

Commute Cost & Access to Employment

Policy Brief

Project: Expanding Female Access to the Labor
Market through Affordable Commute

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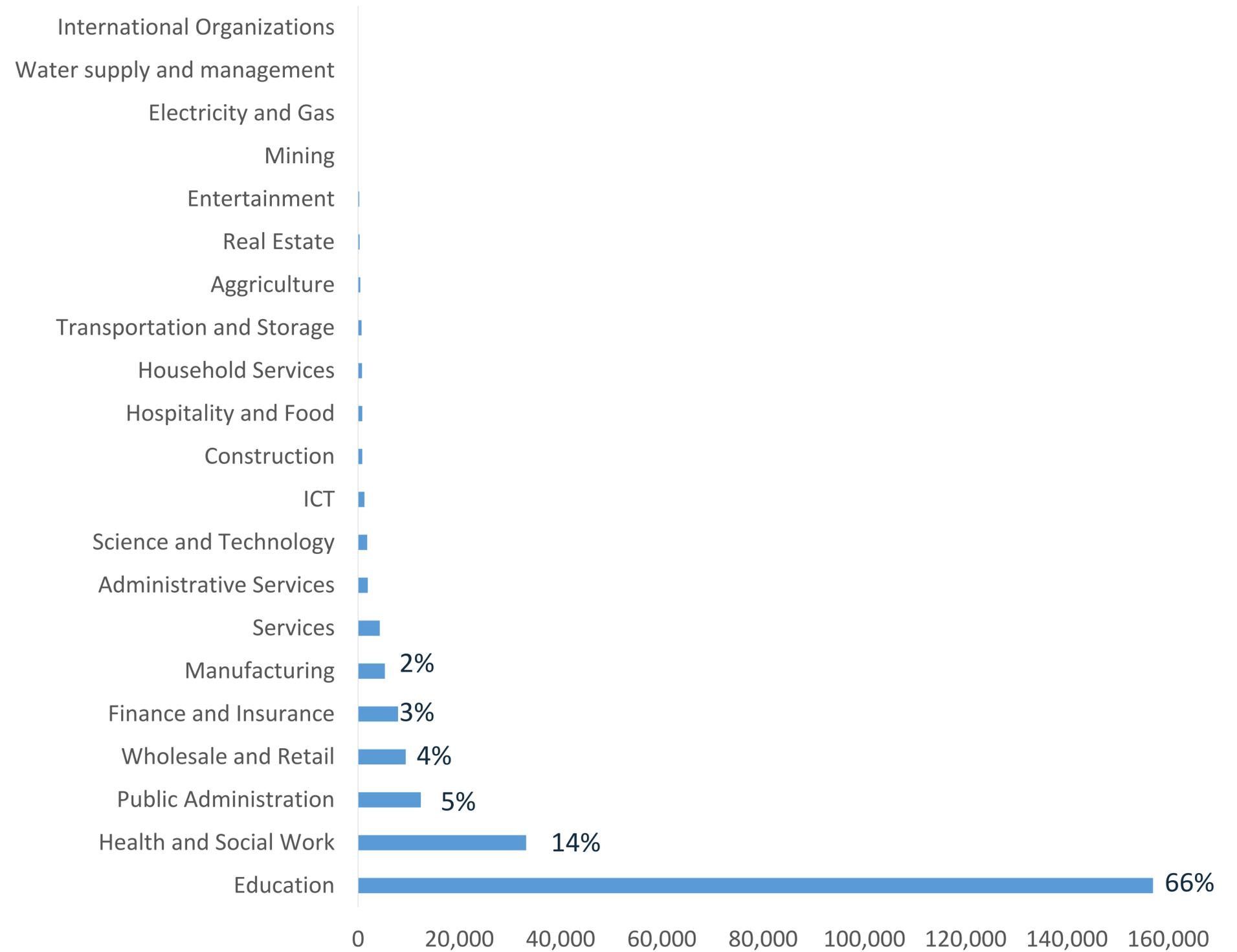
EXECUTIVE SUMMARY

- Female employment is concentrated within specific sectors. Analysis of the salary range for women within the private sector indicates that majority earn less than SAR 7,500, and the average salary range is SAR 3,000 – 5,000.
- Maintaining transportation costs below 20-30% of average salary would require services that transport working women below SAR 650 - 1,500 per month.
- Simulating commute costs to jobs within different sectors using services such as taxi, e-hailing and ridesharing offers the following insights:
 - The current cost burden of commute across different sectors is high, especially for neighborhoods in the periphery, where many may spend 40% or more of their base salary if commuting by taxi or e-hailing services.
 - E-hailing services, are more affordable than regular taxi services. Moreover, there is a significant opportunity for ridesharing, to further reduce costs and allow for increased mobility compared with available services. Ridesharing is best-suited to making commute cost affordable.
 - Sectors that are geographically distributed across the city, such as healthcare, are accessible to a larger proportion of residents, and provide a convenient growth opportunity for employment.
 - Sectors that are geographically concentrated, such as manufacturing, are less accessible. However, they could benefit from transportation solutions that are more targeted and effective, such as ridesharing, buses, and eventually the metro.

