a role in attracting investment and fostering diversification (MOTC, no dates)

This case study allows us to see that GCC states have very clearly defined the social and economic benefits expected from railway infrastructures.

## b) A tool of nation building?

If GCC states are very transparent about the economic and social appeal of railways, very little information could be found on potential political interests of railway. This forces us to look at potential underlying interests of Gulf states. As we saw in the previous chapter nation-building is a game of homogenization of the people to ensure a common interest in national unity and reducing geographic and social distances between the state and the people. We will now research if this applies to Gulf states.

### **Saudi Arabia:**

Saudi Arabia is home to three currents of Islam. Sunni and Wahhabi occupy the population core in the west and the political center respectively, but the Shia occupy the eastern provinces. The eastern provinces are the economic core of the country, where oil reserves are located. Due to traditional tensions between Shias and Sunni/Wahhabi, this situation is a weakness that Riyadh must address. The religious/ethnic differences create a geographical and cultural separation from the political capital, this creates a heterogeneous tribal society that is susceptible to division. To counter dissent, the ruling Al Saud dynasty also extracts a large part of its legitimacy from control over the holy cities of Makkah and Medina and religious institutions, but also from its economic wealth from oil revenues, lack of taxation, strong spending, and ability to crackdown on protests due to large defense spending (Ross, 2001). However due to dropping oil revenues, and increased tensions with Iran, the Saudi government has lost power and influence which it must re-gain.

And from what we mentioned in the previous section, railway development would allow for linking of economic activity centers and encourage diversification and non-oil revenues. We also know from the SAR website that it was founded to provide a link between the northern, eastern, western, and central regions of Saudi Arabia (SAR, no dates). These goals are achieved by the Makkah-Medina and Land-bridge railway projects. Those projects would have the effect of reducing the geographical and cultural distance to Riyadh, whilst consolidating the religious and

economic legitimacy of the Saudi government. Hence, we can hypothesize that the Railway projects play into a potential nation building interest of Riyadh, by homogenizing the country and providing social, economic, and strategic interests.

#### **UAE:**

The UAE is a federation of seven largely independent emirates which united out of necessity in 1971-1972 after the withdrawal of the UK's military protection. According to a memo by Courtney Freer, the UAE is still in the process of state building and creating a national identity, using both top-down and bottom-up tools (Freer, 2018)

The Etihad Rail website openly mentions railway as part of a process of "Emiratization" through fostered community building and increased opportunities across the UAE (Etihad Rail, no dates, d). This could be seen as being part of the aforementioned state initiative for nation building and fostering a national identity. In this case, Railway is an open top-down tool for nation-building in a Gulf State, as hypothesized.

#### **Qatar, Bahrein, Kuwait:**

Those Gulf states are small with large metropolitan capitals. There is very little geographical distance from population centers to the government. There are still however cultural and tribal differences which can threaten the status quo. For Qatar, according to Michael Stephens, there is a need to create a national identity to give legitimacy to the ruling Al Thani family (Stephens, 2012). Cultural and ethnic diversity is also observed in Bahrein where the population is split in half between natives and foreign workers, or Shia and Sunni. This is a difficult situation for the ruling Sunni monarchy, which therefore also seeks to legitimize their power through the building of a homogenous national identity (Al Khalifa, 2012). For Kuwait, legitimacy comes partly from a semi-democratic government. Very little information could be found however on current Kuwaiti-identity building aspirations. In any case, none of those cases relate specifically to Rail, and no information could be found on governmental plans to homogenize the country through Railway.

### c) A tool of Region Building

Currently the Arab Gulf has no international railway links, but a major project, the GCC railway, was approved in 2009. The goal is for all six-member states to build a railway network spanning from Kuwait to Oman. Each member is supposed to build their own part of the railway that goes through its national territory. The plan involves visa-free travel for GCC citizens. In addition, the railway would include freight transport to increase trans-GCC trade. The railway is also projected to create more than 80,000 jobs, indirectly and directly, once completed (Al-Anazi, 2016).

Due to the project's importance, member states have included it as part of their national strategies. As part of the vision 2030, Saudi Arabia clearly mentions its intention to integrate their economic and interconnectivity integration with the GCC, mentioning the construction of a shared Rail network as part of that initiative (Vision 2030, no dates). For the UAE, Etihad Rail mentions that the UAE is a vital part of the GCC railway and that the railway will "redefine logistics and transport in the region" (Etihad Rail, no dates, c). According to the Kuwaiti government, the Kuwait national railroad, which would extend internationally with the GCC Railway framework, would increase Kuwait's regional integration (KAPP, no dates).

