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# KRANNERT SCHOOL OF MANAGEMENT

Highlighting Management Department  
Faculty Research

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## **Management Department Head Ananth Iyer**

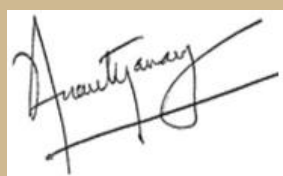
We are pleased to present the 3rd research newsletter, showcasing management faculty research across all eight academic areas, published by the management department at the Krannert School of Management at Purdue University. If there is one theme in all of these papers, it is the dedication of our faculty to scholarship, to their drive to understand, synthesize and recommend actions in their domain of interest. I hope you learn from their insights, and provide us feedback regarding this newsletter. We will continue to strive to communicate our faculty's research to our stakeholders.

This newsletter contains a diverse set of topics. Kelly Wilson studies how the relative loads that partners have in the family may impact work life satisfaction, with surprising results. Zaiyan Wei studies the impact of Airbnb on local housing costs, and finds that housing costs do indeed increase due to a reduction in supply. His results suggest a 3% decrease in housing costs when Airbnb restricted hosts to a single address in a city. Philip Thompson studies methodologies to help solve optimization problems, with an approach called stochastic gradient descent, with his work winning the 2019 Student paper prize awarded by the Stochastic Programming Society. Ananth Iyer's paper examines retail distribution in India to understand how distribution margins are low (an average of 5.4%), despite the challenges of distributing to over 12 million retail outlets.

Mara Faccio and John McConnell study the impact of Pokemon Go on driver safety by studying the link between app use and vehicle crash data. Ted Goodman explores the impact of holding costs on investor strategies, particularly for short term investors. Heejung Byun studies the impact of sharp increases in relational capital (the value associated with external relationships). His paper finds that under such cases the associated employee is more likely to exit. Daisy Dai examines whether publicizing hygiene scores for restaurants improves food safety. They find that when poor hygiene is showcased in Yelp, customers responded with a 12% decrease in intent to visit.

We hope you enjoy perusing these articles and are motivated to look up the associated academic papers. But, more importantly, we hope you seek the expertise of our faculty to provide you with insights regarding your own business environment. We hope this newsletter provided you with ideas that were enriching that you to continue to read our research newsletters and provide feedback.

Have a wonderful day.

A handwritten signature in black ink, appearing to read 'Ananth V Iyer', with a stylized flourish at the end.

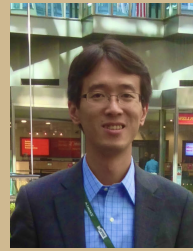
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Misery Loves Company: How Your Partner's Roles Influence Your Work-Family Satisfaction

**Kelly Wilson**



What Does Airbnb Do to the Local Housing Market? Make It Less Affordable

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Devising a "Line Search" Method to Tackle Stochastic Optimization Problems

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Displaying Restaurant Hygiene Scores on Yelp: Does it Help Improve Food Safety?

**Daisy Dai**



# Misery Loves Company: How Your Partner's Roles Influence Your Work-Family Satisfaction

*by Melvin Durai*

Donna and Rhonda work at the same office and have comparable job responsibilities. Yet things are quite different at their respective homes, where they live with working partners. Donna has few responsibilities compared to her partner, Kim, who handles almost all the domestic chores and takes time off from work whenever their child is sick. Rhonda, on the other hand, often feels overwhelmed with housework and the burdens of raising four children, and so does her husband, Mark, who shares the household duties and also takes care of an aging parent. Conventional wisdom would suggest that Donna's light duties at home enhance her work-family satisfaction, while Rhonda's heavy load diminishes hers. But new research on working couples is challenging the



Source:  
Kelly Wilson

assumption that a family life that's less taxing and less likely to infringe on an employee's work life always produces more balance satisfaction — an employee's satisfaction in being able to fulfill both work and family responsibilities.

Indeed, having a partner who is equally burdened with housework may actually result in more satisfaction than having a light load compared to your partner. That's what research, based on surveys of 141 couples, surprisingly shows.

