Marketing Employee Turnover and Brand Performance: Evidence from 477 Firms

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March 11, 2025

Abstract

How important are marketing employees for brand performance? This paper estimates the impact of marketing employees on brand performance metrics by inspecting how employee turnover — stratified by seniority and by role — affects brand buzz and brand equity. Using a novel dataset that combines detailed employment records with brand metrics for 477 firms from 2012 to 2020, we find strong evidence that marketing employee turnover leads to significant declines in both brand buzz and brand equity, with the departure of a single senior marketing executive estimated to reduce brand buzz and equity by approximately 6.1% and 2.4% of the median within-firm standard deviation, respectively. Turnover of mid-level managers and junior employees also produces significant and meaningful (albeit smaller) negative impacts, with mid-level manager turnover estimated to have approximately 20-25% of the effect on brand performance as executive turnover. Moreover, we find that these effects are predominantly driven by employees in digital marketing roles, across all seniority levels. Results are robust to both two-way fixed effects estimation and instrumental-variables analysis based on marketing employee turnover at peer-of-peer firms, and compare to null placebo effects of future marketing employee turnover. Taken together, our study provides novel quantitative estimates of the precise value that marketing professionals, and especially digital marketing professionals, bring to their brands.

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1   Introduction

How does marketing employee turnover influence brand performance? Although extensive literature has examined the negative effects of employee turnover on overall organizational performance (e.g., Shaw, Gupta, and Delery, 2005; Kacmar et al., 2006; Hausknecht, Trevor, and Howard, 2009; Hancock et al., 2013), far less attention has been paid to the specific consequences of marketing employee turnover on brand performance. Estimating this effect is challenging because the impact of employees on brand performance is often indirect, may take time to materialize, and can be difficult to separate from industry-specific time trends in small samples, even though measuring marketing employee impact is crucial for understanding the value of marketing in modern organizations. Moreover, although modern marketing increasingly demands a blend of more traditional and more digital responsibilities (Kane et al., 2017; Schaarschmidt, Walsh, and Ivens, 2021), surprisingly little is known about the differential impacts of employee turnover in different roles.

In this paper, we tackle these questions directly with a novel panel dataset that combines detailed employee position data from Revelio Labs along with comprehensive brand performance metrics from YouGov BrandIndex, covering 477 firms between 2012 and 2020. Using both two-way fixed effects estimation and a peer-of-peer instrumental-variables strategy, we establish a strong causal link between marketing employee turnover and brand performance that declines monotonically as seniority declines, and with much larger measured effects for employees in digital roles.

First, we estimate the impact of marketing employee turnover using an exhaustive two-way fixed effects approach, comparing changes in brand buzz and brand equity after con-

trolling for both firm and industry-specific time fixed effects. This estimator allows us to isolate the effect of turnover from other average differences across firms, and net of each separate industry's time trend. We measure marketing employee turnover as the number of marketing employees exiting the firm in a given quarter, stratified by seniority level. With this, we find that a single turnover by a senior marketing executive is associated with a decline in brand buzz of roughly 6.1% of the median within-firm standard deviation and a decrease in brand equity by approximately 2.4%; this result extends prior literature that examined CMO effects on firm performance, and provides additional evidence that marketing executive turnover also damages brand performance (Nath and Mahajan, 2011; Germann, Ebbes, and Grewal, 2015; Bansal et al., 2017; You et al., 2020; Varma, Bommaraju, and Singh, 2023). Furthermore, we find that turnover among mid-level managers and junior staff—previously unstudied in the literature—yields significantly negative (though progressively smaller) effects. Finally, when we estimate the effects of all levels jointly, we find that controlling for turnover among lower-level employees reduces the measured importance of high-level employees by around 20-40%, suggesting that an important part of the causal pathway by which high-level employee turnover affects brand performance is through associated lower-level employee departures.

Second, to assess the persistence of these turnover effects, we construct a cumulative measure of turnover over a four-quarter preceding window and estimate the impact on brand performance of turnover in this longer time-span. We recover significant, but slightly smaller, effect estimates as compared to our baseline specification, indicating that the negative effects on both brand buzz and brand equity endure beyond the initial quarter, though their magnitude gradually decays over time. This attenuation suggests that while firms may

partially recover from the immediate disruption through internal adjustments or the assimilation of new talent, the cumulative loss in marketing expertise still results in significant long-term deterioration of brand performance.

Third, we examine how this effect differs not only across seniority levels, but also across particular employee roles. Specifically, given the rise of digital marketing over the last two decades, we stratify our observed turnover to separately estimate effects for marketing employees in digital (such as Chief Digital Officer, Digital Marketing Manager, SEO/SEM Specialist, or Social Media Manager) versus non-digital roles, and find that the turnover of digital marketing employees drives most of this measured effect: while ratios vary across specifications and seniority levels, we generally recover 4x-8x larger effects for digital marketing employee turnover, and in some specifications recover null effects for employee turnover in non-digital marketing roles versus highly significant negative effects for turnover in digital roles.

We then perform a set of robustness checks to confirm the reliability of our approach and findings. First, we validate our specification with a placebo test by regressing current brand buzz and equity against future marketing employee turnover. This tests the key identifying assumption of our two-way fixed effects approach by checking whether turnover is associated with prior differences in brand performance; if reverse causality or confounding pre-trends were driving our results, future turnover would be expected to correlate with current brand performance. We find no significant association between current outcomes and future turnover, supporting our causal interpretation. Next, to further assuage potential endogeneity concerns, we implement an instrumental variables strategy based on employee turnover at peer-of-peer firms—defined based on shared industry classifications—as an in-

strument for a firm's own marketing employee turnover. Intuitively, this instrument is based on the fact that employee labor markets may be correlated across firms that are otherwise not closely related; and peer-of-peer firm turnover can capture variation in labor market opportunities that drives employee turnover independent of any firm-specific contemporaneous confounds. This IV approach recovers large and significant negative impacts of employee turnover on brand performance, even larger than in our baseline two-way fixed effects model. We hypothesize that this may potentially arise because the local average treatment effect for this IV is larger (since higher-quality employees may be more likely to leave in tight labor markets (Nanda et al., 2024)), or possibly because measurement error attenuates estimates in our baseline setting. In either case, the findings corroborate the direction and strong significance of our main effects, and suggest that our full sample estimates may be best interpreted as conservative lower-bounds. Finally, we also present results that exclude 2020 observations that may coincide with COVID-19, in case pandemic-era observations are for that reason confounded, and recover highly similar effect estimates.

Taken together, our results provide robust, novel evidence that marketing employee turnover negatively impacts brand performance. We quantify both immediate disruptions and longer-term decay in brand buzz and equity from such turnover, validating our findings through placebo tests and instrumental-variables analysis, and thereby recover a clear, quantified measure of the brand value that firms preserve by retaining their marketing talent. Our findings underscore the need for firms to safeguard critical marketing roles, particularly those involving digital expertise.

The rest of the paper is structured as follows. Section 2 describes related literature. Section 3 details the data and sample construction methodology. Section 4 presents baseline

empirical results. Section 5 present robustness analyses. Section 6 concludes.

2 Literature Review

Our paper contributes to several literature streams. First, this paper contributes to the large empirical literature on the determinants of brand equity and brand performance, which includes Srinivasan, Park, and Chang (2005) and many others; for extensive literature reviews, see Keller and Lehmann (2006) and Parris and Guzmán (2023). More specifically, this paper contributes to the empirical literature on the importance of marketing employees in building and maintaining brand performance. To date, this literature has focused on high-level executive effects, such as in Germann, Ebbes, and Grewal (2015), who find that Chief Marketing Officers (CMOs) have a significant positive impact on firms' Tobin's q; Bansal et al. (2017) who find deviations in CMO compensation schemes have an adverse impact on operating performance and stock returns; Nath and Mahajan (2011) who examine how specific firm factors determine CMO role and importance; as well as Varma, Bommaraju, and Singh (2023), who examine how female CMOs differ from male counterparts. You et al. (2020) provide an survey of this research on the role of executives in firm performance, and in particular firm profitability and financial performance, including both CMOs and CEOs. Our paper advances this literature with a newly robust, large-scale analysis based on hundreds of firms over a long time period, rigorously identifying the role of marketing employees on brand performance by examining the effects of employee turnover. Moreover, the present work provides, to the best of our knowledge, first-of-its-kind evidence on the importance of mid-level and junior marketing employees in brand performance, filling an important gap in

prior literature (Field, Hancock, and Schaninger, 2023).