The Bahrein ministry of transportation website mentions that the GCC railway's overall aim is "unifying the region and enhancing people connectivity and freight movement, the project is also expected to contribute to the region's economic growth, development and prosperity". It goes in on mentioning environmental, trade, and employment benefits (MTT, no date). Qatar Rail does mention the GCC railway but mostly focuses on the environmental benefits (QR, no date). The Qatar vision 2030 however clarifies Qatar's international vision more by planning and increased economic and cultural role of Qatar in the GCC, and by encouraging cultural exchanges and coexistence, regionally and internationally (Qatar national vision 2030, 2008). It can be hypothesized that international railway development factors into that framework. And just like for Qatar, the GCC railway seems to play into Oman's strategy of becoming a regional transshipment hub, and to foster unity and

stability in the region (Alaraby, 2016). However, no official information was found on Oman's interest in the GCC railway.

We can therefore see from those cases that the region-building and integrative nature of the GCC railway is clear and appears to be shared by GCC state. We can also see that the project also plays into individual national interests. However, despite the benefits of the project, its eventual completion is put in question. The nature of public goods means that all participants must do their share for it to succeed. As of now, this has not happened, and the project, intended for 2018, has been postponed to 2021 and then 2023, and is realistically projected for 2030 (Morgan, 2016).

In 2016 the project was put on hold by Oman, the kingdom accusing other GCC states of not doing their share of the project. Hence Oman focused on its own national network instead. According to Oman's minister of Transport Ahmed Al-Futaisi the lack of progress is due to the 2016 oil price drop reducing public investment capabilities. In addition, lack of regional integration, competing economic agendas, immigration smuggling, and Visa issues could contribute to the issue (Alaraby, 2016).

As a demonstration of the current weak integrated nature of the GCC, member states seemed to be prioritizing national development before looking internationally. A supranational authority was supposed to ensure proper development, but it failed to be created. In 2017 official announcements were made to prioritize the project, Abdullatif Al-Zayani, the GCC secretary general calling the project a necessity for regional development (kuwaittimes, 2017). Reportedly Saudi Arabia, the UAE and Oman had made some progress by 2017. Kuwait's progress was delayed and restarted in 2018. A 2019 article from the International Railway Journal indicated that with the oil crisis having settled in the GCC, infrastructure projects are re-prioritized and making progress (Sinclair, 2019).

This case study allows us to see that region-building benefits of railway are understood and shared by GCC states, but that the current lack of regional integration and economic downturns seem to harm attempts to build integration through rail.

This is in some way a strange tautologic scenario where we see that state integration is required to integrate states.

Conclusion:

This case study of the GCC reveals that railway developments in the GCC are very clearly motivated by social and economic aspects, and region-building goals. Rail infrastructures also seem to play a role as part of country-building agendas, though this is not openly stated.



### **Part III: Railway as a foreign policy tool**

#### **1) FDIs as foreign policy tools**

*Objective of the section: This section will take a general look at FDIs to understand if they play a role as foreign policy tools. We will take a practical approach and look first at how foreign investments and infrastructures can be analyzed as tools of influence. This will be illustrated by analyzing how Chinese investments play into its foreign strategy and how it affects Western nations.*

##### **a) The soft power of FDIs**

Soft power is a concept proposed by Joseph Nye in 1990 in “Bound to Lead: The changing nature of American Power” and in 2004 in “Soft power and American Foreign, Policy”. Soft power is a realist concept (Nye, 2011) that is used by a state to act according to its interests. It focuses on attraction and appeal to bend another to one’s interests. In a 2008 report to the US Congress, CM Blanchard et al. compare US and Chinese projections of influence through non-coercive means, like infrastructure funding, foreign aid, or foreign direct investments. The report refers to those means as tools of “soft power” (Blanchard et al., 2008). This means that according to Nye’s definition, those tools must be attractive and appealing to the recipient, which mean they must play into the recipient nation’s interest. For example, it appears obvious that a developing or economically struggling nation will find the prospect of economic assistance and investment quite enticing.

For the investing nation, those investments are valuable not just because they play in the country’s national interests, but because they produce wealth. As foreign assets, the investments can for example contribute to creating sovereign wealth funds, diversify foreign currency reserves, or contribute to the investing country’s industry. If the investment takes the form of a multinational company, they can contribute to the image of the country they represent. So, in theory investments are a tool of soft power that is attractive to both the recipient and the investor. We must now look at factors that affect the viability of the soft power strategy.

