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<https://doi.org/10.1057/s41599-024-02868-y>

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# Evidence of grade inflation in bachelor of business administration degrees in Turkey for the period from 2002 to 2022

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The study analysed the change in the proportion of business management undergraduate programme graduates in Turkey who received honours (>2.99) over the past two decades. It also investigated the factors that contribute to grade inflation and the distribution of course grades. The research employed various statistical methods, including the random effects estimator, ANOVA, *t*-test, and ANCOVA, to examine the GPAs and 515,739 student grades from 12,579 courses taken by 46,416 graduates of business management undergraduate programmes at 40 universities between 2002 and 2022. According to our findings, the percentage of undergraduate business management students graduating with honours (>2.99) has increased from 11% in 2002 to 56% in 2022. The most significant increases occurred in 2021 and 2022, which coincided with the COVID-19 pandemic. Our research also revealed grade inflation, with a significant increase of 28% after controlling for variables that may affect graduation grades in Turkish undergraduate business management programmes. The factors that affect course grades include the student's gender, grade level, language of instruction, instructor title, and course content. According to our findings, it can be concluded that the rapid expansion of undergraduate business management programmes in Turkey has resulted in a decline in qualifications. This, in turn, has led to a rise in grades.

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## Introduction

A simple search<sup>1</sup> of the WoS (Web of Science) database using the keyword “grade inflation” using the keyword ‘grade inflation’ yielded 395 publications, with the earliest dating back to 1975. Over the past decade, 207 studies have contributed to the body of knowledge on grade inflation. These studies consist of eight book chapters and 189 articles. It has been noted that studies which have conducted original research on this subject and contributed to the theory have gained significance in recent years. Approximately half of the studies (89 in total) fall under the category of ‘educational research.’ The remaining studies were divided into the following categories: The study covered 36 cases of ‘business economics’, 14 cases of ‘nursing’, 10 cases of ‘psychology’, and 10 cases of ‘social sciences and other topics’. The United States was the country where 56% of the studies were conducted. The quality of the output is directly proportional to the assessment process in all undergraduate programmes. However, the literature on grade inflation has reached a consensus on the lack of standardisation in education, particularly in medicine, and the absence of an objective outcome (Karadag, 2021a). Non-standard practices negate the significant advantages that grades provide for students, such as having a disciplined study routine and a higher chance of success in future employment, as well as for external stakeholders, including the identification of competent graduates (Kostal, Kuncel, & Sackett, 2016). Therefore, it is incorrect to equate a student’s grade point average with their intelligence or potential (Chen, 2018). As the concept of grade inflation affects all academic disciplines equally and there is limited research on this aspect, this study aims to investigate (i) the change in the percentage of Turkish undergraduate business administration students who graduated with honours (>2.99), as well as the causative factors of (ii) grade inflation and (iii) course grade. To achieve this aim, the following research questions were addressed:

RQ1: Does the proportion of graduates from business management undergraduate programmes in Turkey who receive “honours (>2.99)” vary from year to year?

RQ2: Does Turkey’s undergraduate business administration education experience grade inflation?

RQ3: Does the gender of the student, the grade level, the language of the course (Turkish & English), the title of the instructor, and the content or field of the course have any effect on the course grades?

## Background

**Business administration education in Turkey.** During the post-Tanzimat period, the Ottoman Empire integrated with the western world and was influenced by western capitalism. As a result, there was a need for business administration science, and many students were sent to France to receive this education. The influence of the French school through “Les Ecoles de Haute Etude Commercial” could be seen from this time on. In 1883, undergraduate education began with the establishment of the Hamidiye Commercial School, which is now known as the Marmara University Faculty of Business Administration (Guvemli, 2018). Along with this school, which was established as a copy of the Paris Commercial School, another school that provided business education during this period was the Mülkiye Mektebi, which was also under the influence of the French school (Ercek & Usdiken, 2011).

The German School, which initiated the scientificization of business in Turkey, emerged after the aforementioned period under the influence of the ‘Grandes Ecoles’ structure (Ozkul, 2012). The German School became particularly effective during World War II, thanks to professors who fled from Hitler’s

Germany. Consequently, Istanbul University established its Faculty of Economics in 1936. The establishment of the first Business Administration Chair in Turkey and the publication of the first book on systematic business practices also occurred around this time (Aytemur, 2010). During this period, the discipline of business economics, known for its German origin, saw significant contributions from both German professors working in Turkish universities and Turkish academics who were sent to Germany for education.

Relations with the United States developed as a result of liberal economic and political movements, giving rise to a third school. This school has been a major draw for students at the business academy since the 1950s. Robert College, which became Bogazici University in 1971, and Middle East Technical University (METU) are renowned for their exceptional academic programmes, including English instruction, new academic titles, and undergraduate and graduate degrees (Sargut, 2009). During the North American School period, the Harvard Business School provided effective leadership, with the Ford Foundation taking the lead. In 1954, the Institute of Business Economics in Istanbul and the Higher School of Economics and Commerce in Ankara were founded. Later, in 1956, METU became associated with this institution. This period also saw the separation of the domains of economics and management, which was a significant development (Negiz, 2020).

The structure of ‘Business Administration’ originated from the Hamidiye Commercial School, which is 140 years old. It grew under the influence of the three aforementioned schools and gained academic and professional recognition in Turkey in the late 1960s. Today, it has developed significantly and is capable of providing business education under various names in 196 distinct units. Of the 196 universities, 57 are private and 139 are public. The business schools at these universities employ a total of 863 professors, 565 associate professors, 879 doctoral candidates, 99 lecturers, and 786 research assistants<sup>2</sup>.