"For couples with similarly high levels of family-to-work conflict, the focal employee fared better, compared to when one partner had low family-to-work conflict while the other had higher family-to-work conflict," said Kelly Schwind Wilson, associate professor of organizational behavior and human resource management at Purdue University's Krannert School of Management. "This is surprising given decades of previous research that suggests low family-to-work conflict is always better for employee outcomes."

Previous research has shown that when an employee's work infringes on family life or when family life infringes on work, it lessens the employee's work-family satisfaction. And while some research has considered the partner's views of an employee's work-family conflict, the partner's own conflict has been largely ignored.

Wilson's research, in collaboration with Heidi M. Baumann of Bradley University, Fadel K. Matta of University of Georgia, Remus Ilies of The National University of Singapore, and Ellen Ernst Kossek of Purdue University, explores work-family conflict experiences at the couple or dyad level. This research examines how an employee's work-family conflict and a significant other's work-family conflict can jointly affect the employee's work-family satisfaction, which in turn influences the employee's job satisfaction and their partner's relationship satisfaction.

In their paper, entitled "Misery Loves Company: An Investigation of Couples' Interrole Conflict Congruence" and published online April 2018 in the Academy of Management Journal, the researchers show that when couples

experience congruence (or similarity) in their family-to-work conflict, it can provide validation and comfort, resulting in higher balance satisfaction. The employee is more satisfied at work and the significant other is more satisfied with their relationship at home.

"This research suggests that it is important for both partners in a romantic couple to share family responsibilities pretty equally," Wilson said. "Couples may want to focus on clearly communicating family demands and determining whose turn it is to fulfill each, in order to facilitate congruence or similarity in family-to-work conflict."

But what about congruence in work-to-family conflict? When both members of a couple experience high levels of work-to-family conflict, does it produce more balance satisfaction than when one partner experiences less conflict than the other? The researchers were unable to find conclusive proof of this, which they suggest may be partly due to the focus on nonwork or couple dyads in this research.

"The key here is that the dyad we focused on was the romantic, dual-earner couple, and yes, our results indicate that for this type of dyad, family-to-work congruence was more informative than work-to-family congruence," Wilson said. "Family-to-work conflict originates in the family and we suggest that this may be a more important form of congruence for family dyads, whereas future research should consider work-to-family congruence in co-worker or work dyads."

Her research suggests not only that couples should strive to share family responsibilities equally, but also that employers should take steps to reduce family-to-work conflict for both employees and their partners.

"For employers, our research suggests that family benefits that can help the entire family (not just one employee or partner) would be more likely to enable congruence or balance for the couple," Wilson said. "Such benefits might include, for example, offering high-quality childcare, or referrals for house cleaning, lawn care, and grocery services or discounts. These offerings should benefit the entire family and decrease both partners' family responsibilities (and thus lower both partners' family-to-work conflict)."

# What Does Airbnb Do to the Local Housing Market? Make It Less Affordable

*By Melvin Durai*

Home-sharing platforms, particularly Airbnb, have enjoyed tremendous growth over the last decade, as property owners have capitalized on the opportunity to offer rooms, apartments and entire homes to travelers seeking short-term rentals.

The proliferation of Airbnb properties has sparked criticism that Airbnb hosts are snatching up homes that would otherwise be listed in the residential rental or housing market, thus reducing supply and driving up prices.



Source:  
Zaiyan Wei



But is this really happening? Does home sharing make it less affordable to rent or buy homes in a particular market? Indeed, it does, according to research by Zaiyan Wei, assistant professor in Krannert School of Management, and his co-authors, Wei Chen of University of Arizona and Karen Xie of University of Denver. They found that in three U.S. cities where Airbnb had implemented a policy to restrict hosts to a single address, rents and home values dropped by about 3 percent. "Airbnb is indeed making the real estate market more expensive," Wei said.

By enriching its hosts while making housing less affordable for others, Airbnb and other home-sharing platforms may be compromising public affordability for private wealth, the research suggests. "It's going to increase the gap between the rich and the poor," Wei said. "It's going to make inequality a little worse."

