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The Stratification of Universities Revisited: Status, Followers, and the Shape of National Hierarchies

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Résumé de l'article

Il est généralement reconnu que les universités canadiennes sont moins stratifiées que leurs voisines du Sud, une hypothèse popularisée au milieu des années 2000 et vérifiée par des recherches empiriques comparatives subséquentes. Dans cet article, nous revisitons l'hypothèse du « nivellement » canadien, en adoptant une définition plus sociologique des hiérarchies de statut et en nous basant sur les utilisateurs des médias sociaux comme indicateur focal du statut. Malgré notre scepticisme théorique, l'adoption d'un autre indicateur de statut et l'utilisation de données plus récentes, nos analyses confirment l'hypothèse du nivellement. Nous théorisons les implications de ces résultats et de notre nouvelle approche pour l'étude de la stratification organisationnelle dans l'enseignement supérieur.

THE STRATIFICATION OF UNIVERSITIES REVISITED: STATUS, FOLLOWERS, AND THE SHAPE OF NATIONAL HIERARCHIES

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Abstract

It is generally accepted that Canadian universities are less stratified than their southern neighbours, a hypothesis popularized in the mid-2000s and verified by subsequent comparative empirical research. Through this piece, we revisit the Canadian "flatness" hypothesis, embracing a more sociological definition of status hierarchies and using social media followers as a focal proxy for status. Despite our theoretically based skepticism, adoption of an alternative status proxy, and use of more recent data, our analyses validate the flatness hypothesis. We theorize the implications of these findings, and our novel approach, for the study of organizational stratification in higher education.

Keywords: organizational stratification, higher education, universities, Twitter

Résumé

Il est généralement reconnu que les universités canadiennes sont moins stratifiées que leurs voisines du Sud, une hypothèse popularisée au milieu des années 2000 et vérifiée par des recherches empiriques comparatives subséquentes. Dans cet article, nous revisitons l'hypothèse du « nivellement » canadien, en adoptant une définition plus sociologique des hiérarchies de statut et en nous basant sur les utilisateurs des médias sociaux comme indicateur focal du statut. Malgré notre scepticisme théorique, l'adoption d'un autre indicateur de statut et l'utilisation de données plus récentes, nos analyses confirment l'hypothèse du nivellement. Nous théorisons les implications de ces résultats et de notre nouvelle approche pour l'étude de la stratification organisationnelle dans l'enseignement supérieur.

Mots-clés : stratification organisationnelle, enseignement supérieur, universités, Twitter

Introduction[1]

For decades scholars have marvelled at Canadian higher education's (HE) flatter "prestige-ladder" (Davies & Hammack, 2005, p. 98) or "inter-organizational status hierarchy" (Stevens et al., 2008, p. 140), especially when contrasted with its more steeply stratified southern neighbour. Studies performed by Canadian sociologists (e.g., Davies & Zarifa, 2012; Zarifa, 2008; Zarifa et al., 2021) using financial metrics have verified this hypothesis, thus further accelerating its diffusion across the social science literature (e.g., Aurini et al., 2020; Baker, 2014; Kowalchuk & McLaughlin, 2009; Lachapelle & Burnett, 2018; McLaughlin, 2005; McLaughlin & Turcotte, 2007; Mullen et al., 2021; Nevin, 2019; Ramey & Ramey, 2009; Simard-Duplain & St-Denis, 2020; Siler & McLaughlin, 2008; Sweet et al., 2017; Zarifa & Davies, 2018). Today, even mainstream American (e.g., Binder & Abel, 2019; Stevens et al., 2008) and international

1 The opinions expressed through this article are those of the authors and do not reflect those of their employers. This research was conducted by the first author while he was a Visiting Researcher in the University of Toronto's Department of Leadership, Higher and Adult Education.

scholars (e.g., Marginson, 2016) are cognizant of Canada's relatively flatter hierarchical structure.

We posit that this emerging consensus may be premature. As classical scholars of prestige acknowledged nearly more than a century ago: "In order to gain and to hold the esteem of men, it is not sufficient merely to possess wealth or power" (Veblen, 2007, p. 29).[2] Indeed, an alternative sociological definition of social status centres "stakeholders' perceptions" (Bloch & Mitterle, 2017, p. 931) or the "esteem, respect, or approval that is granted by an individual or a collectivity" (Goode, 1978, p. 7). This alternate approach has led anthropologists and sociologists alike to operationalize and measure status in more relational terms, with a high-status entity being one that is (i) the "object of extensive relations from followers" (Knoke & Burt, 1983, p. 199; also see Rubel & Rosman, 1976; Sahlins, 1963) and (ii) effectively dominates the attention space (Collins, 2009) or attention economy (Marwick, 2015) in a given period. From such theoretical positioning, we hypothesize that conclusions drawn about the hierarchical structure of Canadian universities based solely on financial metrics may not prove robust to re-examination using metrics that reflect the social dimensions of organizational hierarchies.

Through this study we make a first effort to re-examine the hierarchical structure of the Canadian university sector using an alternative sociological definition of status. To do so, we use web-scraping techniques to compile a custom dataset containing both detailed information on the characteristics of Canadian universities, and a novel proxy for status: the number of followers of each university's official Twitter account. The use of this proxy is particularly fitting within the present context, given that scholars agree that "maintaining a successful presence…within social media spaces is an increasingly important component of the 'business' of higher education institutions" (Condie et al., 2018, p. 192; also see Bélanger et al., 2014; Kimmons, et al., 2017; Veletsianos et al., 2017). Across diverse economic and societal sectors, a large social media following has become synonymous with "prominence, prestige, and importance" (Riddell et al., 2017, p. 283; also see Marwick, 2015), prompting researchers to use social media followers as a proxy for the status of entities ranging from urology departments (Cardona-Grau et al., 2016; Ciprut et al., 2017) to hospitals (Triemstra et al., 2018), and universities (Brech et al., 2017; McCoy et al., 2018; Meseguer-Martinez et al., 2019; Rybiński & Wodecki, 2022). As such, this study makes a timely contribution to the literature by conceptualizing and mapping status hierarchies using data from an increasingly consequential medium of communication in modern society, especially among higher education (HE) organizations (del Rocío Bonilla et al., 2020; Pringle & Fritz, 2019).

