WORLD BANK GROUP
Transport

Working Paper

Connecting to jobs?
Employers perspectives on the impact of transport services in Morocco

Clotilde Minster, Jean-François Arvis, Nabil Samir

October 2021

Abstract

Since the start of the 2000s, the Kingdom of Morocco has embarked on a major modernization process, focusing on deploying large infrastructure projects, particularly transport infrastructure, which has been the main focus of the public investment. The objective of these investments was not only to increase the country's accessibility and connectivity but also implicitly to create jobs. Nevertheless, these public policies and investments have not had the expected effects in terms of employment opportunities. This low return in job creation can be explained: investments in Morocco have been evaluated based on costs and benefits associated with the state and users. A rigorous analysis of new job opportunities has not been carried out while prioritizing the investments because of the lack of established tools and methodologies to inform policy decisions. The study highlights one way of assessing the question of job creation through infrastructure investment in the road sector. This research is based on the results of two surveys administered in autumn 2019. Our results demonstrate that companies highlight both the importance of proximity to the highway for accessing markets and saving time and the importance of transportation for their competitiveness and employee retention. Our results highlight the impact of increased spatial accessibility on job creation and the importance of complementary investments needed to maximize the positive effects of the transport infrastructure. Finally, the working paper suggests policy actions to develop the process of ex-ante and ex-post socio-economic assessments of public investment in infrastructure (including transport infrastructure) and thus maximize the impact of this investment, particularly in terms of employment.

Introduction

Since the start of the 2000s, the Kingdom of Morocco has undertaken several proactive and sustained steps to modernize the economy, encourage investment in new industrial and service sectors, and create jobs. Transport infrastructure has been one of the main targets of public infrastructure financing. The aim was only to increase accessibility and national and international connectivity through territorial planning and create jobs. Large scale infrastructure investments with an underlying growth and job creation objectives include the extensive motorway network ("Autoroute du Maroc"). However, a 2017 Joint Note prepared by the Moroccan Planning Commission (HCP) and the World Bank pointed the negligible impact of Moroccan investments on job creation: for example, an investment of 32 percent of GDP in 2016 failed to produce any improvement in the employment rate.[1] Annual net job creation between 2012 and 2019 was only 58,040 on average, while the working-age population (15 to 65 years) increased on average by 270,000 each year.[2] This assessment is especially concerning as unemployment and inactivity remain high in Morocco, especially among youth and women. In 2019, the overall activity rate for Morocco was 45.8 percent, while, for women, the rate never rose above 21.5 percent. The overall unemployment rate was close to 9.2 percent,[3] but was higher among women, youth, and degree holders. In Morocco, 46.2 percent of the population is now under the age of 25. This means that the size of the labor market will increase substantially in the years ahead.[4]

[1] Source: Moroccan Planning Commission and World Bank 2017. The Labor Market in Morocco: Challenges and Opportunities, p. 40
[2] Source: World Bank 2018. Systematic Country Diagnostic, Kingdom of Morocco.
[3] World Bank 2018. Systematic Country Diagnostic, Kingdom of Morocco.
[4] Source: Moroccan Planning Commission and World Bank (2017); The Labor Market in Morocco: Challenges and Opportunities. Internal Report.

This working paper aims to examine how an improved spatial accessibility, resulting from road investments, influences employment. The mechanisms by which infrastructure contribute to productive activity are contextual and indirect. This paper, therefore, focuses on motorway investments and on public transport provisions. Infrastructure and services increase accessibility of firms and people to market and opportunities. The actual mechanisms of improvement of accessibility and accessibility impacts on firms' productivity can be modelled, supposing data are available. In the absence of very geographically granular data it has not been possible to look at the local activity and job impact of gradual improvements of transport infrastructure such as the recent (last 15 years) extensions of the motorway network. This paper aims to address this gap by highlighting the perception of motorways and public transport provisions on enterprises' activities. Indeed, firms are direct beneficiaries of mobility improvement for their goods, services, and employees. Hence, they should be able to report the benefits constraints and changes brought by recent improvement.

The surveys: scope and methodology

To understand the relationship between road transport investments and firms' productivity, two surveys were designed aiming identifying policy insights as revealed by the firms. The two surveys explore the link between transport and job creation at two different scales and with two different perspectives. The objective was twofold: (i) test the extent to which road infrastructure influence where enterprises choose to locate, and (ii) test the impact on job access. The surveys that were conducted aim to support the understanding of the enterprises' point of view. The surveys aim to highlight possible mechanisms through which firms benefit from enhanced transport infrastructures, and thus spatial accessibility. Both surveys were administered in autumn 2019. The methodology for each survey is the following:

1. The first survey, called the motorway accessibility survey ("Motorway"), examines the impact of the two most recent extensions of "Autoroute du Maroc." The survey aims at looking at the benefits from increase market accessibility brought by the extension depending on (i) the sector and (ii) the distance from the motorway exit. This survey was administrated to 100 enterprises.[5] About 80% of our sample is constituted of small enterprises with less than 10 employees, 20% have between 11 and 60 employees. Two surveyed enterprises have more than 100 employees. The survey targeted 50 firms located along the Khouribga-Beni Mellal and 50 firms along the El Jadida-Safi motorway. Those are the most recently completed links in the motorway network. The aim of this study was to analyze how these enterprises perceived the potential benefits of operating near the two selected motorways. In the absence of data gathered before the motorway extension, the survey distinguishes enterprises and questions depending on when the unit was created. 57 of the enterprises in the survey existed before the opening of the motorway, while 43 were established afterwards. The locations surveyed were the principal place of business for 89 of the enterprises.[6] The "motorway" survey represents several economic sectors, mostly trade, construction, services, transport, and industry.
2. The second survey, called the "online employers survey," looks at a separate policy question which is the employees' spatial accessibility to workplaces.[7] The focus on manufacturing jobs for which jobs are located in industrial zones primarily in the Casablanca and Tangiers areas. Commuting is challenging with no established policy or guidelines. Mobility solutions include a mix of collective transportation, taxis, and company organized transportation. Casual conversations with industry executives point out that the mobility

[5] The questionnaire for this survey is presented in Annex 1.
[6] This survey was largely based on another survey conducted in Brittany in 1988, the results of which are presented in: Ministry of Infrastructure, Road Directorate. 1988. The socioeconomic effects of major road infrastructure. SETRA.
[7] The questionnaire for this survey is presented in Annex 2.

of skilled workers (cost and comfort) is a growing concern in light manufacturing and contribute to lower competitiveness in the traditional locations in Tangiers and Casablanca. Various business associations were requested to disseminate the web links for the French and Arabic versions of the questionnaire. The survey was sent to a specific contact person in each establishment. The survey link included questions on the nature of the establishment to prevent duplication of responses from a single establishment. As the survey was administrated online, the level of responsiveness is unknown: the number of enterprises that were asked to participate is unknow. In all, 31 establishments, all working in the textile sector responded to the online survey. 60% of the surveyed firms are located in Casablanca, 20% in Tangier, 13% in Fez, and the remaining 7% being located in Marrakesh. In view of the limited number of respondents (31), the results of the analysis should be considered as indicative rather than as statistically significant.

For reason of sample selection, and also due to the relatively small sample size, the following analysis aims to identify mechanisms whereby firms are affected by spatial accessibility understood as the proximity to a newly-built motorway and dependent of a high-quality urban transport. Moreover, both surveys were run after the events we assess the impacts of. The goal of these surveys is to gain on understanding of the underlying mechanisms and to complement other analysis based on bigger and more heterogeneous data. It seems that there was no precedent as until now mobility surveys have been designed not for firms but for employees and households. Therefore, both surveys should be seen as a pilot to gain a general understanding of enterprises' positions, and thus are not representative.

