Educational Outcomes and Gender Location: Inequalities in Education from a Broader Gender Perspective

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Short Abstract

This study delves into the intricate dynamics of gender categorization and its implications on inequality research by studying gender inequalities in education. Following queer and trans studies, it leverages data from the Mexican National Survey on Sexual and Gender Diversity to investigate the robustness of gender classification, following four distinct ways of categorizing gender locations to analyze educational outcomes. Linear models are employed to analyze disparities between gender categories that have been used in previous research. Additionally, latent class analysis is used to inductively identify gender locations among non-cis individuals. Preliminary results reveal significant insights: queer* individuals exhibit an initial advantage in educational outcomes, although this effect diminishes when accounting for age. In contrast, trans* individuals face significant educational disadvantages taking age into consideration. Surprisingly, binary or non-binary identification demonstrates no significant impact on educational outcomes. These preliminary findings underline the complexity of gender categorization and their impact on research outcomes, suggesting a need to reconsider conventional methods of data collection and research in gender diversity. By embracing a comprehensive and inclusive approach, this research broadens the understanding of how gender identities intersect with educational outcomes, encouraging further exploration into the intricate interplay of gender location and educational inequalities.

Background

Gender inequalities in education have been extensively explored within the fields of population studies and sociology. While much of this research has traditionally concentrated on distinctions between men and women, recent studies have begun to shed light on the disparities experienced between cis and trans* populations. However, the lived experiences of non-normative individuals can hardly be explained by using these binary categories.

In this article, my objective is to explore the influence of varying gender categorization methods on educational outcomes. Building upon insights from trans and queer studies, I aim to transcend the traditional man/woman and cis/trans* dichotomies, embracing a more inclusive approach that accommodates a broader spectrum of gender experiences. I seek to address two key questions: 1. Do educational outcomes differ between gender locations? 2. How does the way we categorize gender locations affect research outcomes in this regard? To do so, a combination of linear and clustering methods will be utilized to study the Mexican National Survey on Sexual and Gender Diversity which includes various questions that can be used to construct gender categories in different ways (ENDISEG, 2021).

This paper advances existing research in two significant ways. Firstly, it analyzes educational outcomes through the lens of queer and trans studies, exploring multiple approaches to categorizing gender identities. This research delves into the comparison of various gender categorization methods used in previous research and their results in terms of educational outcomes. Thanks to the innovative survey design, it offers a novel characterization of individuals, allowing for comparisons between trans*, cis, and queer* identities, as well as binary and non-binary identifications. This progressive approach offers a broader comprehension of the multifaceted nature of gender and how gender locations are formed and accessed.

Secondly, this article departs from the predominant focus on the United States in research on non-cisgender populations, venturing into the Mexican context. In Mexico, the link between socioeconomic origin and life opportunities is notably pronounced, heavily influenced by traditional gender norms (Torche, 2015). This presents an intriguing foundation to study how access to origin resources may differ for individuals identifying in non-normative ways, potentially exacerbating disparities in life opportunities between cisgender and non-cisgender populations.

Empirically, the article will investigate four distinct methods of categorizing gender locations. It initiates with a comparison between cis, trans* and queer* identifying individuals, as well as binary and non-binary identification, following current literature and studies, such as Carpenter et. al. (2020) and Wilkinson et. al. (2021). Linear models are employed to analyze disparities within these gender categories. Secondly, it assesses educational differentials following Beischel et al.'s (2023) "3x3" framework, considering gender identification in terms of cis and non-cis, binary and non-binary identities. Lastly, the study employs Latent Class Analysis to inductively identify salient gender location groups, akin to previous research by Donnelly Moran (2023) in the context of labor market outcomes.

Gender categories and Education

In recent years, many studies sought to study educational inequalities related to gender identification. Carpenter, Eppink, and Gonzales (2020) found that transgender adults tend to achieve lower levels of education than their cisgender counterparts in the United States, with only 14% holding a college degree compared to 28% among cisgender individuals. This study was based on a trans* versus cis comparison. However, as Darwin (2020) presented, non-binary identification can hardly be sorted neatly into man/woman and cis/trans* categories. Wilkinson, Shifrer, and Pearson (2021) included non-binary and gender-unsure identities, discovering differences in terms of educational outcomes, with binary transgender and gender-unsure youth facing disadvantages compared to their cisgender and non-binary peers.