Soft power is realized through 3 forces. Assimilatory, Normative and Influence. Simply put assimilatory force refers to how willing a state will be in integrating with another culturally, politically or economically. The normative force refers to how far a country can make other states act according to the former's interests. A country that provides enough incentives will have more assimilatory and normative power. Finally, the influence force refers to the recognition of a country's power nationally and internationally. This depends on various factors like national image, stability, size, reputation. These factors will determine the existence of soft power and its effectiveness (Xuejun et al., 2017)

This means that we can work with the assumption that FDIs are tools of soft power that can be tools of foreign policy, if it provides enough assimilatory or normative force, and is backed up by sufficient influence. We will now look at the practical case of Chinese soft power relating to investments.

#### b) Soft power through FDIs, the case of China

In 2014 president of China Xi Jinping declared in a speech "We should increase China's soft power" (Shambaugh, 2015). This approach appears to have been successful, especially regarding geo-economic tools. The Lowly Institute even ranks China as the 2<sup>nd</sup> most powerful diplomatic country behind the US and before France (lowly institute index, 2017). Looking at it through the scope of Chinese Assimilatory, Normative and Influence power, we can say that China has significant soft power.

China's foreign investments have come to be referred to as "Checkbook Diplomacy" where interests are shaped mostly by infrastructural tools (Al Jazeera, 2015). The Blanchard et. Al (2008, p166) report explains that China has used checkbook diplomacy to entice countries in changing their official position on Taiwan recognition. A more recent article by Hamilton D.S in the Diplomatist explains that China also extends its soft power tools to get support from counties in the United Nations and on various topics of national interests (Hamilton, 2016). This demonstrates how soft power tools can help support a country's interests. A more dramatic example of

Chinese checkbook diplomacy was observed in Sri Lanka as China allegedly created a “debt trap” by financing a new unprofitable port which Kotte was unable to repay (Limaye, 2017, BBC). Sri Lanka ended up ceding the port to China alongside an exclusive 100 year right on the surrounding area in exchange for debt forgiveness. According to the Blanchard et al. (2008 p40) “debt forgiveness is a major form of PRC foreign aid”. This investment granted China a valuable harbor and enclave in the Indian Ocean as part of the Belt and Road initiative.

In 2013 president Jinping officially presented the One Belt one Road initiative, also called Belt and Road initiative (B&R) which is objectively the largest international infrastructure investment in history. Financing the very expensive B&R is the new Asian Infrastructure Investment Bank (AIIB). An institution proposed in 2013 by Xi Jinping that a Forbes article refers to a “soft-power at it best” (sic) (Rapoza K. 2015). For China the B&R is a strategic asset for economic integration but would also allow China to circumvent US controlled sea-lanes and strategic trade chokepoints like the strait of Malacca. For countries included in the B&R the economic incentives are significant as they would also gain integration in global markets, new infrastructures, and new international trade routes. The B&R would therefore give China soft-power influence in all B&R participating countries.

Looking at Chinese railways in particular, a report by the African Union says “China has emerged as a leading country in railway development” and mentions Chinese railways being developed in Africa with cooperation on railways goals having been implemented in a 2015 memorandum. Hence China will play a major role in creating the trans-African railway defined in the 2063 vision (AU, no dates). A report by Caixin global states that China is expected to spend \$120 billion on rail projects in 2019 (Yelin, 2019).

We can therefore conclude from this case study that infrastructure investments, including railways, are a significant tool of soft-power and influence, with China providing significant empirical contemporary evidence.

### c) Understanding Western perceptions of Chinese soft power

The Blanchard report mentions that according to some experts, Chinese soft power is a threat to US interests (Blanchard et al., 2008). This argument is understandable as the growing soft-power influence of China shifts the global balance of power in favor of China. The US is therefore not keen on seeing its power and influence undermined.

Europe is divided on the shifting of the balance of power. A 2016 Politico article explains the increasing economic presence of China in Eastern Europe as it becomes a major trade partner and finances infrastructure projects. Those investments are important in the face of what the article refers to as “local and EU capital shortness”. During the 2008 crisis China even purchased Eurobonds and helped countries like Greece and Portugal financially, obtaining stakes in key infrastructures like the Piraeus Harbor. The countries get economic relief and opportunities, and China gains critical infrastructure, access to the EU market, and a positive image (LE CORRE, 2016, Politico). This growing influence however worries EU as they see their power undermined by a more powerful state.