Second, this paper contributes to the management and labor economics literature on employee turnover and its effects on firms. This literature includes Moon et al. (2022), who estimate precise negative impacts of turnover for factory performance; Li et al. (2022), who estimate negative impacts of of employee turnover on firms' future financial performance; Kacmar et al. (2006) and Shaw, Gupta, and Delery (2005), who find negative effects of turnover on unit- or employee-level performance; Impink, Prat, and Sadun (2025) who find that executive turnover may also negatively impact internal communications; and Hausknecht, Trevor, and Howard (2009) who find negative effects of high turnover on customer service quality. For more comprehensive surveys of this literature, see Hancock et al. (2013) and Hom et al. (2017). Generally speaking, these studies have previously been constrained to settings where productivity is easy to measure, like factories or financial performance, and for this reason has, with limited exceptions (Hausknecht, Trevor, and Howard, 2009), overlooked marketing employees, as marketing-related outcomes, such as brand perceptions, are often difficult to quantitatively measure at scale. Our study advances this literature by leveraging a large-scale panel on firm-level brand equity and brand buzz to analyze the effect of marketing employee turnover on brand performance, and then furthermore examine how this effect is moderated by employee seniority and role.

Finally, this paper contributes to the literature on the importance of digital marketing in brand performance. To date, this literature has predominantly focused on the differential performance of marketing campaigns and advertisements on digital versus traditional channels (Draganska, Hartmann, and Stanglein, 2014; Dinner, Heerde, and Neslin, 2014; Song, 2024), presenting consistent evidence that digital marketing activities can, in many

contexts, be more cost-effective than traditional marketing strategies (albeit with important nuances and potential caveats, depending on the setting). For a more extensive literature review of this empirical literature, see Basimakopoulou, Theologou, and Tzavaras (2022). Our study offers a novel empirical design to approach this question, examining whether employee impact on brand performance differs between those in digital versus non-digital marketing roles, and providing strong new evidence that digital marketing employees have a significantly larger impact on brands.

3 Data

3.1 Brand Performance Metrics Data: YouGov

Our primary outcomes data come from YouGov BrandIndex. This BrandIndex dataset is based on online surveys of consumer perceptions of a wide set of brands, collected from 5000 randomly selected consumers (out of a panel of 5 million consumers) on a daily basis. This repeated-panel approach is designed to produce responses that are stable over time, allowing for panel analysis of brands over a continuous multiyear period.[1] These data have been used extensively in the marketing literature in recent years as a standard measure of brand performance (e.g., Hewett et al., 2016; Colicev et al., 2018; Malshe, Colicev, and Mittal, 2020).

To measure the overall strength of each brand, we follow YouGov's own methodology (and prior literature) and compute "brand equity" as the average of the following six YouGov

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[1]Importantly, YouGov ensures the consistency of measures by keeping the same survey questions throughout the panel's existence, and maintains a representative sample through standard re-weighting on observable participant characteristics.

dimensions: Impression, Quality, Value, Recommendation, Corporate Reputation, Satisfaction.[2] To capture more recent changes in brand performance, we use YouGov's "brand buzz" measure, which captures whether people have heard anything positive or negative about a brand recently. This short-term measure provides a more immediate index of net positive buzz for each brand in its survey. As we only consistently observe our employee turnover metrics at the firm and quarter level, we average these brand performance statistics to the firm-quarter level prior to merging to our Revelio data, described below. The industry variable in the YouGov dataset is used to determine industry categorizations, which we use in our subsequent analyses to control for industry-specific time fixed effects. For further details on the YouGov dataset, see Appendix A.

3.2   Job Transition Data: Revelio Labs

Our measure of marketing employee turnover comes from Revelio Labs' individual-level position data.[3] Revelio Labs is a third-party data provider that sources workforce data from a variety of publicly accessible datasets including public employment records, online professional profile and resume websites, such as LinkedIn. It covers both public and private companies and includes around 20 million companies worldwide, and over 400 million active positions. As most of the data sources do not rely on firm-level disclosure, Revelio data is free from firm reporting bias, and has been used increasingly often in academic research to measure job turnover rates (Li et al., 2022; Cai et al., 2024).

The Revelio panel covers 102,106,715 individuals with job histories dating from 2008

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[2]Exact survey questionnaire is reported in Appendix A.

[3]For more detail, see https://www.data-dictionary.reveliolabs.com/data.html#individual-level-data; https://wrds-www.wharton.upenn.edu/pages/about/data-vendors/revelio-labs/.

to 2023. These jobs data include information on employer company, position start and end dates, job role, job category, seniority and salary. Revelio also provides ancillary information on the companies tracked including CIK and NAICS codes as well as company names, which we use to match the data to YouGov brands. Since not all employees share their employment information online, the Revelio datasets likely are most representative of white collar occupations, which aligns closely with the focus of this paper on marketing employees. Moreover, we include industry-specific fixed effects in all of our empirical specifications to ensure that any potential confounds related to changing representativeness over time does not drive our results.

From these raw individual-by-position data, we construct a quarterly panel dataset of marketing employee turnover at each seniority level for each firm. We restrict the data to marketing employees and stratify our sample across three levels: senior executives; mid-level managers; and entry-level juniors.[4] We define "turnover" as any instance when marketing employees of the given seniority level depart their previous positions at a given company and does not take a new position at the same company. We also compute the number of current employees at each company, in each quarter, as a control variable.

3.3 Final Sample Construction

We merge YouGov and Revelio Labs datasets based on the quarter of observation and firm. For firm matching, we merge first on CIK codes (for publicly traded firms) and direct company name matching and then, for a small remainder, extend this match through

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[4]We classify the seniority level based on raw description of job titles using a modified two-step LLM approach. For further details, as well as robustness to alternative approaches for classifying seniority, see Appendix B.

Table 1: Summary statistics for marketing employee turnover and brand performance metrics

Variable	Mean	SD	Mean SD by firm	Median SD by firm
Senior executive turnover	2.36	5.73	1.38	0.43
Mid-level manager turnover	9.70	25.52	4.06	0.70
Junior employee turnover	18.03	49.18	6.73	1.28
Total turnover	30.29	74.63	10.29	1.55
Log no. of current employees	4.85	3.77	0.14	0.11
Brand buzz	4.43	4.71	1.08	0.67
Brand equity	11.68	9.90	1.30	0.91
No. of observations				14787
No. of firms				477
No. of quarters				31

Note: The table presents summary statistics of our balanced panel at the firm-quarter level. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Current employees refers to the total number of employees working at a given firm during the quarter. Brand metrics are averaged across all brands under each firm.

fuzzy matching of company names confirmed with manual checks. For more details on our matching process, see Appendix C. We then restrict our sample to firms that we observe in our panel continuously across all dates to ensure a balanced panel. After each of these steps, our final dataset contains 477 firms, observed over 31 quarters from November 13, 2012 to June 30, 2020, leaving us with 14,787 firm-quarter observations in our final analysis sample.[5] Descriptive statistics are presented in Table 1.

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[5]Note that we can only match to job turnover data at the firm level, and so aggregate brand measures to the firm level with averaging; for multi-brand firms, brand metrics therefore represent the average brand performance across all brands in our sample that belong to the given firm. Our sample of 477 firms derives from brand-level data on 765 associated brands.