The researchers used a unique quasi-experiment on Airbnb—a platform policy that capped the number of properties a host could manage in certain cities—to explore how home sharing affects local residential markets.

Airbnb announced its so-called "one host, one home" policy for New York City and San Francisco in April 2016 and implemented it seven months later. In February 2017, it implemented the same policy in Portland, without a prior announcement. The policy induced hosts with listings at more than one address to place the extra properties in local residential markets, while deterring them from taking other properties off the market. These conditions gave the researchers an opportunity to study the impact of Airbnb on the long-term rental and for-sale housing market.

To conduct their study, they created a comparison group of zip codes from cities that were similar to the three policy-affected cities but had not been affected by the policy. Their main sample included more than 400 zip codes from ten cities across the U.S., including New York City, San Francisco and Portland.

They studied data from Airbnb, residential platform Zillow and a third-party real estate information company over a period of almost three years (October 2014 to July 2017).

They found that the "one host, one home" policy led to a drop in both rents and home values in the affected zip codes. Rents declined by 1.2 percent and home values by 1.7 percent when the policy was announced, and rents dropped by 2.3 percent and home values by 1.3 percent when the policy was implemented.

"People either choose to buy a house or to find a place to rent, so these two markets are connected," Wei said. "In equilibrium, these two markets should stay relatively stable. The policy shouldn't affect one market more than the other one." They also found that the policy increased the supply in both the rental and housing market, and also increased equilibrium quantities (the number of homes rented or sold) in a similar magnitude.

Exploring how the policy affected the supply of properties listed on Airbnb, they found that the number of properties of "multi-listing" hosts—those who manage properties at different addresses—shrank significantly, as would be expected. In contrast, properties managed by single-listing hosts—those who have a property at only one address on Airbnb—seemed to increase. These new listings, however, are primarily shared or private rooms, which are less likely to have been taken off residential markets.

The study shows that home sharing has become a major alternative for real estate investment and has a significant impact on housing affordability. Noting that platforms have the ability to self-govern—as Airbnb has done in New York City, San Francisco and Portland—the researchers suggest that platforms should be "mindful of unexpected societal impact" and should "proactively self-govern for goodwill."

# Devising a "Line Search"

## Method to Tackle Stochastic Optimization Problems

*By Melvin Durai*

Stochastic optimization problems, encountered in machine learning, operations research and other fields, seek to minimize the risks associated with uncertainty.

In machine learning, the risk is the amount of inference error when doing a prediction fit, such as getting an algorithm to correctly classify an image as a dog 90 percent of the time.

In operations research, optimization may be used to handle a wide range of uncertainty. Forecasts and demand in energy markets, for example, can be so random that optimization is needed to determine the equilibrium price.



Source:  
Philip Thompson

Equilibrium and other optimization problems often take the form of stochastic variational inequalities, and the challenge of finding methods to solve them has inspired Philip Thompson, assistant professor in Purdue University's Krannert School of Management, and other mathematicians.

Thompson and his co-authors, Alfredo N. Iusem and Roberto I. Oliveira of Brazil's Instituto Nacional de Matemática Pura e Aplicada, and Alejandro Jofré of University of Chile, have proposed, to the best of their knowledge, the first provably convergent stochastic approximation method with variance reduction, either for stochastic variational inequalities or stochastic optimization, assuming just an unbiased stochastic oracle within a large sample regime.

In the paper "Variance-Based Extragradient Methods with Line Search for Stochastic Variational Inequalities," published online last January in Volume 29, Issue 1 of the SIAM Journal on Optimization, the researchers share their method, which breaks with the prevailing approach in stochastic optimization and obtains an optimal stochastic gradient descent algorithm with line search.

For his work on the method, devised while he was studying at Instituto de Matemática Pura e Aplicada (IMPA) in Rio de Janeiro, Thompson was awarded first prize in the 2019 Dupačová-Prékopa Student Paper Prize Awards, presented by the Stochastic Programming Society.