Using an alternative proxy, but the same analytical techniques (e.g., boxplots, Gini coefficients, and Lorenz curves) employed by Davies & Zarifa (2012) to analyze financial stratification of universities, we examine the distribution of followers across Canadian universities, performing bivariate analyses of such a metric across key dimensions (e.g., university age, size) commonly analyzed by business management and organizational sociologists (e.g., Bruderl & Schussler, 1990; Freeman et al., 1983). Further, we contrast the distribution of social media followers among Canadian universities with a large sample of comparable American universities (n = 1,713). Our extensive set of analyses generally confirm Davies & Zarifa's (2012) conclusion that the status hierarchy north of the border is generally "flatter" in its shape. Moreover, our use of this alternative proxy generates new insights into status dynamics within the field of HE that will be of interest to organizational researchers across various subfields.

Literature Review

Canadian scholars have long acknowledged that our HE system is structured differently than that of our southern neighbours. More than three decades ago, Ornstein (1988) noted the "absence of Canadian counterparts to the elite universities which serve as national training and research centres in the U.S." (p. 370). A few years later, Skolnik & Jones (1992) followed by noting that one "fundamental difference" between American and Canadian universities was that the latter were not as "hierarchically differentiated" (p. 126). Around the same period, Maxwell & Maxwell (1995) opined that a "clearly distinct set of elite universities, as exists in both Britain and the US" (p. 317), was absent in Canada. However, seemingly aided by Davies & Hammack's (2005) more recent commentary on the topic within *The Journal of Higher Education*—along with the supporting evidence produced by recent empirical analyses of the subject (e.g., Davies & Zarifa, 2012; Zarifa, 2008; Zarifa et al., 2021) —there now appears to be far greater domestic (e.g., Aurini et al., 2020; Baker, 2014; Kowalchuk & McLaughlin, 2009 Lachapelle & Burnett, 2018; McLaughlin, 2005;

2 A classical example of this dynamic being Marx's petite bourgeoisie, a social group ranking high in financial resources but low in prestige.

McLaughlin & Turcotte, 2007; Mullen et al., 2021; Nevin, 2019; Simard-Duplain & St-Denis, 2019; Siler & McLaughlin, 2008; Sweet et al., 2017) and international (e.g., Binder & Abel, 2019; Marginson, 2016; Ramey & Ramey, 2009; Stevens et al., 2008) recognition of the relative flatness of Canadian HE. Indeed, even within policy discourse across several Canadian provinces, we now see influential leaders advocating for governments to consider "fostering greater stratification in higher education" (Atkinson, 2008, p. 65) or encouraging further institutional "differentiation" (Toope, 2014; Weingarten & Deller, 2010).

Why re-examine the now largely taken-for-granted flatness hypothesis? Our critique of financial resources as a singular proxy for social hierarchies is far from original. More than a century ago, Max Weber (1994) argued that "'mere economic' power, and especially the 'naked' power of money, is by no means a recognized basis of social honor" (p. 113). Ever since, scholars have routinely defined social status in explicit opposition to financial reductionism. Goldthorpe & Hope (1972), for example, defined status as a "particular form of social power and advantage that is of a symbolic rather than an economic or political character, and which gives rise to structured relationships of deference, acceptance, and derogation" (p. 19). If one accepts the plausibility that financial and social hierarchies do not align perfectly, it logically follows that the financial hierarchical structures mapped by Davies & Zarifa (2012) could differ markedly from those associated with the concepts of esteem and deference that status has been observed to inspire across diverse settings (e.g., Collins, 2009).

Here, it is worth briefly highlighting the distinctiveness of social status vis-à-vis the inter-related concepts of reputation and legitimacy, a topic that has been discussed extensively within organizational sociology (e.g., Bitektine, 2011; Deephouse & Carter, 2005; Shenkar & Yuchtman-Yaar, 1997). While status can be thought of as referring to a "socially constructed, inter-subjectively agreed-upon and accepted ordering or ranking of individuals, group, organizations, or activities" (Washington & Zajac, 2005, p. 284), reputation refers to the idea that "over time an organization can become well known, can accrue a generalized understanding in the minds of observers as to what it is known for, and can be judged favorably or unfavorably by its observers" (Lange et al., 2011, p. 154). As such, though reputations can incorporate status distinctions, they can also encompass differentiation across other dimensions that do not neatly fold into status hierarchies. For example, it is just as possible for a university to develop a reputation for having an elite engineering program as it is for them to become known as having a toxic work environment. In turn, status is distinguished from legitimacy in that the latter signals organizational conformity with established norms (Meyer & Rowan, 1997), which is not linearly correlated with status (Philips & Zuckerman, 2001). There are many universities that adopt legitimate forms yet vary widely in their social status.

Far from trivial, our softer concept of status served as the foundation for some of the most influential sociological theories of the late 20th century. The new institutionalist (DiMaggio & Powell, 1983) tradition within organizational sociology, for example, is premised on the idea that elite organizations are followed and emulated by lower status actors, a dynamic that drives isomorphism observed across countless fields. [3] Similarly, sociological studies of intellectual traditions (e.g., Collins, 2009) have shown that star philosophers dominate attention space during their lifetimes, producing large and devoted followings that fervently defend and extend their ideas. Contemporary HE can also be understood to be heavily steeped in these status dynamics. Middle-class students and parents' pursuit of admission into elite universities (e.g., Aurini et al., 2020; Stevens, 2009) is also partly a function of their deference to firmly institutionalized status hierarchies. Scholars also reinforce prevailing hierarchies when they hire new faculty predominantly from the same small group of elite universities (Burris, 2004), or compete to publish their work in prestigious journals (Starbuck, 2005).