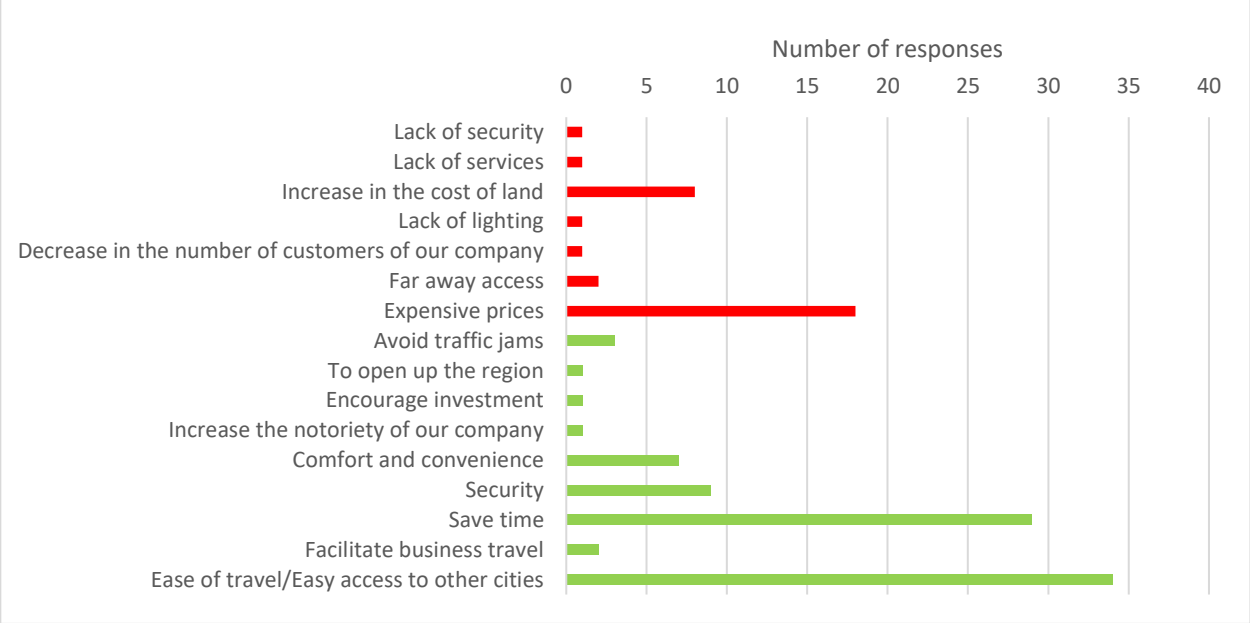
Insights from the Motorway survey

Enterprises pointed to the positive impact of motorways on employment

The "motorways" survey appears to demonstrate a link between transport infrastructure and job creation: indeed, 58 enterprises (of 100) reported an increase in the number of their employees after the opening of the motorways. The type of jobs created appears to have changed for about half of the respondents: new jobs were described as similar in terms of the expected level of qualification (49 enterprises) or higher (45 enterprises). Sixty-three enterprises recognized the overall positive impact of the motorway in terms of domestic market access. However, it appears that this benefit did not apply to international markets.

The figure below shows the reported impact of the motorway on the enterprises, with positive effects in green and negative effects in red. In qualitative terms, it should be noted that 70 enterprises reported no negative effects on their businesses from the motorway, while, by comparison, only 36 enterprises reported no positive effects from the motorway.

Figure 1: Positive and Negative Effects of the Motorway Reported by the Enterprises



Source: "Motorways" survey, multiple-choice question.

The majority of enterprises pointed to the time savings and ease of travel afforded by the motorways, which help promote productivity. In all, 78 enterprises described motorway access as "somewhat important," "important," or "absolutely critical." By way of comparison, only 35 enterprises assign the same level of importance to access to airport infrastructure. This may be explained by the sectoral specialization of enterprises and by differences in their channels of distribution.

Surprisingly, only 42 enterprises described labor availability as "important," with 19 responding "not important" or "not very important." Nevertheless, labor cost was reported as "absolutely critical" or "important" by 80 percent of enterprises. It appears that there was almost full agreement on this point, as only 1 percent of the enterprises surveyed reported that labor cost was not an important factor.

Box: Spatial factors continue to influence the choice of location of enterprises

In the context of digitization and accelerating global trade, we sought to establish the most important factors adduced by enterprises when deciding where to establish their operations.

As discussed above, the issue of accessibility, either to a motorway or an urban center, is still viewed as essential by enterprises. Indeed, access to an urban center was rated as "absolutely critical" by 56 percent of the enterprises surveyed. As was to be expected, land is also a decisive factor when it comes to decisions on where to set up a company. The cost of land was rated as "absolutely critical" or "important" by 59 percent of enterprises. Our survey did not address localization economies, as the issue of clustering of firms in the same sector was rated as "absolutely critical" or "important" by only 28 percent of enterprises.

Access to an airport or port was reported as "absolutely critical" by 14 percent of the enterprises surveyed. This response may be more indicative of enterprises that focus on regional, rather than on international markets. By contrast, access was rated as more important than proximity to the actual market outlet: only a quarter of enterprises reported that proximity to market was "absolutely critical," while almost as many declared that this factor was "not important" (24 and 21 percent, respectively). Forty percent of enterprises reported that the presence of a strategic client was "absolutely important."

It appears from the results that enterprises assign very little importance to public incentives or proximity to an administrative department; only 20 percent of enterprises surveyed indicated that these measures were "absolutely important." By contrast, 31 percent of enterprises indicated that good Internet connectivity was essential.

Source: "Motorways" survey

There is a link between job creation and proximity to motorways

Enterprises generally report positive effects from new motorway links. For 58 enterprises in our survey, these positive effects were reflected in the creation of new jobs. The Table below demonstrates that the majority of enterprises that created new jobs were located in close proximity to motorways.

Table 1: Job-Creating Enterprises, by Distance from the Motorway

Sector	Number of job-creating enterprises	Number of job-creating enterprises, by distance from the motorway	
		1-10 km	11-15 km
Agriculture and Fisheries	2	2 (100%)	0
ICT sector	1	1 (100%)	0
Industry	3	3 (100%)	0
Transport/Logistics	2	2 (100%)	0
Trade	22	18 (82%)	4 (18%)
Hotels & Restaurants	2	2 (100%)	0
Building and Public Works	16	12 (75%)	4 (25%)
Miscellaneous Services	10	7 (70%)	3 (30%)
Total	58	47 (81%)	11 (19%)

Source: "Motorway" survey conducted as part of the study

For all sectors combined, 81 percent of enterprises that reported the creation of new jobs are located less than 10 km away from the motorway. Nevertheless, job creation was not evenly distributed across all sectors. The three sectors in which the most jobs were created were services (83 percent of enterprises in this sector created jobs); trade (71

percent); and agriculture and fisheries (66 percent). Somewhat counterintuitively, our survey showed that few enterprises in the transport and logistics sector created jobs after the opening of a motorway. The inverse relationship between proximity and job creation was also apparent. The table below shows that a significant proportion (43%) of enterprises that reported no new jobs were located at a greater distance from the motorways.