The basic idea, Thompson said, is like a mountaineer descending a mountain next to a valley (representing the minimum) using multiple straight line steps. The goal is to descend as quickly as possible. Defining the step size — the length of every straight line used in every step — is critical. If it is too short, the descent will take more time than needed or the mountaineer may even get stuck at a point. If it is too long, the mountaineer may actually start climbing the mountain again instead of descending.



"It turns out that the best step-size to be chosen depends on problem parameters of the risk trying to be minimized," Thompson said.

In linear regression, the best step size depends on the correlation between the covariates/features, he said. In energy markets equilibria, the step size depends on how the agent's utility functions or payoffs vary. This is rarely known in practice and can be hard to estimate.

Without randomness, the step size for gradient descent can be determined, fairly easily, using a greedy algorithm called "line-search." It works, Thompson said, more or less like this: Once you've defined a direction to descend, you guess an initial step size and check if the objective has decreased. If not, you decrease the step size and repeat the process until the objective has decreased. This works well in deterministic optimization problems.

"In stochastic optimization problems, this does not work well because the direction is noisy," Thompson said. "The whole point of our method was to address this issue by devising a proper line-search method in case of uncertainty in the direction. An important point was to devise a very specific policy of variance-reduction."

The most significant aspect of the method is to be able to use stochastic gradient descent with an adaptive choice of the step size — without knowing in advance endogenous parameters that are not generally available in practice. This widens the applicability of the method.

"You can use the method with much less information and make it more adaptive." Thompson said.

# Understanding the Stockist's Contract: How Millions of Small Stores in India Get Their Goods

*By Melvin Durai*

If you're out of laundry detergent in America, you're likely to get into your car and drive to a big-box or mid-sized store that's part of a national or regional chain. If you're in India, you'll probably take a stroll to a tiny store in your neighborhood, where hundreds of consumer goods are within reach of a storekeeper eager to serve you.



Source:  
Ananth Iyer

About 12 million small stores operate in India, occupying street corners and other spaces in residential areas and generating more than 90 percent of retail sales. As consumers buy soap, toothpaste and other goods, these independent stores have to frequently replenish their inventories, but not directly from manufacturers. They get their merchandise through entities known as stockists, whose delivery methods may include trucks, cars, motorcycles, handcarts or even baskets balanced on heads.

In India and other developing countries, manufacturers and retailers rely on stockists to keep the goods flowing. But despite their vital, multifaceted role, stockists and the contracts they work under had been largely unexplored until they caught the interest of a Purdue University professor and his research colleague in India.

Ananth Iyer, professor of supply chain and operations management in Krannert School of Management, and Omkar Palsule-Desai of Indian Institute of Management (IIM) in Indore, were intrigued by the low distribution margins—an average of 5.4 percent—for consumer goods delivered to small stores. How was this possible, when delivering to so many small stores seemed inefficient?

"We wondered where the efficiency was coming from, because in many places around the world, whenever big chains have gone in and tried to compete, they've had a very hard time competing with the little guys," Iyer said.

The efficiency comes from the stockists' ability to serve many stores and their frequent replenishment of merchandise, as the researchers discovered after collecting and analyzing data, partly with help from IIM students who accompanied stockists and recorded their activities as they visited more than 240 stores in India.

In their paper "Contract Design for the Stockist in Indian Distribution Networks," published in the Spring 2019 issue of Manufacturing & Service Operations Management, the researchers describe the stockist's two major roles: market-making and logistics.

The market-making role includes advising retailers on which products to carry, providing credit and collecting funds, and identifying new outlets for a manufacturer's products. The logistics role includes paying for a manufacturer's products, carrying an inventory in their own warehouses, and delivering the product to retailers through various means.

A stockist may fill up a van or other vehicle with consumer goods and make many stops to replenish stores within a sales territory. While the goods are on the store shelf, they're part of the stockist's inventory. The stockist has paid the manufacturer for them and won't collect from the storekeeper until the goods are sold.

Though the stockist may get a margin as low as 2 percent, what's critical, Iyer said, is the number of inventory turns. The stockist is rewarded substantially by turning over their inventory about 85 times a year (every four or five days), earning the margin over and over.

