

TEF Disclosure in UK Higher Education: Countersignaling and Ranking Consistency

Anna Giannopoulou-Merika

Department of Economics
Deree – The American College of Greece
merikas@acg.edu

Ilias Kapareliotis

Department of Marketing
Deree – The American College of Greece
ikapareliotis@acg.edu

Anna Triantafyllou

Department of Economics
Deree – The American College of Greece
atriant@acg.edu

Abstract

Following adoption of the Teaching Excellence Framework (TEF) by the British government, awards of Gold, Silver, and Bronze ratings to UK universities that satisfied TEF criteria were announced in June 2017. We categorize UK universities in five buckets on the basis of their ranking and investigate whether top ranked schools are least likely to disclose their rankings on their websites. Furthermore, we test whether Guardian university rankings are consistent and informative about the TEF medals awarded. Our finding that the higher the ranking of the university the less the likelihood to disclose the TEF result on the university's website is consistent with prior literature. We assert that universities that have a higher rank use nondisclosure as a countersignal, while universities that have a middle rank use disclosure to stand out from the other middle rank universities. Moreover, we find that the probability of UK universities to get a TEF Gold is significantly lower than that of the top-10 and that probability falls substantially in lower ranking buckets. Finally, even though Guardian rankings appear to be generally consistent with and supportive of TEF ratings, only 35% of the top-ranked universities by Guardian are rated TEF Gold, indicating discrepancy between Guardian rankings and public national TEF classifications, thereby rendering further investigation of the Guardian ranking - TEF rating relationship necessary, in order to enhance the usefulness of rankings for student consumers.

Keywords:

Teaching Excellence Framework, Voluntary disclosure, Countersignaling, University rankings

1. Introduction

Data compiled by the UK Higher Education Statistics Agency (HESA, www.hesa.ac.uk) indicates that, after a slight fall in 2011-13, both national and international participation in UK higher education has been steadily increasing. HESA's official student enrollment data for 2016/17 shows an increase in the number of students in higher education, a decline in part-time students, and over a quarter of first degree graduates gaining a first. As a result, affording mass higher education and allocating public funds to universities becomes increasingly challenging. In this context, the UK government decided to create a link between funding and teaching quality.

The UK Teaching Excellence Framework was established aiming to “provide clear information to students about where the best provision can be found” (TEF, 2016). TEF comprises three core pillars, namely students’ views on the quality of teaching, learning environment, and student outcomes and learning gain (TEF, 2016).

Universities are assessed by an independent panel of experts including academics, students and employer representatives. Universities receive a positive or negative flag if they are above or below a benchmark based on the profile of their student cohort, with the overall number of flags giving an rating as follows: gold for those with three or more positive flags (either single or double) but no negative flags; bronze for those with two or more negative flags (regardless of other results) and silver for the rest. Initial ratings are adjusted according to characteristics of the university’s student body, such as gender, ethnicity and social background (TEF, 2016).

Results of the 2017 TEF were released in June 2017 (www.hefce.ac.uk). According to the announcement, 231 UK universities and other higher education institutions were awarded Gold, Silver or Bronze ratings for the quality of their teaching at the undergraduate level. In particular, just over 25% higher education providers were rated gold, about 50% silver and just under 25% bronze. Among those in the top category were eight Russel Group institutions, corresponding to 38% of all Russel universities.

Along with aiming to boost the quality of teaching, a main driver of the TEF is to provide all current and prospective stakeholders, notably future undergraduate applicants, with more - and more meaningful- information, so that they can make an informed choice about where to pursue an undergraduate degree¹. Thus, TEF rating gives universities the opportunity to provide market signals in the education market.

Among the Russell Group universities – traditionally seen to be the best in the UK – eight out of 21 institutions were awarded the Gold rating, including Oxford, Cambridge, Birmingham, Leeds, Nottingham, and Exeter, while 10 institutions got Silver, including Manchester. The London School of Economics was awarded the lowest bronze rating, as did Liverpool, Southampton, Goldsmiths and the School of Oriental and African Studies (SOAS). All of these universities were outperformed in the TEF by newer universities such as Liverpool Hope and

¹ It is noted that TEF results are not broken down by subject areas. A university receives one TEF rating for the whole institution.

Lincoln, along with small specialist institutions, such as The Royal Veterinary College and Royal Northern College of Music, which received Gold rating.