To qualify for business education through a central examination conducted by the Student Selection and Placement Centre (OSYM), students must answer questions on subjects such as Turkish, mathematics, geometry, biology, physics, chemistry, history, and geography. As of 2022, a total of 1,269,099 students are enrolled in business administration programmes, including 107,708 newly registered students<sup>3</sup>.

The Turkish Higher Education Qualifications Framework covers the primary areas of business administration and management sciences in two categories: academic and professional. Undergraduate education should focus on developing competencies such as theoretical and factual knowledge, cognitive abilities, the capacity to work independently and responsibly, learning aptitude, interpersonal and communication aptitude, and field-specific aptitudes<sup>4</sup>.

**Grade inflation.** Grade inflation is the increase in average grades that does not accurately reflect the quality of student outcomes or achievement over time (Kostal et al., 2016). It does not fully correspond to the increase in student achievement (Baglione & Smith, 2022). The concept of grade inflation raises questions about the rationale behind rating increases (Karadag, 2021a).

According to Oleinik (2009), grade inflation refers to the decline in the external validity of grades awarded to students. It is important to note that this concept is different from the grade disparity resulting from variations in faculty grading policies and grade compression, which is the clustering of grades up to a certain point. However, Finefter-Rosenbluh and Levinson (2015) consider these concepts to be a potential cause of grade inflation.

When there is grade compression, and even average or mediocre performers receive relatively high grades, it becomes difficult to distinguish between levels of achievement. This issue is not only relevant among faculty members, but also when comparing private and public colleges in terms of grade disparity. Oleinik's definition emphasises that, unlike earlier periods, students are now receiving higher grades on average. This study also addresses the issue of longitudinal grade inflation.

Grades indicate a student's strengths and weaknesses. Interpreting low grades as a lack of ability in a particular subject can influence a student's course selection (Butcher et al., 2014). Matos-Díaz (2012) analysed the Student Evaluation of Teaching (SET) scores of full-time professors at the University of Puerto Rico-Bayamon from 1998–2004. The study found that students' grade expectations were influenced by their own academic performance and the professors' past grade distributions. The study also highlighted the importance of grade expectations in students' course selection. The ease of achieving good grades in humanities compared to subjects like mathematics, science, and economics, where it is challenging to obtain good grades, exemplifies the economic interpretation emphasised below. Achen and Courant (2009) view this as a result of liberal education and compare students to individuals who shop for good grades. Ahn et al. (2019) investigated how students make course selection decisions within the framework of grade policy. They found that female students place more value on grades than male students. The effect of grade policy on course selection is particularly significant for female students.

There is disagreement regarding the causes and effects of the concept of grade inflation (Karadag, 2021a). Grade inflation undermines meritocracy by giving students more than they deserve and prevents higher education institutions and employers from ranking their applicants realistically (Finefer-Rosenbluh & Levinson, 2015). Nevertheless, Kostal et al. (2016) bring up six topics as the primary causes of the increase in grades: (1) the higher proportion of female and minority students in the student population; (2) changes in department and course selection patterns towards less demanding alternatives; (3) increased student effort; (4) the development of new educational methods; (5) the ease with which students can drop out of courses where the probability of getting bad grades is high; and (6) the transition from a faculty-centred to a student-centred structure, accepting students as customers and increasing tolerance to ensure student satisfaction. Similarly, Rosovsky and Hartley (2002) listed several reasons for grade inflation, including the 1960s and the Vietnam War, student diversity, new grading policies, student evaluations, the concept of the student as a customer, less demanding content, and changing faculty structure. According to the authors, during the Vietnam War period, some faculty members gave high grades to male students to prevent them from joining the army due to low grades. However, Rosovsky and Hartley (2002) argue that the effect of minority students on grade inflation is often misunderstood. They provide examples from literature to emphasize that favouritism towards minority groups in faculties is not a significant factor. Another reason for grade inflation is the increase in students' control over their curriculum, which allows them to avoid difficult courses. Rosovsky and Hartley approach the topic of student consumerism from the perspective that students are dissatisfied with the education they receive, and the attractiveness of the programme decreases. Faculty practices are shaped by student expectations. Finally, faculty structure changes that lead to grade inflation include a decrease in institutional loyalty of faculty members caught between student pressure and administrative dissatisfaction, increasing class sizes, and an increase in out-of-class work that takes up faculty members' time to evaluate students. Moreover, consumerism, job retention,

conflict avoidance, time pressures, and vague grading standards were presented by Watts, Winters (2016) as the causes of grade inflation.

The functional discourse on grade inflation discusses the efforts made by non-permanent faculty members to maintain their positions, as well as the increasing impact of students' evaluations of instructors on their academic careers and financial status. Rational-choice theories highlight the competitiveness that institutions face when attempting to attract students (Oleinik, 2009). In a system where students evaluate faculty members who lack job security, faculty members may be more lenient in their grading policies. Therefore, evaluations of teaching by students may not be a reliable indicator of teaching quality (Keng, 2018). This pressure on faculty members to achieve high student evaluation scores highlights the need to eliminate grade inflation at the institutional level (Butcher et al., 2014).

Oleinik (2009) emphasises the importance of highlighting the variability in the mechanics of the concept, rather than arriving at a universal definition of grade inflation. He asserts that viewing universities as cathedrals, limited companies, factories, alma maters, or music halls creates the background that leads to grade inflation. Accordingly, universities as cathedrals have evolved into hotbeds of dominance and power. The rector is equivalent to a bishop, the faculty member to a priest, and the students to parishioners. Grade inflation is a result of the interaction between universities and students. When universities are viewed as businesses or limited liability companies, attracting students becomes a priority for employers. As a result, grade inflation becomes more acceptable, as it is seen as crucial for students to work in high-paying positions. This consumerist approach to education affects the distribution of grades, turning students into consumers and lecturers into service providers. Grade inflation can be significantly contributed to by the evaluation of faculty members by students based on clear, quantifiable standards for productivity and quality, as seen in the factory example. Alma Mater compares the university to a loving mother and a big family, which may be seen as a subjective evaluation. Instead, it would be more objective to describe the university as an educational institution. Grade inflation is caused by the desire of both faculty members and students to achieve high grades. Music Hall suggests that universities require public attention and encourages lecturers to make their lectures more engaging for students, but it is important to maintain academic standards and not compromise on grading.