Delving deeper into alternative methods of categorizing gender locations, Beischel et al. (2023) introduce a multidimensional approach, incorporating gender trajectory (involving trans, cis, or allogender identities) and a binary relation dimension (comprising binary, non-binary, or allobinary identifications). This innovative framework, known as the "3x3" model, classifies gender based on these two dimensions. To my knowledge, this novel categorization approach has not yet been applied to the examination of educational outcomes.

In contrast, Donnelly Moran (2023) takes a different approach by employing Latent Class Analysis to consider multiple gender dimensions to study labor market experiences of transgender individuals. These dimensions include gender identity and presentation, plus institutional and relational aspects. This represents a significant departure from the existing research landscape.

Given the current state of knowledge, I find myself pondering the potential influence of gender categorization on the outcomes of our studies. Specifically, it raises the question: Can we consider results regarding socioeconomic disparities as consistent when we employ different gender categorization approaches?

Data and Analytical Strategy

To conduct this study I will be using the Mexican National Survey on Sexual and Gender Diversity (ENDISEG, 2021). This survey, conducted between 2021 and 2022, serves as a valuable resource due to its representative nature and novel way of asking for gender identification. The questionnaire design and development lets me identify 441 non-cis individuals and their respective gender identities in a broader way. As I will be studying educational outcomes related to secondary education completion, I excluded individuals younger than 18 years old, which leaves me with 341 non-cis individuals.

This survey has a multidimensional way of inquiring gender identity. It includes two different questions related to how individuals identify themselves in terms of gender: “Do you consider yourself: 1. Man, 2. Woman, 3. Both, 4. None, 5. Other Gender” and “Given that your gender differs from the one assigned to you at birth: 1. Are you transgender or transexual? 2. Are you queer, gender fluid or other?”. Besides gender, the questionnaire also asks for sex assigned at birth and if individuals were born with any genital, hormonal or other variations in their bodies, as well as institutional and relational aspects. This way of inquiry lets me create

different comparisons in terms of gender locations, going beyond man/woman and cis/trans* dichotomies.

As non-cis individuals are highly concentrated among individuals who are in ages where many people go to university, as well as the restricted access to post-secondary education in the Mexican context, secondary completion will be used as the dependent variable. Thus, to study the differentials in terms of educational outcomes a variable related to secondary level education completion is created and analyzed.

In the latter phase of the study, cluster analysis is employed as an inductive approach to seek for salient grouping. These profiles encompass a range of variables related to questions on gender identification, mentioned previously, as well as relational and institutional aspects, such as gender expression and if the individuals are open about their gender identities in different contexts.

Preliminary Results

The unique way in which the sample is collected, using two different questions to address gender identity besides sex assigned at birth, lets me create ten different non-cis groups. Table 1 presents the total number of individuals per category. As can be noted, many trans* individuals do not identify as male or female, nor all queer* individuals identify in a non-binary way.

Table 1. Number of individuals per identification.

	Female	Male	Both	None	Other	**Suma total**
Queer	55	45	66	20	35	**221**
Trans	23	35	37	8	17	**120**
Total	**78**	**80**	**103**	**28**	**52**	**341**

From these groups, three distinct ways of categorization will be studied. The first one compares trans* (n=120), queer* (n=221) and cis (n=40.881) individuals. The second one compares binary identification (Female/Male) with non-binary identification (Both/None/Other). For this second comparison, binary identifying individuals are also separated between cis and non-cis categorization, thus identifying 158 non-cis, binary, 40.881 cis-binary and 183 non-cis, non-binary individuals. The third way follows Beischel et al. (2023) “3x3” framework, considering cis/trans*/queer* and binary/non-binary identification at the same time.