"For the same amount of money, they get a 170 percent return," Iyer said. "That's how they make their money."

Using the data they collected, the researchers developed a principal-agent model to understand the contracts offered by manufacturers to stockists. Because the capability of stockists can vary considerably, contracts offered to them are likely to be screening contracts, which offer them a series of options and give bigger rewards to stockists who are adept at selling and promoting goods.

Part of what we noticed is that not everybody gets the same contract," Iyer said. "You have to give a little incentive to people who are very good."



A stockist working for Hindustan Unilever Limited, one of the top manufacturers, isn't just trying to deliver Unilever products, but to convince storekeepers to carry more Unilever products, at the expense of products from Godrej and other companies. "The key is for this person not to just to push the same product, but to have a sense of the market, determine what will sell and help the retailer," Iyer said.

The model considers the type of assistance given to stockists—whether it substitutes or complements their ability—and characterizes firms using three parameters: logistics cost driver, demand generation and the mix of efficient and less efficient stockists.

Fitting the model to firms according to the parameters, the researchers were able to correlate the model-generated results with observed data. They hope the model will help manufacturers who are interested in entering the Indian market.

"The model they have to follow is not the Walmart model—ship in bulk—but to really deliver to the little stores very efficiently by contracting with stockists," Iyer said. "These stockists become the gatekeeper, and that's the reason we studied them and made the case that they're a unique entity."

The model may also be valuable for existing firms who want to adjust their distribution strategies to maximize performance. Proctor & Gamble, for example, decided several years ago to prune its product portfolio, offer lower margins and focus on urban consumers.

"The model allowed us to understand why that strategy might actually make sense as a way to be successful," Iyer said.

"It basically allows multinational marketing managers to think through their strategy as to how they should approach this market."

# Under the Influence of Pokémon GO: The Cost of Using Apps While Driving

*By Melvin Durai*

Developers of Pokémon GO could not have dreamed of a better debut. Within a week of its release on July 6, 2016, the augmented reality game had been downloaded 10 million times worldwide, and within a month, it had registered 100 million downloads. In neighborhoods across America, the excitement was palpable as participants roamed around to not only capture virtual creatures, but also replenish their stockpile of "weapons" near "PokéStops," located at libraries, museums and other points of interest.

Hearing that some participants were playing the game while driving, Mara Faccio and John J. McConnell, Professors of Finance in Purdue University's Krannert School of Management, spotted an opportunity for some important research.



Source:  
John McConnell  
& Mara Faccio

"We connected the dots and quickly understood that the game provided us an incredible opportunity because of its location-based features and because it was an immediate success," Faccio said. "It gave us the ideal setting to investigate the connection, if any, between smartphone apps usage while driving and vehicular crashes."

If participants were playing the game while driving, and if their actions increased the likelihood of vehicular accidents, locations near PokéStops should experience a disproportionate increase in crashes following the introduction of the game, the researchers theorized.

Focusing on Tippecanoe County, Indiana, they analyzed data from police crash reports, made connections with specific locations of PokéStops and found that 136 incremental crashes had occurred near PokéStops in the 148 days following the introduction of Pokémon GO, leading to 33 incremental injuries and two incremental deaths. "It was not obvious that we would find anything, but we did find very strong results," Faccio said.

Sharing their results in a paper entitled "Death by Pokémon GO: The Economic and Human Cost of Using Apps While Driving," forthcoming in The Journal of Risk and Insurance, the researchers estimated that the total insurance payout as a result of the additional crashes was \$1.71 million at a minimum, which would imply a 2.47 percent increase in auto insurance premiums.

The insurance payouts, based on lower bound estimates, included \$334,145 for vehicular damage, \$892,155 for bodily injuries and loss of lifetime income, and \$482,772 for fatalities

Previous studies have used simulation/test track experiments and naturalistic observation to explore the connection between mobile phone usage and driving safety, but the shortcomings of such studies included unrealistic settings, small sample sizes, subject awareness, and absence of actual damages or injuries. "This experiment allowed us to overcome the shortcomings," McConnell said.