FEMALE EMPLOYMENT

Saudi employment in Riyadh region is concentrated within specific industries, namely education, healthcare, public administration, retail and manufacturing.

Saudi Female Employment in Riyadh Region by Sector- 2016



Source: GStat Labor Market Survey, 2016

SALARY RANGE

Analysis of the salary range of working women in the private sector indicates that majority of working women earn less than SAR 7,500 monthly.

The mean salary range for working women in the private sector is estimated at SAR 5,150 - 3,182.

Salary Range in the Private Sector – Female Employees

Sector	Mean	95 th Percentile
Business & Finance	5,150	12,500
Social Services	4,694	12,400
Telecommunications	4,019	8,515
Education	4,795	7,410
Health	3,889	7,215
Other (ag. & petrol)	3,546	6,125
Manufacturing	3,565	6,009
Elect. Gas & Wat.	3,618	5,860
Wholesale & Retail	3,431	5,010
Construction	3,182	4,000

COMMUTE BUDGET

Estimating the available commute budget based on the mean salary within each sector indicates that maintaining commute costs below 20-30% of income requires services that cost around SAR 650 - 1,500 monthly.

This analysis builds on interviews conducted with private sector employers, who indicate that high cost of commute (over 30% of income) is one the key challenges impacting retention of female employees.

Hence, many employers are increasing transportation allowances (average 20% of salary, or SAR 600). Others, particularly manufacturing and retail, are providing transportation services to their employees.

Available Commute Budget by Sector

Sector	Mean	10%	20%	30%	40%
Business & Finance	5,150	515	1,030	1,545	2,060
Social Services	4,694	469	939	1,408	1,878
Telecommunications	4,019	402	804	1,206	1,608
Education	4,795	480	959	1,439	1,918
Health	3,889	389	778	1,167	1,556
Other (ag. & petrol)	3,546	355	709	1,064	1,418
Manufacturing	3,565	357	713	1,070	1,426
Elect. Gas & Wat.	3,618	362	724	1,085	1,447
Wholesale & Retail	3,431	343	686	1,029	1,372
Construction	3,182	318	636	955	1,273

BENCHMARKING TRANSPORTATION COST

Comparing Riyadh to cities of similar size or density indicates that transportation cost tends to be cheaper in cities with greater density and smaller area size.

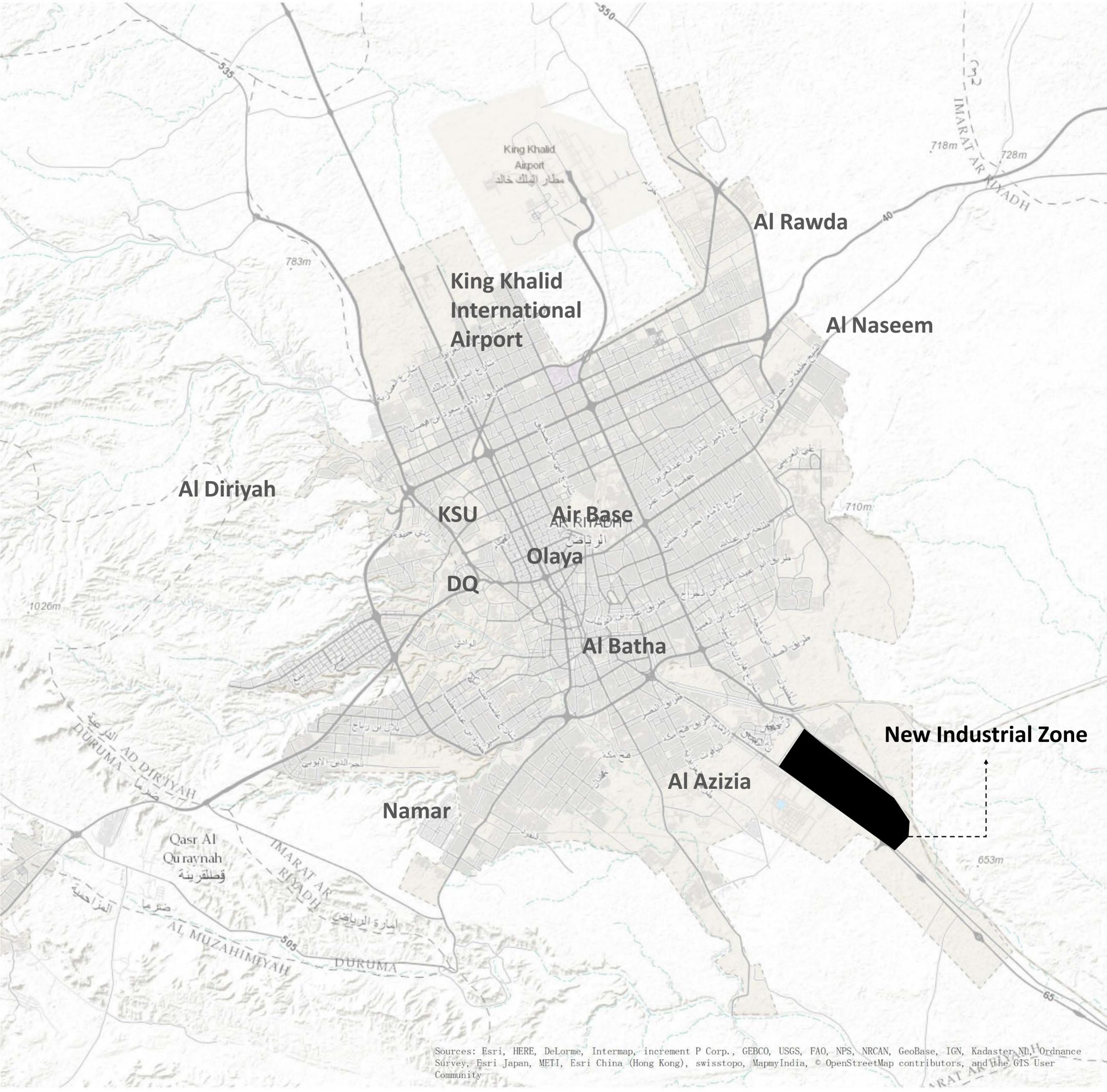
Riyadh is closest to Los Angeles in size and density. The average transportation cost there is 19% of total income, which offers a useful benchmark for determining affordability in Riyadh.

