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KRANNERT SCHOOL OF MANAGEMENT

Highlighting Management Department Faculty Research

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Management Department Head
Ananth Iyer

This 6th edition of the management department's research newsletter provides a glimpse of the research ideas being generated by our faculty. We hope you enjoy reading and pondering the issues raised, and seek out our faculty if their research is applicable to your context. As always, we do seek feedback from you, the reader, to improve our efforts to share the research excellence of our faculty.

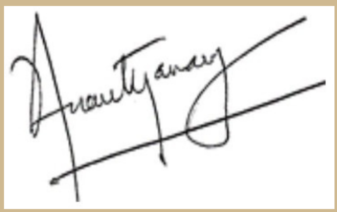
Given that "overstatements in financial reporting" tend to attract lawsuits, Jonathan Black and his co-authors explore where the inclusion of legal experts i.e., general counsel, in senior management, leads to conservative reporting. While claims of better performance may improve compensation of general counsel, the researchers find that they do increase conservative reporting. Yanjun Li studies polynomial-time algorithms to solve select classes of integer programs, a general methodology to frame many business decision-making contexts. But his focus is on characterizing the class of these easier-to-solve models, as a way to expand the sets of real-world problems that can be solved rapidly.

Yan Liu focuses on the impact on risk-taking of size thresholds in regulations, such as the Home Mortgage Disclosure Act. His model finds that firms "just below the threshold choose safer projects, while firms just above the threshold choose riskier investments," thus suggesting that thresholds can cause distortion effects. Rich Makadok studies the question of whether a company should be "a pioneer or a follower," citing the example of Apple's smartphone entry after cell phones were already adopted. He and his co-author offer a framework to separate first mover advantages and first mover benefits to understand how different entry decisions affect firms.

Mohammad Rahman uses a “quasi-random design” to explore racial discrimination faced by minority hosts on the Airbnb platform. He and his co-author separate statistical discrimination from taste-based discrimination to explore the extent of statistical discrimination in marketplaces. Meredith Woehler explores the interaction between teams across companies during a merger or acquisition and its impact on employee turnover during such events. By studying over 15 million email records, she and her co-authors show that well-connected employees are more likely to stay in their jobs as they reach out to form new connections. In contrast, less connected employees tend to leave, unless their jobs are secure.

Research drives a lot of our faculty on a daily basis, and their passion for excellence should be evident in the ideas showcased here. We will continue to provide you our research newsletters on a regular basis. We hope you enjoy reading this newsletter, and look forward to your feedback.

Have a wonderful day.



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Legal Expertise in Top Management: Does it Lead to Conservatism in Accounting?

by Melvin Durai

Shareholders of a San Diego-based pharmaceutical company filed a federal class action lawsuit accusing the company of overstating its assets and exaggerating its financial health.

An investor sued a Chinese vaping company, claiming that it had overstated its financials when it filed its IPO paperwork.

A shareholder of a Chicago-based cybersecurity technology company filed a securities fraud class action complaint, alleging that the company overstated its revenue from software licenses.

These lawsuits, filed in the last few years, illustrate a well-founded belief in accounting circles: overstatements in financial reporting are more likely to trigger lawsuits than understatements because it's easier to show investor harm.

Source:
Jonathan Black

"If a company understates, people are surprised in a good way," said Jonathan Black, assistant professor of accounting in Krannert School of Management. "The economic reality is better than the picture that was painted in the financial statements, so they are less likely to initiate a lawsuit."

Reporting conservatively on financial statements—whether recognizing bad news sooner or good news later—can help deter lawsuits. Because managers with legal expertise are more likely to recognize the benefits of conservatism, Black and his collaborators were interested to see whether legal expertise in the senior management team leads to greater conservatism. They also sought to determine if changes in the legal environment that alter the legal costs of overstated earnings or net assets result in an adjustment of conservatism levels among firms with such legal expertise.

Black and his co-authors, Charles Ham of Washington University in St. Louis, Michael D. Kimbrough of University of Maryland, and Ha Yoon Yee of Krannert, used the presence of a general counsel (GC) in senior management as evidence of legal expertise. While a growing number of firms are appointing GCs to senior management, the researchers note that it isn't obvious that GCs will seek to minimize legal risks through conservative reporting because this may conflict with other incentives to report favorably. A rosier financial picture may increase a GC's compensation or improve their career prospects.