How does grade inflation harm students and employers? Longitudinal grade inflation can negatively impact students by deceiving them about their academic aptitude. This can discourage high achievers from working harder and lead to the development of sloppy study and work habits. Employers are also affected by grade compression as a problem. Employers can identify significant differences between job seekers through tight grading (Finefer-Rosenbluh & Levinson, 2015). However, high grades in certain sections do not necessarily indicate a student's overall performance, talents, or motivation (Sabot & Wakeman-Linn, 1991). The allocation of high grades to students results in a significant reduction in study time. Babcock's (2010) findings indicate that in classes where an 'A' is expected, study time is halved compared to classes where a 'C' is expected. Therefore, classroom factors that create low grade expectations motivate students to exert more effort. To illustrate this scenario, Baglione and Smith (2022) provide an example: Imagine two graduates with equal motivation and cognitive ability, but from different institutions. One graduated with a 3.6 GPA from a school with a 3.4 average GPA, while the other graduated with a 3.3 GPA from a university with a 2.8 average GPA. When considering only the students' individual grade point averages, the second student may

appear less qualified than the first, despite performing better than their peers in their school. According to Butcher et al. (2014), students have reported that having a low GPA can be a disadvantage, with some businesses excluding applicants with a GPA below 3.5. Koedel (2011) identified three potential consequences of a dysfunctional grading system: a decrease in human resource capital, inaccurate performance signals for students, and a negative impact on the evaluation standards of faculty members.

Uneven grading can contribute to social inequality and injustice. Students who are already privileged by attending private schools may further strengthen their position of superiority through inflated grades, which is unfair to other students. Finefer-Rosenbluh & Levinson, 2015 argue that this practice is harmful to society.

Recent research has highlighted the significance and pervasiveness of grade inflation, particularly in American universities. However, it is important to note that this topic has not received much attention outside of the United States in the context of higher education (Karadag, 2021a).

## Methodology

**Research design.** To analyze original secondary data for our study on the effect of grade inflation in business administration undergraduate programmes in Turkey, we used secondary research methods. This method involves compiling and summarizing previously collected data to improve research efficacy. As the data is gathered directly from organizations or businesses, the reliability of secondary research data is higher than that of primary research (Karadag, 2021a).

**Data set.** The data in our study pertains to students who have completed undergraduate programmes in business administration at 40 Turkish universities. The criterion used to select these universities is their university entry percentile rankings. In Turkey, students are placed in universities based on rankings derived from the results of a central exam that covers Turkish language, mathematics, science, and social sciences (Karadag, 2021b). In the initial stage, we categorized all undergraduate business administration programmes since 1998 (the year of graduation for students who enrolled in 1998 is 2002) into ten groups based on university rankings by percentiles. We considered the percentiles of the last student admitted to the programme.

During the second stage of the analysis, we gathered the grades of graduates from 40 undergraduate business administration programmes, with four from each entrance level group, from relevant universities between 2002 and 2022. Two types of data were used in this study. Firstly, the General Weighted Grade Point Average data of 46,415 students was analysed to examine the change in the proportion of graduates with 'Honours' (>2.99%) and 'grade inflation'. Secondly, grade data for 515,739 students at the end of the academic year, consisting of 14 weeks for 12,579 courses, was analysed to identify the factors affecting course grades. The grades were converted to a semantic letter system (AA to FF) to standardise passing grades for courses. This means that the passing grade can range from 4.0 (a course in which each student received an AA) to 0 (a course in which each student received an FF) (refer to Table 1).

**Data analysis.** In this study, the 'real' (university) random effects estimator (REE) was used to account for differences induced by students and universities across years (Greene, 2005). The REE was chosen for two main reasons. Firstly, some of the empirical studies on grade inflation have used production functions based on fixed effects models, which do not fully control for university

**Table 1** Grade categorisation system.

100-point grading scale	4-point gradin scale	Letter Grade
88-100	4,00	AA
81-87	3,50	BA
74-80	3,00	BB
67-73	2,50	CB
60-66	2,00	CC
53-59	1,50	DC
46-52	1,00	DD
35-45	0,50	FD
0-34	0,00	FF