Benchmarking Transportation Cost as a Proportion of Income

Sector	Area	Density	Transportation Cost
New York	1,213	10,831	9%
Boston	232	5,344	11%
Miami	143	4,770	19%
Chicago	606	4,447	15%
Washington DC	177	4,308	10%
Riyadh	1,798	3,331	
Los Angeles	1,302	3,198	19%
Detroit	3,350	1,985	21%
Houston	1,625	1,414	20%
Austin	704	1,296	28%

CASE EXAMPLE - MANUFACTURING

Applying our analysis to the manufacturing sector, we find that the largest concentration of women in in this sector work within the New Industrial Zone located in the South of Riyadh.



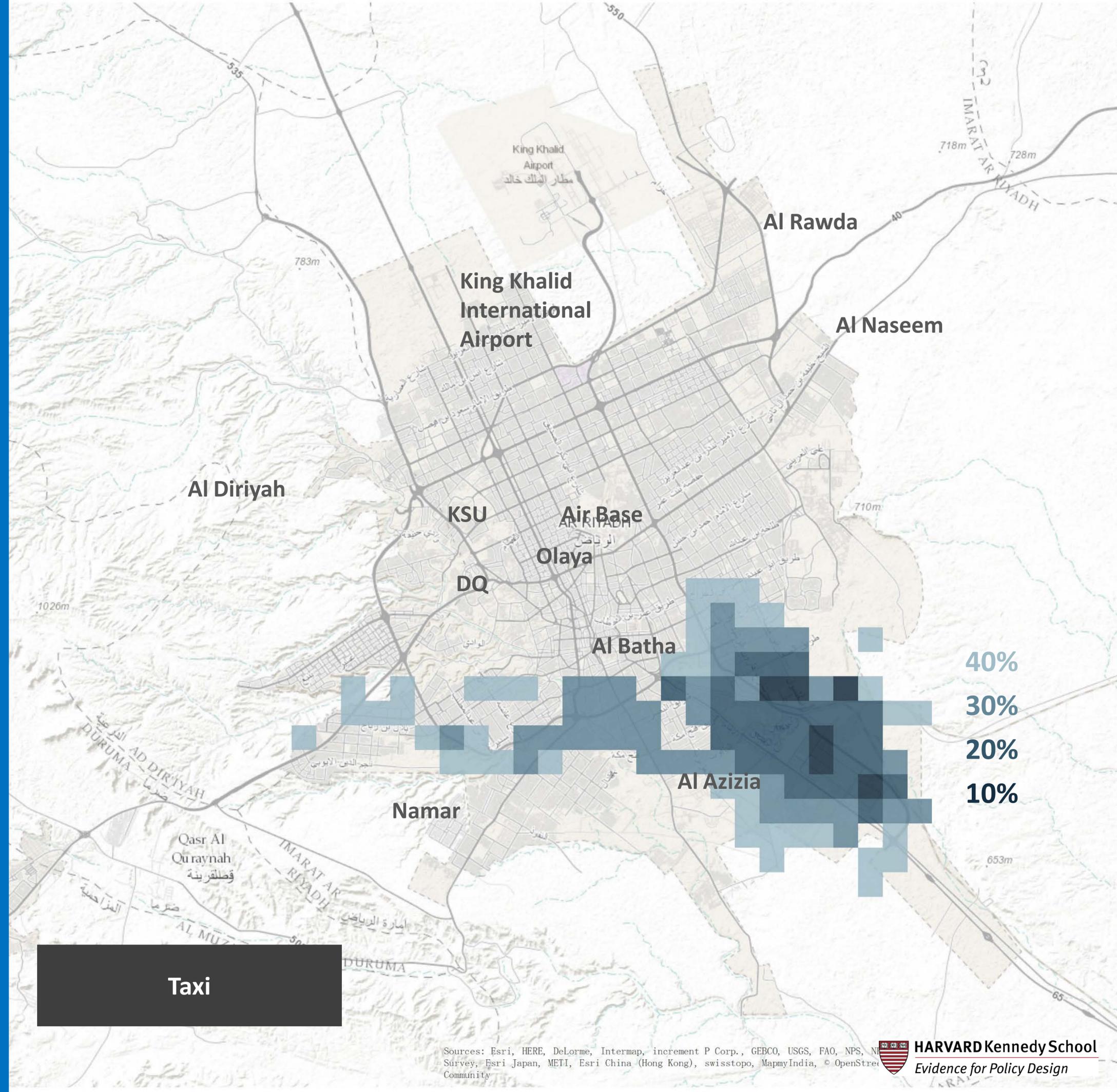
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CASE EXAMPLE - MANUFACTURING