But the researchers' findings, revealed in a paper entitled "Legal Expertise and the Role of Litigation Risk in Firms' Conservatism Choices," indicate that a GC in senior management does lead to greater conservatism.

Analyzing almost 30,000 annual observations of firms from 1992 to 2017, the researchers found that firms with a GC in senior management, relative to non-GC firms, are faster to recognize bad news on their financial reports and do so more asymmetrically—more uniformly with how they recognize good news.

"If you have inventory that is going obsolete and you need to write-down the inventory, how quickly do you do that?" Black said, citing an example of "bad news" that a GC firm may recognize sooner than a non-GC firm.

Exploring the responsiveness of GC and non-GC firms to changes in the legal environment, the researchers found that GC firms report more conservatively when their industry peers have faced recent litigation. In contrast, non-GC firms show no significant change in their conservatism when their peers experience legal action.

The researchers also looked at the impact of two court decisions that affected litigation risk for firms in the Ninth Circuit Court of Appeals. Litigation risk decreased for firms in the Ninth Circuit following the 1999 Silicon Graphics International (SGI) case, but returned to the same level as other Circuits after the 2007 Tellabs case.

The researchers found that during the period of lower litigation risk (2000 to 2006) GC firms in the Ninth Circuit were significantly less conservative than GC firms outside the Ninth Circuit. But outside this period (before 2000 and after 2006), GC firms in the Ninth Circuit were no more or less conservative than GC firms in other Circuits. Just as telling, the GC firms outside the Ninth Circuit and the non-GC firms inside the Ninth Circuit did not alter their level of conservatism in response to the cases.

These findings suggest that firms with legal expertise in top management adjust their level of conservatism to changes in the legal environment that alter the legal risks associated with overstated earnings or net assets.

As more lawyers occupy senior positions in companies, making decisions alongside CEOs and CFOs, the research helps reveal the implications of this trend.

"Our study suggests that companies with influential GCs report their earnings differently, and specifically, they're going to report more conservatively, which is a good thing for investors that are worried about unexpected bad news," Black said. "The alternative possibility would be that if you pay a lawyer a lot of money, they may try to maximize their own wealth at the expense of the shareholder and the company. So, we find some evidence that influential GCs benefit investors rather than harm them."

The study also substantiates one of the factors for conservative reporting.

"There's been some evidence that litigation risk drives conservative reporting, but our study confirms that," Black said. "We have these shocks to litigation risk and we have variation in who would be responsive to it."

Approaching Hard Integer Programming Problems with Easy Ones

By Melvin Durai

In integer programming, the values of decision variables in optimization models are restricted to integers. If you are determining, for example, how many cars to produce in a month or how many courses to include in an education program, you'd want to avoid fractions. In the case of a "yes/no" decision, such as whether a certain supplier is included in a supply chain or whether an investment opportunity is taken, the integer variable can be binary, taking the value of 0 or 1.

Though integer programming models are common in business and economic applications, it is a big challenge to efficiently solve general integer programming models. Using the language of computer science, integer programming is "nondeterministic polynomial-time complete" or NP-complete. People do not expect to solve a general integer programming problem, with solution time being a polynomial function of the problem's input size.

"A lot of progress has been made in computational study of solving integer programming problems," said Yanjun Li, professor of quantitative methods in Krannert School of Management. "People have developed various methods for bounding, branching, cutting plane, and search that have been included in modern solvers."

Li and other researchers have been inspired by H.W. Lenstra's polynomial-time algorithm for solving integer programming problems with a fixed number of variables. Discovered in 1983, it was hailed as a breakthrough in solving integer programming problems.

Source:
Yanjun Li

"We know that integer programming is NP-complete if the dimension of integer variables is considered as an input," Li said. "Lenstra's result is that an integer programming problem can be solved in polynomial time if the dimension of integer variables is considered as a fixed number. So, with this result, we are able to approach hard integer programming problems with easy integer programming problems in some sense."