To the best of our knowledge, there has been no study to this day on the degree of accomplishment of the TEF as an instrument that allows prospective students to make an informed choice about the university they will attend. This study aims to fill this gap. For this purpose, we set out to examine two hypotheses. First, we investigate whether there is countersignaling, that is whether top-ranked higher education institutions are least likely to disclose their TEF rating. Second, we examine whether Guardian rankings are consistent and informative about university TEF results.

In line with prior literature, we find that the higher the ranking of the university the less the likelihood to disclose the TEF result on the university's website. Thus, we assert that universities that have a higher rank use nondisclosure as a countersignal, while universities that have a middle rank use disclosure to stand out from the other middle rank universities. Moreover, we find that the probability of UK universities to get a TEF Gold is significantly lower than that of the top-10 and that probability falls substantially in lower ranking buckets. In addition, even though Guardian rankings appear to be generally consistent with and supportive of TEF ratings, only 35% of the top ranked universities by Guardian are rated TEF Gold, indicating inconsistency between Guardian rankings and public national TEF classifications. Although this finding may be related to the fact that rankings place higher weight on research-related criteria than teaching, further investigation would be necessary, so as to improve the "product" information available to prospective students via university rankings.

The remaining of the paper is structured as follows. Section 2 presents a review of related literature. In the third section we lay out the hypotheses. Our sample and methodology are presented in Section 4. Presentation and discussion of our empirical findings is given in Section 5. Concluding remarks and suggestions for further research are outlined in Section 6.

2. Literature Review

According to mainstream economic theory, mandatory disclosure of quality information is not necessary because market mechanisms will lead all suppliers, except the poorest quality, to voluntarily disclose, assuming consumer rationality and negligible disclosure costs (see, for example, Grossman, 1981; Milgrom, 1981; Jovanovic, 1982). As Milgrom (1981) puts it, the supplier reports the most favorable data about the product and the buyer takes a skeptical view of any information the supplier does not reveal. Thus, if consumers are rational, suppliers are better off by disclosing information.

It has also been shown that mandatory disclosure rules are not necessarily welfare improving, suggesting that the role of the government is limited to facilitating voluntary disclosure (Easterbrook and Fishcel, 1984; Fishman and Hagerty, 2003). There are, however, empirical studies on disclosure that find evidence that market unravelling is incomplete (Jin, 2005; Bederson et al., 201X).

A large number of studies show that where students apply greatly affects their future income, pointing to a high return to institution quality (Zhang 2005, Black and Smith 2006). Even studies that do not find evidence in favor of return to students selecting to pursue

undergraduate studies in a good quality institution, there are studies that attest to the fact that selectivity yields significant returns in the case of disadvantaged students (Dale and Krueger, 2002).

In a variety of economic sectors, from healthcare (see for example, Jin, 2005; Jung, 2010) to shipping (see, for example, Andrikopoulos et al., 2013) and from manufacturing (see for example, Matherly and Burton, 2005) to banking (see, for example, Estrella, 2004), researchers have depicted website disclosure as a main driver of performance. Similarly, internet disclosure has attracted the interest of researchers who focus on the behavior of higher education institutions. Website disclosure has been investigated primarily in the form of signaling for strategic purposes (Feltovich et al., 2002; Luca and Smith, 2015). A strand of research has concentrated on the quality of information that is generally revealed in the websites (Michelon et al. 2015).

Feltovich et al. (2002) define countersignaling as taking place when a high-quality firm signals high quality through non-disclosure. In a job interview example, with job candidates of high, medium, or low ability, the candidates may signal their ability through an endogenous signal (sharing their GPAs) and an exogenous signal (a recommendation letter). On the one hand, high and medium types have good GPAs while the low type has bad GPAs. Thus GPAs separate high and medium from low, but not high from medium. On the other hand, a recommendation letter is always good for high ability candidates, always bad for low-ability candidates, but can be good or bad for the medium-ability candidates. Hence, the recommendation letter is still not enough to distinguish the high type from the medium ability candidates. Thus, the authors argue that countersignaling can help to separate all three types if the high type do not disclose their high GPAs, because this countersignaling action plus the favorable recommendation letter may help them stand out from the medium candidates that disclose high GPAs and have a good letter. In contrast, medium-ability high-GPA candidates cannot afford to hide their high GPAs because they do not know the exact content of the recommendation letter when they make the disclosure decision and high GPAs will clearly distinguish them from the low-ability candidates even if the letter turns out bad.