Estimating the cost of commute from each neighborhood in Riyadh to the New Industrial Zone using a standard Taxi service, illustrates that only a limited portion of Riyadh can affordably access employment opportunities there.

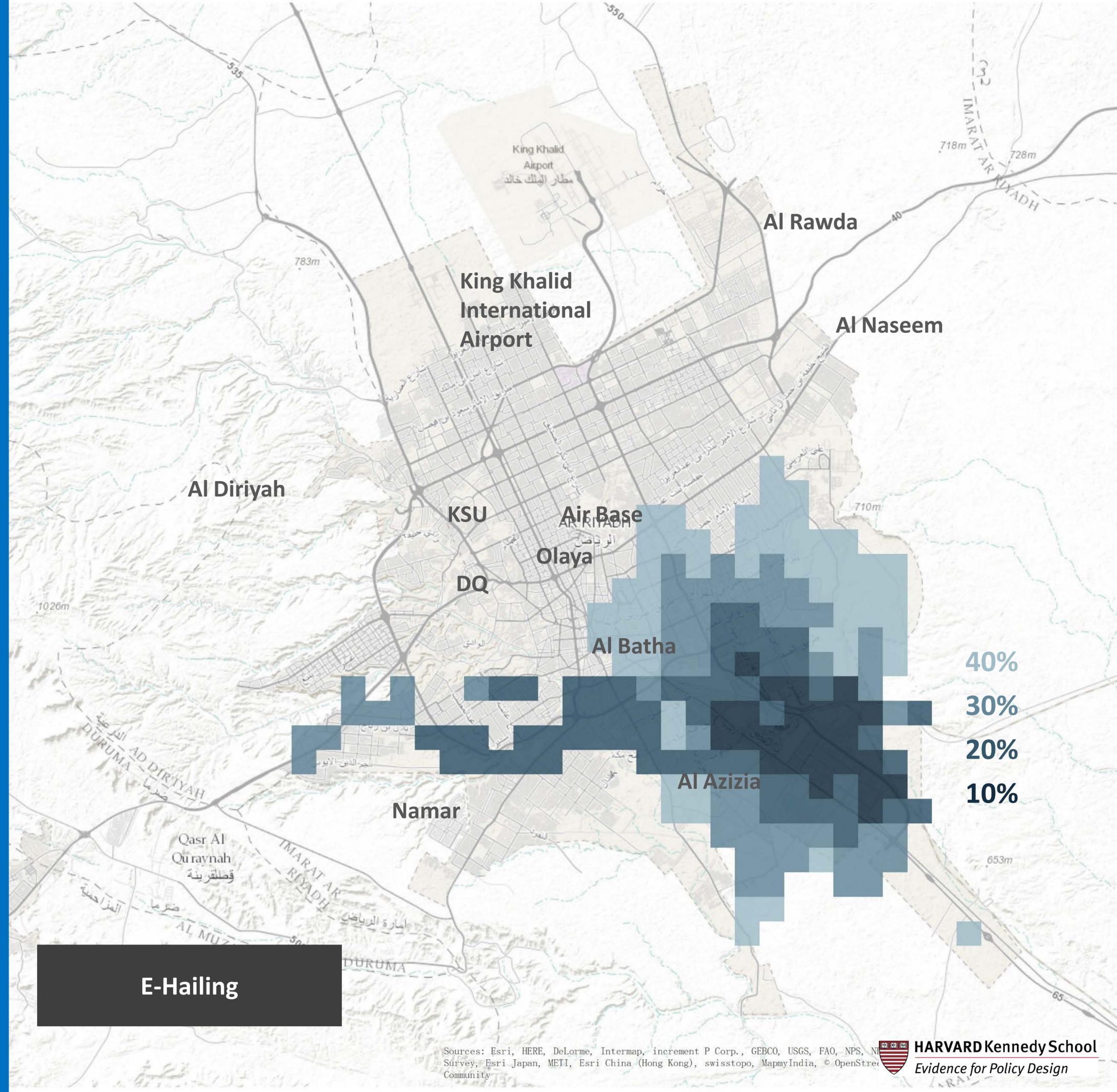
Commuting from neighborhoods that are not shaded, to the industrial zone, would cost more than 40% of average base salary in manufacturing.

This analysis does not take congestion into consideration.