While many studies have documented the growing use of social media by universities as a tool for strategic branding (e.g., Peruta & Shields, 2017, 2018; Pringle & Fritz, 2019), few have explicitly conceptualized social media following as a basis for organizational stratification. This is despite it being now generally accepted that an account's number of followers is a useful proxy for an actor's social status (e.g., Manor & Pamment, 2019), and that "Twitter followers are a proxy for the brand strength or the reputation of the university brand" (Rutter et al., 2016, p. 3101). A first study by McCoy et al. (2018) observed that—among a sample of 264 NCAA Division I universities in the United States—Twitter following size was positively correlated with status metrics

3 Prominent organizational scholar Richard Scott (2010) notes that within the US higher education system "a predominant pattern is to form a snakelike line with the smaller and less well endowed schools doggedly attempting to follow the direction set by the more prestigious colleges" (p. 12).

derived from ranking publications. A second study by Lund (2019) observed that—among a random sample of 50 universities from the Top 1000 QS World Ranking list—there was a strong bivariate relationship between a university's ranking and their number of Facebook followers. Third, Brech et al. (2017) observed that university status, defined as their *Times Higher Education* ranking, was correlated with Facebook fans even net of university size. Fourth, Meseguer-Martinez et al. (2019) observed that the popularity of YouTube videos published by universities was closely related to university rankings. Related work by Rybiński & Wodecki (2022) has also found a net relationship between QS university rankings and a university's popularity in Google searches for the top 500 universities in the world. Similarly, Holmberg (2015) found a correlation between Google trend scores and the number of peer-reviewed publications produced by Finnish universities.

The correspondence between the online popularity of universities and ranking metrics provides justification for experimentation with the former as a proxy for the esteem that universities inspire within their communities. Using this theoretically meaningful proxy, we ask: what is the distribution of Twitter followers across the Canadian university sector? More importantly, how does the distribution of this proxy differ in Canada and the United States? We contrast our observations with those made through earlier work by Davies & Zarifa (2012) to re-evaluate the flatness hypothesis using non-financial metrics.

Data Sources

Our study draws on a custom dataset constructed primarily through the automated scaping of information about Canadian universities from various publicly available sources. To arrive at our analytic sample, we produced a list of unique universities from two central directories published by the Council of Education Ministers, Canada (CMEC) and Universities Canada (UA). The latter is an advocacy group that represents Canadian universities. The former is a council composed of provincial ministers of education from every provincial/territorial jurisdiction. As we are interested in the stratification of mainstream universities, and to maintain some consistency with previous work by Davies and Zarifa (2012), we applied a series of sample restrictions. First, we excluded theological seminaries (e.g., Institute for Christian Studies) or Bible colleges, which formally exist within the boundaries of Canadian university sector—since they grant degrees—but constitute their own disconnected niche of the field (Pizarro Milian & Rizk, 2019). Second, we excluded all entities that are not standalone in their structure, such as affiliated[4] or federated[5] universities. We also excluded foreign universities formally approved to offer degrees within a Canadian province (e.g., Northeastern University) but possessing their headquarters in foreign jurisdictions.[6] Such restrictions render our sample of Canadian universities more comparable in their mission and structure than if we had included these marginal entities.

From the abovementioned sources, we were able to gather basic details about each institution, such as their geographical address, web address, and a variety of social media account links. Upon inspection, we noticed that many universities did not report links to all their social media accounts via CMEC or UA. As such, we queried the home webpages of each university in our sample using a Python script and extracted links to social media accounts. We also scraped information for all Canadian university profiles hosted on 4icu.org. This website produces a ranking of world universities using a method—listed on the IREG Observatory on Academic Ranking and Excellence—that focuses on an organization's web presence, estimated traffic, and other web metrics. The website 4icu.org is the only public source we are aware of that comprehensively catalogues the social media accounts for universities, as well as a set of basic institutional characteristics, such as their geographical location, phone number, enrolment range, control type (public/private), and entity type (for-/non-profit). Lastly, to extend the analytical options with these data, we manually gathered information on which Canadian universities were ranked in the 2022 *Times Higher Education* tables from that publication's webpage and appended such information to our dataset.

Once the abovementioned information was compiled for each Canadian university, we performed a preliminary evaluation of the uptake of various social media platforms.

4 This included the likes of King's University and Renison College (Western), St. Peter's College (Saskatchewan), Dominican University (Carleton), and University de Hearst (Laurentian).

5 This group included the likes of Victoria University (Toronto), Saint Paul University (Ottawa), Huntington University (Laurentian), University of Sudbury, and Throneloe University (Laurentian).

6 Examples include Adler University, which has its primary campus in Chicago, Illinois, but has a satellite campus in Vancouver, as well as Northeastern University, which has operations in Toronto but has its main campus in Boston.

We were able to gather Twitter and Facebook account information for all Canadian universities in our sample, Instagram accounts for 95% of universities, LinkedIn account information for 92% of universities, and YouTube accounts for only 80% of universities. We then proceeded to manually evaluate the extent to which data could be reliably scraped (using automated methods) from the two platforms—Facebook and Twitter—that were used uniformly across our sample. This led us to discover that while Twitter profiles were uniform in their structure and content, Facebook profiles differed in their formatting and content. With respect to the latter, key information (e.g., likes, follows) was not present for a subset of university profiles. These complications with missing data on Facebook profiles, combined with the already small size of our sample, led us to focus our analysis on the complete follower data gathered from Twitter profiles. From each Twitter profile (n = 96) we gathered key information, including the number of tweets, followers, accounts followed, location, and small blurbs of text describing the institution.

The unique identifier used to perform a one-to-one match of organizational information across all these sources was each university's web domain, a piece of information that is by necessity unique, and present across all queried sources. A primary advantage of gathering information for each Canadian university from multiple sources was that we were able to obtain complete information for several key variables. Preliminary inspections revealed that relying on any single source (e.g., CMEC, Universities Canada), for example, would have only afforded access to approximately 60–85% of information for certain fields in our set. A secondary advantage of our approach was that it afforded access to extremely timely information. Indeed, all follower data presented in this manuscript reflect the 24-hour period during which our data was gathered, from April 1st to 2nd, 2022. As such, this—to our knowledge—is the freshest data utilized in any peer-reviewed study on status hierarchies in HE.[7] A notable challenge of working with data of this sort pertains to the necessary efforts to validate data quality. All key data fields (e.g., follower counts) gathered through automated means, as well as matches across datasets, had to be manually verified to ensure their accuracy.