Globally China’s increasing influence undermines Western interests (Cheru, Fantu and Cyril Obi, 2011). Chinese international economic presence presents strong advantages over western presence. China for example accepts payments in goods, land, and exclusive rights instead of payments. This is a significant asset for trading with states with low liquidity. Chinese economic presence is also exclusively state sponsored, meaning projects receive Chinese subsidies. This allows Chinese project offerings to be more competitive than western private sector offers. China also presents the advantage of not demanding “conditionality”, which is traditionally demanded by Western nations, for countries to receive financial benefits. This means Chinese investments are usually given with no underlying condition, like for example respect for human rights, or environmental protections. Conditionality can restrict the range of action of political actors in pursuing their national interests, thus this

principle of non-intervention is flexible and adaptable, and is more attractive to foreign nations (Blanchard et al., 2008, p9).

All and all we can summarize that Western powers are generally wary of Chinese growing influence through investments. This is because it affects the balance of power and creates a security dilemma. Chinese influence undermines Western influence in its traditional sphere of influence and tends to run contrary to traditional western interests.

### Conclusion:

This section has helped us understand how we must understand foreign investment in our analysis. We have learned that foreign investments and aid are tools of soft power that can help a country motivate another to support the former's interests. We have also learned that there is a clear competition for that influence between China and the West. And that China has reportedly an increasing share of influence in the MENA from their railway investments. We will now look at how that competition expresses itself by looking at foreign investments and infrastructure in railway projects in the countries in the previous chapter.

## **2) Railway investments in the MENA**

*Objective of the section: Now that we have seen how foreign investments and infrastructures, like railways, can be used as tools of soft power and foreign policy, we will look at railway infrastructure projects in the MENA and analyze how soft-power and foreign policy relationships might be represented by foreign investments in the region.*

As we demonstrated in the previous chapter, railways are tools of development, stability, country and region building. They are an attractive asset for governments. However, we have also seen that they are expensive infrastructure that often must be imported from more developed nations which have expertise in railway. For the latter, this makes railways a relatively powerful tool of soft power projection.

Working from this assumption that infrastructures are tools of influence, we will now look at railway infrastructure projects in the previously analyzed MENA states. By researching railway projects and the nation that support them financially or build them, we should be able to draw conclusions on the influence relationships in the MENA.

For this purpose, we will look at 95 railway projects in Egypt, the Maghreb and the GCC, focusing on the source of railway investments, their value, and the origin of the infrastructure. Our research does not include Rolling stock as it would make the analysis infinitely more complex, we only focus on investment on physical rail infrastructures.

For clarity the countries are color coded. Blue nations/consortiums are for states that are traditionally perceived as “western” states, belonging either to NATO, the EU, or the US and its sphere of influence. We chose to pool those together as their strategic interests are traditionally aligned. The color code for China is red, Africa and African states are Green, and Arab Gulf states are yellow. To compare investment values, the data has been converted to 2018-2019 Euro value. This simple methodology should give us a simple understanding of railway investments in the analyzed countries.

## Egypt

Project nb	Country	Project	Investor	Date	Investment Amount	Converted amount in 2018-2019 €	Infrastructure
1	Egypt	Cairo metro Line 1	France	1982	1107 million francs	€370 million	France
2	Egypt	Cairo metro line 1 extension	Europe	2018	€605 million	€605 million	???
3	Egypt	Cairo metro line 2	Japan	1995	€761 million	€761 million	Japan
4	Egypt	Cairo metro line 2	EU	2015	€100 million	€100 million	???
5	Egypt	Cairo metro line 3	France	2014	€500 million	€500 million	France-Japan
6	Egypt	Cairo metro line 4	Japan	2018	\$1,5 billion	€1,3 billion	Japan
7	Egypt	Cairo metro line 5	Italy, SK, or China	???	???	???	N/A
8	Egypt	Cairo metro line 6	Canada/Germany	2018	???	???	Canada/ Germany
9	Egypt	Alexandria Metro	China or Japan	2017	???	???	N/A
10	Egypt	Cairo Monorail	Canada/Germany/UK	2019	\$3 billion	€2,6 billion	Canada/Germany/UK
11	Egypt	ENR railway restructuring	France	2015	\$305 million	€294 million	N/A
11	Egypt	ENR railway restructuring	China	2018	\$600 million	€559 million	China
12	Egypt	new capital link	China	2017	\$1,2 billion	€1,1 billion	China
13	Egypt	Luxor-Hurgada railway	China	2018	\$2,5 billion	€2,3 billion	China

Figure 7: Railway projects of Egypt. Source: Annex 1

Looking at the data for Egypt (Fig. 7) allows us to see that the total investment over the period 1982-2019 in the country's railway projects represent €10,4 billion. Of those, €6,5 billion come from western investors (blue) and finance western-build infrastructure. Chinese railway investments appeared in Egypt in 2017 and represent

€3,9 billion over the 2017-2018 period, or a 30% share of total investments. Though Chinese investments are substantial, they are clearly lower than Western investments. This value could however be higher if China were to become the preferred investor for the Cairo metro line 5 or the Alexandria Metro project. By how much China's share would increase though is uncertain as we could not find the investment value of those projects.