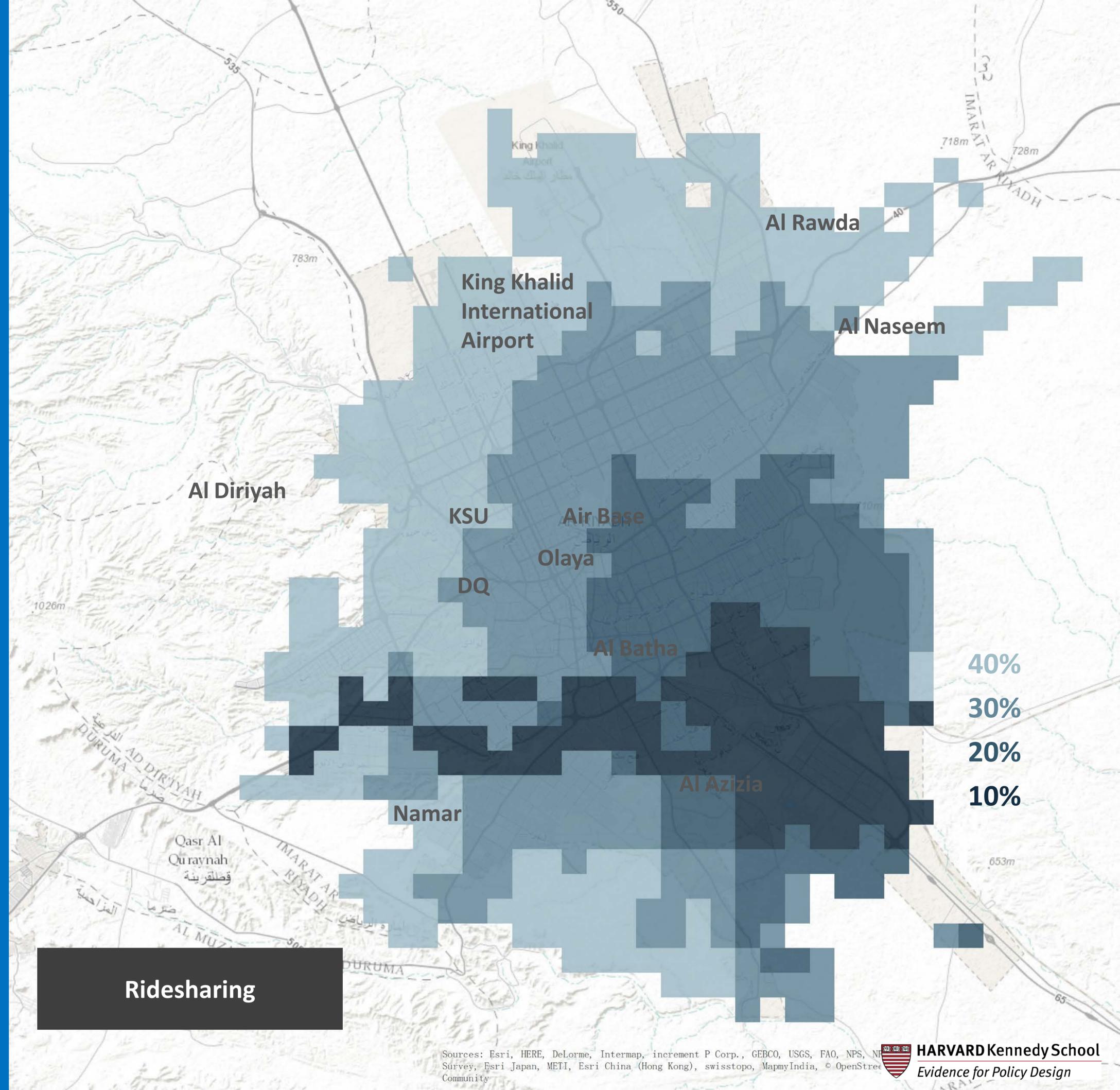
CASE EXAMPLE - MANUFACTURING

Repeating the same analysis for e-hailing services, illustrates how cheaper transportation solutions can increase access to employment within the city.



CASE EXAMPLE - MANUFACTURING

Applying the same analysis, with the assumption that women can share the cost with other female commuters through ride sharing enables residents of the majority of neighborhoods in Riyadh to reach the Industrial Zone, while spending 20-30% of their salary.



CASE EXAMPLE – COMPARING SECTORS

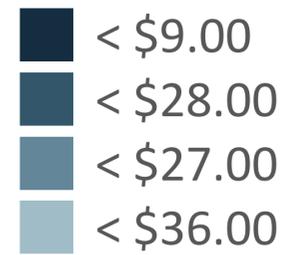
Examining the level of access across other sectors, offers several insights:

- Comparing level of affordability across different private transportation services highlights the extent to which e-hailing and ridesharing can increase mobility
- Access to employment is greater in sectors that are distributed across the city, and offer a higher base salary (e.g. health care)