To obtain a sample of American universities for our comparative analyses, we relied exclusively on 4icu.org, where information was available for more than 1,700 four-year universities at the time of writing. The selection criteria for organizations listed on 4icu.org generally mirrors the restrictions applied to our Canadian sample. This website includes only universities that are officially recognized, licensed, or accredited by national or regional entities to provide four-year degrees, and provide courses for such credentials mainly via face-to-face learning format. Excluded from their tables are community colleges or vocational institutes granting shorter two-year credentials, along with seminaries or theological institutions. Further, 4icu.org does not rank institutional sub-units which do not have their own distinct domain (e.g., "www.utoronto.ca"), as opposed to a subdomain (e.g., "www.vicu.utoronto.ca"). Lastly, the hosting of institutional profiles on 4icu.org does not require a fee, thus limiting any bias that this could introduce into the website's directory. At the time of writing, 4icu.org exceeded the number of four-year American universities listed on other popular websites we inspected, such as USNews.com rankings, by several hundred. It also contained more complete data across relevant fields (e.g., institutional web address, social media profiles).

Methods

Our methods and focus on distributional trends and bivariate analyses intentionally mirror those employed in Davies and Zarifa (2012). We begin with an analysis of stratification exclusively within the Canadian sample, producing boxplots, Gini coefficients, and Lorenz curves to explore disparities in follower counts across key dimensions identified by organizational sociologists (e.g., Bruderl & Schussler, 1990; Freeman et al., 1983) as driving stratification. This includes analyses by organizational age and size, geographical location, and status markers. Once we explore dynamics within Canada, we then shift our attention to coarser cross-national comparisons that once again mirror the approach set out in Davies and Zarifa (2012).

In our analyses, we use boxplots to visualize the distribution of Twitter followers. Within our vertical boxplots, the

7 An early data validation exercise carried out with Twitter data from July 31st revealed only miniscule differences (0 to 2%) in the follower counts for Canadian universities within our sample. As such, it would appear that even within this very fluid platform, where sensations are born overnight, the general distribution of followers is rather rigid. That being said, Twitter has undergone dramatic changes under new leadership, including various efforts to clean up "bot" accounts and otherwise clean up the platform. As such, presented counts could differ markedly from present day follower counts.

Y axis represents Twitter followers, while the X axis includes categorical dimensions. The box itself represents the 75th percentile (upper hinge), median and 25th percentile (bottom hinge) values. Meanwhile, the "whiskers" on the top/bottom of the plot represent the upper/lower adjacent values, beyond which outlier observations are identified via small circles.[8] On occasion, we utilize scatterplots to explore the relationship between Twitter followers and other continuous measures of interest.

We use Gini coefficients to quantify overall levels of inequality in social media following across universities.[9] Gini coefficients are standardized measures of inequality, commonly reported in international assessments of income inequality (see Cowell, 2011; Hao & Naiman, 2010). In short, Ginis provide a summary measure of the cumulative difference in the proportions of social media followers of all adjacent universities in a population. Gini coefficients range in values from zero to one, where smaller values indicate low levels of inequality and higher values indicate greater levels of inequality. Ginis equal to zero are an indication of perfect equality, and Ginis equal to one indicate total inequality. Lorenz curves offer a graphical representation to accompany Gini coefficients, wherein the Gini coefficient equates to twice the area between the Lorenz curve and line of perfect equality. Narrower Lorenz curves characterize smaller Ginis and wider Lorenz curves correspond to larger Gini coefficients.

Findings

A first dimension across which we analyze disparities in Twitter followers within Canada is across geographical regions. Canada's vast size and de-centralized coordination of HE, with provinces being primarily responsible for the funding and regulation of universities, raise legitimate questions about differentiation in the structure of status hierarchies across major geographical areas. As seen in Figure 1, universities located in Ontario tend to have the largest median social media following (23,700). There is a significant drop in median followers when we shift our attention to any other region, with those in central Canada (Alberta, Manitoba, Saskatchewan, Yukon) having the smallest median following (4,500). However, it is interesting to note that there are outliers within each region that far exceed the distributional norm. For starters, McGill—situated in Quebec—leads the nation with approximately 150,000 Twitter followers. The University of Alberta, University of British Columbia, and Memorial also occupy outlying leadership positions within their region. It thus appears that, beyond basic Ontario/non-Ontario disparities, there are select provincial elites within each Canadian region that attract sizeable followings. Corresponding Gini coefficients suggest that Ontario (.496), British Columbia (.486), and the Atlantic (.466) provinces have relatively similar degrees of inequality, differing from the more steeply stratified Quebec (.588) and central (.667) regions.

The outliers within Figure 1 would not be surprising to most observers familiar with local status hierarchies, as these universities' (e.g., Alberta, UBC, MUN) tend to be ranked well within both domestic and international ranking publications. In addition, it is useful to note that hidden in the upper tail of the Ontario boxplot are standouts such as the University of Toronto (103,000), McMaster (81,000), Waterloo (95,000), and Western (86,000).

In Figure 2, we plot the distribution of followers across subsets of universities included and excluded from the 2022 *Times Higher Education* (*THE*) global rankings. *THE* is one of the most visible and influential rankings in the world, despite ongoing critiques of its methodology and validity (e.g., Bookstein et al., 2010). What we observe through Figure 2 is that, despite some overlap in the distributions of social media followers, and the existence of non-ranked universities that punch well above their weight on Twitter—such as Brock, UQAM, and Wilfrid Laurier—the 68 Canadian universities excluded from the THE rankings have a far flatter distribution of followers with a median value of approximately 7,500. This pales in comparison to the corresponding value for those that are ranked (41,800).

Plotting social media followers against *THE* ranking (Figure 3) reveals a noticeable non-linear relationship between these two metrics, with follower counts dropping considerably with rank position.[10] Put differently, social media

8 Further details can be found at https://www.stata.com/manuals13/g-2graphbox.pdf.

9 Specifically, we estimate Gini coefficients using the ginidesc Stata package (Aliaga & Montoya, 1999).

10 After the University of Ottawa (165), values in the *THE* table for Canadian universities are ranges (e.g., 201–250). We utilize the lower bound estimate for those institutions with ranges as opposed to singular rank values, hence the observed clustering of institutions like Windsor, Regina, and Quebec, as well as Lakehead and St. Francis Xavier in the scatterplot.