4 Empirical Results

4.1 Theoretical Mechanism

Theoretically, one could argue that marketing employee turnover may be expected to help or hurt brand performance. On the one hand, to keep customers satisfied and loyal, firms need to put consistent effort into their brand management activities, which typically is the responsibility of marketing employees. In line with this, turnover of senior marketing executives, mid-level marketing managers, and even junior marketing employees could be detrimental to such efforts as departing employees take their branding skills, experience, and customer relationships with them (Bansal et al., 2017; Hom et al., 2017; Moorman, Sorescu, and Tavassoli, 2024), reducing the cohesiveness of marketing strategy and consistency of marketing tactics (Homburg, Workman, and Jensen, 2000) and potentially damaging brand buzz and brand equity (Homburg, Müller, and Klarmann, 2011).

On the other hand, retaining marketing talent is costly, requiring competitive salaries, career advancement opportunities, and investment in employee development (Phillips and Connell, 2004; Domeyer, 2019; Steimer, 2020). If one's prior is that the positive value of marketing employees is low, one may expect that shedding marketing employees to have null effects, or even positive effects if such turnover frees up resources to be spent on higher-marginal-benefit marketing pursuits.

4.2 Baseline Specification

We rely on an exhaustive two-way fixed effects specification to identify the effect of marketing employee turnover on brand equity and brand buzz:

$$y_{it} = \sum_s \beta^s \ exit_{it}^s + \theta X_{it} + \mu_i + \gamma_{gt} + u_{it}. \tag{1}$$

where y_{it} represents our measure of brand performance metrics (either average brand equity or brand buzz) for all brands held by firm i at a given quarter t.[6] As described in Section 3.1, brand buzz measures the short-term "net" positive impressions of the brands of a given firm while brand equity measures the long-term overall perception of a firm's brands. μ_i denotes the firm fixed effect and γ_{gt} denotes the industry g specific time fixed effect. X_{it} is the matrix of time-varying firm characteristics of firm i that act as additional control variables. $exit_{it}^s$ measures the number of employees leaving the focal firm whose job roles are marketing-related and are at seniority level s. The parameter β^s therefore captures the average "treatment" effect of one marketing employee turnover of seniority s on brand buzz or brand equity. We present specifications that separately examine each seniority level s— capturing the "total effect" of a given turnover at that level—and a saturated specification that simultaneously regresses against turnover across all seniority levels.

The key identifying assumption of this identification strategy is that marketing employee turnover is not systematically correlated with other potential contemporaneous drivers of changes in brand buzz or brand equity. To support this assumption, we first and foremost

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[6]As noted above, for firms that hold multiple brands, y_{it} is therefore measured as the average across brands held by firm i in time t.

Table 2: Effects of marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive turnover	−0.041***			−0.024***	−0.022***			−0.017**
	(0.0051)			(0.0059)	(0.0054)			(0.0063)
No. of marketing manager turnover		−0.011***		−0.0055***		−0.0054***		−0.0038*
		(0.0014)		(0.0016)		(0.0015)		(0.0017)
No. of marketing junior turnover			−0.0063***	−0.0032**			−0.0015	0.00073
			(0.00087)	(0.001)			(0.00092)	(0.0011)
Log no. of current employees	−0.30***	−0.29***	−0.30***	−0.25***	0.11	0.12	0.090	0.13†
	(0.068)	(0.068)	(0.068)	(0.069)	(0.072)	(0.072)	(0.072)	(0.073)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity with industry specific time fixed effect. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

include firm fixed effects and industry-time fixed effects in all of our estimated empirical models, ensuring that we identify our effect by comparing changes within a given firm to changes in other firms, after controlling for the average industry-specific change in that period. This "differences-in-differences"-style specification intuitively compares differential changes in brand buzz/equity for firms that experience different levels of marketing employee turnover. We also add controls for firm size, measured as the logarithm of the number of employees, to ensure that time-varying differences in overall firm size do not drive our results.

Results from this baseline specification are presented in Table 2. In columns (1) and (5), we present results from regressions of senior executive turnover on brand buzz and brand equity, respectively. We find a highly significant effect of senior marketing executive turnover on both measures, with one senior marketing executive turnover leading to declines of 0.041, or roughly 6.1% of a median within-firm standard deviation, in brand buzz, and

declines of 0.022, or roughly 2.4% of a median within-firm standard deviation, in brand equity. In columns (2) and (6), we present results for mid-level managers. We find a smaller significant effect of mid-level marketing manager turnover on both measures, with one mid-level marketing manager turnover leading to declines of 0.011, or roughly 1.6% of a median within-firm standard deviation, in brand buzz, and declines of 0.0054, or roughly 0.59% of a median within-firm standard deviation, in brand equity. In columns (3) and (7) we present results for entry-level juniors. We find a small, but significant effect of juniors on the short-term measure of brand buzz, both in a singular regression and in a saturated regression that controls for turnover at other levels; but we find null impacts of junior turnover on brand equity, suggesting that junior-level employee turnover does not significantly impact long-term brand performance, in particular after controlling for turnover at higher levels of seniority. To disentangle the effects of turnover at different seniority levels, we present the results for stacked regressions in columns (4) and (8). Consistent with our main findings, we observe negative effects of marketing executive and manager turnover on both brand buzz and brand equity. The effect sizes are slightly smaller, which may indicate that some of the negative impacts of senior executive turnover are partially driven by their indirect effect on the turnover of lower-level employees (Impink, Prat, and Sadun, 2025). For further robustness checks, including specifications that include different sets of controls, see Appendix D.

These results suggest that marketing employees have significant effects on brand performance metrics across seniority levels, with marketing employee turnover causing significant declines in both short-term brand buzz and long-term brand equity even for mid-level marketing managers and (for brand buzz metrics) junior employees. Overall, we find that more

senior marketing employees have, in line with their increased responsibilities, a large impact on brand performance: based on a Wald test of the comparative stacked regressions in columns (4) and (8), we find that the senior executive turnover has a significantly larger negative effect than mid-level manager turnover on both brand buzz ($p = 0.0022$) and brand equity ($p = 0.029$), while mid-level manager turnover has a significantly larger negative effect than entry-level junior turnover on brand equity ($p = 0.023$). That said, the effects of lower-level employees are still significant and, proportional to their representation in the firm, quite large: we estimate that around 4-6 mid-level marketing manager turnover corresponding to the impact of a single executive-level turnover. Given that firms generally have many more mid-level and junior employees, this suggests that the overall importance of retaining lower-level employees may be largely comparable to the importance of retaining executives, depending on the relative volumes of departures at each level.

4.3   4-Quarter Cumulative Window

The current analyses highlight the critical role of marketing employees in maintaining brand performance metrics. Our findings show that marketing employee turnover negatively affects brand buzz (across seniority levels) and brand equity (for mid-level and higher) in the quarter of the turnover. At the same time, one may be concerned that our results are actually a severe underestimate of the true effect of marketing employee turnover because we only measure the immediate-term, and not long-term, impacts of marketing employee turnover. To the extent that there is long-lasting damage to brand performance metrics following employee turnover, our estimates may meaningfully undervalue the importance of such employees.

Therefore, a natural follow-up question is whether this impact is long-lasting or merely

Table 3: Effects of 4-quarter stock marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive turnover	−0.010*** (0.0013)			−0.0061*** (0.0015)	−0.0054*** (0.0014)			−0.0043** (0.0016)
No. of marketing manager turnover		−0.0027*** (0.000 35)		−0.0014*** (0.000 41)		−0.0013*** (0.000 37)		−0.000 96* (0.000 43)
No. of marketing junior turnover			−0.0016*** (0.000 22)	−0.000 80** (0.000 25)			−0.000 37 (0.000 23)	0.000 18 (0.000 26)
Log no. of current employees	−0.30*** (0.068)	−0.29*** (0.068)	−0.30*** (0.068)	−0.25*** (0.069)	0.11 (0.072)	0.12 (0.072)	0.090 (0.072)	0.13† (0.073)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels in the past 4 quarters on brand buzz and brand equity. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

a short-term dip. To investigate the long-term effects of marketing employee turnover on brand buzz and brand equity, we construct a stock turnover variable that aggregates the total number of marketing employee turnover over the previous four quarters at each seniority level. We then evaluate its effect on brand performance metrics. This stock measure captures the aggregate effect of employee turnover over the entire preceding year, thereby measuring the effects over a considerably longer time period and capturing the combined effect on an annual scale.