Table 2: The Inverse Relationship Between Distance from the Motorway and Employment is Also Apparent

Sector	Number of enterprises that created **no** jobs	Number of enterprises that created no jobs, by distance from the motorway	
		1-10 km	11-15 km
Agriculture and Fisheries	1	0	1 (100%)
ICT sector	2	0	2 (100%)
Industry	5	2 (40%)	3 (60%)
Transport/Logistics	5	2 (40%)	3 (60%)
Trade	9	4 (44%)	5 (56%)
Hotels & Restaurants	2	1 (50%)	1 (50%)
Building and Public Works	16	13 (82%)	3 (18%)
Miscellaneous Services	2	2 (100%)	0
Total	42	24 (57%)	18 (43%)

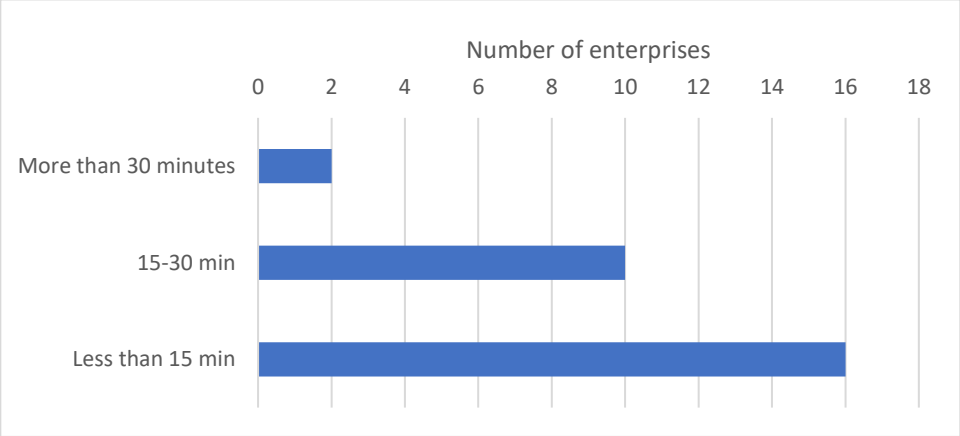
Source: "Motorway" survey conducted as part of the study

Which enterprises create employment?

The survey conducted among enterprises located near the motorways shows that the biggest contributors to job creation were companies that had established their operations after the motorways opened. Indeed, of the 28 enterprises that relocated their company or expanded their operations after the opening of the motorways, 19 of them, or 68 percent, generated new jobs. It should be noted, however, that none of these enterprises received government assistance for the transfer or expansion of their operations. Of the enterprises newly established near a motorway, 86 percent were located less than 10 km away from the roadway. These enterprises highlighted the importance of the motorway in their choice of location. We may assume, therefore, that enterprises made a deliberate choice as to where to locate their businesses, and that there is a direct relationship between the opening of a motorway and the creation of jobs by these companies. It appears that the motorways were instrumental in promoting job creation among enterprises that were newly established along their route. By contrast, of the 46 enterprises that were already located along the corridors before the opening of the motorways, only 13 reported that they had created new jobs. These are industrial enterprises, working in building and public works, and, based on anecdotal evidence, in the trade and transport and logistics sectors.

It appears that the motorways did not facilitate access by the enterprises to labor. Indeed, 41 percent of job-creating enterprises and 55 percent of those that failed to generate new jobs reported that the presence of the motorway was not an important factor in terms of accessibility to the workforce. This is expected as the motorway is expected to improve long distance connection but not contribute much to daily commute. This was the subject of the second survey that we conducted. The question of employees' access to their workplace is worth an analysis at a larger geographical scale. The results of the online survey ("online employers survey") were in line with those of the "motorway" survey outlined above. In both cases, most of the enterprises surveyed were situated less than 15 minutes away from a motorway access point.

Figure 2: Access Times to the Motorway for Enterprises Participating in the Survey



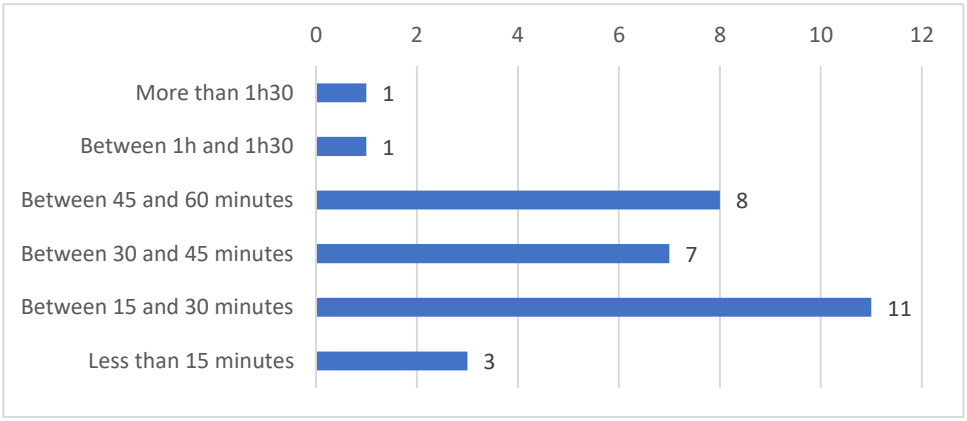
Source: Online "employers" survey (2019)