The work of Luca and Smith (2015) focuses on the quality of information posted on higher education institutions websites. The authors look at the general case of the former on the impact of types of information disclosed on accountability and in the case of the latter in applicant's decisions to enroll in a higher education institution. Analyzing the disclosure decisions of 240 MBA programs about which rankings to display on their websites, they confirm that top schools are least likely to disclose their rankings, whereas mid-ranked schools are most likely to disclose. The authors also find that schools treat rankings by different reviewers as substitutes and generally tend to coarsen information to make it seem more favorable.

In an earlier study, Luca and Smith (2013) investigate the impact of college rankings on students' application decisions in the U.S., depicting a causal impact of rankings on application decisions, with a one-rank improvement leading to a one per cent increase in the number of applications. Moreover, the authors assert the role of information as a salient determinant of demand in the U.S. education market. In the same spirit, Opoku et al. (2006) identify a variety of brand personality features that relate to MBA offering higher education institutions in South Africa, arguing that brand personality portrayed in the university website will positively influence the various stakeholders of each Business School.

Finally, Dranove and Jin (2010), who review empirical evidence on quality disclosure in the sectors of healthcare, education, and finance argue that although there are many examples

in which quality disclosure has benefitted consumers by allowing them to find suppliers who best meet their needs, there is less evidence that that suppliers respond by boosting quality. The authors present evidence indicating that suppliers responses in the three sectors examined often focus on gaming behavior that harms consumers, on top of measurement errors, consumer misunderstandings and inspector bias that are also to the consumer's detriment. In the long-run, however, Dranove and Jin (2010) argue that quality disclosure drives out low quality firms, invites high quality competitors and/or encourages existing firms to improve quality, thus benefitting consumers.

3. Hypotheses Tested

In a variety of economic settings, top-quality suppliers tend to eschew disclosing signals that separate them from low-quality suppliers. For example, Fremling and Posner (1999) argue that high status suppliers may have lower marginal returns from signaling than those who are ranked lower. Moreover, Feltovich et al. (2002) show that "high types" not only save the costs by relying on the additional information that separates them from "low types", but also countersignaling constitutes a signal of confidence that separates "high types" from "medium types". Drawing on these arguments, we formulate the following hypothesis:

H1

Is there countersignaling in UK higher education, namely are top-rated UK universities least likely to disclose their TEF rating?

Before the establishment of the Teaching Excellence Framework, university rankings were mostly based on research-related criteria, overemphasizing research performance and neglecting teaching and activities enhancing student engagement. University rankings have been severely criticized for that, as well as for being based on unreliable data (Bekhradnia, 2016). Moreover, there is a perception that prospective students rely more on word of mouth than official rankings for their choice of university (Milian and Rizk, 2017). Thus, our second hypothesis is:

H2

Are the Guardian rankings consistent with and informative about TEF ratings?

4. Sample description and methodology

Our sample consists of 121 universities, all of them ranked by Guardian for the year 2017 where TEF (Teaching Excellence Framework) rating was first publicly undertaken by an independent State agency. This number accounts for roughly 95% of the entire UK university population. For the remaining 110 universities taking part in the national survey, we had no rankings by the Guardian. All data were retrieved from the Guardian rankings and the published TEF results.

Our relationships of interest are specified below:

GOLD=f(C, RANK11,RANK22,RANK33,RANK44)

SILVER=z(C, RANK11,RANK22,RANK33,RANK44)

BRONZE=y(C, RANK11,RANK22,RANK33,RANK44,UNRANKED)

All our variables are binary assuming the value of 1 if their definition holds and 0 otherwise. We use the linear probability model (Probit) for estimation purposes. The omitted variable *c*, includes the top-10 universities, over all subjects, as ranked by the Guardian.

Table 1 gives the definitions of dependent and independent variables in our model.

Table 1

Definition of dependent and independent variables

Dependent variables

TEFGOLD (GOLD)	Universities ranked as Gold in the TEF survey
TEFSILVER (SILVER)	Universities ranked as Silver in the TEF survey
TEFBRONZE (BRONZE)	Universities ranked as Silver in the TEF survey

Explanatory variables

RANK11	Universities ranked 11-29 by Guardian
RANK22	Universities ranked 21-50 by Guardian
RANK33	Universities ranked 51-80 by Guardian
RANK44	Universities ranked 81-121 by Guardian
UNRANKED	Universities unranked by Guardian

5. Empirical Findings and Discussion

With regards to our first hypothesis, H1, Figure 1 below is consistent with countersignaling. More specifically, out of the 121 universities that got TEF classification in the three categories, namely Gold, Silver and Bronze, only 39 disclosed voluntarily their ranking on their websites. Out of these 39 universities only 12 or 31% disclosed TEFGOLD and these universities were other than those classified by Guardian in the top 10. We further observe that 20 out of 39 or 51% disclosed on the web their TEFSILVER classification and only 7 out of 39 or 18% disclosed their TEFBRONZE classification. It appears, therefore, that the top-rated universities in terms of teaching excellence do not disclose their ranking even if this is Gold, while middle-rated universities are most likely to disclose their TEF rating.