Utilizing linear models to further study these differentials, four models were created. Models 1 and 2 present a differential in terms of educational outcomes related to cis, trans* and queer* identification. On the first model, a significative positive differential is observed for the queer* population, while a non-significative penalty is observed for trans* identifying individuals. However, when controlling for age, the outcomes vary interestingly: differential for queer* identification is almost zero, and becomes non significant, while the penalty previously observed for trans* individuals increases and become significant.

Models 3 and 4 study disparities between cis binary, non-cis binary and non-cis non-binary gender categorization. For this second way of categorization, no significant disparities have been observed between cis binary, non-cis binary and non-cis, non-binary individuals. Next

steps include considering interactions between these two ways of grouping, to adhere to Beischel et al. (2023) methodology.

Table 2. Linear models explaining secondary education completion.

	Model 1	Model 2
Intercept	0.45 ***	0.14 ***
Trans* (Ref.: Cis)	-0.07	-0.16 ***
Queer* (Ref.: Cis)	0.14 ***	0.02
Age Group		
19-20		0.58 ***
21-22		0.55 ***
23-24		0.55 ***
25-29		0.48 ***
30-34		0.43 ***
35-39		0.39 ***
40-44		0.32 ***
45-49		0.27 ***
50-54		0.25 ***
55-59		0.22 ***
60-64		0.15 ***
65-69		0.11 ***

	Model 3	Model 4
Intercept	0.45 ***	0.14 ***
Non-Cis	0.04	-0.08 *
Non-Binary	0.06	0.06
Age Group		
19-20		0.58 ***
21-22		0.55 ***
23-24		0.55 ***
25-29		0.48 ***
30-34		0.43 ***
35-39		0.39 ***
40-44		0.32 ***
45-49		0.27 ***
50-54		0.25 ***
55-59		0.22 ***
60-64		0.15 ***
65-69		0.11 ***

Note: *** p <0.01; ** p<0.05; * p<0.10

Conclusions

This study contributes to gaining a deeper understanding of how gender categorization relates to educational outcomes. Preliminary findings show that Queer* individuals seem to have an advantage in terms of educational outcomes, but this effect is nulled when controlling for age. The opposite relation is found for trans* population: the penalty in education becomes significant when including age groups. Binary or non-binary identification appears to have no significant relationship with educational outcomes. Next steps include studying these differentials following the “3x3” framework, where interactions will be tested, and latent class analysis to provide an alternative based on inductive methods rather than deductive, including a broader range of characteristics related to gender location.

These preliminary results help to further understand the intricate ways in which gender identities and categorization can create completely different results depending on the way they are addressed and studied. This could impact the way in which we conduct data collection and research on gender diversity, as well as shed light on the way people chose to identify themselves.

References

Beischel, W.J., Schudson, Z.C., Hoskin, R.A., Van Anders, S.M., (2023). The gender/sex 3×3: Measuring and categorizing gender/sex beyond binaries. *Psychology of Sexual Orientation and Gender Diversity* 10, 355–372. https://doi.org/10.1037/sgd0000558

Carpenter, C.S., Eppink, S.T., Gonzales, G. (2020). Transgender Status, Gender Identity, and Socioeconomic Outcomes in the United States. *ILR Review*, 73(3), 573–599. https://doi-org.are.uab.cat/10.1177/0019793920902776

Darwin, H., (2020). Challenging the Cisgender/Transgender Binary: Nonbinary People and the Transgender Label. *Gender & Society* 34, 357–380. https://doi.org/10.1177/0891243220912256

Donnelly Moran, K., (2023). Deconstructing Gender Quantitatively: Heterogeneity of Transgender Labor Market Experiences.

Torche, F., (2015). Intergenerational Mobility and Gender in Mexico. *Social Forces* 94,563–587. https://doi.org/10.1093/sf/sov082

Wilkinson, L., Shifrer, D., & Pearson, J. (2021). Educational Outcomes Of Gender-Diverse Youth: A National Population-Based Study. *Gender & Society,* 35(5), 806–837. https://doi-org.are.uab.cat/10.1177/08912432211038689