Insights from the Employee mobility survey

Employee mobility is critical for employers

While access to road infrastructure was favorable in terms of access times, our survey showed that spatial accessibility to employment areas for employees was rather difficult. As the figure below indicates, over 21 enterprises reported that the average commute time for employees was 30 minutes or more.

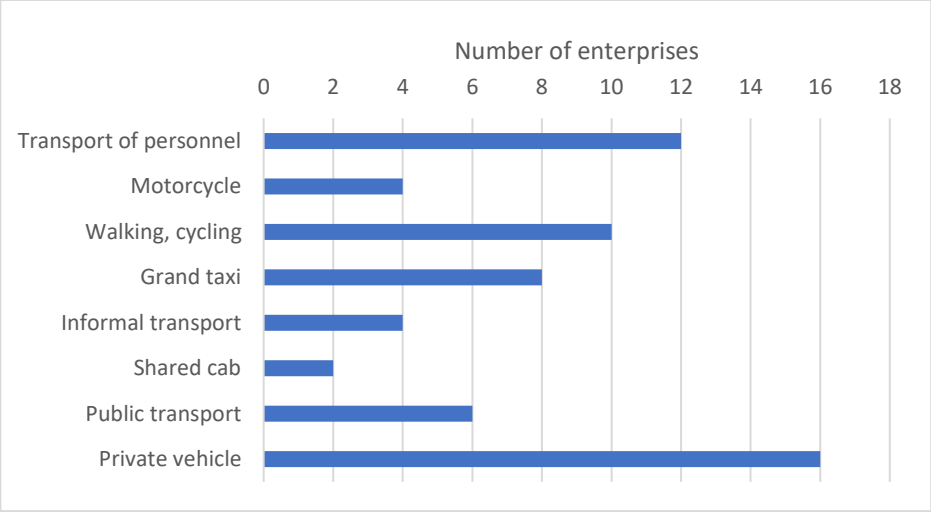
Figure 3: Estimated Average Commute Times of Employees



Source: Online "employers" survey (2019) N=31.

The wide variety of the means of transport used by employees on a daily basis is striking (see figure below). The survey reveals that motor vehicles are a major form of transport and highlights the extent to which employee transportation services are used to facilitate the commute of workers.

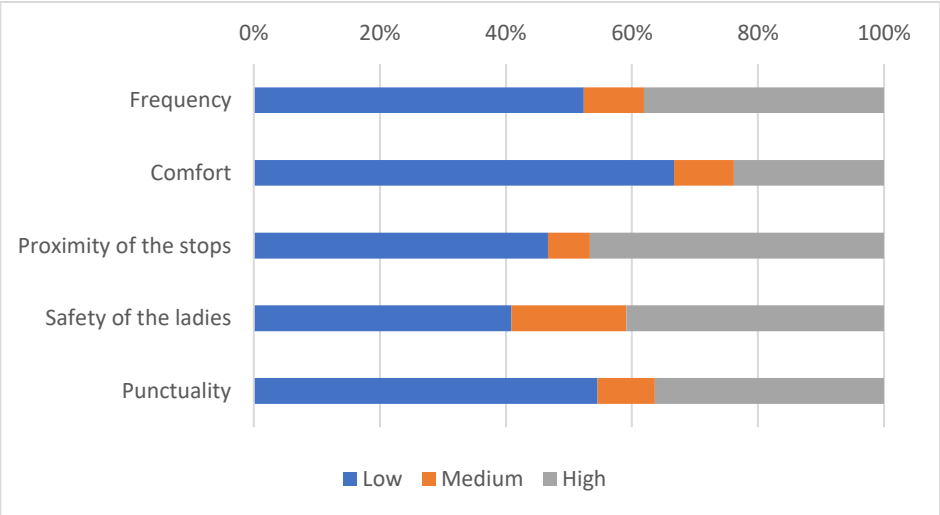
Figure 4: Means of Transport Normally Used by Employees to Commute



Source: Online "employers" survey (2019) (multiple responses admissible per establishment)

The fragmentation of the means of transport identified above affects company productivity. Furthermore, as the figure below shows, the enterprises surveyed were extremely critical of all aspects of the public transportation service. It appears that the textile firms in our survey sample were unanimous in their assessment of the poor quality of public transportation.