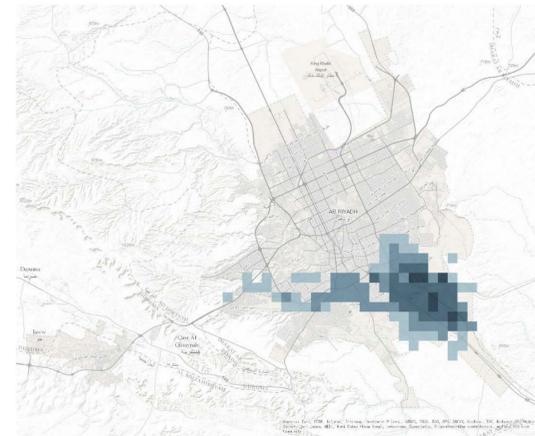
**Trip costs are determined by simulating rides from location of employment to each neighborhood in Riyadh. Calculation is derived from published formula for taxi, e-hailing services and ridesharing*

Trip Cost*

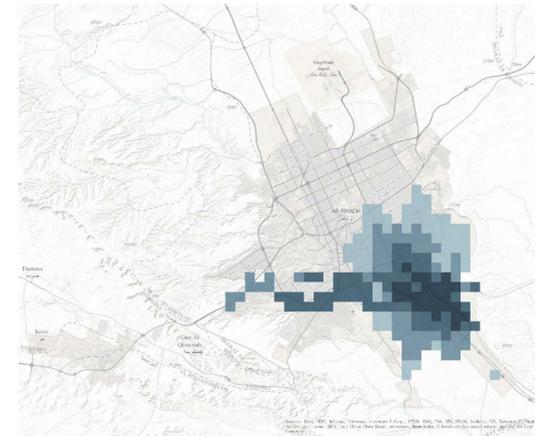
Manufacturing



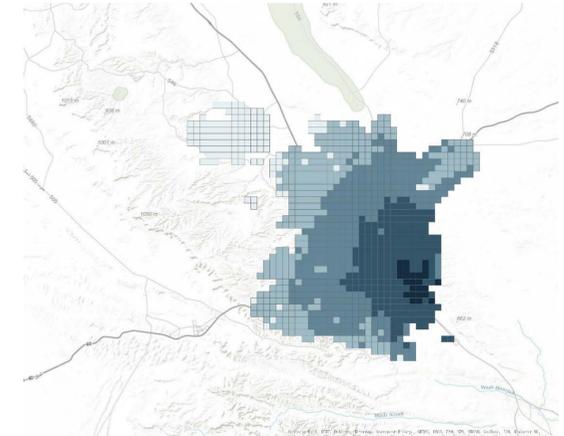
Taxi



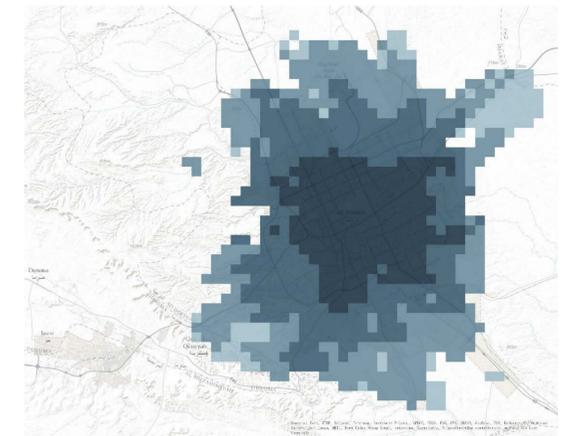
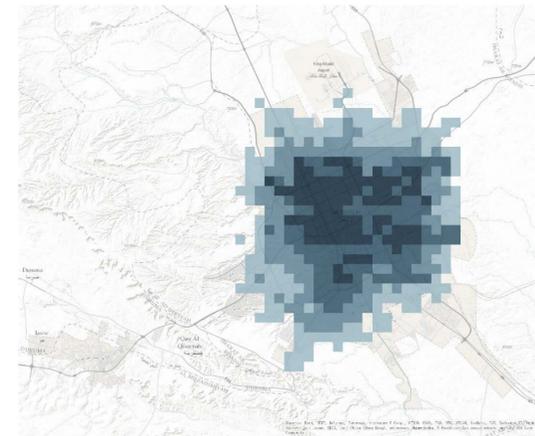
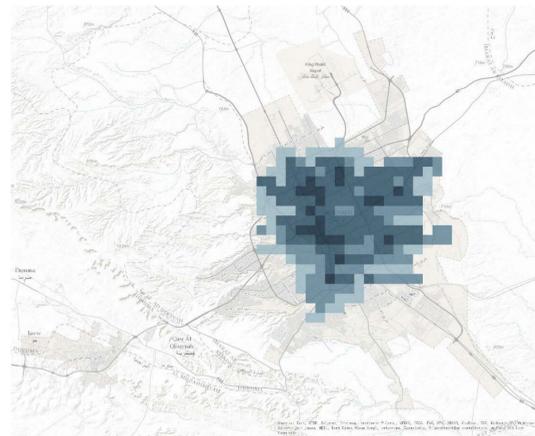
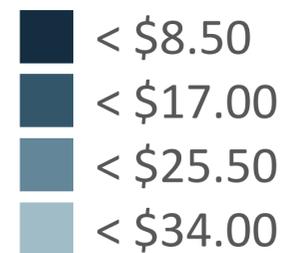
E-Hailing