Table 3 reports the results. We find consistent patterns indicating that marketing employee turnover has a significant negative effect on brand buzz and brand equity, with their influence on brand performance metrics diminishing as employee rank decreases. This confirms that marketing employee turnover has a long-term negative impact on brand performance metrics. Additionally, the effect sizes are smaller compared to the current-quarter effects, suggesting a decaying impact of employee turnover over time.

4.4 Digital-Related Positions

Finally, one may expect that the impact of marketing employee turnover may depend not only on their hierarchical level but also on their specific functional role within the organization. In particular, the rapid digitization of marketing over the past few decades has created multiple novel roles that primarily demand emerging knowledge encompass cutting-edge digital marketing technologies and tools —such as Chief Digital Officer, Digital Marketing Manager, SEO/SEM Specialist, and Social Media Manager. According to a knowledge-based theory (Grant, 1996) of the firm, the impact of employee turnover on firm performance could depend on the relative risks of losing relevant knowledge, which could differ systematically across digital versus non-digital roles if digital positions are harder (or easier) to refill due to tighter (more slack) labor markets (Kane et al., 2017; Schaarschmidt, Walsh, and Ivens, 2021; Li et al., 2022); if duties of employees in such roles affect customers more (or less) directly; or if digital outputs are more (or less) demanding of employee maintenance. One may argue, for example, that roles such as Social Media Manager are non-essential for brands and are simply trend-chasing, while others may consider such roles as especially crucial in brand-building.

To test which hypothesis may hold in our context, we identify digital job positions in our data, defined as those with job titles broadly associated with terms such as "digital," "influencer," "platform," "mobile," "web," or "social media", and separately measure employee turnover of those in digital versus non-digital roles.[7]

We find that the turnover of marketing employees in digital roles has substantially larger

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[7]We use a modified two-step LLM-based approach similar to the one used for classifying seniority levels based on job titles. Details are provided in Appendix E.

Table 4: Effects of digital versus non-digital marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of digital marketing executive turnover	−0.10***			−0.082***	−0.081***			−0.066***
	(0.017)			(0.017)	(0.018)			(0.018)
No. of non-digital marketing executive turnover	−0.027***			−0.0095	−0.0084			−0.0014
	(0.0063)			(0.0070)	(0.0067)			(0.0074)
No. of digital marketing manager turnover		−0.035***		−0.016*		−0.042***		−0.035***
		(0.0077)		(0.0081)		(0.0081)		(0.0086)
No. of non-digital marketing manager turnover		−0.0067***		−0.0038†		0.000 58		0.000 66
		(0.0019)		(0.0020)		(0.0020)		(0.0021)
No. of digital marketing junior turnover			−0.026***	−0.019**			−0.016*	−0.0085
			(0.0059)	(0.0061)			(0.0063)	(0.0064)
No. of non-digital marketing junior turnover			−0.0045***	−0.0018			−0.000 12	0.0018
			(0.0010)	(0.0011)			(0.0011)	(0.0012)
Log no. of current employees	−0.30***	−0.28***	−0.30***	−0.24***	0.11	0.13†	0.093	0.13†
	(0.068)	(0.068)	(0.068)	(0.069)	(0.072)	(0.072)	(0.072)	(0.073)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of digital and non-digital marketing employee turnover at different seniority levels on brand buzz and brand equity with industry specific time fixed effect. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees of a specific role at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

impacts on brand buzz and brand equity compared to their counterparts in non-digital roles. In columns (1) and (5), we present regression results for digital and non-digital senior executive turnover on brand buzz and brand equity, respectively. Both digital and non-digital senior marketing executive turnover have highly significant effects on brand performance. Specifically, for digital employees, one senior marketing executive turnover results in a decline of 0.10 in brand buzz (approximately 14.9% of a median within-firm standard deviation) and a decline of 0.081 in brand equity (approximately 8.9% of a median within-firm standard deviation).

By contrast, the effects of non-digital employees are much smaller. One senior marketing executive turnover among non-digital employees leads to a decline of 0.027 in brand buzz (approximately 4.0% of a median within-firm standard deviation) and a decline of 0.0084

in brand equity (approximately 0.92% of a median within-firm standard deviation). Similar patterns are also observed among mid-level managers and junior employees. These findings suggest that marketing employees with modern digital-related skills play a significantly more critical role in determining modern brand performance.

5 Robustness Checks

5.1 Placebo Test

While these baseline results offer strong suggestive evidence that marketing employees play a significant role in maintaining brand performance, one may be concerned that our two-way fixed effects specification is still affected by other sources of bias. In particular, one may be concerned that the observed relationship between brand performance and marketing employee turnover are not due to the effect of turnover on brand quality, but rather the effect of sustained brand under-performance on subsequent marketing employee turnover. If this were the case, our results would in fact be driven by reverse causality, and our estimates of the importance of marketing employees would be invalid. Similarly, one may be concerned that some third-party, unobserved factor drives both below-average brand performance and above-average marketing employee turnover in a given period, such as a scandal that both drives employees to quit and brand performance to nosedive. In both cases, our estimates would be confounded by time-varying, firm-specific deviations from industry-level trends.

To inspect these concerns, we here present a simple placebo test of our specification. In this model, we examine effects of turnover *just prior* to the given quarter, i.e. a lead measure

of employee turnover, formally implemented with the following econometric specification:

$$y_{it} = \sum_s \beta^s \ exit^s_{i,t+1} + \theta X_{it} + \mu_i + \gamma_{gt} + u_{it}. \tag{2}$$

If employee turnover causally affects brand performance metrics, their effects should only manifest after the turnover, not before. Testing future turnover as a "placebo" allows us to verify this relationship and rule out confounding pre-trends.

Table 5: Placebo test of future 1-quarter marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive	0.0043			0.0033	−0.012			−0.013
turnover 1 quarter after	(0.022)			(0.022)	(0.024)			(0.024)
No. of marketing manager		0.041		0.041		0.042		0.042
turnover 1 quarter after		(0.029)		(0.029)		(0.030)		(0.030)
No. of marketing junior			0.011	0.0096			0.0076	0.0060
turnover 1 quarter after			(0.027)	(0.027)			(0.029)	(0.029)
Log no. of	−0.38***	−0.38***	−0.38***	−0.38***	0.072	0.073	0.073	0.073
current employees	(0.068)	(0.068)	(0.068)	(0.068)	(0.071)	(0.071)	(0.071)	(0.071)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Placebo test for effects of marketing employee turnover in the subsequent quarter at different seniority levels on brand buzz and brand equity with industry specific time fixed effect. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees of a specific role at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

Results are presented in Table 5. We find no evidence that marketing employee turnover affects brand buzz or brand equity one quarter in advance, suggesting that differential pre-trends are not driving the observed effects in our primary analysis.

5.2 Instrumental Variable (Peer-of-Peer) Specification

All the same, one may still be concerned that there exist contemporaneous, firm-specific confounds that drive both changes in brand performance and marketing employee turnover at the same time. While our previous estimates found no evidence of any pre-period confounds, those models cannot fully rule out the possibility that an unobserved third covariate may drive declines in brand performance and increases in marketing employee turnover in the same quarter. For example, as mentioned above, firm-specific scandals could plausibly drive both turnover and declines in brand performance.