Our findings support our hypothesis H2. All variables in the models presented in Tables 2, 3, and 4 have the expected signs. Table 2 indicates in the first place that the probability that a university from rank11 (11-29 in Guardian rankings) will get a TEFGOLD is 69% lower compared to a university ranked by Guardian in the top 10. Second, the probability that a university from rank22 (21-50 in Guardian rankings) will get a TEFGOLD is 69% lower compared to a university ranked by the Guardian in the top 10. Third, the probability that a university from rank33 (51-80 in Guardian rankings) will get a TEFGOLD is 97% lower compared to a university ranked by the Guardian in the top 10. Finally, the probability that a

university from rank44 (81-121 in Guardian rankings) will get a TEF GOLD is 180% lower compared to a university ranked by the Guardian in the top 10.

FIGURE 1

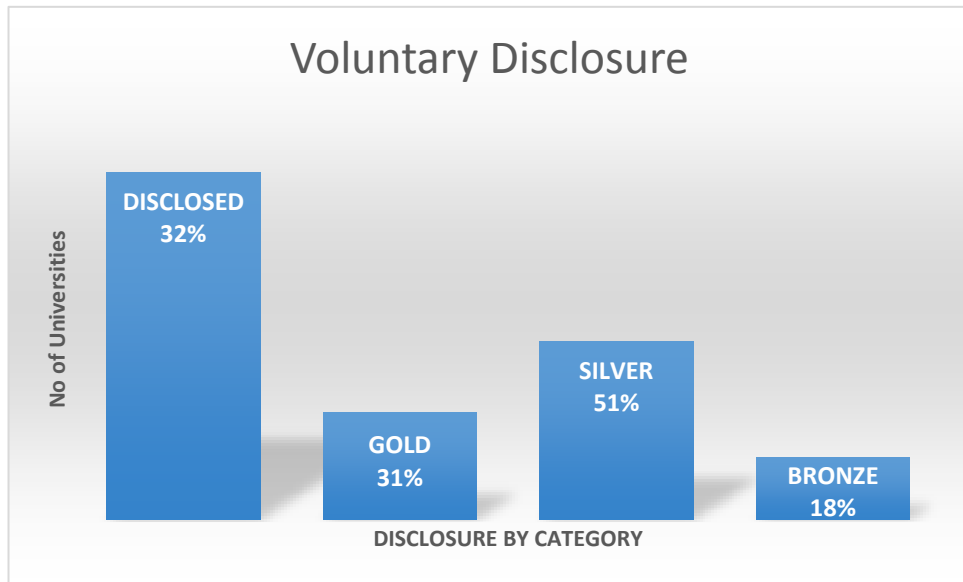


Table 2

<u>Dependent variable GOLD</u>	
	Coefficient
Constant	0.349 (0.051)***
RANK11	-0.699 (0.411)*
RANK22	-0.698 (0.394)*
RANK33	-0.972 (0.428)***
RANK44	-1.802 (0.457)***
UNRANKED	-

***Significant at the 1% level, *Significant at the 10% level

The estimated model improves on the Dep=1 predictions by 20 percentage points, but does more poorly on the Dep=0 predictions (-4.40 percentage points). Overall, the estimated equation is 6.67 percentage points better at predicting responses than the constant probability model.

Success cutoff: C = 0.5

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
P(Dep=1)≤C	87	24	111	91	30	121
P(Dep=1)>C	4	6	10	0	0	0
Total	91	30	121	91	30	121
Correct	87	6	93	91	0	91
% Correct	95.60	20.00	76.86	100.00	0.00	75.21
% Incorrect	4.40	80.00	23.14	0.00	100.00	24.79
Total Gain*	-4.40	20.00	1.65			
Percent Gain**	NA	20.00	6.67			

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
E(# of Dep=0)	71.72	19.32	91.04	68.44	22.56	91.00
E(# of Dep=1)	19.28	10.68	29.96	22.56	7.44	30.00
Total	91.00	30.00	121.00	91.00	30.00	121.00
Correct	71.72	10.68	82.40	68.44	7.44	75.88
% Correct	78.82	35.60	68.10	75.21	24.79	62.71
% Incorrect	21.18	64.40	31.90	24.79	75.21	37.29
Total Gain*	3.61	10.81	5.40			
Percent Gain**	14.56	14.37	14.47			

Table 3 illustrates that it is highly unlikely for top-ranked universities to get a TEFSILVER (probability -0.84). The highest probability compared to top-ranked to be given TEFSILVER is assumed by RANK33 universities in the Guardian ranking. Furthermore, from Table 4 we observe that only RANK44 universities have a significant probability, albeit quite low at 14%, to be given TEFBRONZE.