Li's research interest is in studying polynomial-time solvability of the integer programming problems with a fixed Chvatal rank. The Chvatal rank of integer programs is defined with the Chvatal cutting-plane method that was introduced by Vasek Chvatal in 1973. As proved by Chvatal, every integer program has a finite Chvatal rank. A higher Chvatal rank of an integer program indicates more complexity of the integer program.

To "approach" hard integer programming problems with easy integer programming problems, an open question that has captured the interest of Li and other researchers is: Can integer programming problems with a fixed Chvatal rank be solved in polynomial time?

Several classic combinatorial optimization problems with Chvatal rank 1 have been successfully solved in polynomial time, including the weighted non-bipartite 1-matching problem solved by Jack Edmonds in his trailblazing work in the 1960s that opened up areas inaccessible with the classic methods based on flows, linear programming, and total unimodularity.

There has been little knowledge of polynomial-time solvability of the general integer programs with Chvatal rank even fixed at 1.

In a paper entitled "On the Rational Polytopes with Chvátal Rank 1," published in Mathematical Programming in January 2020, Li and his co-authors, Gérard Cornuéjols and Dabeen Lee, both of Carnegie Mellon University, studied whether a rational polytope with Chvátal rank 1 contains an integer point.

"We gave several special classes of the integer feasibility problem that are solvable in polynomial time, and we studied various properties of the infeasible integer programs with Chvatal rank 1," Li said.

In another paper with Cornuéjols, entitled "When the Gomory–Chvátal Closure Coincides with the Integer Hull" and published March 2018 in Operations Research Letters, Li explores Gomory–Chvátal cuts, which are prominent in integer programming. The Gomory–Chvátal closure of a polyhedron is the intersection of the half spaces defined by all its Gomory–Chvátal cuts.

"We proved that recognizing the integer programs with Chvatal rank 1 is NP-hard," Li said. "Because polynomial-time solvability of integer program is closely related to polynomial-time solvability of integer feasibility problem of integer program, studying the integer feasibility problem is what we have been focusing on."

They found that the integer feasibility problem for an integer program with Chvatal rank 1 is in the complexity classes of NP and Co-NP, which strongly indicates that the integer feasibility problem can be solved in polynomial time.

"Developing a polynomial-time algorithm for solving integer feasibility problem of the integer programs with Chvatal rank 1 is what I have been working on," Li said.

The Unintended Consequences of Regulations Based on Size Thresholds

By Melvin Durai

The Dodd–Frank Wall Street Reform and Consumer Protection Act, enacted in 2010 in response to the Great Recession, imposed additional regulatory requirements on financial institutions with assets above $10 billion and above $50 billion.

It's among a wide range of regulations, from the Home Mortgage Disclosure Act to the Affordable Care Act, that use size thresholds to prescribe varying costs and benefits on financial institutions and other firms.

Such thresholds distort the risk-taking incentives of regulated firms, according to a model created by Yan Liu, assistant professor of finance in Krannert School of Management, and his collaborator, Shane A. Johnson of Texas A&M University.

The model shows that banks just above the size threshold have incentives to make riskier investments, knowing that any loss that drops them below the threshold will be cushioned by the regulatory cost savings.

Source:
Yan Liu

"If you think about it, that's contrary to the intended consequence of Dodd-Frank," Liu said. "Dodd-Frank wants to reduce risk-taking for these big banks, but it's exactly these big banks that are taking more risk, just because they're above the threshold."

In their research paper, entitled "Distorted Risk Incentives from Size Threshold-Based Regulations," the researchers describe how their model determines the risk level that a risk-averse manager chooses to maximize a company's expected benefit.

Comparing firms facing size-threshold regulation with a benchmark case having no thresholds, the model finds that firms just below the threshold invest in safer projects with lower expected returns. Firms just above the threshold do the opposite, choosing riskier investments with higher expected returns.

The model predicts how banks respond to the Dodd-Frank act. For those below the size threshold, greater risk or volatility increases the likelihood that their assets will reach the threshold, forcing them to pay additional regulatory costs. This reduces their incentive to take greater risks. For banks above the size threshold, greater risk increases the likelihood that their assets will fall at or below the threshold, allowing them to save money on regulatory costs.

