



LIDLAW UNDERGRADUATE LEADERSHIP AND RESEARCH PROGRAMME
APPLICATION – 2023 COHORT

Name	<i>Milla Li</i>
Programme	<i>PPES – Political Science and Economics</i>
Year of Study	<i>2nd year</i>
Research Project Title	<i>The grass isn't greener on 'the others' side: a study of the integration of Swedish immigrants based on unequal access to public green spaces in Stockholm</i>
Proposed Supervisor(s)	Dr. Davide Romelli

Before completing this submission, you should review the [Laidlaw Programme Application Guide](#) sections and “Leadership-in-action experience proposal (Summer 2)”

<p>Research Project Proposal (750-1000 words max.)</p> <p><i>See Self-defined research project proposal (Summer 1) in the guidance for more information</i></p>
<p><u>Introduction</u></p>
<p>A dynamic labour force is essential for a growing economy. Yet, there is an increase in the aging population across Europe in recent decades. At the same time, Europe is bracing for an influx of climate and war refugees from regions like North Africa and the Middle East. Whilst these demographic shifts are generally negatively regarded—aggravated by the misconception that immigrants hurt a country’s economy—this offers a solution to the aging labour force. For shortages in transportation, education, and healthcare, countries like Sweden have increased residence permits by 30% over this last year to attract skilled immigrant workers (Morina, 2024). Sweden’s problem, however, is integration: foreign-born unemployment rates are double that of native-born Swedes (OECD, 2014). Compared to America, who advocates that immigrants will boost GDP by \$7 trillion over the next decade, (Saraiva and Curran, 2024), Sweden believes that welfare costs outweigh immigrants' contribution to Sweden’s GDP.</p> <p>Stockholm is a Nordic city with progressive immigration policies that can expect a high volume of climate refugees, mainly from countries where they have already received many political refugees, like Syria, Somalia, and Eritrea (Statistics Sweden, 2023). I intend to study the integration of existing immigrants in Stockholm as a proxy for the expected climate refugees, with a focus on access to public green spaces. Whilst wages and employment levels are strong indicators of successful integration, my analysis will extend beyond fundamental needs and assess</p>



quality of life within Swedish society. Sweden ranks 5th globally for greenest-countries (World Population Review, 2024) and a Swedish survey confirmed that over 60% of participants believe public green spaces provide mental, physical, and environmental benefits (Elbakidze et al., 2022). Access to nature is critical to one's wellbeing and can thus serve as a proxy to measure the wellbeing of foreign-born citizens; it is further essential that integration is not outpaced by immigration rates. As it currently stands, immigrants of the past 40 years "[account] for about two-thirds of [Sweden's] population increase" (Heleniak, 2016), with 41% of immigrants expressing isolation from Swedish society (Nordic Welfare Center, 2024).

I would first analyse the economic disparity within a low income bracket between first-generation immigrants and native Swedes and then cross-reference the two groups by their respective access to green spaces. This would answer my two-tiered question: Are quality green spaces more accessible to lower class native citizens than lower class immigrants, thereby indicating a shortcoming in Stockholm's integration system?"

A similar study was completed in 2023 in Oslo, where they found a strong positive correlation between proximity to high NDVI and income (Venter et al., 2023). Unlike Oslo, whose historic East–West class divide reaffirmed the findings of this study (Venter et al., 2023), Stockholm's geopolitics are less defined. Following the influx of Eastern European political refugees in the '60s, Sweden initiated the "Million Homes Programme" which led to "ethnically clustered" housing throughout Stockholm (Rokem & Vaughan, 2018). These neighbourhoods remain as a division that "lives on in the city today as a mental barrier" (Myers, 2021).

My research would operate beyond the distinct geo-economic barriers of a city like Oslo and focus on the integration of the increasingly heterogeneous Stockholm. In Stockholm, the correlation between status and green space will be more effectively characterised by the quality of maintenance than proximity due to the recency of the "Million Homes Programme". I would additionally examine the positive feedback loop that perpetuates this disparity by analysing income, housing costs, and employment rate, all of which are essential to ensure economically productive immigrant workers.

In the face of a declining working population and a rising immigration rate, successful integration of a new labour force is crucial in driving GDP growth and economic stability. Beyond the opportunity of economic prosperity foreign-born citizens present, they deserve access to public goods equal to that of native citizens. Bolstering the Swedish integration effort will prove of vital importance so that, if managed effectively, climate refugees can become an economic and humanitarian opportunity as opposed to a crisis.