This means that as far as Egypt is concerned, Chinese soft-power through railway investments is inferior to western soft power, but it is rising.

## The Maghreb

### Morocco

14	Morocco	Taniger-Casablanca HSR	France	2010 €1.1 billion	€1.2 billion	France
14	Morocco	Taniger-Casablanca HSR	Saudi Arabia	2010 €144 million	€157 million	France
14	Morocco	Taniger-Casablanca HSR	UAE	2010 € 140 million	€150 million	France
14	Morocco	Taniger-Casablanca HSR	Kuwait	2010 €100 million	€108 million	France
15	Morocco	Trans-Maghreb railway	Africa	2017 \$1,7 billion	\$1,7 billion	N/A
16	Morocco	Railway upgrade	Africa	2018 €300 million	€300 million	N/A
17	Morocco	Casablanca tramway	France	2017 €225 million	€225 million	France
17	Morocco	Casablanca tramway	EU	2017 €60 million	€60 million	France
18	Morocco	Rabat Tramway	France/EU	2015 €200 million	€206 million	France

Figure 8: Railway projects of Morocco. Source: Annex 1

The data for Morocco (Fig.8) gives us a total investment value of €4,1 billion. Western investments represent €1,58 billion, with Africa appearing as the strongest investor with €2 billion, or half, of the total investment value. Investments coming from Gulf-states are present but occupy a modest share of just €384 million, which is less than 10% of the total value. Morocco is however the only state where we could find African, and Gulf foreign investments in the railway sector. It must also be pointed out that African and Gulf-state investments do not finance African or Gulf-state built-assets. France seems to have a quasi-monopoly on building railway infrastructures in Morocco. We could interpret this result on the basis that Morocco shares history with France, and hence is part of its traditional sphere of influence. Therefore France would have an interest in investing in local infrastructure to maintain its soft power and influence. No railway investments coming from China could be found.

## Tunisia

47	Tunisia	Modernization of railway lines	EU	2017 €160 million	€160 million	???
48	Tunisia	Sfax light rail	EU	2017 €600k	€600k	France / Tunisia
49	Tunisia	Tunis light rail modernization	France	2017 €40 million	€40 million	???
50	Tunisia	Grand Tunis Rapid Rail	Europe	2017 €50 million	€50 million	???
51	Tunisia	Nabeul Metro	PPP	2019 ???	???	China
52	Tunisia	Medenine -Gabes line	PPP	2018 ???	???	China

Figure 9: Railway projects of Tunisia. Source: Annex 1

Tunisia is rather modest in terms of railway investments (Fig. 9) and available data, and it is therefore difficult to interpret the incomplete data. Only about €850 million were found to be invested in the Tunisian railway network in 2017, all of which coming from France and Europe, and most of which (€600 million) to finance a French-built infrastructure in Sfax. Like for Morocco French and European presence is not surprising considering the shared colonial history and that France could consider Tunisia as part of its traditional sphere of influence.

Chinese infrastructure is being built most recently in 2018-2019. The value of the infrastructure could however not be found, nor the origin of the investment as it was established through a Public-Private-Partnership (PPP) which means the infrastructure are financed both by public funds and private investors. We could interpret the recent Chinese railway infrastructure as China encroaching on France's sphere of influence, but the lack of data does not allow us to draw this conclusion.



