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Interim performance feedback and quitting in tournaments: evidence from the civil service exam in China

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ABSTRACT

This study investigates the impact of interim performance feedback on candidates' subsequent decisions on whether to quit during the tournament-like civil service exam in China, consisting of two stages: the written exam and the interview. We empirically find that, following the disclosure of written exam scores, candidates' own scores significantly decrease their probability of quitting the later interview, whereas the scores of their rivals for the same government position significantly increase their probability of quitting. This indicates that candidates compare their own scores to those of their rivals to assess their chances and strategically decide whether to quit midway. However, this impact is only significant for laggards, requiring further explanation in future studies.

KEYWORDS

Performance feedback; tournament; civil service exam; quitting

JEL CLASSIFICATION

J45; D83; D91

1. Introduction

Understanding how players strategically respond to interim performance feedback is crucial for eliciting players' effort in tournaments (Villeval 2020). For this purpose, the tournament-like civil service exam in China provides an ideal identification setting. The civil service exam primarily consists of two stages: the written exam and the interview. Typically, candidates apply for a specific government position, and only the one with the highest final score in the two-stage exam will secure this government position. Following the release of written exam scores, a significant number of candidates choose to quit the subsequent interview. This allows us to explore the strategic reactions of candidates in the civil service exam to interim performance feedback, that is, the scores of the written exam.

In theory, interim performance feedback in tournaments could lead to a strategic momentum or discouragement effect, where leaders gain momentum from feedback while laggards are discouraged by it (Harris and Vickers 1987). As a result, an early success in tournaments increases chances of a later success (Gauriot and Page 2019). In dynamic tournaments where players can choose

to quit midway, front-runners with a higher probability of winning are motivated to persist, while laggards, less likely to succeed, are discouraged and opt to exit prematurely (Fershtman and Gneezy 2011). In this line of thought, candidates in the two-stage civil service exam, with the option to quit in the middle, are expected to take quitting as a strategic decision after the disclosure of written exam scores. The candidates who perform relatively better in the written exam are more likely to secure the position, hence reducing the likelihood of quitting midway, and vice versa.

Our empirical evidence supports the aforementioned argument that interim performance feedback (i.e. written exam scores) has significant influences on candidates' subsequent quitting decisions after the written exam during the China's civil service exam. Specifically, we observe that candidates' own written exam scores significantly decrease their probability of quitting, whereas the scores of their rivals for the same government position significantly increase their probability of quitting. This indicates that candidates compare their own scores to those of their rivals to assess their chances and strategically decide whether to quit. The higher the candidates' own scores and the

lower the scores of their rivals, the greater the candidates' chances, and consequently, the less likely they are to quit, and vice versa. Moreover, we find that the impact of written exam scores on subsequent quitting is significant only for those who lagged behind in the written exam, while it is not significant for leaders. This implies that leaders in the written exam are not swayed in their evaluation of chances and subsequent decisions on whether to quit by the score margin compared to their rivals.

Our empirical study, leveraging the civil service exam in China, contributes to the existing literature on the impact of interim performance feedback in dynamic tournaments by offering novel field evidence. The existing literature, mostly conducted in sports or laboratory settings, is inconclusive regarding the impact of previous performance feedback on subsequent effort and performance. On the one hand, several empirical studies identify a pattern of success breeding success, where leaders are motivated to increase their effort, while laggards become discouraged and slack off (e.g. Gauriot and Page 2019; Mago, Sheremeta, and Yates 2013). On the other hand, some studies empirically demonstrate an opposite pattern where laggards exert more effort to catch up with leaders (e.g. Fu, Ke, and Tan 2015; Tong and Leung 2002). Moreover, certain studies provide evidence of no such effects (e.g. Klein Teeselink, van den Assem, and van Dolder 2023; Kniffin and Mihalek 2014). Considerable variation in environments and identification designs may be one factor leading to the lack of consensus.¹ Evidence from our new setting serves as a robust test, supporting the pattern of success breeding success and, concurrently, expanding our understanding of a more specific relationship between performance feedback and quitting. The impact of performance feedback on quitting has been rarely explored, except for the work of Eriksson et al. (2009). They observe that underdogs almost never quit in tournaments due to

performance feedback, where peer effects and emotions play a crucial role. Our contrasting observation that underdogs tend to quit may result from the absence of peer effects in our unique field setting. In this setting, all candidates do not know each other and should not be concerned about how their rivals might perceive their decision to quit or judge them for it. Therefore, it is essential to seek more evidence across diverse empirical settings to ensure the robustness of results.

II. Background and data

The civil service exam in China is a rigorous and competitive exam system used for recruiting civil servants for various government positions, mainly consisting of two stages: the written exam and the interview. This exam follows a tournament-like structure. Candidates submit applications, applying for a specific government position within a particular department at a specific location, and compete with others seeking the same position. Generally, the total score of the written exam is 200 points, and the top three candidates for each position will advance to the next stage: the interview, which is worth 100 points. The interview is conducted under a two-blind format, meaning the interview panel is unaware of any information regarding the candidates, including their personal details and written exam scores. Ultimately, the candidate achieving the highest final score, which combines both the written exam and the interview, will secure this government position.