Alternatively, one may be concerned that our previous estimates suffer from classic measurement error, in particular due to the possibility of imprecision in reported timing of marketing employee turnover from our Revelio data. Since employee turnover is self-reported on sites such as LinkedIn, it may occasionally be reported retrospectively, leading to recall or rounding errors in the reported dates of job moves. In that case, one might worry that our estimates may be meaningfully attenuated by measurement error, leading us to underestimate the true effect of marketing employee turnover on brand performance in our main specification.

We use an instrumental-variables approach to address both concerns. Specifically, we instrument for marketing employee turnover at focal firms with marketing employee turnover of the same seniority level at peer-of-peer companies. Peer firms of a focal firm are those that share the same industry, while peer-of-peer firms operate in the same industry as a peer firm but do not overlap with the focal firm's industry. Intuitively, this instrument captures a measure of labor market conditions for marketing employees in a broadly-defined set of

Table 6: IV regression of marketing turnover on brand buzz and brand equity

	Second stage					
	Brand buzz			Brand equity		
No. of marketing executive turnover	−0.38***			−0.21***		
	(0.064)			(0.061)		
No. of marketing manager turnover		−0.13***			−0.068**	
		(0.023)			(0.021)	
No. of marketing junior turnover			−0.058***			−0.036***
			(0.0083)			(0.0082)
Log no. of current employees	0.34*	0.67**	0.33**	0.47***	0.63***	0.51***
	(0.14)	(0.2)	(0.13)	(0.14)	(0.19)	(0.13)
Observations	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.883	0.866	0.888	0.976	0.975	0.975
First stage F-stat	37.28	58.70	86.76	37.28	58.70	86.76

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$
Notes: Instrumental variable regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity. The number of marketing employee turnover among peers-of-peers firms at each corresponding seniority level is used as the instrument. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees of a specific role at a certain seniority level who leave a given firm during a specific quarter. Standard errors are reported in parentheses.

related firms that do not include the focal firm or its immediate peers, isolating variation in the labor market conditions that is not driven by any firm-specific factors that may be otherwise confounded.[8] We use peer-of-peer firms, and not direct peer firms, since changes at peer firms may more plausibly directly affect brand performance of the focal firm. This instrument is inspired by a rich literature in marketing that uses peer-of-peer instrumental-variables designs to establish causal effects, including Germann, Ebbes, and Grewal (2015); Shi, Grewal, and Sridhar (2021). For details on the precise construction this instrument, see Appendix F.

Results from this instrumental variables specification are presented in Table 6.[9] We re-

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[8]One may be concerned that peer-of-peer turnover may be higher in worse economic conditions, which could also correlate with worse brand performance, posing a potential threat to the exclusion restriction of our instrument. However, we find in ancillary analysis that that peer-of-peer marketing employee turnover is instead associated with *tighter* labor market conditions, which appears to then drive higher levels of marketing employee turnover: the correlation between the national unemployment rate and average peer-of-peer turnover in each quarter is -0.32, suggesting that improved labor market conditions are associated with higher marketing employee turnover.

[9]We note that we cannot perform stacked regression with our IV analysis, as peer-of-peer turnover at

cover first-stage F-statistics of over 37 for marketing employee turnover at all three seniority levels, well above the conventional strong-instrument threshold of 10. In our second-stage, we find highly significant effects of instrumented marketing employee turnover on brand buzz and brand equity. Moreover, we find point estimates that are a full order of magnitude larger than the estimates in our naive two-way fixed effects regression: in this instrument-variables specification, we find that every marketing executive turnover is associated with a 0.38, roughly 56.7% of a median within-firm standard deviation, decline in measured short-term brand buzz, and a 0.21, roughly 23.1% of a median within-firm standard deviation, decline in measured long-term brand equity. In both cases, these effect sizes are approximately ten times as large as the naive estimates. This suggests that our baseline results are unlikely to be driven by an contemporaneous firm-level confounds, and are instead indeed driven by the marketing employee turnover *per se*. The larger estimated magnitudes also suggest that our baseline estimates may indeed be significantly attenuated due to classical measurement error, and true effects are indeed considerably larger; or, alternatively, that the local average treatment effect (LATE) from our IV analysis may be non-representative of general impacts, since in tight labor market conditions with high peer-of-peer turnover, effects may derive from very-high-quality marketing employee turnover, as those employees may be more likely to leave for other positions in tight labor markets (see also Nanda et al., 2024). As we are unable to empirically distinguish these two potential explanations for our larger effects, we primarily present this analysis as a successful robustness check that our negative effects are unlikely to be driven by contemporaneous confounds, and instead capture true negative effects of employee turnover on brand performance.

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different levels is driven by broad labor market conditions and are highly collinear across levels. As such, we only present IV results for the separate-level regressions.

In sum, we find, across a wide variety of specifications, that marketing employee turnover is associated with highly significant declines in both short- and long-term measures of brand performance. We find that these declines are unconfounded by spurious pre-trends and appear, if anything, considerably larger in an instrumental-variables analysis based on measured levels of peer-of-peer employee turnover.

5.3 Dropping COVID-19 Era Observations

Finally, one may be concerned that our panel overlaps slightly with part of the COVID-19 era, when marketing employee turnover and brand performance may have systematically shifted for spurious reasons. As such, we also estimate our specifications with data from 2020 excluded, in order to ensure that none of such potentially-problematic COVID-19 era variation is driving our results. Estimates from this restricted sample are presented in Appendix G. Our point estimates are qualitatively identical, although in some cases we find very slightly smaller point estimates; for example, the effect of one marketing executive turnover on brand buzz in the stacked regression specification changes from -0.024 to -0.027, with nearly identical (very high) levels of statistical significance. We interpret this as evidence that our results are not driven by any spurious confounds related to the COVID-19 pandemic. Full tables for this restricted-sample specification are presented in Appendix G.

6 Conclusion

Shifting trends in the labor markets have made it common for employees to change jobs frequently. According to a study by the Employee Benefit Research Institute, the number of employees looking to leave jobs after just a year has grown steadily since 2006 (Cas-

trillon, 2023). Losing employees is particularly damaging for companies' outward-facing functions, such as marketing (Griffith and Lusch, 2007; Ahearne et al., 2025), because of the rising importance in customer-centric strategic orientation. To keep customers satisfied and loyal, firms need to put consistent effort into their brand management activities, which is typically the responsibility of marketing employees. However, the turnover of senior marketing executives, mid-level marketing managers, and even junior marketing employees can be detrimental to such efforts as departing employees take their branding skills, experience, and customer relationships with them (Hom et al., 2017; Moorman, Sorescu, and Tavassoli, 2024).

Our study provides robust empirical evidence on the relationship between marketing employee turnover and brand performance. Analyzing a panel dataset of 477 firms between 2012 and 2020, we leverage a two-way fixed effects approach and an instrumental variables strategy to identify a significant causal link between marketing employee departures and declines in brand buzz and brand equity. Our results reveal that senior executive turnover leads to pronounced declines in brand performance, but mid-level managers and junior employees are still significantly important in maintaining brand buzz. As mid-level marketing managers are believed to be the "heart" of the company (Field, Hancock, and Schaninger, 2023), our results empirically show—for the first time in the empirical literature—that their departure does indeed negatively impact brand performance (Frankwick et al., 1994). Furthermore, we find that turnover among employees in digital marketing roles generates significantly larger negative effects than those in traditional marketing roles, underscoring the critical role of digital expertise in modern brand management.

Beyond quantifying the immediate disruptions caused by turnover, we also examine the

persistence of these effects over a longer window of time. We analyze cumulative turnover over four-quarter windows and find still-significant, but smaller impacts, suggesting that while brand performance metrics partially recover over a longer time period, the negative impact still lasts. These findings highlight the importance of continuity in marketing leadership and the challenges firms face in maintaining brand equity amid workforce fluctuations.