"Essentially they get some kind of kickback from getting down below the threshold," Liu said. "Obviously no bank wants to go there, unless something bad happens to a bank and they have a big reduction in capital that forces them to go below the threshold. But just because there's a chance for that to happen, that changes the whole incentive. Our theory suggests that these banks will try to encourage additional risk-taking because all of a sudden, going down below is not so bad anymore. The negative impact is softened, so they're going to take more risks."

The researchers tested the model's predictions using actual data that captured the impact of the Dodd-Frank Act. Employing a difference-in-difference regression approach, they found that asset volatility for above-threshold banks increased significantly following the passage of Dodd-Frank compared to that for below-threshold banks. The change in post-Dodd-Frank asset volatility was 33 percent larger (relative to the overall mean) for above-threshold banks than for below-threshold banks.

The researchers point out, however, that the largest banks in America do not experience any incentive distortion because they're sufficiently far above the $50 billion threshold. As such, Dodd-Frank will have succeeded in reducing risk for these large banks.

Among other findings: as relative regulatory costs increase as a percentage of size threshold, both the mass of firms that face distorted risk incentives and the magnitude of the distortion increases.

The distortion effects arise because the marginal regulatory costs or reduction in benefits are a fixed amount that a firm incurs when it crosses a threshold. If these costs were variable and proportional to firm size, the incentive distortions would disappear.

"That's a hypothetical scenario," Liu said. "In the real world, it's impossible to implement. It would be very hard for the government to monitor: what is a firm's actual level of assets? How do we make sure the costs are exactly proportional to your size? That's not really realistic."

Regulators, however, might be wise to consider incentive distortions and anticipate the unintended outcomes of their regulation. "We don't believe they are aware of it," Liu said.

The researchers' theories can be applied to numerous regulations with size-based thresholds. The United States Small Business Administration, for example, provides a number of benefits to firms below certain revenue or number-of-employee thresholds. A solar electric company with 255 employees would have an incentive to lower its employment to the 250 threshold.

"Whenever you have this kind of discrete cutoff, then you will always have a distortion effect," Liu said.

How Do You Know Whether Your Company Should be a Pioneer or a Follower? Consider First-Mover Benefits Rather than First-Mover Advantages

by Melvin Durai

Economic opportunities have always been most abundant in new markets – on the frontier of the economy – where high rewards are matched by equally high risks. On one hand, seeing the potential for such great rewards, Horace Greeley imparted his advice in 1865 to “Go West, young man.” On the other hand, the old adage that “pioneers are the ones with arrows in their backs” is a reminder of the risks that go along with those rewards.

Although emerging economies still provide plenty of new markets, the frontier of today’s economy is no longer just geographic. Today’s new markets also include new technologies, new products for old customers, or new customers for old products.

Some companies bravely choose to pioneer new markets despite the risks, while others take a “wait-and-see” approach – hoping to keep their backs relatively arrow-free by watching the fate of pioneers before deciding whether to follow.

“How should your company decide whether to be a pioneer or a follower?” asks Richard Makadok, professor of strategic management at Purdue’s Krannert School of Management. “In your industry, if you see that pioneers usually continue dominating new markets long after they have become old markets, does that mean that your company should also pioneer new markets? On the other hand, if you see that followers usually leapfrog the pioneers and soon come to dominate new markets in your industry, does that mean that your company should be a follower too?”

Source:
Richard Makadok

It’s a trick question, which Makadok uses to distinguish the concept of first-mover benefit from the related concept of first-mover advantage.“If you answered yes to either of those questions, then you’re thinking about the choice only in terms of first-mover advantage," he says. "You’re comparing apples to oranges, because you’re weighing the performance of two different kinds of companies against each other. The kind of company that chooses to pioneer is fundamentally different from the kind of company that chooses to follow.”

For example, Apple is renowned as a pioneer. When Apple introduced the iPhone in 2007, consumers were already using smartphones, but those phones would soon look primitive compared to the iPhone and its touchscreen interface. By re-imagining the phone, Apple had essentially created a new product that helped it capture a large share of the smartphone market.