Figure 5: Respondents Point to the Poor Quality of Public Transportation

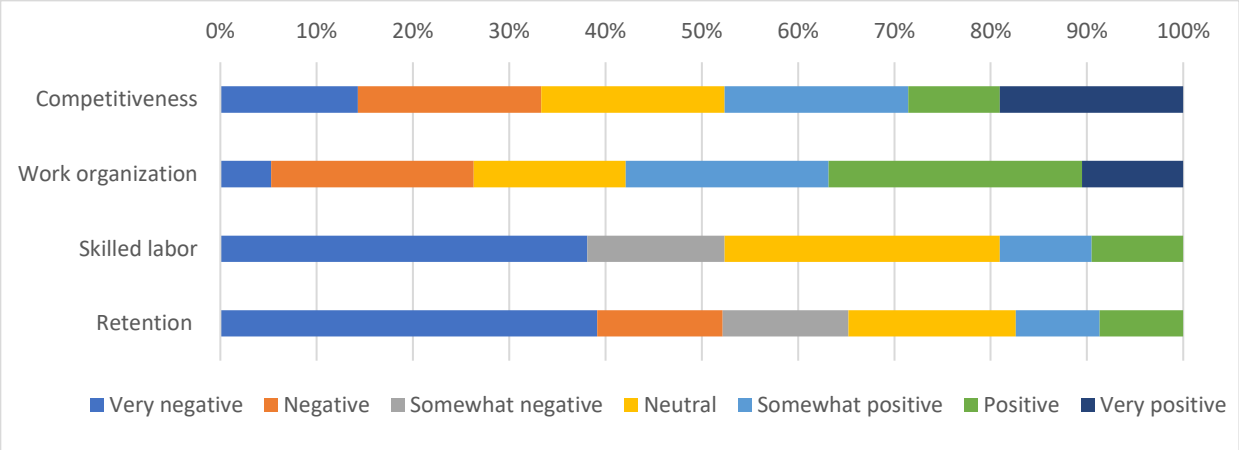


Source: Online "employers" survey (2019) Note: Over 50 percent of enterprises surveyed assigned a rating of "poor" to the punctuality of public transportation serving their enterprises.

The poor quality of public transportation also has a negative impact on company performance. The most striking effect is the negative impact of public transportation on employee retention. This is reflected in the figure below, which

shows that almost 40 percent of enterprises surveyed reported that the facilities in place for the transportation of workers had a negative impact on employee retention at the workplace.

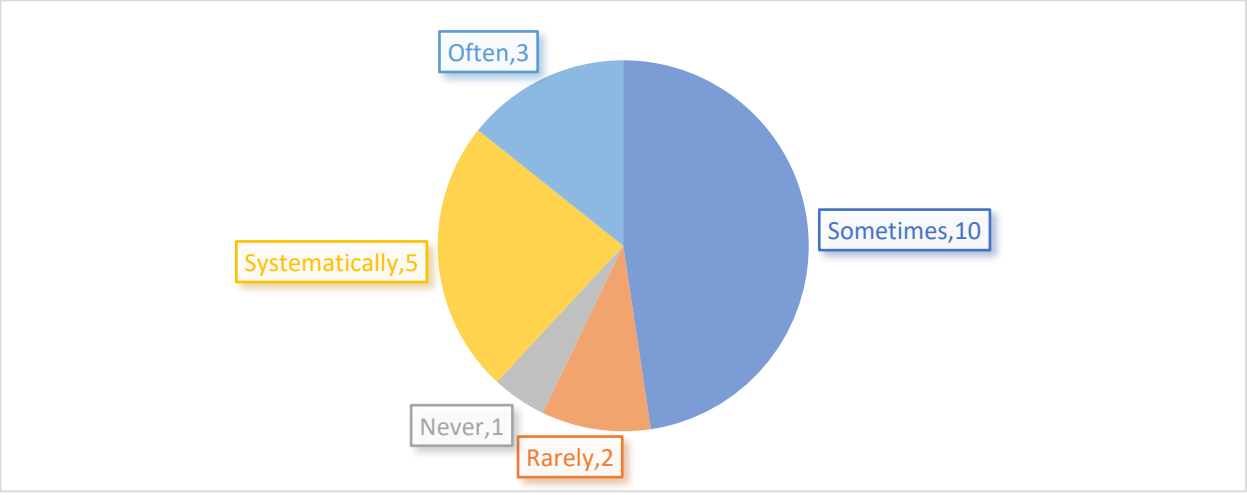
Figure 6: Impact of Mobility Conditions on Company Performance



Source: Online "employers" survey (2019)

The subject of company-related transportation was raised regularly by employee representative bodies in 8 of the 21 enterprises that responded to this issue.