## Algeria

19	Algeria	Metro Algiers	Algeria	2006	€380 million	€438 million	Germany, France, Spain, Algeria
20	Algeria	Metro Line 1 extension	Algeria	2016	€85 million	€87 million	France, Algeria
21	Algeria	Metro Line 1 extension	Algeria	2016	€86 million	€88 million	France, Algeria
22	Algeria	El quantas rail tunnel	Algeria	2018	???	???	China, Algeria
23	Algeria	Metro Oran	PPP	2014	€1,3 billion	€1,3 billion	???
24	Algeria	Tramway Algiers	Algeria	2006	€365 million	€421 million	France, Algeria, Italia
25	Algeria	Constantine Tramway	Algeria	2008	\$44 billion dinars	€496 million	Italy / France
26	Algeria	Bejaia tramway	Algeria	2012	40 billion dinar	€428 million	Spain
27	Algeria	Biskra tramway	Algeria	2012	32 billion dinar	€342 million	Belgium / Algeria
28	Algeria	Bechar tramway	Algeria	2012	25 billion dinar	€267 million	France
29	Algeria	Bilda tramway	Algeria	2012	37 billion dinar	€396 million	France / Algeria
30	Algeria	Tebessa Railway	Algeria	2012	35,7 billion dinar	€381 million	France / Algeria
31	Algeria	Ouargla Tramway	Algeria	2013	€228 millions	€236 million	Portugal / France / Algeria
32	Algeria	Mostagadem Tramway	Algeria	2013	€240 millions	€248 million	Spain / France / Algeria
33	Algeria	Sidi Bel Abbes tramway	Algeria	2013	\$420 million	€375 million	Turkey, France, Algeria
34	Algeria	Skikda Tramway	Algeria	2012	37,7 billion dinar	€386 million	Spain / France
35	Algeria	Setif Tramway	Algeria	2014	38 billion dinar	€350 million	France / Turkey
36	Algeria	Djelfa tramway	Algeria	2012	36,5 billion dinar	€374 million	France / Algeria
37	Algeria	Oran Tramway	Algeria	2007	€355 million	€371 million	Espagne / France / Algeria
38	Algeria	Rocade ferroviare Nord	Algeria				France, Germany, Algeria
39	Algeria	Rocade ferroviare des hauts plateaux	Algeria				Italy / Algeria
40	Algeria	Ligne Minière Est	Algeria				???
41	Algeria	Penetrante ouest	Algeria				???
42	Algeria	Penetrante Est	Algeria	2011	€32 billion	€34 billion	???
43	Algeria	Penetrante Centre	Algeria				???
44	Algeria	Boucle Sud Est	Algeria				???
45	Algeria	Boucle Sud Ouest	Algeria				???
46	Algerie	LGV	Algeria				Italy / Algeria

Figure 10: Railway Projects of Algeria. Source: Annex 1

Algeria has been making very substantial investments in the railway infrastructure, amounting to 40 billion from 2006-2016 (Fig. 10). Contrary to Egypt, Morocco or Tunisia, the projects all appear to be state-funded, except for one confirmed PPP project, which also implies state-participation in the investment. According to the research Algeria is reliant on its oil revenues to finance infrastructure, with price fluctuation affecting project completion or not. This means that Algeria finances its own infrastructure, but the country is still reliant on foreign assistance for building and managing the actual infrastructure. For this reason, the table shows Algerian financing foreign built-infrastructure, almost all of which by western led consortiums. France, like for Tunisia and Morocco, is present on almost all projects. Once again, we could understand this result as being part of a French desire to maintain soft-power over its sphere of influence by building railways. China does appear to have a presence in Algerian railway infrastructure, like in Tunisia Chinese infrastructure being the most recent in 2018. But it is impossible to ascertain the extent of their presence. It is however clear it is modest compared to other western states.

Overall looking at railway investments in the Maghreb we find that France appears as a constant. This presence we can interpret as intended by the French government to maintain some form of soft-power over its traditional sphere of influence. However, we could also make the counter-argument that due to the historical

presence of French railways in the region, that Maghreb states maintain a path dependent relationship due to a socially consolidated preference of French-made infrastructure. As for China, its presence is very recent and limited, which does not allow us to draw any conclusion that this is part of any sort of trend or pattern.