While Apple typically pursues a product leadership strategy—investing heavily in R&D and encouraging experimentation—other companies like Samsung prefer a fast-follower strategy, and must therefore organize and invest differently. Rather than pioneering a new product or technology, they quickly bring their version to the market, perhaps improving on certain features or offering a lower price.

"Because they are followers, they don’t have to invest as much money in R&D," says Makadok. "They don't have to run 99 experiments to find the one right way to do it, so they have lower costs to develop the product. They can just imitate what the other company did and sell a similar product for a lower price."

Whichever strategy a company prefers—being a pioneer or a follower—there are certain advantages to be gained. But evaluating the benefits of entry timing is not as simple as comparing a first mover's performance with a follower's performance, as Makadok and his co-researcher, Kubilay Cirik of Louisiana State University, show in their paper "First-Mover Advantages Versus First-Mover Benefits: What's the Difference and Why Does It Matter?" (published online April 2, 2021, and forthcoming in print in Academy of Management Review).

Unlike a clinical trial in which subjects are randomly assigned to one group or another, companies can influence, if not choose, the timing of their entry into a market. That creates what the researchers call an "endogeneity bias" that scrambles together the “treatment effect” of pioneering with the “selection effect” of having had a strong motivation to pioneer.

“When we measure first-mover advantage, are we measuring the effect of moving first or are we measuring the effect of having been the kind of company that would want to move first?" Makadok asks. "What we’re really interested in is the effect of moving first, so we want to be able to separate those two effects in order to control for the endogeneity problem.”

To separate the effects, the researchers created a theoretical framework to distinguish first-mover advantages (FMA) from first-mover benefits (FMB). While FMA compares a first-mover's performance to a follower's actual performance, FMB compares a first-mover's performance to the first mover's own hypothetical performance if it had been a follower.

FMB, not FMA, is what profit-maximizing firms should use to make entry-timing decisions, the researchers say. FMA compares the performance of two different firms under a single entry-order scenario. Instead, by comparing the performance of a single firm under two different entry-order scenarios, FMB measures not only what a company gains by moving first, but also what it loses by not following.

FMB recognizes that each firm has certain resources and capabilities that help determine its best strategy. Apple's resources enable it to be a superior product leader, whereas Samsung’s may position it to be an outstanding follower.

“The kinds of companies that have a product leadership strategy will benefit more from entering first and are therefore more likely to enter first," Makadok says. "So if we’re comparing the performance of a first mover to a second mover, but the first mover was a company that had a product leadership strategy and the second mover was a company that had a fast follower strategy, what are we really measuring? Are we measuring the effect of the entry order itself, the treatment effect, or are we measuring the effect of the differences in the strategies and the capabilities and resources they had before they entered? It’s the latter that we’d like to filter out, so we can focus on the former, which is just the pure treatment effect. We want to filter out the selection effect, in order to focus on the treatment effect."

The researchers developed an economic model to explore FMA and FMB. Among their findings was that a firm's FMA will exceed its FMB if the firm enjoys a sufficiently large proprietary competitive advantage. This divergence is stronger when the competitive advantage is not tied to entry order, though it occurs regardless of whether the competitive advantage is tied to entry order.

Makadok cited the example of EMI Group, the British conglomerate that was best known for producing records for the Beatles and other music groups. EMI developed CT scanners and began selling them to U.S. hospitals in 1972. It wasn't long before other companies, including GE, Philips and Siemens, entered the market and used their well-established sales force, distribution network and other strengths within the healthcare industry to squeeze EMI out.

EMI's initial advantage was tied to its entry order, but its rivals' was not. "All those resources and capabilities that Siemens, GE and Philips had, which EMI lacked, would have been a benefit to them regardless of whether they entered first or second," Makadok says.

How Airbnb's Superhost Status Alleviates Racial Discrimination Faced by Black Hosts

By Melvin Durai

In recent years, digital marketplaces such as Airbnb, Uber and TaskRabbit have allowed users to view the names and images of other users. This helps build trust, but also makes the platforms vulnerable to discrimination. Airbnb, in particular, has continually addressed complaints of racial discrimination faced by guests. The company has taken a variety of steps to reduce discrimination, including removing 1.5 million people from its platform since 2016.