Figure 1

Distribution of Twitter Followers, by Region (n = 96)

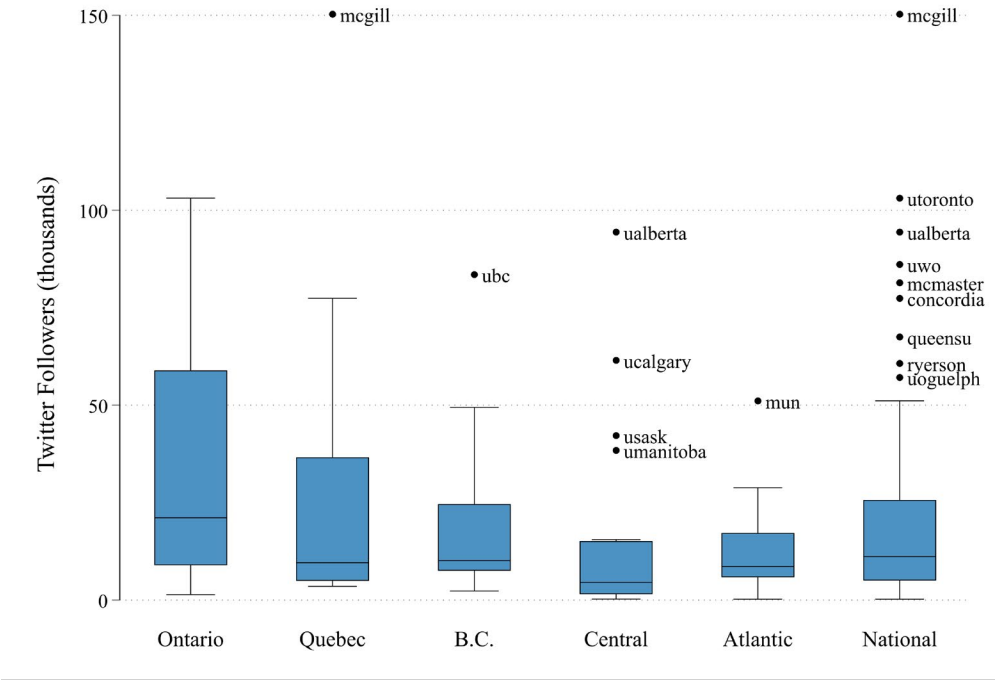


Figure 2

Twitter Followers, by THE Inclusion (n = 96)

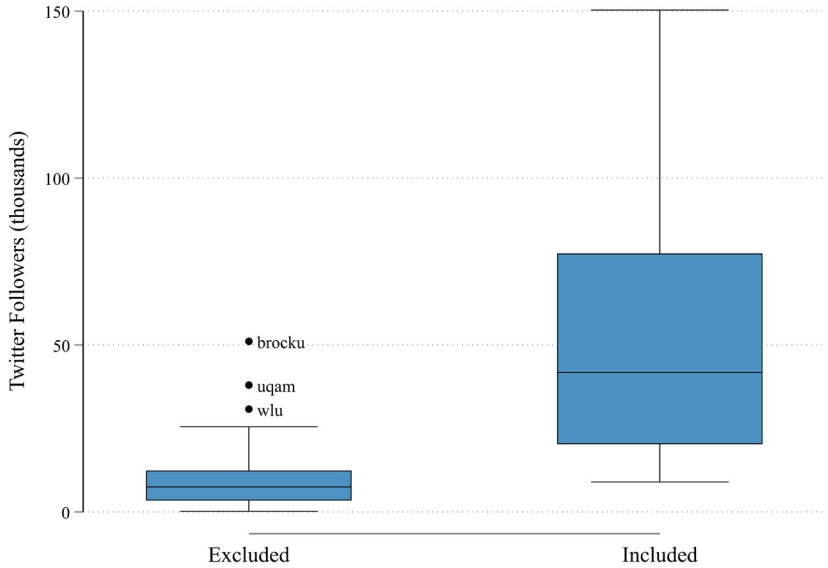
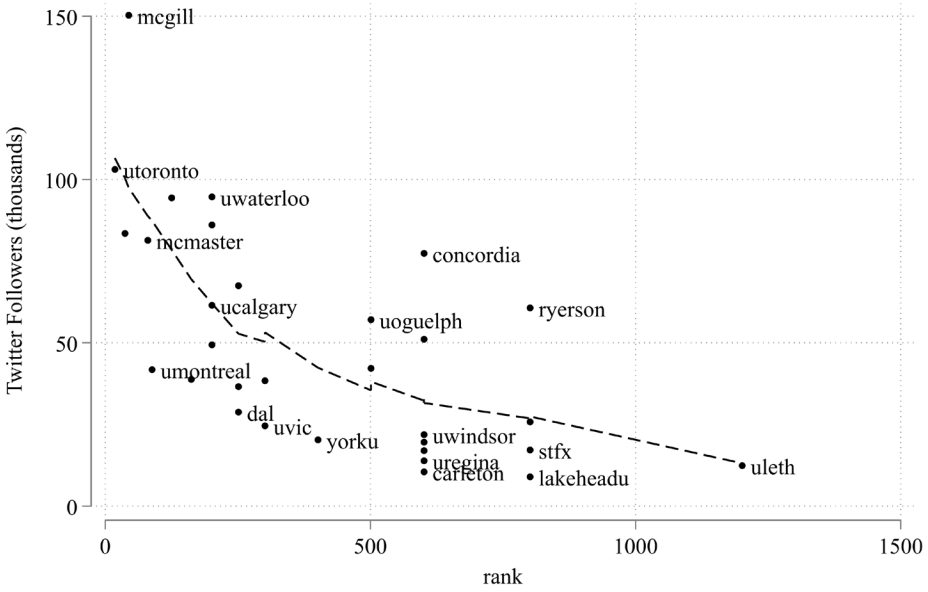


Figure 3

Twitter Followers, by THE Rank (n = 31)



follower counts appear to grow quickly as one climbs up the ranks towards the first-place ranking. This, of course, is a relationship that merits further exploration through a more in-depth analysis of the broader global group of universities included in the *THE* ranking tables.

Next, we plot the distribution of followers across groups of universities established during various historical periods.[11] Our chosen categories mirror the quartile values for the year of establishment for Canadian universities in our sample. Here, we see that the median follower value decreases gradually as the university founding date gets closer to the present. Nevertheless, several younger universities perform better than expected given their age. For example, Concordia (77,000) and Calgary (62,000) have a much larger following than many older counterparts.[12]

Lastly, we plot the distribution of followers across categories reflecting quartiles of total student enrolments. [13] Through Figure 5 we can observe that, as would be expected, larger universities—particularly those with enrolments within the upper quartile of the distribution—tend to have substantially larger followings. One simple explanation for this pattern being that these organizations have a larger number of current (e.g., students, staff) and former members (e.g., alumni) that would be drawn to follow their official social media accounts. However, if this was the case, it is unclear why the relationship between these two variables would exhibit such a high degree of non-linearity.