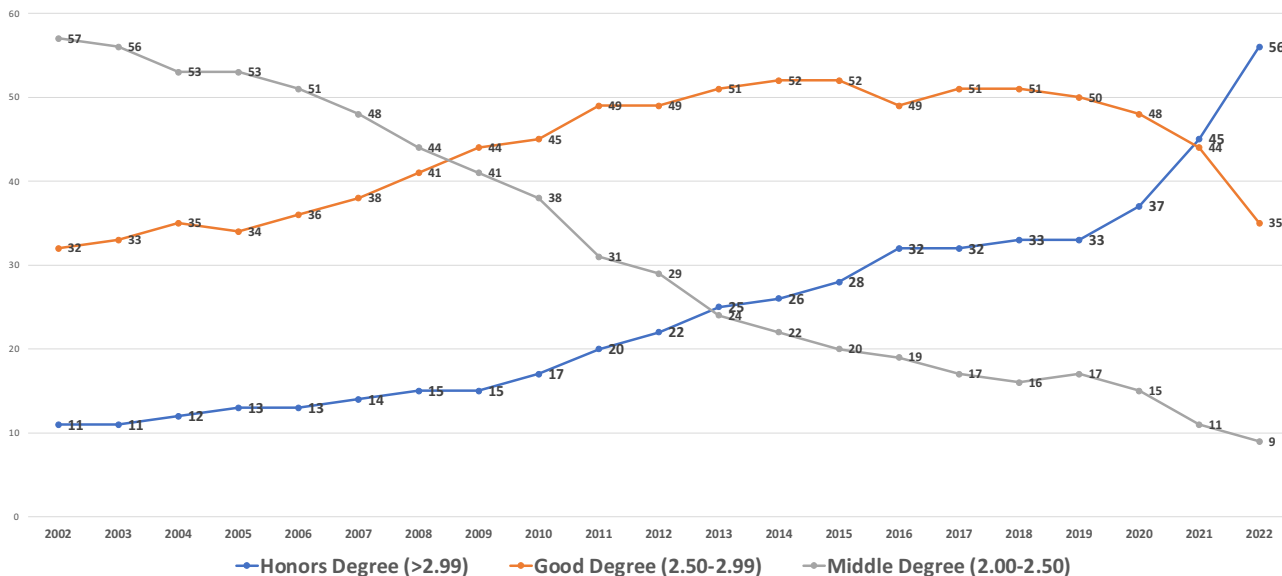
and student differences in the analyses. Therefore, the 'grade inflation' observed in most of the studies mentioned may be a result of universities becoming more technically efficient in teaching and learning, and students becoming more technically efficient in learning (Karadağ, 2021). Older stochastic random effect panel models have been developed to separate the change in various university characteristics over time with REE from the heterogeneity of the university profile (Bachan, 2017). Secondly, we chose the random effects model because of the non-normal distribution of our data, the randomness of our sample, and the heterogeneity of teaching programmes. This is due to the lack of a standard programme both within the same university (according to years of entry) and outside the university. In our analyses, we used graduation grades as the dependent variable and the year variable as the independent variable. In the analysis of changes in the proportion of graduates with honours (>2.99) (RQ1) and grade inflation (RQ2), dummy variables were added for the % of the last student placed in the programme, the structure of the university (state and non-profit foundation), the gender ratio of the programme, and the language of instruction of the programme. To avoid multicollinearity,  $k(\text{category})-1$  dummy variables were generated for each dummy variable. The reference value is represented by the value left out for the dummy variables, while the fit values of the remaining groups represent the difference from this reference.

For our third research question (RQ3), we analysed five potential factors that we hypothesised to have an impact on course grades using ANOVA and *t*-test. These factors were gender, class level, language of the course (Turkish & English), title of the instructor, and content/area of the course.

## Results

**Graduates with "Honours (>2.99)" degree.** The percentage of graduates with honours degrees (>2.99) from business administration programmes in Turkey has increased dramatically from 11% in 2002–56% in 2022. Meanwhile, the percentage of graduates with good degrees (2.50–2.99) rose slightly from 32% to 35%, and the percentage of graduates with average degrees (2.00–2.49) decreased significantly from 57% to 11% over the same period (Fig. 1).

When analysing the change in the percentage of graduates awarded 'honours' using the stochastic frontier coefficient estimates of the REE (refer to Table 2), a significant negative relationship was found between the entrance score of the last student admitted to the business administration undergraduate programme and the percentage of graduates awarded 'honours'. This indicates that the higher the entrance score, the lower the percentage of graduates awarded 'honours'. For instance, a 10% reduction in entrance scores leads to a 3.7% increase in the proportion of graduates awarded 'honours'. This finding suggests that programmes with lower entry scores will produce more 'honours' graduates than those with higher entrance scores.



**Fig. 1 The graduation grade classification of all students.** The x-axis of the graph shows the distribution of the years and the y-axis shows the grade classifications of the students.

Variable name	Random effects
Students' characteristic	
ln (% Female)	0.23 (0.085)*
University characteristics	
ln (percentile of the last student)	-0.37 (0.058)*
Non-profit private universities	0.02 (2.238)
English medium education programmes	-0.08 (0.109)*
σi	0.089
σe	0.077
ρhoi	0.751
Within-R <sup>2</sup>	0.564
Observations	46,415
Number of universities	40

\*p < 0.001

In Turkey, universities are classified as either state or non-profit private universities. State universities provide free education, while private university programmes require tuition fees. The tuition fees for business administration undergraduate programmes at private universities range from \$ 52,625–\$ 278,000 per year. However, private universities are required to allocate at least 15% of the total quota for each programme to full scholarship students (Karadag, 2021a). The statistical analysis of our findings indicates that there is no significant difference in the likelihood of students graduating with an honours degree between non-profit private universities and public universities.

The analysis shows that there is a statistically significant coefficient indicating that women are more likely than men to graduate with an honours degree. This finding demonstrates that being female has a positive and significant effect on performance. According to the point estimate, a 1% increase in the proportion of female students raises the average of those graduating with an honours degree by 0.23%.

The statistical analysis shows that students in Turkish medium of instruction programmes are more likely to graduate with an honours degree than students in English medium of instruction programmes. Specifically, a 1% increase in the proportion of students enrolled in Turkish-medium programmes results in a

0.08% increase in the proportion of students graduating with an honours degree.