But what about racial discrimination faced by hosts? While research has uncovered widespread discrimination against Airbnb guests, showing discrimination against hosts has proven far more challenging. That's because researchers can easily manipulate the identities of potential guests to observe the responses of hosts, but manipulating host identities to observe guest responses is infeasible.

Source:
Mohammad Rahman

A Krannert researcher and his collaborator were able to overcome this challenge to reveal significant discrimination faced by black hosts on the Airbnb platform.

Mohammad Rahman, associate professor of management information systems in Krannert, and his co-author, Mohammed Alyakoob of USC's Marshall School of Business, used a unique quasi-random design to examine discrimination faced by minority Airbnb hosts across 10 large U.S. cities.

In their new study entitled "Market Design Choices, Racial Discrimination, and Micro-Entrepreneurship in Digital Marketplaces," which they presented this summer at a National Bureau of Economic Research conference, the researchers looked at the effect of Airbnb's Superhost certification program, evaluating its potential to alleviate statistical discrimination.

They distinguish statistical discrimination from the more intractable taste-based discrimination. People who exhibit taste-based discrimination are averse to interacting with members of particular groups and will avoid patronizing their businesses regardless of any positive reviews or certifications. Those who exhibit statistical discrimination, however, have lower expectations of products and services offered by members of particular groups, but can be swayed through quality signals such as a property owner's Superhost status.

“This changes their perception not necessarily about the group, but about a member of the group," Rahman said. "They might still think that on average black people have inferior properties, but it turns out that they found out that this person has a good property. Now they are willing to transact with this person and then the demand all of a sudden goes up.”

For their study, the researchers identified Airbnb hosts who were on the margins of fulfilling the Superhost criteria. Because these hosts were unable to precisely manipulate whether they achieved or fell just short of Superhost status, this provided the researchers a quasi-random setup to estimate the causal impact of Superhost selection on Airbnb hosts.

“If we don’t have statistical discrimination in the market and we have two different hosts who both become Superhosts and they have identical properties in identical markets—everything is identical—we should not see any difference in the benefit they get for attaining that status," Rahman said.

On the contrary, the researchers found that black hosts who obtain Superhost status see a 20 percent increase in reservations (a 66 percent increase in corresponding revenue), compared with boosts of 10 percent in reservations for an average host (23 percent boost in corresponding revenue). The analyses suggest that non-Superhost black hosts would be better off not posting their images.

"That means that we had this discrimination faced by these black hosts and it looks like this quality signaling is a good way to actually help these hosts overcome part of the discrimination they face in the market," Rahman said.

Reviews can also serve as a quality signal, but the researchers' analysis shows that reviews are not enough to alleviate statistical discrimination. Black hosts with many reviews still benefit greatly from Superhost status, whereas white hosts gain enough from reviews that Superhost certification gives them no additional boost.

“Another message from this paper is that all these platforms where we have these equity concerns, they need to think about how to figure out a standard for different groups when the minority group is already at a disadvantage," Rahman said. "Having the same standard is probably not effective to get the equity that we’re seeking in the digital era.”

The study shows not only the extent of statistical discrimination in a digital marketplace, but also one of the ways to alleviate it.

"These are difficult issues, but as a society, it's important for us to tackle these issues," Rahman said.

Making Connections: Employees Who Reach Out During a Merger Are More Likely to Stay

by Melvin Durai

The video game company Electronic Arts recently completed its acquisition of Glu Mobile, a developer and publisher of mobile games, for $2.1 billion.

“We’re thrilled to welcome Glu Mobile to our Electronic Arts family,” said Andrew Wilson, CEO of Electronic Arts. “The combination of our talented teams and powerful IP positions us as a leader in the largest gaming category in the world."

Bringing "talented teams" together is one of the benefits of a merger and acquisition and can help determine whether the M&A is ultimately successful. But this benefit can erode during the post-merger integration period if too many employees make a dash for the exits.

Source: Meredith Woehler

Rather than reaching out to collaborate with their counterparts in the other merging company, employees often respond to the upheaval of an M&A by voluntarily leaving, taking their talent and expertise to another firm.