Taken together, the abovementioned analyses reveal moderate forms of inequality among Canadian universities

11 We experimented with a scatterplot to display this relationship, but the clustering of institutions and the odd distribution of the establishment year variable rendered that visualization less aesthetically appealing.

12 There is no notable trend in Gini coefficients across universities established in various periods, with all values clustered in the .52–.57 range.

13 For the vast majority of universities, this reflects enrolments as listed on the Universities Canada website, for the fall of 2021. This is information compiled from several authoritative sources, including the Association of Atlantic Universities, Bureau de cooperation interuniversitaire, Council of Ontario Universities, as well as individual institutions. For a small subset of universities not present in that source, we relied on the most recent figures available through other public sources, such as annual reports, websites, and news reporting.

Figure 4

Twitter Followers, by Founding Date (n = 96)

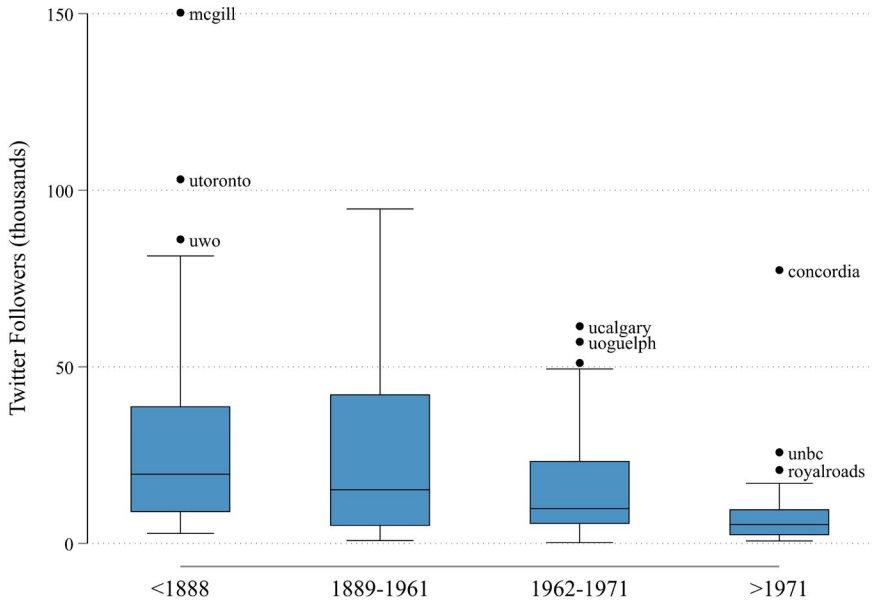
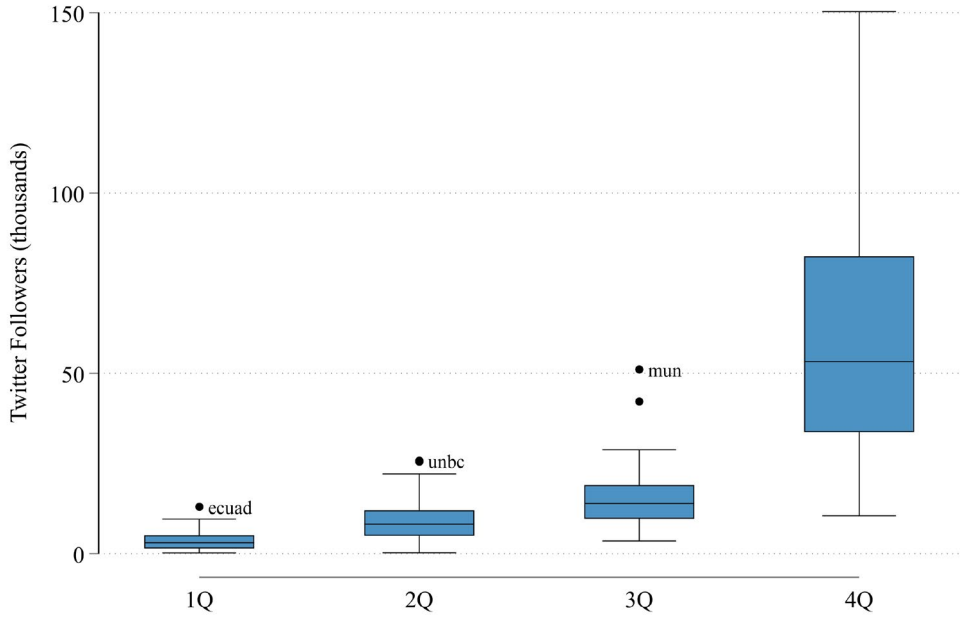


Figure 5

Twitter Followers, by Enrolment Quartile (n = 96)