We then further validate our results with a battery of robustness checks. We test for confounding pre-trends using a placebo test of the effect of future marketing turnover and find null effects, confirming that reverse causality is unlikely to be driving our observed main effects. We also implement an instrumental-variables estimator based on marketing employee turnover at peer-of-peer firms and find significant and larger effect estimates, suggesting that our effects are also not driven by firm-specific contemporaneous confounds. Finally, analysis that excludes observations from the COVID-19 era recovers highly similar results, suggesting that our effects are not driven by any confounds arising from the recent pandemic.

Additionally, examining the specific mechanisms through which marketing employee turnover impacts brand performance is outside of the scope of the present work. While we hypothesize that disruptions in marketing strategy, loss of institutional knowledge, and weakened consumer engagement play key roles, future research could investigate these pathways more explicitly. Studies leveraging internal firm data, employee surveys, or case studies could provide richer insights into how firms manage marketing turnover and mitigate its adverse effects. Moreover, future research could examine whether the impact of turnover varies by industry, firm size, or market competition, shedding light on potential heterogeneity in our findings.

Another promising avenue for future research is the role of organizational culture and employee retention strategies in mitigating the negative effects of turnover. Firms with strong internal knowledge-sharing mechanisms and structured succession planning may experience less disruption from employee departures. Investigating how different retention strategies—such as compensation incentives, career development opportunities, and flexible work arrangements—affect marketing employee stability and brand performance outcomes could provide actionable insights for practitioners. Additionally, given the growing prevalence of remote work, future studies could explore how virtual collaboration tools and remote work policies influence marketing team cohesion and brand performance.

Finally, our findings raise important questions about the broader implications of workforce dynamics in the marketing profession. The substantial negative impact of digital marketing employee turnover suggests that firms must prioritize talent retention and skill development in this area. Future research could explore how firms navigate the challenges of hiring and retaining digital marketing talent in an increasingly competitive labor market. Additionally, studying the impact of marketing workforce composition—such as the balance between in-house teams and external agencies—on brand performance could provide deeper insights into optimal marketing organizational structures.

In sum, marketing drives brands, but people drive marketing. Losing marketing talent, especially digital marketing talent, hurts brand performance, and firms pay a lasting price. Our findings reveal the painful causal effects of turnover, from senior executives down to mid-level managers and even junior employees, highlighting the importance of continuously investing in marketing teams. In an economy characterized by frequent employee mobility, retaining and nurturing marketing talent is not simply good management—it's essential for

sustained brand success.

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A   YouGov BrandIndex Survey Questions

Here we list the YouGov BrandIndex survey questions. The first question links to our brand buzz measure and the next 6 questions links to our brand equity measure.

1. Buzz

   (a) Over the PAST TWO WEEKS, which of the following brands have you heard something POSITIVE about (whether in the news, through advertising, or talking to friends and family)?

   (b) Now which of the following have you heard something NEGATIVE about over the PAST TWO WEEKS?

2. Impression

   (a) Overall, of which of the following brands do you have a POSITIVE impression?

   (b) Now which of the following brands do you have an overall NEGATIVE impression?

3. Quality

   (a) Which of the following brands do you think represents GOOD QUALITY?

   (b) Now which of the following brands represents POOR QUALITY?

4. Value

   (a) Which of the following brands do you think represents GOOD VALUE FOR MONEY? By that we don't mean "cheap," but that the brands offer a customer a lot in return for the price paid.

(b) Now which of the following brands do you think represents POOR VALUE FOR MONEY? By that, we don't mean "expensive," but that the brands do not offer a customer much in return for the price paid.

5. Recommendation

(a) Which of the following brands would you RECOMMEND to a friend or colleague?

(b) And which of the following brands would you tell a friend or colleague to AVOID?

6. Corporate Reputation (not exactly corporate reputation)

(a) Imagine you were looking for a job (or advising a friend looking for a job). Which of the following brands would you be PROUD to work for. Imagine you (or your friend) were applying for the same sort of role at the following brands that you currently have or would apply for.

(b) Now which of the following brands would you be EMBARRASSED TO WORK FOR? Imagine you (or your friend) were applying for the same sort of role at the following brands that you currently have or would apply for.

7. Satisfaction

(a) Of which of the following brands would you say that you are a "SATISFIED CUSTOMER"?

(b) Of which of the following brands would you say that you are a "DISSATISFIED CUSTOMER"?

B   Revelio Labs Individual Position Data

In the Revelio Labs individual position data, we first identify marketing employees using the "MAPPED ROLE" variable, which broadly defines the job responsibilities of each employee. Revelio employs a proprietary algorithm to aggregate position roles into 1500 discrete levels for this variable. Here is the complete list of job roles that we select as marketing-related employees: account coordinator, account services, actor, advertising, affairs, ambassador, animator, art, artist, brand, brand ambassador, brand marketing, brand representative, branch sales, business sales, campus ambassador, campaign, client service representative, comercial, commercial, commercial account, commercial officer, commercial sales, communication, communications, communications consultant, communications coordinator, community, community relations, consumer marketing, content, content analyst, content creator, contributor, copywriter, costumer service, creative, creative services, crm, customer, customer account, customer advocate, customer analyst, customer care, customer care representative, customer consultant, customer development, customer engineer, customer engagement, customer marketing, customer operations, customer relations, customer representative, customer sales, customer service, customer service agent, customer service analyst, customer service consultant, customer service coordinator, customer service engineer, customer service officer, customer service sales, customer service sales representative, customer services, customer services agent, customer solutions, customer success, customer support, customer support engineer, customer support representative, design, design consultant, designer, digital, digital account, digital designer, digital marketing, digital media, digital product, digital project, digital sales, e commerce, ecommerce, editorial, editor,

event, event coordinator, events, game designer, government affairs, graphic artist, graphic design, graphic designer, hospitality, industrial designer, innovation, instructional designer, interaction designer, journalist, key account sales, knowledge, market, market access, market analyst, market development, market research, market research analyst, market sales, marketing, marketing analyst, marketing business development, marketing communication, marketing communications, marketing consultant, marketing coordinator, marketing officer, marketing operations, marketing product, marketing project, marketing representative, marketing research, marketing sales, marketing services, marketing strategic, media, media buyer, media planner, media relations, merchandise, merchandise planner, merchandising, merchandiser, merchant, model, online, online marketing, outside sales, outside sales representative, photo, photographer, pr, press, pricing, pricing analyst, producer, product, product analyst, product consultant, product design, product designer, product development, product development engineer, product engineer, product engineering, product marketing, product sales, product support, production artist, products, programming, promotions, promoter, promotor, public affairs, public relations, relations, reporter, retail, retail account, retail consultant, retail marketing, retail operations, retail sales, retail sales consultant, retail sales representative, retail salesperson, retail store, retention, sale, sales, sales account, sales administration, sales administrator, sales agent, sales analyst, sales business development, sales consultant, sales coordinator, sales customer service, sales development, sales development representative, sales marketing, sales marketing coordinator, sales officer, sales operations, sales operations analyst, sales promoter, sales representative, sales sales, sales service, sales service representative, sales support, sales support representative, salesman, salesperson, seo, service, service sales, services sales, seller, social media, social media mar-

keting, stage, store sales, strategic marketing, technical marketing, technical writer, telemarketer, telemarketing, telesales, trade marketing, translator, ui designer, ui ux designer, user, user designer, user researcher, ux designer, ux ui designer, video editor, virtual, visual, visual designer, visual merchandising, visual merchandiser, web designer, writer.

Next, we exclude job titles containing terms such as "sales," "production," "operations," "customer service," and "customer care," as these job titles are less aligned with the traditional notion of "marketing."