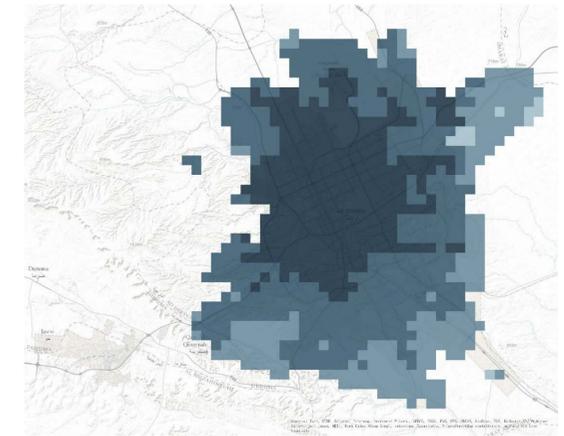
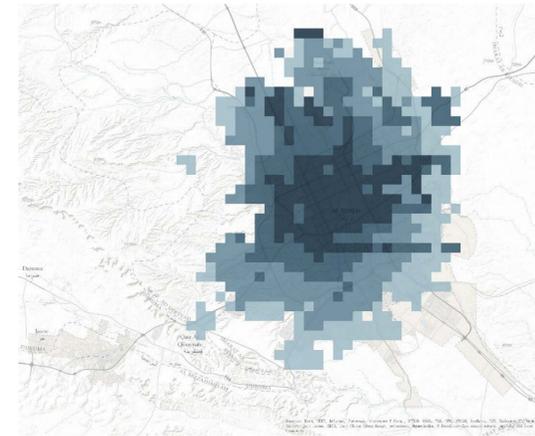
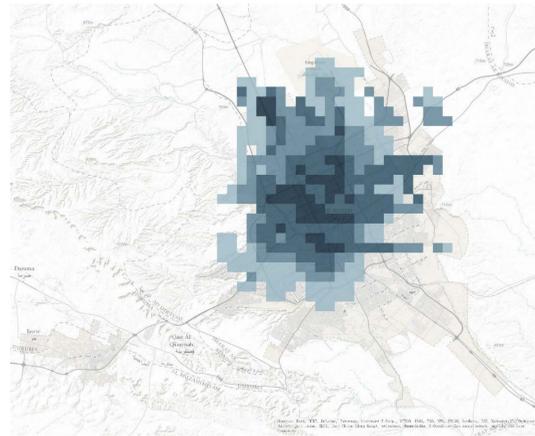
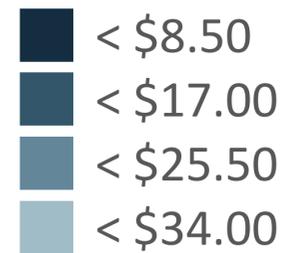
Ridesharing



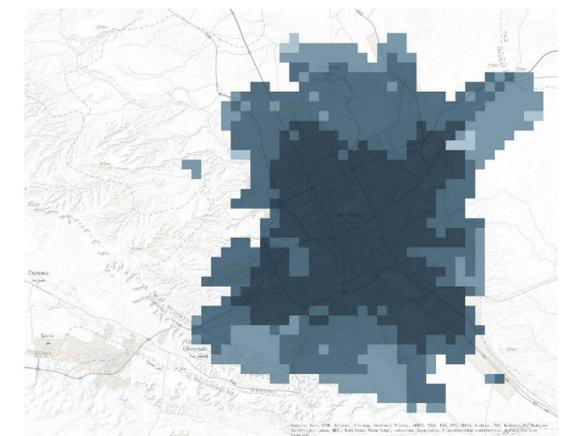
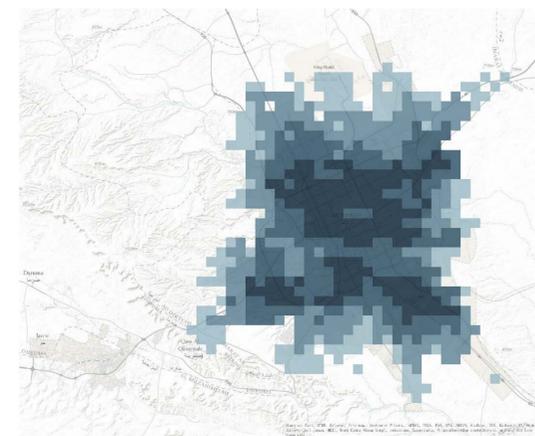
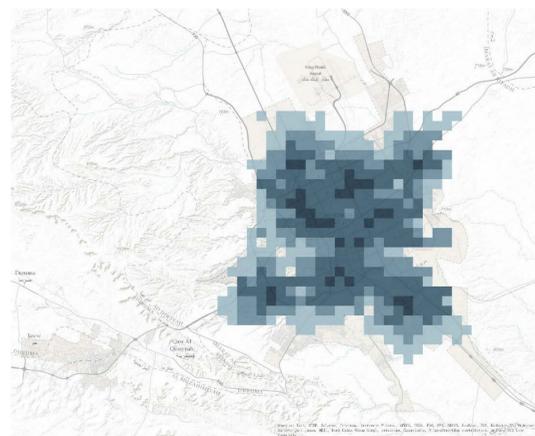
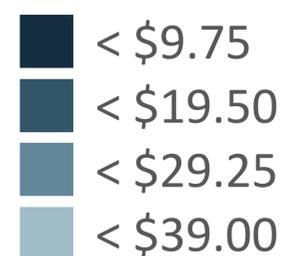
Retail