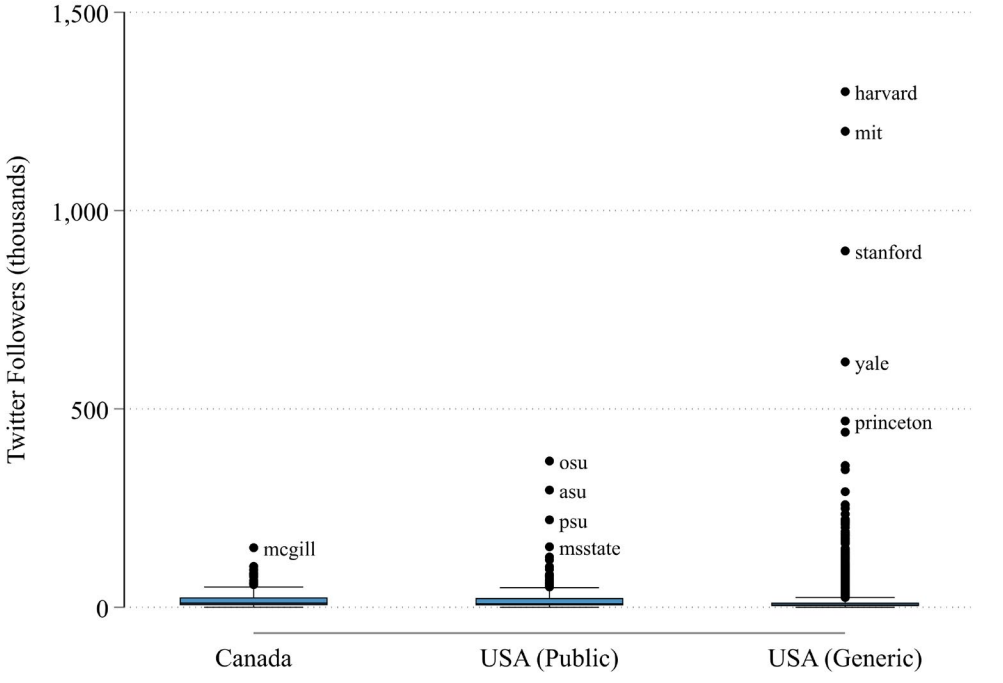
with respect to their Twitter following across several important dimensions of differentiation, with the most pronounced differences existing across prestige (*THE* ranking) and size (enrolment) categories. Next, we move to compare the broader distribution of Twitter followers among universities within Canada (n = 96) and the United States (n = 1,713). We segment the latter group into those that are explicitly branded as a public institution through the inclusion of the "state" moniker into their institution's name (n = 164), such as Alabama State or Michigan State, and those that adopt more generic branding (n = 1,549). This loosely—albeit imperfectly—mirrors distinctions made in Davies and Zarifa (2012) in the forms (e.g., public vs. private) of universities.

In Figure 6 we see that, as in Davies and Zarifa (2012), inequality among Canadian universities with respect to followers is much lower than that observed south of the border, either within the state-branded or generically branded clusters. The upper tail of the generically branded American distribution is elongated by the presence of world-renowned universities like Harvard, the Massachusetts Institute of Technology (MIT), Stanford, Yale, and Princeton. Coincidentally, these are also outliers with respect to endowments and other financial metrics (e.g., see Geiger, 2004). Both Harvard and MIT have Twitter followings that eclipse the one million follower mark. As a useful reference point, these numbers render them more popular than the Twitter accounts belonging to global corporate brands like Reebok (704,000) and Under Armour (959,000), or the official accounts of government representatives of large nations, such as the Prime Ministers of Canada (611,000) or Australia (649,000). American universities with state branding are more comparable to Canadian counterparts, though standouts within that cluster—like Ohio State (369,000), Arizona State (296,000), and Penn State (221,000)—still have followings that far exceed those of the most popular Canadian counterparts.

Looking at the corresponding Gini coefficients, we see that Canadian universities have the lowest value (.577), followed by American state-branded (.654) and generically branded (.744) universities. Comparing these to Gini values reported in Davies and Zarifa (2012, p. 150), we see that our Canadian Gini for Twitter followers is larger than that reported for any financial metrics for Canadian universities—thus evidencing greater degrees of inequality when focusing on

Figure 6

Twitter Followers, by Country and Sector (n = 1,809)



a more social definition of status. However, the American state-branded universities' Gini value for Twitter followers is smaller than half of those reported in Davies and Zarifa (2012) for public American universities. The same is true for generically branded American universities. As such, using Twitter followers as a proxy for status appears to render Canada somewhat more comparable to American counterparts.

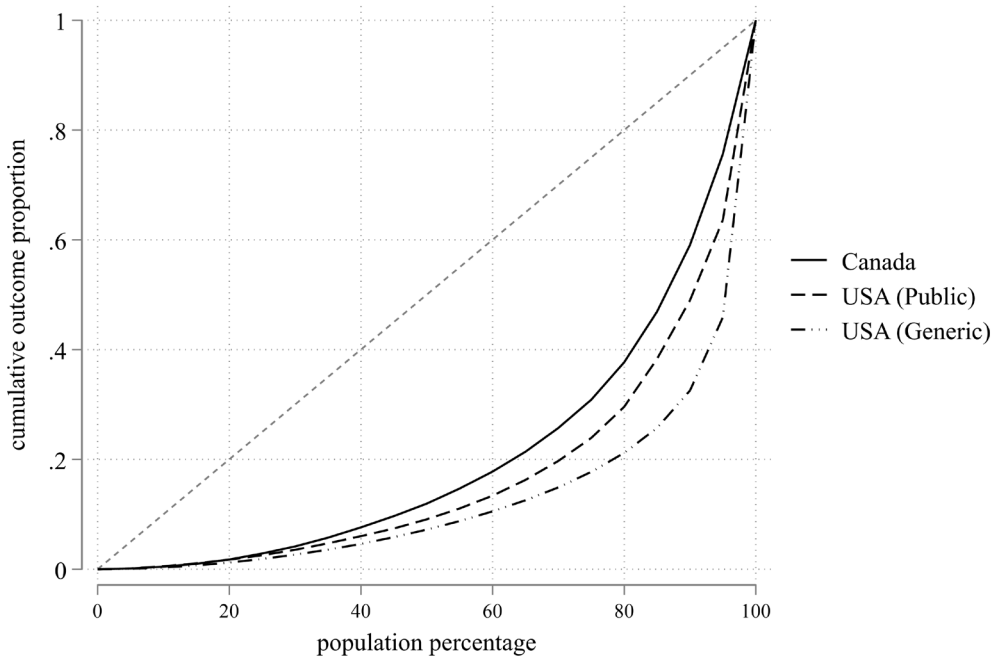
Finally, in Figure 7 we plot Lorenz curves that display differences in the distribution of followers across our three groups versus what would be expected in a 45-degree line representing perfect equality. Our findings here loosely mirror the patterns mapped by Davies and Zarifa (2012, p. 154) with respect to income and expenditures, in that the distribution of Twitter followers across Canadian universities is the most equal. However, they also differ from those reported by Davies and Zarifa (2012) in one important way. We see that the American universities with state branding are the second closest to the line of perfect equality, whereas Davies and Zarifa (2012) found American public universities to be the most unequal. Second, overall, our plotted Lorenz curves—including the Canadian one—appear more distanced from the line of perfect equality than Davies and Zarifa's (2012) for total income. It is interesting to note, however, that the concentration of followers observed among the top 5% of universities in our sample is comparable to that observed by Davies and Zarifa (2012) with respects to total income. Approximately 25% of all Twitter followers are concentrated among the top 5% of Canadian universities, with larger figures also observed for both American state-branded (36%) and generically branded (54%) universities. Corresponding figures for Davies and Zarifa's (2012) data were 28%, 37%, and 64%.