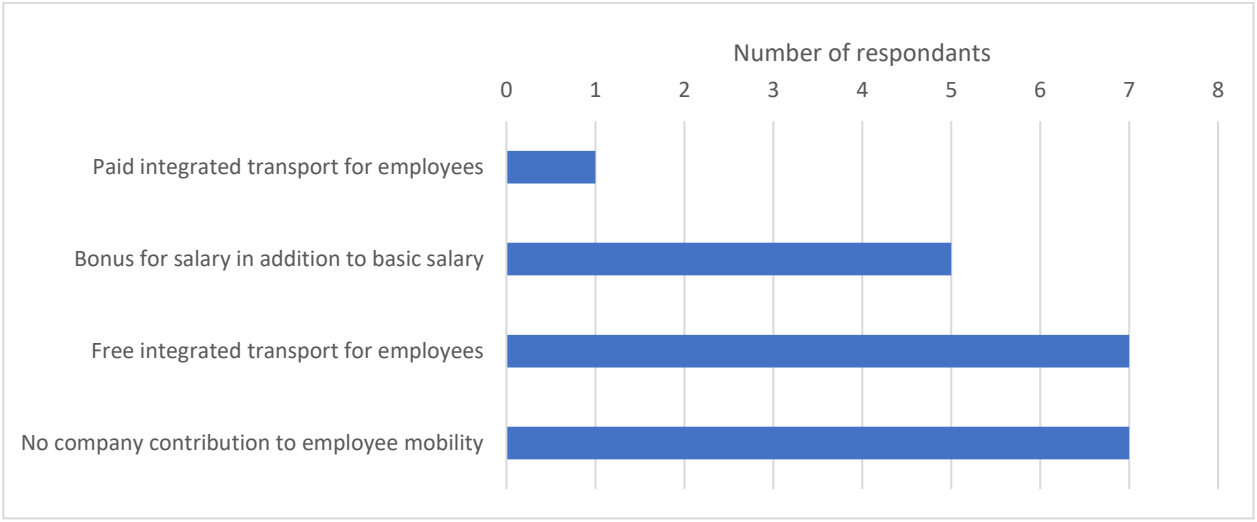
Figure 7: Frequency with which issues of mobility are raised



Source: Online "employers" survey (2019)

Although the question is frequently put to enterprises, it should be noted that 7 of the 21 companies that responded to this issue make no provision for the daily mobility of employees.

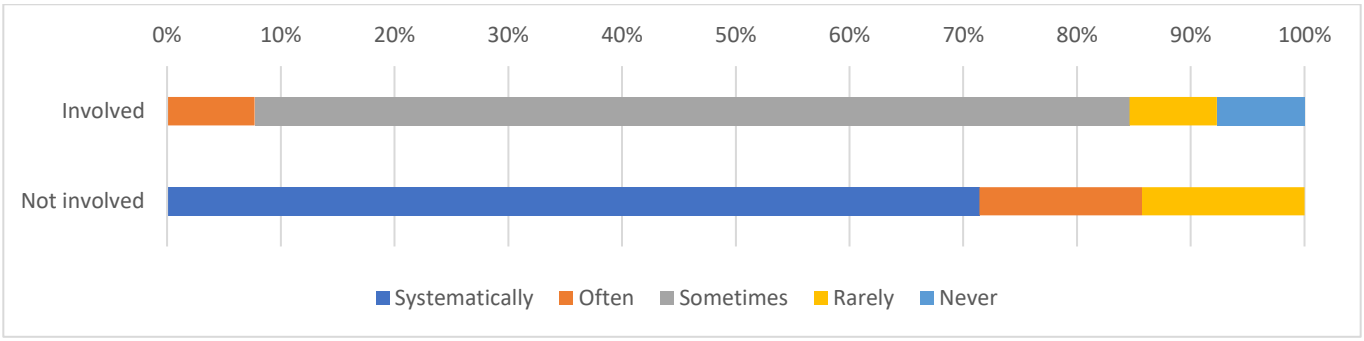
Figure 8: Contribution by Enterprises to Mobility



Source: Online "employers" survey (2019)

Logically, the last two analyses intersect: the enterprises in which the issue of mobility is most often raised are the ones least likely to assume responsibility for this issue (see figure below).

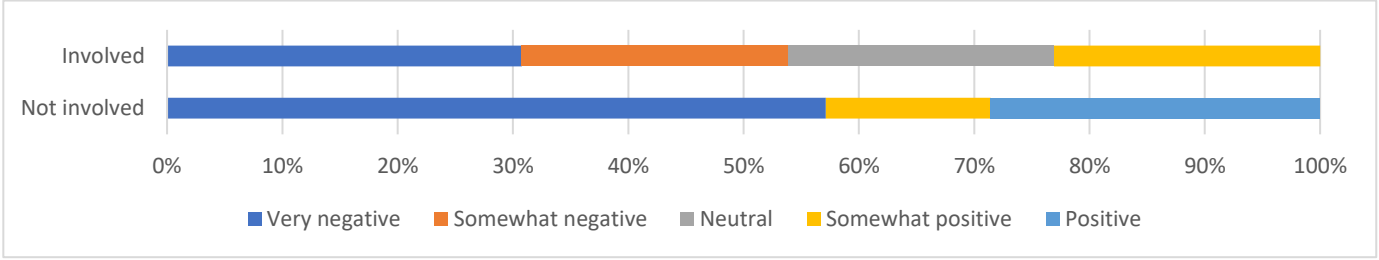
Figure 9: Importance of Mobility in Social Dialogue



Source: Online "employers" survey (2019)

Similarly, the enterprises that assume the least responsibility for the issue of mobility are the ones most likely to decry the negative consequences of public transportation on employee retention (see figure below).