We utilize public data from the civil service exams conducted in Zhejiang Province, East China, spanning from 2019 to 2023. Exam-related information is publicly posted on the official website of the Zhejiang Civil Service Exam.² After the written exam, the lists of all candidates shortlisted for the subsequent interview, along with their written scores, are publicized on the

¹More specifically, the context of the tournament or competition plays a significant role. Different settings, such as sports, laboratory experiments, or real-world examinations like the civil service exam, may introduce varying degrees of pressure, competition, and incentive structures, influencing individuals' strategic behaviours differently. Additionally, the identification strategies employed in previous studies might differ in their ability to isolate the causal effect of performance feedback on subsequent decisions, including the decision to quit. For instance, some studies might rely on observational data, while others utilize experimental designs or instrumental variables to establish causality. Moreover, individual and contextual factors, such as personality traits, social dynamics, and institutional norms, could also influence the relationship between performance feedback and quitting decisions. All these differences might lead to the lack of consensus.

²The website address is <http://gwy.zjks.gov.cn/zjgwy/website/init.htm>.

official website. We identify candidates who quit midway as those whose names are either absent from the publicized interview results or listed in the publicized interview results but receive zero scores in the interview.³ To analysis the impact of written scores on quitting, we construct a sample comprising 9,711 positions and 29,133 candidates shortlisted for the interview, with each position having three candidates. Table 1 presents descriptive statistics that reveal a significant number of candidates quit midway. Out of 29,133 candidates shortlisted for the interview, 1,709 (5.87%) candidates choose to quit the subsequent interview. Furthermore, it is evident that candidates who perform better in the written exam, achieving higher scores and ranks, exhibit a significantly lower rate of quitting. This indicates the relationship between feedback on written scores and subsequent quitting decisions.

It is noteworthy that the final score is calculated as the following equation:

$$\begin{aligned} \text{final score} = & \text{written score}/2 \times 40\% \\ & + \text{interview score} \times 60\% \end{aligned} \quad (1)$$

where the interview score carries much more weight than the written score. Seven points of the written score are equivalent to 2.33 points of the interview score. Therefore, those who are ranked third in the written score still have a significant chance of catching up in the final score. The last row of Table 1 shows the number of individuals who ranked first in the final score among those who were initially ranked first, second, and third in the written score. Among those who were ranked third in the written score, 1,025 individuals

ended up ranking first in the final score, indicating a significant change of catching up.

III. Regression results: feedback on written scores and subsequent quitting

We employ the following regression model to examine the impact of written scores on candidates' decisions on whether to quit the interview:

$$\text{quitting}_{ic} = \text{written_score}_{ic} + \text{written_score}_{jc} + \varepsilon_{ic} \quad (2)$$

where quitting_{ic} is a dummy variable equal to 1 if candidate i of position c quits the interview following the written exam. The independent variables, $\text{written_score}_{ic}$ and $\text{written_score}_{jc}$, represent the written scores of candidate i and rival j competing for the same position c . To account for potential confounding factors, year-county-department fixed effects and written score rank fixed effects are introduced into the regression model. And standard errors are clustered at the department level.

Table 2 reports the regression results. In column (1) for the full sample, it is shown that a one-point increase in candidates' own written scores reduces their probability of quitting the interview by 0.32% points, whereas a one-point decrease in their rivals' written scores decreases their probability of quitting by 0.15% points. This also means that, on average, leading rivals by one point decreases the probability of quitting by 0.235% points (calculated as the average of 0.32 and 0.15), and vice versa. These impacts are economically significant when compared to the average quitting rate of 5.87%. Furthermore, we cluster the full sample at the indi-

Table 1. Descriptive statistics.

	Full sample	Written score rank = 1	Written score rank = 2	Written score rank = 3
Sample size	29,133	9,711	9,711	9,711
Mean of written score	136.9967	140.7938	136.5084	133.6878
Deviation of written score	10.2142	9.5479	9.5860	10.2152
Quitting number	1,709	486	527	696
Non-quitting number	27,424	9,225	9,184	9,015
Quitting rate	5.87%	5.00%	5.43%	7.17%
The number of ranking first in the final score	9,711	6,600	2,086	1,025

³If candidates submit a request to the examination department to quit the interview in advance, their names will be absent from the publicized interview results. If candidates do not submit this request but fail to attend the interview, they will be listed in the publicized interview results but receive zero scores. Therefore, both scenarios indicate that candidates quit the interview.

Table 2. Regression results: feedback on written score and subsequent quitting.