## The GCC

### Saudi Arabia

53	Saudi Arabia	North-South railway	Saudi Arabia	2005	\$5,3 billion	€6,2 billion	Western and Saudi consortium
54	Saudi Arabia	Landbridge	Saudi Arabia	2011	\$7 billion	€7,1 billion	Italy
55	Saudi Arabia	Riyad metro line 1	???	2013			USA, Germany, Saudi Arabia,
56	Saudi Arabia	Riyad metro Line 2	???	2013			USA, Germany, Saudi Arabia
57	Saudi Arabia	Riyad metro line 3	???	2013	\$22.5 billion	€21 billion	Italy, India, Germany, Saudi Arabia
58	Saudi Arabia	Riyad metro line 4	???	2013			Spain, South Korea, France, Australia, Saudi Arabia
59	Saudi Arabia	Riyad metro line 5	???	2013			Spain, South Korea, France, Australia, Saudi Arabia
60	Saudi Arabia	Riyad metro line 6	???	2013			Spain, South Korea, France, Australia, Saudi Arabia
61	Saudi Arabia	Al Muhasheer Metro	???	2008	6,7 billion Riyals	€1,3 billion	China
62	Saudi Arabia	Jeddah metro	PPP	2014	\$12 billion	€11 billion	France, UK
63	Saudi Arabia	Jeddah Corniche Tramway	PPP	N/A	N/A	N/A	N/A
64	Saudi Arabia	Jeddah light rail	PPP	N/A	N/A	N/A	N/A
65	Saudi Arabia	Princess Nourah APM	???	2010	???	???	Spain, Saudi Arabia
66	Saudi Arabia	Makkah Metro Phase 1	PPP	2014	€2,3 billion	€2,3 billion	Spain, Turkey, Saudi Arabia
67	Saudi Arabia	Makkah Metro Phase 2	PPP	N/A			N/A
68	Saudi Arabia	Makkah Metro Phase 3	PPP	N/A	\$17 billion - €2,3 billion	€12,7 billion	N/A
69	Saudi Arabia	Dammam Metro	PPP	N/A	\$16 billion	€14 billion	N/A
70	Saudi Arabia	Medinah Metro	PPP	2015	375 million Riyals	€84 million	France, Turkey
71	Saudi Arabia	Haramain HSR phase 1 P1	???	2009	\$1.8 billion	€1,7 billion	China/Saudi Arabia/ France
72	Saudi Arabia	Haramain HSR phase 1 P2	???	2011	9 billion Riyals	€1,9 billion	Saudi Arabia / Turkey
73	Saudi Arabia	Haramain HSR Phase 2	???	2011	€6,7 billion	€6,7 billion	Spain / Saudi Arabia

Figure 11: Railway Projects of Saudi Arabia. Source: Annex 1

Saudi Arabia is the most significant state for railway investments we would find in our case study. However, it appeared impossible to find the source of all investments. Saudi Arabia seems to privilege PPPs to finance railway infrastructure, hence funds are both public and private. This is used to ensure the completion of the project due to the state's sensitivity to oil price fluctuations. PPPs have the benefit of reducing reliance on public funds by utilizing a relatively stable flow of private investments. Just like Algeria, the investments finance foreign-built infrastructure. From our research it appears clear that western led-consortiums have an almost-monopoly on railway investments. Two examples of Chinese-made infrastructure could be found, and unlike in the Maghreb, they are not the newest, but some of the oldest railways in the country having been made in 2008 and 2009.

## UAE, Qatar, Bahrein, Kuwait, Oman

74	UAE	Dubai Metro	UAE	2006	\$4 billion	€4,4 billion	Japan, Turkey, France
75	UAE	Dubai Tram	UAE	2008	4 Billion AED	€817 million	France, Belgium, USA
76	UAE	Abu Dhabi Metro	UAE	N/A	\$ 5 billion	€4,4 billion	N/A
77	UAE	Abu Dhabi Tram	UAE	N/A	\$7 billion	€6,2 billion	Spain
78	UAE	Ethad Rail 1st Phase	PPP	2009	\$1,28 billion	€1,3 billion	Germany, UAE, USA
79	UAE	Ethad Rail 2nd Phase	PPP	2019	\$409 million	€365 million	China/ South Korea
80	Qatar	Lusail Light Rail	PPP	2011	€2 billion	€2 billion	France / Qatar / USA
81	Qatar	Long distance Rail	???	2014	???	???	USA / France
82	Qatar	Doha metro Red line North underground	PPP				Italy, South Korea, Qatar, France
83	Qatar	Doha metro Red line North Elevated	PPP				Italy, South Korea, Qatar, France
84	Qatar	Doha metro Red line South Underground	PPP	2014	\$8,2 billion	€7,8 billion	France / Qatar/ South Korea
85	Qatar	Doha metro Red line South Elevated	PPP				Spain, Turkey, Netherland, Qatar, France
86	Qatar	Doha metro Green Line	PPP				Austria / Qatar / Saudi arabia / France
87	Qatar	Doha metro Gold Line	PPP	2014	\$700 million	€670 million	Greece / India / Turkey / Qatar / France
88	Bahrein	Bahrein Metro	PPP	N/A	N/A	N/A	N/A
89	Bahrein	Bahrein Railway	PPP	N/A	\$5 billion	€4,4 billion	N/A
90	Bahrein	Causeway	Bahrein	2021	\$4 billion	€3,5 billion	N/A
91	Bahrein	Light Rail	???	N/A	N/A	N/A	N/A
92	Kuwait	Kuwait Metro	PPP	2016	\$7 billion	€6,2 billion	Spain/US
93	Kuwait	Kuwait Railway	PPP	2016	\$3 billion	\$3 billion	N/A
94	Oman	Oman Railway phase 1	Oman	2015	\$149 million	€140 million	Spain
95	Oman	Oman Railway phase 2	Oman	N/A	N/A	N/A	N/A

Figure 12: Railway Projects in the UAE, Qatar, Bahrein, Oman, Kuwait. Source: Annex 1

The rest of the GCC states also represent a sizable amount of railway infrastructure, and just like for Saudi Arabia, resorting to PPPs appears as the preferred source of financing railway infrastructures. GCC states being dependent on oil revenues to finance infrastructures, this solution is therefore not surprising. And just like for Saudi Arabia, the Chinese presence in Railway appears minimal compared to an almost monopolistic presence of western-led consortiums.