Discussion

This study advances the existing literature by leveraging a custom dataset to re-examine taken-for-granted views about the relative flatness of university status hierarchies in Canadian HE, particularly in relation to its most geographically and culturally proximate neighbor. Grounded in sociological theorizing about the multi-dimensional nature of status hierarchies and the importance of followers, we sought to objectively map disparities in the stratification of Canadian universities for the first time using non-financial metrics. De-

Figure 7

Lorenz Curves, by Country and Sector (n = 1,809)



spite our adoption of a contrasting theoretical framework, alternative metrics, and more recent data, our study generally confirms the flatness hypothesis expressed by Canadian scholars since at least the 1980s. Indeed, the general conclusions reached by Davies and Zarifa (2012) prove remarkably robust despite the differences in our research designs.

Why such consistency with Davies and Zarifa's (2012) findings? We fathom that there are at least two plausible explanations. First, it could be argued that our sociological critique of a disconnect between financial and social hierarchies—grounded in classical theorizing by the likes of Veblen and Weber—is insensitive to contemporary status dynamics in HE. The strength of the potential relationship between financial investments in advertising and social media metrics may overrule the conceptual distinction between financial and non-financial forms of stratification observed in other domains. Even at small universities, advertising budgets now reach well into the millions of dollars (SimpsonScarborough, n.d., pp. 15, 31). And, since at least the mid-2010s, industry sources estimate that the lion's share of these budgets are devoted to online advertising (Brock, 2017). Moreover, while aggressive marketing of this sort was once the domain of lower-status for-profit universities, elite non-profit institutions—such as Georgetown, John Hopkins, and Northwestern—are now also spending tens of millions of dollars a year to maximize their brand presence (Marcus, 2021). Within this context, while the naked power of money may not directly translate into esteem, it may nonetheless help move the needle in the desired direction with respect to social media following size.[14] This could also help to partially explain why Canadian universities remain less steeply stratified than their American cousins with respect to social media followers, given the more modest financial resources possessed by these universities.

A second potential explanation for our confirmation of the "flatness" hypothesis is that our empirical strategy does not efficiently capture the nuances of status, esteem, and deference as theorized by Weber and other classical sociological theorists. While following a university's social media account certainly reflects an interest in that brand, the act of following may not always be executed in the spirit of deference or esteem. A first simple, though likely empirically marginal, example: it is possible that a subset of Twitter followers are rivals or competitors monitoring a university's marketing strategy with the intent of emulating it. A second illustrative example: many individuals may ritually follow brands they recognize from television, but perhaps have no strong feelings or emotions about the university. In such scenarios, does following a university on Twitter represent an act of deference or esteem that reflects their high status? Both these examples arguably add an unknown amount of "noise" to our status signal, and in ways that are potentially non-random. For example, it may be that universities in major metropolitan areas, such as Montreal, Toronto, and Vancouver, receive an influx of followers from nearby residents, which has little to do with their status. Perhaps an alternative empirical strategy, capturing the intensity of engagement with, or sentiment of responses to, university Twitter accounts, such as likes or retweets of their posts, would produce alternative results. Though a logical step for future research on this topic, this type of additional data gathering requires an alternative scraping protocol and methodological approach and is outside of the scope of this exploratory study. Despite these limitations, we believe that follower counts—though noisy—still serve as a valuable and theoretically interesting status signal. This position is consistent with a growing literature that similarly adopts this proxy for the same purpose (e.g., Brech et al., 2017; Ciprut et al., 2017; McCoy et al., 2018; Meseguer-Martinez et al., 2019; Rybiński & Wodecki, 2022)

Despite prospective critiques outlined above, we posit that our adopted empirical strategy—once validated by future studies– opens exciting opportunities for future organizational stratification research in the field of HE. Top of mind is the replication of our analyses with follower counts derived from other social media accounts, such as Facebook, LinkedIn, Twitter, and Instagram. Each of these platforms draws on contrasting communities, rendering it possible that followership size and forms of stratification will differ in unexpected ways depending on platforms. It may be, for example, that universities with greater status in professional fields (e.g., accounting, law) have a stronger following among seasoned professionals on LinkedIn than among the more generic crowd of young adults on Twitter. Second on our list of future projects is a more extensive comparison of status hierarchies across additional countries. Existing work relying on both financial metrics (e.g., Zarifa et al., 2021) and impressionistic accounts (Davies &

14 These sort of feedback loops, between various forms of stratification, have been acknowledged by various scholars. Hoxby (1997), for example, notes the mutual reinforcement between selectivity, research funding, and reputation. Winston (1999) has also noted the relationship between financial resources and selectivity.

Pizarro Milian, 2016) has only compared a small number of European and anglophone nations. The now global adoption of social media platforms by universities provides the opportunity to analyze disparities in a globally standardized, albeit imperfect, metric. Third, though we focus on university-level accounts, there is an entire ecosystem of sub-units, such as law and business schools, with their own distinct status hierarchies. The aggregate followership of these sub-units could provide a far more nuanced measurement of a university's status than the main institutional account. The abovementioned directions for future research promise to significantly advance our understanding of status hierarchies in HE.

What are the practical implications of our work? For policy makers wishing to maximize status-based differentiation within Canadian HE, it is important to keep in mind that these distinctions correspond with firmly entrenched financial hierarchies. If we want more "world class" universities in Canada that can rival the status of American counterparts, this will be difficult to achieve without provincial and federal governments making additional strategic financial investments to fuel their ascendance. In addition, in light of the vast gap between our national systems, we would be wise to temper our expectations, acknowledging that public research universities in the United States may be the most realistic benchmark rather than private elites. It is unlikely that we will ever witness a legitimate Harvard of the North. On the other hand, for those responsible for managing and growing the followings of social media accounts at younger, smaller, and unranked Canadian universities, it is hard to be optimistic about their odds of success. Success would require an unprecedented degree of strategic manoeuvring for these organizations to close the gap with the nation's elite universities and, in the process, overcome deeply entrenched structural inequalities.

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