	Full sample (1)	Clustered at Individual level (2)	Rank = 1, rank_rival = 2 (3)	Rank = 1, rank_rival = 3 (4)	Rank = 2, rank_rival = 1 (5)	Rank = 2, rank_rival = 3 (6)	Rank = 3, rank_rival = 1 (7)	Rank = 3, rank_rival = 2 (8)
Written score	−0.0032*** (0.0004)	−0.0042*** (0.0005)	−0.0002 (0.0009)	−0.0003 (0.0007)	−0.0005 (0.0009)	0.0008 (0.0014)	−0.0065*** (0.0010)	−0.0073*** (0.0016)
Written score of rivals	0.0015*** (0.0002)	0.0016*** (0.0002)	−0.0000 (0.0008)	0.0002 (0.0007)	0.0002 (0.0009)	−0.0011 (0.0012)	0.0048*** (0.0009)	0.0048*** (0.0017)
Year-county-Department fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rank fixed effects	Yes	Yes	No	No	No	No	No	No
Observations	58,266	29,133	9,711	9,711	9,711	9,711	9,711	9,711
R-squared	0.2392	0.2402	0.3862	0.3863	0.3636	0.3638	0.3956	0.3927

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors in parentheses are clustered at the department level.

vidual level and calculate the variable ‘written score of rivals’ by summing the written scores of their two rivals. The results of the sample clustered at the individual level are displayed in Column (2) of Table 1, yielding comparable outcomes.

In columns (3) to (8), we narrow down the sample to specific ranks for both candidates and their rivals. We observe that candidates with high written score ranks (ranked first or second), neither their own written scores nor those of their rivals have a significant effect on their decisions regarding whether to quit the interview. The effects are only significant for candidates ranked at third. These contrasting results suggest that candidates achieving high ranks in the written exam do not base their decisions on whether to quit the subsequent interview on the estimated chances determined by both their own and their rivals’ written scores. Furthermore, for candidates ranked at third, regardless of whether their rivals are ranked first or second, the impact of rivals’ written scores remains the same.

IV. Conclusions

In our empirical study, we analyse data from the civil service exam in Zhejiang Province, East China, to investigate the impact of interim performance feedback on quitting in tournaments. Our findings reveal that in the two-stage exam, the performance of the first stage (i.e. the written exam) significantly affects candidates’ decisions on whether to quit the second stage (i.e. the interview). Higher scores in candidates’ own written exams decrease the probability of quitting the interview, whereas higher scores for their rivals increase their probability of quitting. However, this impact is only

significant for laggards, requiring further explanation in future studies. Additionally, it is crucial to examine gender differences in quitting behaviour once the full dataset, including complete gender information, becomes available.

Disclosure statement

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References

- Eriksson, T., A. Poulsen, and M. C. Villeval. 2009. “Feedback and Incentives: Experimental Evidence.” *Labour Economics* 16 (6): 679–688. <https://doi.org/10.1016/j.labeco.2009.08.006>.
- Fershtman, C., and U. Gneezy. 2011. “The Tradeoff Between Performance and Quitting in High Power Tournaments.” *Journal of the European Economic Association* 9 (2): 318–336. <https://doi.org/10.1111/j.1542-4774.2010.01012.x>.
- Fu, Q., C. Ke, and F. Tan. 2015. ““Success Breeds success” or “Pride Goes Before a fall”? Teams and Individuals in Multi-Contest Tournaments.” *Games and Economic Behavior* 94:57–79. <https://doi.org/10.1016/j.geb.2015.09.002>.
- Gauriot, R., and L. Page. 2019. “Does Success Breed Success? A Quasi-Experiment on Strategic Momentum in Dynamic Contests.” *The Economic Journal* 129 (624): 3107–3136. <https://doi.org/10.1093/ej/uez040>.
- Harris, C., and J. Vickers. 1987. “Racing with Uncertainty.” *The Review of Economic Studies* 54 (1): 1–21. <https://doi.org/10.2307/2297442>.
- Klein Teeselink, B., M. J. van den Assem, and D. van Dolder. 2023. “Does Losing Lead to Winning? An Empirical Analysis for Four Sports.” *Management Science* 69 (1): 513–532. <https://doi.org/10.1287/mnsc.2022.4372>.

- Kniffin, K. M., and V. Mihalek. 2014. "Within-Series Momentum in Hockey: No Returns for Running Up the Score." *Economics Letters* 122 (3): 400–402. <https://doi.org/10.1016/j.econlet.2013.12.033>.
- Mago, S. D., R. M. Sheremeta, and A. Yates. 2013. "Best-Of-Three Contest Experiments: Strategic versus Psychological Momentum." *International Journal of Industrial Organization* 31 (3): 287–296. <https://doi.org/10.1016/j.ijindorg.2012.11.006>.
- Tong, K. K., and K. Leung. 2002. "Tournament As a Motivational Strategy: Extension to Dynamic Situations with Uncertain Duration." *Journal of Economic Psychology* 23 (3): 399–420. [https://doi.org/10.1016/S0167-4870\(02\)00083-1](https://doi.org/10.1016/S0167-4870(02)00083-1).
- Villeval, M. C. 2020. "Performance Feedback and Peer Effects." In *Handbook of Labor, Human Resources and Population Economics*, edited by K. Zimmermann, 1–38. Switzerland: Springer International Publishing.