Table 3

	<u>Dependent variable SILVER</u>
	Coefficient
Constant	- 0.836 (0.369)***
RANK11	0.577 (0.388)*
RANK22	0.403 (0.392)
RANK33	0.919 (0.434)***
RANK44	0.682 (0.418)**
UNRANKED	-

***Significant at the 1% level, *Significant at the 10% level, **Significant at the 5% level

The estimated model of Table 3 improves on the Dep=1 predictions by 40.38 percentage points, but does more poorly on the Dep=0 predictions (-26.09 percentage points). Overall, the estimated equation is 5.77 percentage points better at predicting responses than the constant probability model.

Success cutoff: C = 0.5

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
P(Dep=1)≤C	51	31	82	69	52	121
P(Dep=1)>C	18	21	39	0	0	0
Total	69	52	121	69	52	121
Correct	51	21	72	69	0	69

% Correct	73.91	40.38	59.50	100.00	0.00	57.02
% Incorrect	26.09	59.62	40.50	0.00	100.00	42.98
Total Gain*	-26.09	40.38	2.48			
Percent Gain**	NA	40.38	5.77			
	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
E(# of Dep=0)	40.55	28.45	69.00	39.35	29.65	69.00
E(# of Dep=1)	28.45	23.55	52.00	29.65	22.35	52.00
Total	69.00	52.00	121.00	69.00	52.00	121.00
Correct	40.55	23.55	64.10	39.35	22.35	61.69
% Correct	58.77	45.28	52.97	57.02	42.98	50.99
% Incorrect	41.23	54.72	47.03	42.98	57.02	49.01
Total Gain*	1.74	2.31	1.98			
Percent Gain**	4.05	4.05	4.05			

Table 4

Dependent variable BRONZE

	Coefficient
Constant	0.061 (0.076)
RANK11	0.015 (0.084)
RANK22	0.006 (0.008)
RANK33	0.018 (0.092)
RANK44	0.144 (0.088)*
UNRANKED	-0.128 (0.064)**

*Significant at the 10% level, **Significant at the 5% level

Even though Guardian rankings appear to be generally consistent and supportive of the TEF classifications, it must be pointed out that the relationship in Table 2, shows through the coefficient of the constant term that only 35% of the top ranked universities by Guardian, are classified as TEF GOLD. Although at first glance this may seem to be attributable to a traditional over-emphasis on university research performance at the expense of teaching, it further investigation on the consistency between Guardian rankings and national TEF classifications might be needed before concluding that university rankings are useful in helping student consumers to make an informed choice about where to study.

Conclusion

The Teaching Excellence Framework recently implemented in the UK higher education sector has reputational consequences for UK universities as publication of the TEF results and incorporation of these results in university rankings may impact student recruitment both at the national and the international levels. The purpose of this paper has been to investigate whether there is countersignaling in disclosure of UK higher education institutions, that is whether top-ranked UK universities are least likely to disclose their TEF rating. Moreover, we examined whether Guardian rankings are consistent and informative about the university TEF ratings announced in June 2017.

Thus, we categorize UK universities in five buckets on the basis of their ranking and investigate whether top ranked schools are least likely to disclose their rankings on their websites. Furthermore, we test whether Guardian university rankings are consistent and informative about the TEF medals awarded. Our finding that the higher the ranking of the university the less the likelihood to disclose the TEF result on the university's website is consistent with prior literature.

We assert that universities that have a higher rank use nondisclosure as a countersignal, while universities that have a middle rank use disclosure to stand out from the other middle rank universities. Moreover, we find that the probability of UK universities to get a TEF Gold is significantly lower than that of the top-10 and that probability falls substantially in lower ranking buckets.

Finally, even though Guardian rankings appear to be generally consistent with and supportive of TEF ratings, only 35% of the top-ranked universities by Guardian are rated TEF Gold, indicating discrepancy between Guardian rankings and public national TEF classifications, thereby rendering further investigation of the Guardian ranking - TEF rating relationship necessary, in order to enhance the usefulness of rankings for student consumers.

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