In the individual position data, Revelio Labs generates a seniority metric using proprietary algorithms. This metric is based on information such as an individual's job title, company, industry, previous job history, and age, and it is initially expressed as a continuous variable. Revelio Labs then converts this continuous seniority metric into one of seven discrete levels. However, there are some evident misclassifications that require attention. For example, titles like "CMO, Project Lantern - Google X" and "Senior Vice President, Digital Product Management" are classified at the lowest seniority level, while "Executive Assistant to Global CMO, Global CSO, and Global Retail Director, KFC" is classified at the highest seniority level. More concerningly, the title "CMO" appears across all seven levels.

To address these inconsistencies, we reclassify the seniority levels using a two-step approach based on a Large Language Model (LLM). We leverage the distilled version of the RoBERTa base model to generate text embeddings for raw job titles and use similarity distances to cluster them. Since we lack sufficient labeled data to fine-tune the RoBERTa base model for the specific task of classifying seniority levels for marketing employees, we adopt a hybrid approach. In the first step, we classify seniority levels based on keywords, assigning job titles containing specific keywords to five distinct levels.

1. CMO level (excluding keywords like "assistant"):

    (a) 14 CMO-related job titles used in the literature (Koo and Lee, 2018): chief marketing officer, vice president of marketing, executive vice president of marketing, senior vice president of marketing, chief sales officer, chief revenue officer, vice president of sales, executive vice president of sales, senior vice president of sales, vice president of revenue, executive vice president of revenue, senior vice president of revenue, chief business development officer, vice president of business development, executive vice president of business development, senior vice president of business development, chief market development officer, vice president of market development, executive vice president of market development, senior vice president of market development, chief commercial officer, vice president of commerce, executive vice president of commerce, senior vice president of commerce

2. Senior executive level (excluding keywords like "assistant"):

    (a) 8 executive acronyms: CEO, CPO, CMO, CBO, CFO, CTO, COO, CDO

    (b) both "chief" and "officer"

    (c) evp, svp, vp, president, director or associate director

3. Middle manager level: assistant director, manager, mgr

4. Junior level: representative, specialist, analyst, coordinator, consultant, artist, design

5. Entry level: support, clerk, intern, assistant

The first step involves a keyword-based method to "label" job titles by assigning them to corresponding seniority levels. In the second step, for job titles that do not contain any of

these keywords, we use the RoBERTa LLM to compute text embeddings. We then calculate the cosine similarity between each job title's embedding and the centroids of the keyword-based embedding clusters. Each job title is assigned to the seniority level with the highest similarity metric. Approximately 0.70% of job titles are excluded because their embeddings are too distant from any keyword-based cluster centroids. Lastly, we combine CMO-level and senior-executive-level positions to define senior marketing executives, and group junior- and entry-level positions to define junior marketing employees.

B.1   Robustness to Alternative Seniority Classification

While we argue that our above approach is the most performant for our context, we also present a robustness check using a prior keyword-based method from earlier work. For this exercise, we classify marketing executives using the 14 CMO-related job titles defined in the literature (Koo and Lee, 2018) as keywords. Table 7 presents our results.

We find that the effects of turnover among the newly included marketing executives are comparable in magnitude to those observed when classifying based on the narrower set of 14 CMO-related job roles defined in the literature.

Table 7: Effects of marketing employee turnover on brand buzz and brand equity

	Brand buzz			Brand equity		
	(1)	(2)	(3)	(4)	(5)	(6)
No. of chief marketing	−0.13		−0.041	−0.087		−0.042
executive turnover	(0.11)		(0.11)	(0.12)		(0.12)
No. of senior executive (excluding		−0.041***	−0.024***		−0.022***	−0.017**
Koo and Lee's roles) turnover		(0.0052)	(0.006)		(0.0055)	(0.0063)
No. of marketing			−0.0055***			−0.0038*
manager turnover			(0.0016)			(0.0017)
No. of marketing			−0.0032**			0.00073
junior turnover			(0.0010)			(0.0011)
Log no. of	−0.37***	−0.30***	−0.25***	0.073	0.11	0.13†
current employees	(0.068)	(0.068)	(0.069)	(0.071)	(0.072)	(0.073)
Observations	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity with industry specific time fixed effect. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (4) only examine the effect of Koo and Lee's CMO-related turnover; specifications (2) and (5) only examine the effect of senior marketing executive (excluding Koo and Lee's CMO-related roles) turnover; specifications (3) and (6) use the stacked regression with turnover at all four levels. Standard errors are reported in parentheses.

C   Details on Merging the YouGov and Revelio Datasets

In this section, we present our full procedure for merging our two primary panels, YouGov and Revelio, into our final analysis panel.

First, we hand-code the publicly-traded corporate owners of the brands in the YouGov database by using a combination of public data sources, company websites and annual reports, as well as the associated CIK code for each of these publicly-traded corporate owners. Revelio Labs dataset contains a CIK code by merging the individual position data with the company reference files. We are able to match 401 publicly traded firms across YouGov and Revelio databases using the CIK codes.

Second, for the private corporate firms that do not have a CIK code, we use a direct string matching approach to match the remaining YouGov companies with Revelio companies. We find another 307 firms matched using company name or "child" company name or "parent" company name. Finally, for the remaining unmatched companies in the YouGov database, we are able to match 133 firms using fuzzy string matching, confirmed with manual checks.

The merged list of companies contains 814 firms, with 1389 brands, observed from June 3, 2007 to June 30, 2020. The unit of observation is brand-day. There are 4,646,429 observations over 4,777 days in the matched dataset. Table 8 gives summary statistics of the number of marketing employee turnover at each seniority level and various brand metrics for our initial unbalanced merged dataset containing all the brands that appear both in YouGov dataset and Revelio dataset.

However, a number of firms have a high degree of missing data in this dataset, and are not balanced across all periods. We restrict our analysis to the balanced panel, and as

Table 8: Summary statistics for marketing employee turnover and brand performance in the merged unbalanced panel dataset

Variable	Mean	SD	Mean SD by firm	Median SD by firm
Koo and Lee's CMO turnover	0.00026	0.017	0.0043	0
Senior executive turnover	0.046	0.60	0.14	0
Mid-level manager turnover	0.17	2.36	0.50	0
Entry-level junior turnover	0.30	4.24	0.88	0
Total turnover	0.52	6.65	1.46	0
Brand buzz	5.64	8.42	4.73	4.02
Brand equity	12.24	13.02	4.87	4.12
No. of observations				4646429
No. of brands				1389
No. of firms				814
No. of days				4777

Note: The table presents summary statistics of our initial unbalanced panel at the brand-day level. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Current employees refers to the total number of employees working at a given firm during the quarter. Brand metrics at brand level.

such, first restrict our sample period to range from November 13, 2012 on (so that all score measures are available from YouGov) and retain only the 477 firms with full data for the entire sample period.

D Different Controls for Firm Size

In this section, we present analyses that use alternative specifications for controls. First, we present results with no control for firm size; second, we present results with a linear control for firm size. In both cases, results are qualitatively identical to our main specification.

Table 9: Effects of marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive turnover	−0.044***			−0.026***	−0.02***			−0.017**
	(0.0051)			(0.0059)	(0.0054)			(0.0063)
No. of marketing manager turnover		−0.012***		−0.006***		−0.005***		−0.0036*
		(0.0014)		(0.0016)		(0.0015)		(0.0017)
No. of marketing junior turnover			−0.0069***	−0.0035***			−0.0013	0.00087
			(0.00086)	(0.00099)			(0.00091)	(0.0011)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity, without controlling for firm size. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

Table 10: Effects of marketing employee turnover on brand buzz and brand equity

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive turnover	−0.036*** (0.0054)			−0.024*** (0.0060)	−0.017** (0.0057)			−0.016* (0.0063)
No. of marketing manager turnover		−0.0089*** (0.0016)		−0.0047** (0.0017)		−0.0037* (0.0016)		−0.0028 (0.0018)
No. of marketing junior turnover			−0.0054*** (0.000 92)	−0.0031** (0.0010)			−0.000 37 (0.000 97)	0.0011 (0.0011)
No. of current employees	-.000035*** (.0000076)	-.000031*** (.0000080)	-.000036*** (.0000077)	-.000021* (.0000082)	-.000015† (.0000080)	-.000014† (.0000085)	-.000022** (.0000081)	-.000012 (.0000087)
Observations	14787	14787	14787	14787	14787	14787	14787	14787
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.912	0.912	0.912	0.912	0.978	0.978	0.978	0.978

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity, using directly the number of current employees as control for firm size. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.