Figure 10: Impact of Mobility on Employee Retention



Source: Online "employers" survey (2019)

Discussion

The results show the validity of the approach and suggest it could be worth to administer similar surveys to a larger sample of enterprises in the future. The results also show the importance of making the required additional investments to boost the positive impact of transport infrastructure. Indeed, companies located less than 15 minutes from the motorway declared in the survey that they had benefited from the positive externalities derived from their proximity to the motorways. More specifically, more than half of these companies indicated that they had employed additional staff since the opening of the motorways. Therefore, it seems the relationship between road investments and job creation is, for the case study, indirect: improved spatial accessibility to markets has an impact on productivity and thus employment. In addition to their overall growth, enterprises noted the advantages derived from travel time savings that allowed them easier access to their suppliers and markets. Regional data confirm that unemployment falls and, consequently, employment rates rise in territories traversed by motorways. The survey confirms therefore at the micro-level results obtained at the regional level.

At the city-level, enterprises in the textile sector underlined the importance of good public transport in enhancing their competitiveness and employee retention, noting that improvements in this service would redound to the benefit of workers in terms of better job access, while, at the same time, enhancing company performance. The enterprises assuming the least responsibility for the transport of their employees are the ones most concerned by the poor access provided by public transportation to production sites. This points to the strategic importance of making private transportation arrangements for workers. It appears that good quality transportation is viewed as necessary for productivity in the workplace, leading a number of enterprises to set up their own transportation services, where necessary. From the point of view of the enterprises, making their own arrangements for the transportation of their workers has its pros and cons. Nevertheless, if we examine all the ramifications and consider the issue holistically, it follows that making private arrangements for the transportation of workers will have the effect of reducing the number of potential passengers needing to use a public transportation network, and may end up undermining the service through a lack of demand.

The surveys demonstrate the importance that enterprises assign to connectivity and road access when deciding where to establish their businesses and how to increase the appeal of their companies to employees. The surveys were conducted after the construction of the motorways. The work highlights the importance of assessing impacts of transport investment on job creation and the benefit to develop the process of ex-ante and ex-post socioeconomic assessments of public investment in infrastructure (including transport infrastructure) and thus maximize the impact of this investment, particularly in terms of employment. Developing the process of ex-ante and ex-post assessments includes, for example, the implementation of an impact assessment protocol and a data collection system from the design stage of infrastructure projects, preparation and dissemination of a methodological guide to provide detailed information on the various stages of ex-ante assessment (including analysis of the context,[8] impacts[9] and risks) as well as ex-post assessment. The following actions could be taken to develop the process of ex-ante and ex-post socioeconomic assessments of public investment in infrastructure (including transport infrastructure) and thus maximize the impact of this investment, particularly in terms of employment:

[8] The general context, the current situation, the scenarios with and without the project, as well as alternative scenarios, as appropriate.

[9] From a socioeconomic (including the impact on employment) and environmental standpoint.

- The implementation of an impact assessment protocol and a data collection system from the design stage of infrastructure projects. This protocol will determine the methodological approach to be adopted for the establishment of a counterfactual scenario and the precise and concise definition of indicators to measure the direct and indirect effects that are attributable to the project.
- Preparation and dissemination of a methodological guide or terms of reference. This framework tool should provide detailed information on the various stages of ex-ante assessment (including analysis of the context,[10] impacts[11] and risks) as well as ex-post assessment, which allows for description and quantification of the actual impact of the project after it becomes operational, based on the approach used for the ex-ante assessment.
- Development of practical tools, in the form of summary sheets, for the purpose of supporting and providing guidance to the implementing agencies carrying out the socioeconomic assessments of transport projects with application of the methodological framework recommended for these assessments. These sheets should, for example, provide clear and practical information on the methodologies related to the economic aspect (in terms of business activity and appeal), urban planning (particularly in terms of land), the social aspect (in particular access to essential services as well as safety and security), the environmental aspect (in particular air pollution, greenhouse gas emissions, and visual and noise pollution), as well as the nature and type of data to be collected.[12] The sheets would also be used to outline the general assumptions recommended for the process. Lastly, they should provide a detailed framework for the different phases of the assessment methodology. In particular, a detailed sheet should focus on ex-post socio-economic assessments, which are conducted less frequently than ex-ante assessments, both internationally and in Morocco.

Disclaimer

[10] In particular the general context, the current situation, the scenarios with and without the project, as well as alternative scenarios, as appropriate.
[11] In particular, from a socioeconomic (including the impact on employment) and environmental standpoint.
[12] Socioeconomic assessments of infrastructure, in particular transport infrastructure, require reliable data that are compiled in a regular and uniform manner.