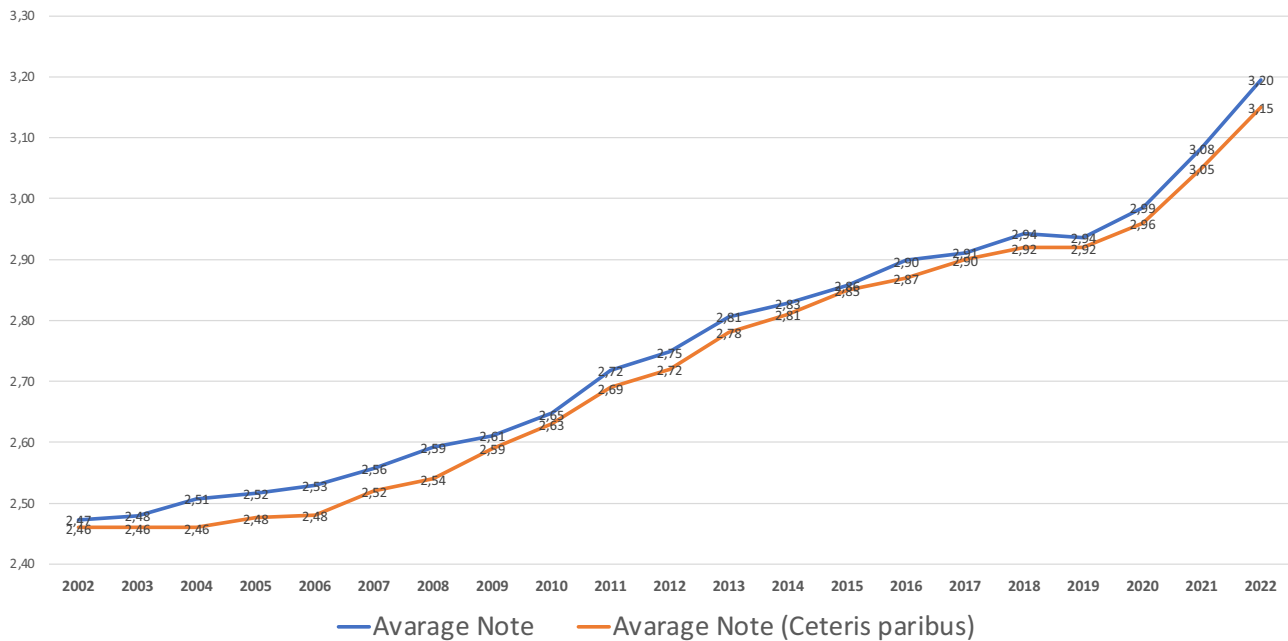
**Grade inflation.** In 2002, graduates of business administration undergraduate programmes in Turkey had an average GPA of 2.47 (SD = 0.90), which has since increased to 3.20 (SD = 0.97) in 2022. The increase of 29.22% is statistically significant ( $t = 12.33$ ,  $p < 0.001$ ), indicating a substantial grade inflation in these programmes. When examining grade point averages by year, it is evident that each subsequent year shows a significant increase over the previous year. In 2022, the highest annual grade inflation rate was 3.63%, followed by 3.28% in 2021 (see Fig. 2).

The analysis of the proportion of graduates with 'Honours (>2.99)' degrees revealed that three factors were associated with graduating with honours: the percentage of the last student placed in the programme, the gender ratio of the programme, and the language of instruction. ANCOVA was used to calculate the means adjusted for these three factors for each year (refer to Fig. 2). In terms of adjusted means, it was found that there was a marginal increase of 28.05% in graduation grade point averages over the 20-year period. This provides evidence of fairly high grade inflation in business administration undergraduate programmes in Turkey.

**Factors affecting course grade**

*Gender differences.* Gender is identified in the literature as a significant factor that may influence course success. We used the *t*-test to examine the differentiation of course grades based on the gender of the student. Our findings revealed that female students achieved higher course grades ( $M = 2.86$ ,  $SD = 0.82$ ) than their male peers ( $M = 2.64$ ,  $SD = 0.86$ ) ( $t = 12.01$ ,  $p > -0.001$ ). Therefore, the student's gender had an impact on the course grade.

*Class size differences.* The enrolment numbers for first and second-year undergraduate programmes are higher due to various factors, such as course repetitions and students who are unable to attend upper-level classes. Our ANOVA analysis revealed a significant difference in average course grades across different grade levels ( $F = 106.08$ ,  $p.001$ ). The final year (4th grade) courses had the highest average grade ( $M = 3.29$ ,



**Fig. 2 The graduation grades of all students.** The x-axis of the graph shows the distribution of the years and the y-axis shows the grade point averages of the students.

SD = 0.61), followed by 3rd year ( $M = 2.79$ , SD = 0.72) and 2nd year ( $M = 2.54$ , SD = 0.87). The course grade is affected by the grade level, with the first year ( $M = 2.36$ , SD = 0.94) having the lowest average grades.

**Course language differences.** Undergraduate programmes in Business Administration in Turkey are structured into three categories: (i) Turkish, (ii) foreign language (English, German, French), and (iii) 30% foreign language. We considered the language of the programme to be a potential factor influencing grades. Our *t*-test analysis revealed a significant difference between the grades given in Turkish and English courses ( $t = 19.41$ ,  $p.001$ ). The grades for the Turkish course ( $M = 2.96$ , SD = 0.94) were significantly higher than those for the English course ( $M = 2.54$ , SD = 0.83). Therefore, the language of instruction has an impact on the final grade.

**Content (field) differences.** It is widely acknowledged that the competencies expected of students and the courses they take vary depending on the field of study. Another potential factor that may influence grades is the field of the course. To investigate this, we conducted an ANOVA to compare course grades across different fields, including Management and Organization, Production Management and Marketing, and Accounting/Finance/Quantitative Methods. The study found a significant difference in course grades based on the field of study ( $F = 87.10$ ,  $p.001$ ). The lowest grade was observed in Accounting/Finance/Quantitative Methods ( $M = 2.48$ , SD = 0.86), while Production Management and Marketing ( $M = 2.88$ , SD = 0.83) and Management and Organization received the highest grades ( $M = 2.87$ , SD = 0.78). Therefore, the field of study had an impact on the course grade.