E   Classification of Digital Marketing Employees

In this section, we detail our classification method for demarcating "digital" roles.

We classify digital marketing employees based on their job titles using a similar two-step approach with LLM embeddings as we use for classifying seniority levels.

In the first step, we identify digital-related job titles using specific keywords. Job titles containing any of the following keywords are classified as digital positions: "adobe," "analytics," "androids," "animation," "cloud," "creator," "cyber," "data," "developer," "digital," "e-commerce," "facebook," "google," "graphic," "influencer," "instagram," "ios," "microsoft," "mobile," "online," "platform," "social media," "software," "twitter," "user interface," "visualization," "web," "youtube." These keyword-based job titles also serve as the focal group for the second step.

In the second step, we use the distilled version of the RoBERTa base LLM to compute text embeddings for all job titles. We calculate the centroid of the embeddings of the job titles identified as digital in the above keyword-based classification step, and then compute the cosine similarity between each job title's embedding and this centroid. We then rank job titles by their similarity to the keyword-based digital group in descending order, and classify the top 10% of unassigned job titles with the highest similarity to the keyword-based centroid as digital. In total, 11.8% of marketing employee turnover is classified as digital employee turnover in this manner.

F Peers-of-Peers Network Construction

In this section, we describe the construction of our peer-of-peer instrument.

First, we acquire the NAICS codes and subsidiary/parent relationships from Revelio's ancillary data. We define a focal firm's peers (i.e., first-degree peers) as all the firms operating in the same firm category (defined by four-digit NAICS code) as the focal firm. We then gather the list of secondary firm categories that these peer firms are adjacent to based on industries that any peer's parent firm also operates in, and define the focal firm's peers-of-peers (i.e., second-degree peers) as firms that are operating in these secondary firm categories. We exclude peer firms from peer-of-peer firms. For each firm, we construct its peers and peers-of-peers. For example, Alphabet firm belongs to NAICS code 5132, defined as Software Publishers. Alphabet firm's peers include Dell, Microsoft, Oracle and Salesforce. The parent firm of Microsoft is Microsoft Corp., which operates in firm categories 4594 (Office Supplies, Stationery, and Gift Retailers) and 5613 (employment services) in addition to 5132. We therefore define all firms in firm categories 4594 (like OfficeMax) and 5613 (Self Employment Specialists) as peers-of-peers of Alphabet firm.

In Figure 1, we use Alphabet as a focal firm to demonstrate the process of constructing peers and peer-of-peer firms. (For demonstration purposes, we only include a subset of the firms and the firm categories in which each firm operates.)

This instrument operates under the standard logic of peer-of-peer instruments that have been applied previously throughout the literature (e.g. Shi, Grewal, and Sridhar, 2021). In our case, we expect that variation in marketing employee turnover among peers-of-peers captures broader macro-level trends in labor market conditions across a related set of firm
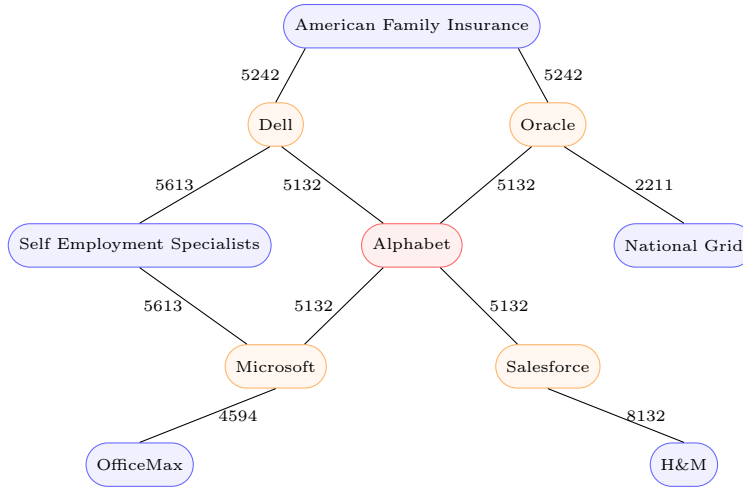
Figure 1: Peers-of-peers network of Alphabet

Note: The four-digit codes adjacent to the links refer to the common first four-digit NAICS codes shared by two firms. Here are the industries associated with these NAICS codes. 5132: Software Publishers; 2211: Electric Power Generation, Transmission and Distribution; 4594: Office Supplies, Stationery, and Gift Retailers; 5242: Agencies, Brokerages, and Other Insurance Related Activities; 5613: employment services; 8132: Grantmaking and Giving Services.

categories. This approach helps isolate general labor market effects from firm-specific variations that may be contemporaneously confounded.[10] Our identifying assumptions are (1) that variation in marketing employee turnover at peer-of-peer firms, as a measure of average labor market movement for marketing employees in a broadly-defined group of related firm categories, is a proxy measure for labor market conditions that drive marketing employee turnover at the focal firm, and (2) that such variation does not affect the focal firm's brand buzz or brand equity except through said marketing employee turnover, in particular after controlling for brand fixed effects and industry-quarter fixed effects. (Note that turnover may be higher under better labor market conditions, as better job opportunities drive higher quit rates; given that we observe negative brand quality effects, we suggest that it is especially

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[10]This may be interpreted as a peer-group-level form of a "leave-one-out" IV design, where we are using the group-level average of a given covariate as an instrument for that covariate, leaving out the focal peer group (following Germann, Ebbes, and Grewal (2015)) to avoid endogeneity.

unlikely that superior labor market conditions for marketing executives drives same-quarter

declines in brand perception measures, except through the effects of the employee turnover

itself.)

G   Pre-Covid Periods

In this section, we present results from a restricted sample that excludes COVID-19-era observations. Results are presented in Table 11. We recover highly similar negative effects of marketing turnover on brand buzz and brand equity, although estimated effect sizes are slightly different.

Table 11: Effects of marketing employee turnover on brand buzz and equity (pre-COVID)

	Brand buzz				Brand equity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of marketing executive turnover	−0.045*** (0.0055)			−0.027*** (0.0063)	−0.018** (0.0058)			−0.013† (0.0066)
No. of marketing manager turnover		−0.011*** (0.0015)		−0.0050** (0.0017)		−0.0049** (0.0015)		−0.0037* (0.0018)
No. of marketing junior turnover			−0.0076*** (0.00093)	−0.0045*** (0.0011)			−0.0015 (0.00097)	0.00031 (0.0011)
Log no. of current employees	−0.27*** (0.072)	−0.27*** (0.073)	−0.26*** (0.072)	−0.21** (0.073)	0.13† (0.076)	0.14† (0.076)	0.12 (0.076)	0.15† (0.076)
Observations	13833	13833	13833	13833	13833	13833	13833	13833
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.915	0.915	0.915	0.915	0.979	0.979	0.979	0.979

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.1$

Note: Two-way fixed effect regressions for effects of marketing employee turnover at different seniority levels on brand buzz and brand equity with industry specific time fixed effect for just pre-Covid periods. Sample based on brand metric data from YouGov and job turnover data from Revelio. Turnover refers to the number of marketing employees at a certain seniority level who leave a given firm during a specific quarter. Specifications (1) and (5) only examine the effect of senior executive turnover; specifications (2) and (6) only examine the effect of mid-level manager turnover; specifications (3) and (7) only examine the effect of junior employee turnover; Specifications (4) and (8) use the stacked regression with turnover at all three levels. Standard errors are reported in parentheses.