"That’s a particularly bad time to have employee turnover, because you're trying to capitalize on the human and social capital within the merging organizations to integrate them and achieve the merger's goals," said Meredith Woehler, assistant professor in Krannert School of Management.

Hoping to understand which employees are likely to stay and which are likely to leave during the post-merger integration period, Woehler and her co-researchers studied the merger of two U.S.-based consumer goods manufacturing firms, analyzing data that included millions of emails exchanged among employees.

"What we find is that high-ranking employees and employees who are very well-connected within the organization are more likely to remain because they reach across the legacy organization aisle and they connect with employees in their counterpart organization," Woehler said.

Low-ranking and peripheral, disconnected employees are most susceptible to being lured away, the study shows.

"But we do find one moderator," Woehler said. "We find that for low-ranking employees, if they find that their job is secure, they're more likely to reach across the aisle and then ultimately stay. So it's really those low-ranking employees who may have some concerns about job loss, as well as employees who are peripheral or disconnected from the organization—those are the employees you have to worry about leaving."

The researchers shared their findings in a paper entitled "Turnover During a Corporate Merger: How Workplace Network Change Influences Staying," published in February 2021 in the Journal of Applied Psychology.

Woehler, the lead author in the study, collaborated with Theresa M. Floyd of University of Montana, Neha Shah of Microsoft Corp., Joshua E. Marineau of North Dakota State University, Wookje Sung of Hong Kong Baptist University, Travis J. Grosser of University of Connecticut, Jesse Fagan of University of Exeter, and Giuseppe (Joe) Labianca of University of Kentucky.

The researchers studied data from the merger of the two consumer goods manufacturing firms, Luxury and Standard (pseudonyms), within the same industry. Luxury had built a reputation for high-end products, while Standard was more of a generalist, producing a large variety of goods. The new organization, Luxury Standard, was expected to benefit from synergies and capture a larger market share.

"The management continued to tell employees that they were not going to engage in layoffs, that they were thinking that this merger was going to result in a lot of growth, so that should not be a concern for employees," Woehler said.

The researchers collected data from two employee surveys, HR department records, and more than 15 million emails exchanged by employees. The surveys were conducted one year apart, the first about three months into the merger. The HR records included employee demographics, performance evaluations, and voluntary turnover documents. The emails were used to unobtrusively assess ties between employees as the merger took effect.

Through their results, the researchers were able to show that network activation theory can be extended to apply to the merger context as well. According to network activation theory, individuals with higher power and status respond to uncertainty and threat by activating a wider portion of their existing network. In their study, the researchers observed that individuals with high formal power and high informal status mobilized wider networks by reaching out and developing connections with employees in the other merging organization.

They found that individuals with high power (measured by their rank) were more likely to make these cross-legacy connections if they perceived their jobs to be insecure. But such perceptions did not affect individuals with high status (measured by how well-connected they were before the merger). They were inclined to reach out regardless of the personal job security threat they felt.

Not only do high-status employees face informal pressure and expectations from co-workers to make connections, they see increased opportunities in the merger and have a strong desire to help.

"They have greater optimism and confidence in the face of the change, and they're more likely to lead, in terms of reaching across the aisle, taking that initiative to integrate the organizations," Woehler said.

The study underscores the importance of encouraging employees to reach across the organizational aisle during a merger. Such employees are more likely to stay in their jobs, helping the company retain vital talent and expertise.

Low-ranking, as well as peripheral, disconnected, employees are less likely to reach out, but reassuring them that their jobs are secure can induce them to do so.

"Reassuring employees that their jobs are not at stake, that you're not planning to have layoffs, is a wise message, especially for those low-ranking employees who may be less likely to integrate and therefore more likely to leave," Woehler said.

Other ways to encourage employees to make cross-legacy connections include rearranging work locations, strategically staffing work groups, and reducing any barriers to developing connections. In the case of Luxury Standard, professional employees were brought together in Lexington, Kentucky, where one of the merging companies was based.

"By having the professional employees working together in Lexington, they were able to integrate the two organizations," Woehler said. "They were more likely to see each other in halls and be working together because they were together."

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