**Differences regarding the academic rank of the instructor.** Undergraduate business administration courses in Turkey are taught by instructors with doctoral (Ph.D.) degrees or as lecturers (MBA, MA, and MSc). The instructors are organized hierarchically as lecturers, assistant professors, associate professors, and professors. The ANOVA results indicate that courses taught by professors ( $M = 2.86$ , SD = 0.75) and associate professors

( $M = 2.84$ , SD = 0.72) received significantly higher grades than those taught by assistant professors ( $M = 2.63$ , SD = 0.81) and lecturers ( $M = 2.65$ , SD = 0.76) ( $F = 218.74$ ;  $p.001$ ). Therefore, the instructor's academic degree had an impact on the course grade.

## Discussion and conclusion

In line with the aim of analysing the concept of grade inflation and its causes in higher education, the results indicate that grade inflation is the main cause of grade increase. Although some educators view grade inflation as a positive change that maximises students' potential, rather than a threat (Chen, 2018), and some studies attribute grade inflation to factors such as improved student quality and learning techniques over time (Lin, 2019), these arguments are not applicable to this study. Our study's statistical control variables support our conclusion that grade inflation is the primary cause of grade increases. Studies in the literature have raised the question of whether there are more qualified students (Kutner, Greenberg, & Baer, 2006; Barriga, Cooper, Gawelek, Butela, & Johnson, 2008) or whether grades are rising because students are working more (Saenz & Barrera, 2007; Babcock & Marks, 2011). According to these studies, grades tend to increase, but test scores related to students' intelligence decline, and the amount of time students devote to academics decreases. From this perspective, it can be stated that this study has made significant and original contributions to business education in Turkey within its scope.

The data shows that the percentage of students graduating with honours (>2.99) and the marginal increase after controlling for other factors that may affect the graduation grade are consistent with the literature on grade inflation. Our study found a grade inflation rate of 28.05% over a 20 year period, which is similar to Karadag's (2021a) rate of 31%, the highest reported in the literature.

The literature supports that the rates of graduating with honours in private and public universities are similar. Recently, the concepts of 'student consumerism' and 'consumerism-driven model of higher education' have led to a higher level of tolerance in grades (Chen, 2018). Grade inflation exists as a reality in both

public and private universities due to factors including university ranking systems, the tendency to graduate students as soon as possible due to budgetary constraints, and the desire to please students and their families.

The study results show a significant difference in grades between female and male students, with females performing better. This conclusion is consistent with previous research on the effects of gender on course grades, although some studies have found higher grades among male students. For instance, in their study comparing the grades of resident doctors in intensive care rotation over a 10 year period, Spring, Abrahams, Ginsburg, Piquette, Guasch, Kiss & Mehta (2021) found that male anaesthesia residents received higher grades than their female counterparts. Additionally, men were more likely to receive the highest grade of 5. Yeritsyan, Mjelde & Litzenberg's (2022) study highlighted the increase in the number of female students as a significant reason for the improvement in grades. The literature suggests that female students tend to achieve higher grades, but this difference is often attributed to personal relationships and perceived discrimination faced by male students. The study conducted by Hinnerich, Höglin, & Johannesson (2011) did not find evidence of a 'discrimination' effect. However, it is relevant to consider the concept of personal relationships in the context of classroom empowerment. Achacoso (2002) developed a scale which includes statements such as 'the lecturer in charge of the course determines the in-class rules or course requirements according to the student'. This may lead to the belief that female or male students' expectations of authorisation could be a contributing factor to the observed differences. Vanderroot et al. (2018) investigated the impact of gender on academic performance, specifically exploring variables such as risk aversion and anxiety. The study highlights the need for a comprehensive framework to fully understand the underlying causes of gender-based differences in academic achievement.

The study results demonstrate that grade inflation is significantly influenced by differences in grade class levels. The 4th year has the highest grade point average, while the first year has the lowest. The academic rank of the lecturers is also considered a contributing factor to grade inflation. It has been found that professors and associate professors in higher academic ranks tend to give higher grades than their colleagues in lower ranks. One possible explanation for this phenomenon is related to class size. In classes with a large number of students, there may be a desire to reduce the number of students quickly, which can lead to grade inflation (Barriga et al., 2008). Chen (2018) suggests that differences in grading tendencies among faculty members may be attributed to differences in their pedagogical backgrounds, efforts to establish rapport with students, and high grade tolerance to avoid bureaucratic evaluation processes. It is important to note that subjective evaluations should be clearly marked as such and that bias should be avoided. The language used should be clear, concise, and objective, with a formal register and precise word choice. In Turkey, education and research processes are often intertwined. This can lead to faculty members prioritising research and article publication over teaching, resulting in a desire to minimise time and energy spent on educational processes. This may explain the findings in question. In the Turkish higher education system, there is a common belief that a high number of students receiving low grades in a course reflects poorly on the lecturer. This can lead to job insecurity in private universities and the loss of a course in public universities. As a result, some lecturers may feel pressured to give higher grades to students. This can lead to a tendency to give high grades as a tool to cover up mistakes made by the lecturer during the semester. In higher education in Turkey, incompetence is not limited to lecturers. It is important to avoid using grades to mask inadequacies

in course content or unproductive semesters. The OSYM selection and placement exam allows students with limited capacity to attend university. Objective evaluations should be employed to accurately assess student performance. Faculty members should not give high grades to inadequate students in order to get rid of them quickly. It is important to maintain objectivity in grading and to avoid biased evaluations. Conversely, lecturers who want to evaluate students with interpretative questions that measure their knowledge and ability to establish relationships between concepts learned during the semester may feel psychological pressure from students and the school.