Education



Healthcare



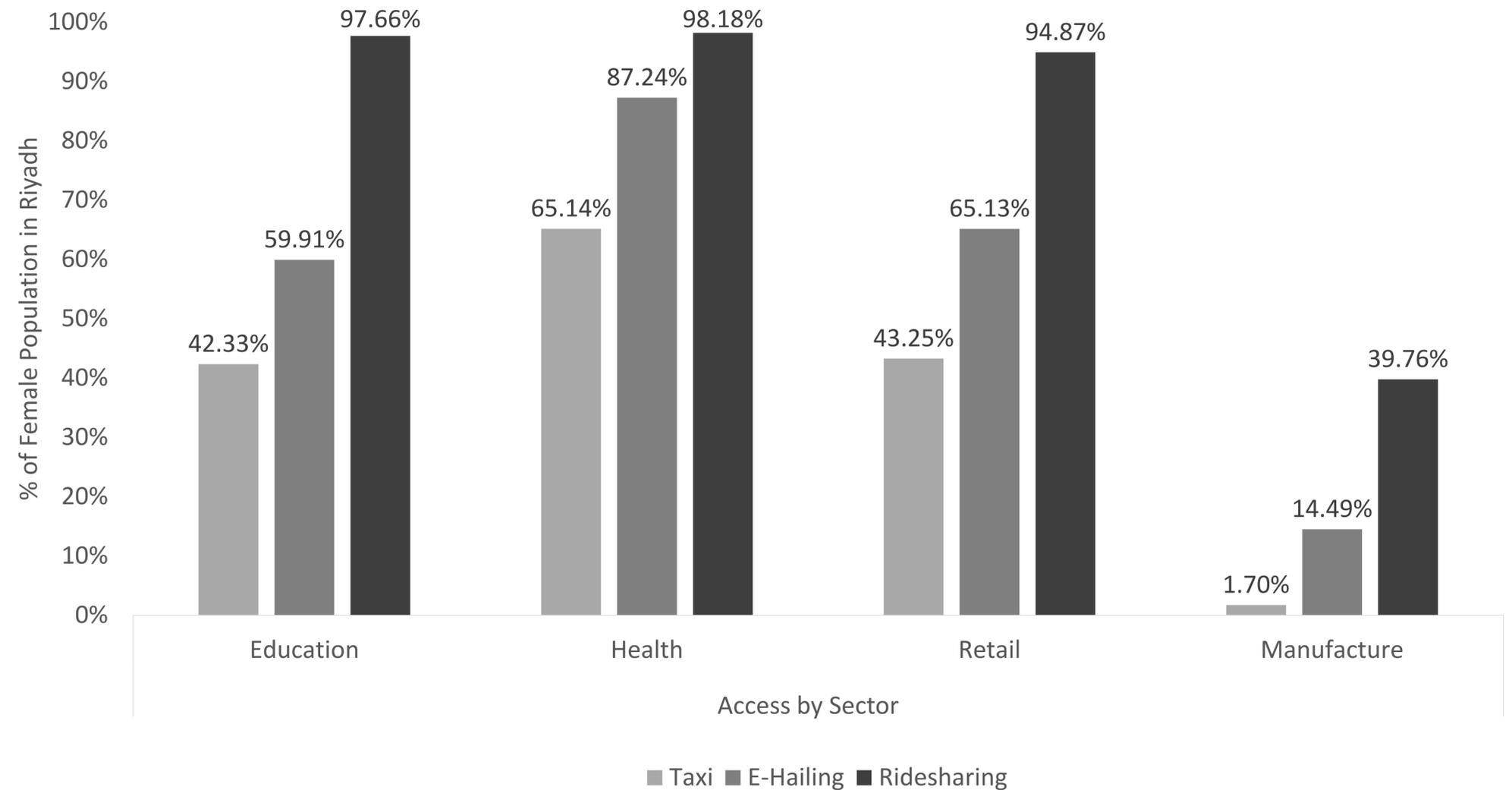
CASE EXAMPLE – COMPARING SECTORS

The size of the female population with access to employment is very dependent on the sector and transportation service.

Manufacturing is accessible to the lowest proportion of Riyadh's female population, compared to healthcare, which is the highest.

Ridesharing offers the highest coverage across all sectors.

Female Population with Access to Employment in Riyadh (Based on 20% of Base Salary)



CONCLUSION

- This analysis offers multiple opportunities for addressing access to employment:
 - There is potential demand for transportation services that offer affordable rides below SAR 650 - 1500 monthly
 - Ridesharing may offer a real solution for mobility across all sectors, as it allows for a significant reduction in cost and greater access across Riyadh
 - Female employment can most easily be increased within sectors that are geographically distributed across the city

RESEARCH TEAM

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