References (not included in word count)

Elbakidze, Marine, et al. "Multiple factors shape the interaction of people with urban greenspace: Sweden as a case study." *Urban Forestry & Urban Greening* 74 (2022): 127672.

Greenest Countries / Most Eco-Friendly Countries 2024. World Population Review.

Heleniak, Timothy. "The Cool Embrace: Recent Migration Trends into the Nordic Region." *Nordregio*, 23 Apr. 2016.

Morina, Drenusha. "Sweden Is Looking for Foreign Workers to Fill in These Jobs: List." *SchengenNews*, 3 July 2024.

Myers, Jessie. (2021) *Here There Be Dragons*. [Podcast]. 26 March 2021.

OECD (2014), OECD Factbook 2014: Economic, Environmental and Social Statistics, OECD Publishing.

Official Statistics of Sweden. "Population in Sweden by Country/Region of Birth, Citizenship and Swedish/Foreign Background, 31 December 2023."

"Report: Four in Ten Immigrants in Sweden Do Not Feel Integrated into Society." *Integration Norden*, 4 Apr. 2024.

Rokem, J. and Vaughan, L. (2018) Geographies of Ethnic Segregation: The Role of Mobility and Co-Presence in Shaping the 'Diverse' City, *Urban Studies*.

Saraiva, Augusta, and Enda Curran. *Bloomberg.Com*, Bloomberg, 22 Mar. 2024.

Venter, Zander S., et al. "Environmental justice in a very green city: Spatial inequality in exposure to urban nature, air pollution and heat in Oslo, Norway." *Science of The Total Environment*, vol. 858, 1 Feb. 2023, p. 160193.



Project Methodology & Timeline

I will complete a two-tiered quantitative study. I will average income, housing costs, and employment rates of the lower wealth bracket (60% of median income) of adults (18-66) in Stockholm (2011-2021). This data would then be stratified by foreign-born and native Swedes. I will then import NDVI data (40 images, 1 per season for 10 years) using LANDSAT 7 with cloud coverage <5% from Google Earth Engine into ArcGIS PRO where I will measure NDVI. I will map the two demographics using vector data and compare using simple linear regression the relationship between NDVI and the respective wealth profiles. I will additionally include beta coefficients with 95% CI and a Pearson's correlation coefficient.

Timeline: May 17th 2025 – June 28th 2025

Prior to Week 1: Gain access to private statistics (I have already been in contact with Statistics Sweden) ensure pre-approvals if necessary.

Week 1: Calculate (income, education level, type of tenure, and employment status) stratified by foreign-born and native-born (chi-square tests and t-tests).

Week 2: Collect and export NDVI tiff files into ArcGIS Pro and measure distance/size of parks in the relevant areas.

Week 3 & 4: Troubleshooting and Statistical analysis (linear regression/statistical significance).

Week 5: Collect economic and NDVI data.

Week 6: Summarise and submit findings to Laidlaw.

Intended Outcomes

My intended impact is to quantify, if existing, the disparity between first-generation immigrants and native Swedes in a low wealth bracket to their respective access to quality green spaces. My research expands on two NDVI studies which I have referenced below:



References (not included in word count)

Persson, Å., et al. "Urban residential greenness and adiposity: A cohort study in Stockholm County." *Environment international* 121 (2018): 832-841.

Venter, Zander S., et al. "Environmental justice in a very green city: Spatial inequality in exposure to urban nature, air pollution and heat in Oslo, Norway." *Science of The Total Environment*, vol. 858, 1 Feb. 2023, p. 160193.

Planning for pre-approval requirements (if relevant e.g. ethics approval, Garda vetting)

I require an ethical approval for Summer 2. I am enrolled in a Trinity module that outlines the application process for an ethical approval.

Planning for expected additional project costs (if relevant e.g. lab expenses, subscriptions, software, project-related travel)

I have attained an ArcGIS Pro license through Trinity IT services. The data from Statistics Sweden is estimated to cost about €4,753.07 not including VAT.¹

Are there any other relevant details to your proposal e.g., interdisciplinary collaborations, potential for international travel, or links to existing projects or organisations?

I have reached out with and plan to collaborate with IM Stockholm, an association that supports the social and financial integration of immigrants.