The language in which a course is taught has been found to be related to the probability of achieving a higher grade. It is not surprising that courses taught in Turkish resulted in higher grades. This may be due to the fact that students whose mother tongue is Turkish are more likely to understand, interpret and make inferences about the course successfully. The educational background and language proficiency of the lecturer may also be relevant to this situation. Furthermore, Turkish universities that provide instruction in foreign languages are generally reputable institutions of higher learning. This information suggests that students in courses taught in a foreign language may be expected to perform at a higher level, given the structure of faculty and universities. According to Karadag (2021b), when instructors invest more effort into a course, students' performance expectations increase, and evaluations can be conducted more sensitively and carefully.

Business Administration undergraduate education has a comprehensive multidisciplinary structure. Including numerical and verbal reasoning courses has been proven effective in improving student grades. The analysis indicates that fields with numerical courses, such as accounting, finance, and quantitative methods, have lower grades compared to areas with more verbal courses, such as marketing, management, and organization. During student selection in the Turkish higher education system, undergraduate programmes are categorized as numerical, verbal, or equal weight. This approach guides students to select departments that align with their abilities. The fact that undergraduate students in business administration come from the same weight group may explain their relative struggle in purely numerical courses.

It is recognised that external factors can cause systematic grade increases. For instance, the Vietnam War was responsible for the grade increase in American universities during the 1960s. Some university professors aimed to prevent the recruitment of students who would have to drop out of school due to their low grades, and therefore gave them high grades (Lin, 2019). Similarly, it has been claimed that during the period of increasing human rights and feminist struggles, some faculty members tended to award high grades to students with whom they wished to demonstrate solidarity due to ideological affinity (Chen, 2018).

Our study shows that the years 2010 and 2020 had the highest grade increases. These increases can be attributed to external factors, as explained above. The increase in 2010 can be linked to the significant rise in the number of universities in Turkey in 2006, which is also highlighted by Karadag (2021c). The popularity of Business Administration departments has led to an increase in their numbers, particularly in private universities due to lower investment requirements and employment burdens on graduates. This suggests a direct correlation between the number of universities and the number of Business Administration departments. Such an increase in popularity may also lead to grade inflation. The Covid-19 pandemic, which began in 2019, has disrupted the entire education system and is associated with an increase in 2020. At the beginning of the pandemic, face-to-face education at universities was quickly suspended, resulting in

a period that can be seen as a loss-term. This health problem was experienced for the first time by all students and faculty members, causing both parties to lack the necessary motivation for education. The lack of online education infrastructure in universities at the time made it difficult to conduct education, training, and evaluations in a healthy and realistic manner. It is important to note that grades may increase after evaluations based on superficial assignments. Karadag (2021b) also reached a similar conclusion and investigated the cause of the significant increase in grades during this period. The author suggests that faculty members who are accustomed to evaluating students through face-to-face education may be hastily assessing students through assignments or only the final exam, without paying sufficient attention to student development. However, during the first semester of the Covid-19 pandemic, courses were only delivered through lecture notes. This reduced the level of performance expected from students by lecturers who put in minimal effort into the course.

The main limitations of this study are its focus on a limited number of factors as possible causes of grade increase and its coverage of only a 20 year period. Future studies should draw on social psychology literature and emphasise variables such as individual built-in characteristics of instructors and students that were not considered in this study. This will make the field more productive for future research. The study of similar cross-cultural contexts is important due to the impact of different educational policies on the educational routine, cognitive, emotional, or behavioural attitudes of all educational stakeholders in different countries. In addition to these factors, further studies are needed to investigate the potential impact of explanatory variables such as entitlement expectations, gender discrimination, anxiety levels, risk aversion, and personal relationships on the higher grades achieved by female students compared to male students.

### Data availability

Data cannot be shared publicly because the Research Ethics Committee and Institutional Review Board has prohibited the public publication of data. Data are available from the Data Access contact, the corresponding author, via email for researchers who meet the criteria for access to confidential data.

Received: 7 June 2023; Accepted: 21 February 2024;

Published online: 02 March 2024

### Notes

- 1 The search was conducted on March 8, 2023.
- 2 Visit <https://istatistik.yok.gov.tr> for further details; Access date: 16.01.2023.
- 3 Visit <https://istatistik.yok.gov.tr> for further details; Access date: 16.01.2023.
- 4 Visit <http://tyyc.yok.gov.tr/?pid=48>, Access date: 16.01.2023.