Looking at the data for Saudi Arabia and the rest of the GCC, for railway infrastructure, there is a clear dominance of western states. Chinese presence is minimal. Interpreting the results in terms of influence, we could make the argument that the GCC falls under the traditional western sphere of influence, and the large share of western railway infrastructure reflects that. However, we could also make the argument that based on the large value of this market, and the fact that the investments mostly appear to come for the private sector through PPPs, and the diversity of states represented in the consortiums, that we are simply looking at a natural competition between western companies in a foreign market. It could be that the use of PPPs removes political considerations to the benefit of rules of supply and demand. Hence it could be interpreted that western states are not here competing for influence, but for market shares. This argument however does not explain the lack of Chinese presence, considering that China is proficient in building railways domestically and internationally

## **Conclusion**

This chapter has allowed us to subscribe to the argument that railway infrastructures and investments can be used as tools of soft power by states to gain influence on other states, thus allowing them to pursue their own interests. Looking at various MENA states for evidence of this influence, it is hard to draw definite conclusions. However, some patterns did appear that were noteworthy and seemed to corroborate our argument. Most notably the large presence of French railway infrastructure in the Maghreb, or the clear dominance of western-made infrastructure in the GCC. The lack of Chinese presence is surprising considering the fact the research initially showed strong Chinese rail presence in Africa.

## **General Conclusion**

This paper set to demonstrate how railway infrastructures in the MENA region can be understood as tools of national and foreign policy.

The first chapter demonstrates how railway infrastructures bring theoretical benefits to the economy of connected areas, to the people's lives, and to their environment. Those benefits are relatively well understood and can generally be measured. Railways also have in theory political benefits in that they can help power figures in building or consolidating their nation through homogenization and reduction of geographical and cultural distances. This benefit also in theory should scale to Region-building as it can create a socio-constructivist reiterative discourse that is a "hidden integrator". This means railways can be seen as tools of national policy.

Looking at MENA countries that have been selected for having railway development projects is an opportunity to look at how the benefits of railway infrastructures are understood in this region at this time. The research indicated that the governments of the analyzed states had a very clear understanding and were putting forward economic, social and environmental benefits of rail. However in some cases nation-building or power-consolidating goals were underlying, in others, they were clearly expressed. The analysis also looked at the Maghreb Sub-region and the GCC region to look at how railway was expected to play a role in region-building. The results showed that this benefit also appears to be well understood, although utilizing railway for region building appears to require a pre-existing level of regional integration as both regions are struggling in cooperating on railway projects. Hence railways are here used as tools of national policy.

The final chapter looked at how since railways are key infrastructure, that states can utilize their expertise on railways to finance or create railways in other states, which may grant them soft-power and influence over that state. Hence railways can be seen as tools of foreign policy. By looking at the railway projects in the previously selected MENA countries, it became clear that there is a very strong presence of western build or financed railway infrastructures in the MENA; vastly overshadowing

Chinese ones, which is reportedly emerging as a major investor in railways in the region. This could be interpreted as a battle for soft-power and influence on the MENA region, although the data indicating a minor Chinese presence does not allow us to reach this conclusion on the selected countries.

Having understood all this through theoretical and practical evidence, some questions can be put forward.

For example, the first chapter presented historical evidence of railway being used for country building and economic and social development starting from the 19<sup>th</sup> century. But since most of the research we could find on the economic/social/nation-building effects of railways were very recent, we could reach the conclusion that 19<sup>th</sup> century politicians saw those benefits of railway infrastructure from guess-work. Or that those benefits were obvious.

Another aspect is that despite a large amount of information and studies existing on measuring the economic and environmental effects of railways, the social and nation/region-building effects are not well empirically understood and measured. This paper made the claim that railway infrastructures are being made for social-constructive, nation building, or region-building objectives; but does not say how effective railways are at achieving them. Further research should focus on empirically demonstrating the social and political effects of railways. The MENA countries that have been analyzed, representing a diverse area of varied railway experiences and networks, should represent an ideal analytical pool for such empirical research as their railway infrastructures emerge and develop.

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