¹ Appendix—see further details regarding cost breakdown



Leadership-in-Action experience proposal (500 words max.)		
<i>See Leadership in Action Proposal (Summer 2) in the guidance for more information</i>		
LiA Category Insert x as appropriate	Category A: Central Laidlaw Foundation Project	
	Category B: Leadership Placement	
	Category C: In-field application of research	X
<p>My research seeks to quantify relative access to public green spaces between foreign-born citizens’ and native Swedes of a certain income bracket. This concentrated data piece would inform my second summer project to raise awareness on this potential disparity and to bridge the gap between changemakers and underrepresented citizens. In a city where there is a distinct sense of isolation and social hierarchy, it is crucial that all voices are heard and needs are seriously considered. My In-field application project would be two-fold: a public forum partnered with IM Stockholm and a budget proposal to implement a change to the Stockholm green space.</p> <p>Prior to my 6 weeks, I would organise a public forum and invite the communities I have been researching to share their experiences with the surrounding green spaces and their feelings on integration, with a focus on economic integration efforts. I would facilitate this discussion in the hopes of streamlining the conversation towards improvement.</p> <p>I would track the responses and form a data spread of the varying improvement suggestions to the parks—along with my data from summer 1—to draft a budget proposal of feasible yet impactful changes to the urban planning division of Stockholm city government. This budget proposal would allocate a portion of their current funding to create a change to the public green spaces that low-income citizens share. This budget proposal would consider the various costs of park upkeep, of playgrounds and family-friendly infrastructure, and the financial tradeoff between creating more public green spaces and improving on existing ones. I will collaborate with various Swedish organisations concerning climate and immigration to improve public green spaces for Swedes of all backgrounds.</p> <p>This Leadership-in-action experience would allow me to build upon my research by adding a qualitative facet, visit the green spaces I’ve been researching, and hear from people I’ve been analysing firsthand. It would also fulfil my intended leadership goal of being an active listener that represents diverse voices and make a small but hopefully potent improvement to the green spaces that I have spent summer 1 researching.</p>		



Are there any other relevant details to your proposal e.g., interdisciplinary collaborations, potential for international travel, or links to existing projects or organisations, plans to apply to a Study Abroad / Erasmus opportunity?

I have applied to study abroad in Sweden but would be committed to travelling back to Dublin to attend all leadership activity days.



Appendix: Statistics Sweden data breakdown

Minimum 1 year access:

C **Catarina.Nordstrom@scb.se** Thu 31 Oct, 10:19 ☆ ↶ ⋮
to me ▾
Hi Milla,
We produce aggregated tables, it is not possible to provide microdata. Statistics Sweden can only release mikrodata to a Swedish entity responsible for research.
It is difficult to know in advance how small values the table will generate, but if the table needs to be split is something that we can discussed during the work producing the table.
A price estimate for the last table example is 43 000 SEK for the first year. VAT is not included. Number of variables in the table affects the price.
Let me know if you want an offer or if you want to make some changes in the table example.
...

10 year access:

C **Catarina.Nordstrom@scb.se** Fri 15 Nov, 07:45 ☆ ↶ ⋮
to me ▾
Hi Milla,
An estimated price for the table including 12 years is 55 000 SEK. VAT is not included.
...

M **Milla Li** <milla@svensk-li.com> Fri 15 Nov, 07:50 ☆ ↶ ⋮
to Catarina.Nordstrom ▾
Hello Catarina,
Thank you for the estimate. I just want to confirm this is the quota for the entire table 10 years (2011-2021) as opposed to 12?
All the best,
Milla
...

C **Catarina.Nordstrom@scb.se** Fri 15 Nov, 08:53 ☆ ↶ ⋮
to me ▾
Hi Milla,
The estimated price was for the table for 12 years (2011-2022).
An estimated price for the table for 11 years (2011-2021) is almost the same since the price for the last time series is only 250 SEK each.
...

1. Initial Estimate for one year of data (e.g., 2011):
 - 43,000 SEK (excluding VAT).
2. Additional Years:
 - Approximately 2,000 SEK per year.
3. Total Estimated Cost:
 - (2011-2022): 55,000 SEK (excluding VAT).
 - (2011-2021): Almost the same as for 12 years, cost of (2022) data is only 250 SEK.
4. Invoicing:
 - Invoicing will occur before the data is delivered.