### References

- Achacoso MV (2002) "What do you mean my grade is not an a?" an investigation of academic entitlement, causal attributions, and self-regulation in college students. Unpublished doctoral dissertation, University of Texas, Austin
- Achen AC, Courant PN (2009) What are grades made of? *J Econ Perspect* 23(3):77–92
- Ahn T, Arcidiacono P, Hopson A, Thomas JR (2019) Equilibrium grade inflation with implications for female interest on STEM majors, National Bureau of Economic Research, Cambridge, MA
- Aytemur JO (2010) Türkiye'de yönetim düşüncesinin erken dönemleri, sümerbank (1930–1945). *Libra Yayıncılık*, İstanbul, 148–151
- Babcock P (2010) Real costs of nominal grade inflation? new evidence from student course evaluations. *Econ Inq* 48:983–996
- Babcock P, Marks M (2011) The falling time cost of college: evidence from half a century of time use data. *Rev Econ Stat*, MIT Press 93(2):468–478
- Bachan R (2017) Grade inflation in UK higher education. *Stud High Educ* 42(8):1580–1600
- Baglione SL, Smith Z (2022) Grade inflation: undergraduate students' perspective. *Qual Assur Educ* 30(No. 2):251–267
- Barriga AQ, Cooper EK, Gawelek MA, Butela K, Johnson E (2008) Dialogue and exchange of information about grade inflation can counteract its effects. *Coll Teach* 56(4):201–209
- Butcher KF, McEwan PJ, Weerapana A (2014) The effects of an anti-grade-inflation policy at Wellesley College. *J Econ Perspect* 28(3):189–204
- Chen RK (2018) Determinants of course grades in allied health sciences programs. *J Allied Health* 47(1):35–44
- Ercek M, Usdiken B (2011) İşletme iktisadı: Türkiye'de bir akademik disiplinin oluşumu, gelişimi ve sönüşü. In: Tokdemir, Ertuğrul and Günçavdı, Öner İ. and Kayam, Saime S., (eds.), Prof. Dr. Haydar Kazgan'a Armağan: Yakın Tarihimizin İktisadi Panoraması, Türk Tarih Kurumu, Ankara, pp. 229–260
- Fineffer-Rosenbluh I, Levinson M (2015) What is wrong with grade inflation (if anything)? *Philos Inq Educ* 23(1):3–21
- Greene W (2005) Fixed and random effects in stochastic frontier models. *J Product Anal* 23:7–32
- Guvemli O (2018) Türkiye'de İşletme eğitiminin tarihçesi ile ilgili bir görüş. *Account Financial Hist Res J* 14:238–241
- Hinnerich BT, Höglin E, Johannesson M (2011) Are boys discriminated in Swedish high schools? *Econ Educ Rev* 30:682–690
- Karadag E (2021c) Academic (dis)qualifications of Turkish rectors: their career paths, H-index, and the number of articles and citations. *High Educ* 81(2):301–323
- Karadag E (2021a) Pre-graduation grade inflation in medical training in Turkey: a longitudinal study from 2005 to 2020. *BMC Med Educ* 21:395
- Karadag E (2021b) Effect of COVID-19 pandemic on grade inflation in higher education in Turkey. *PLoS One* 16(8):e0256688
- Keng SH (2018) Tenure system and its impact on grading leniency, teaching effectiveness and student effort. *Empir Econ* 55(3):1207–1227
- Koedel C (2011) Grading standards in education departments at universities. *Educ Policy Anal Arch* 19:1–23
- Kostal JW, Kuncel NR, Sackett PR (2016) Grade inflation marches on: grade increases from the 1990s to 2000s. *Educ Meas: Issues Pract* 35(1):11–20
- Kutner M, Greenberg E, Baer J (2006) A first look at the literacy of America's adults in the 21st century. National Center for Educational Statistics. Available at <https://nces.ed.gov/naal/pdf/2006470.pdf>
- Lin YP (2019) Rising grades: a review. *J Appl Econ Bus Res* 9(4):177–185
- Matos-Díaz H (2012) Student evaluation of teaching, formulation of grade expectations, and instructor choice: explorations with random-effects ordered probability models. *East Econ J* 38(3):296–309
- Negiz M (2020) Türkiye'de İşletmecilik Okulları: Tarihsel Gelişim Süreci Işığında bir gelecek perspektifi, *AcademiaNews*
- Oleinik A (2009) "Does education corrupt? theories of grade inflation". *Educ Res Rev* 4(No. 2):156–164
- Ozkul AS (2012) 19. Yüzyıl Türk Yükseköğretiminde İşletme Eğitimi. *J Süleyman Demirel Univ Inst Soc Sci* 2(16):223–241
- Rosovsky H, Hartley M (2002) Evaluation and the academy: are we doing the right thing? grade inflation and letters of recommendation. Cambridge, MA American Academy of Arts and Sciences pp. 1–25
- Sabot R, Wakeman-Linn J (1991) Grade inflation and course choice. *J Econ Perspect* 5(1):159–170
- Saenz VB, Barrera DS (2007) Findings from the 2005 college student survey: national aggregates. UCLA, Higher Education Research Institute. Available at: [https://www.heri.ucla.edu/PDFs/2005\\_CSS\\_REPORT\\_FINAL.pdf](https://www.heri.ucla.edu/PDFs/2005_CSS_REPORT_FINAL.pdf)
- Sargut AS (2009) Türkiye'de İşletme Yönetimi Eğitiminin Kurumsal Çerçevesi: Çeşitlilikten Eşbiçimliliğe. *Eskişehir Osmangazi Üniversitesi İktisadi ve İdari Bilimler Derg* 4(1):51–63
- Spring J, Abrahams C, Ginsburg S, Piquette D, Guasch FM, Kiss A, Mehta S (2021) Impact of gender on clinical evaluation of trainees in the intensive care unit. *ATS Sch* 14 2(3):442–451
- Vanderoost J, Janssen R, Eggermont J, Callens R, De Laet T (2018) Elimination testing with adapted scoring reduces guessing and anxiety in multiple-choice assessments, but does not increase grade average in comparison with negative marking. *PLoS One* 13:e0203931
- Watts LK, Winters R (2016) Examining grade inflation and considerations for radiologic sciences: a literature review. *J Med Imaging Radiat Sci* 48(1):95–102
- Yeritsyan A, Mjelde JW, Litzenberg KK (2022) Grade inflation or grade increase. *J Agric Appl Econ* 54(2):375–393

### Author contributions

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Engin Karadag. Literature review and discussion and conclusion sections were written by Ibrahim Taylan Doryol. All authors read and approved the final manuscript



### Competing interests

The authors have no competing interests to declare that are relevant to the content of this article.

### Ethical approval

As this study does not contain any studies with human or animal subjects performed by any of the authors, ethical approval was not required.

### Informed consent

Since secondary data were used in the study, informed consent was not required.

### Additional information

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