To conduct their analysis, the researchers had to obtain almost 12,000 police accident reports for Tippecanoe County for a 21-month period (March 1, 2015, to Nov. 30, 2016), allowing them to analyze accident rates before and after the introduction of the game.

They used a difference-in-differences analysis to determine the number of incremental crashes that occurred since the introduction of Pokémon GO.

"Because the game was an immediate success, we can tell whether there was an immediate spike in crashes in the week after the game was introduced relative to the week before," Faccio said.

They were also able to compare any increase in crashes in the vicinity of PokéStops with any increase in crashes in the vicinity of other locations (not close to PokéStops).

"For the game to give rise to the increase in crashes that we document, it has to be the case there is a greater spike in the incidence of crashes where it's more likely that the game is played," Faccio said.

To rule out alternative explanations for their results, the researchers conducted a variety of robustness tests. One possible explanation was that the increase in accidents was due to an increase in the number of university students driving around. Because Tippecanoe County is home to Purdue University, its population fluctuates with student arrivals and departures.

It was fortunate, for research purposes, that Pokémon GO was introduced on July 6, when most students were away for summer break. "That enabled us to look at the change in crashes around that date and focus on periods—days of the year—when Purdue University is not in session," Faccio said.

They compared, for example, the number of crashes at each location (both near and far from PokéStops) in the week following Pokémon GO's introduction on July 6, 2016, with the number of crashes at each location during the same week of the previous year, 2015.



They also compared the number of accidents in West Lafayette, where the vast majority of students live, with accidents in the neighboring city of Lafayette, and found similar results.

"That largely rules out any possibility that what we found is associated with Tippecanoe County being home to Purdue," Faccio said.

Another possibility was that the crashes were related to the game, but not due to people playing while driving.

"Because the game was very popular, it's possible that parents would drive around with their children, and maybe the children would be playing," Faccio said. "Obviously, as more people drive, more crashes are likely to occur. In fact, it's even possible that people would drive to the points of play, then park their car, then stay there a little bit to replenish their pile of weapons."

To investigate this possibility, the researchers analyzed the data using only accidents in which police reports indicate that the driver causing the crash was alone in the vehicle. Their analysis ruled out—at a high level of certainty—the possibility of a passenger playing the game for 122 of the 136 additional crashes.

While the researchers are confident that their results can be generalized beyond Tippecanoe County and Pokémon GO, they advise caution about using their analysis to recommend further bans on the use of smartphones while driving.

"My disinclination to immediately offer policy recommendations is that without careful thought, regulatory actions often give rise to unintended consequences," McConnell said. "The unintended consequences, which are not perceived at the time a regulation is enacted, are not infrequently worse than the problem to be cured."

Added Faccio: "As economists, it would be unwise on our part to make recommendations without a full examination of all costs and all benefits."

# When Financial Reporting Quality is Poor, Short-Term Investors Look for Momentum, Not Value

By Melvin *Durai*

A common investment strategy, followed by Warren Buffett, Carl Icahn and others, is to buy undervalued stocks and profit on them once their true value is recognized. Value investing can be particularly effective when financial reporting quality (FRQ) is poor. A savvy investor is able to take advantage of the uncertainty about a firm's economic performance and buy stocks at a lower price than would otherwise be possible.



Source:  
Ted Goodman

But in order to see a return, the investor must wait for a price correction, which imposes holding costs on the investor. "Even though you've identified companies you think are undervalued, you still can't end your trading strategies until you get the other investors to revise their beliefs," said Theodore H. Goodman, assistant professor of accounting in Purdue University's Krannert School of Management. "That's where the cost comes in."

These holding costs are particularly significant for short-term investors, influencing how they respond to poor FRQ. Sophisticated investors tilt their portfolios away from value stocks and toward past-winner stocks, according to research by Goodman and his co-authors, Brian J. Bushee of University of Pennsylvania and Shyam V. Sunder of The University of Arizona.

In a paper entitled "Financial Reporting Quality, Investment Horizon, and Institutional Investor Trading Strategies," published in the May 2019 issue of *The Accounting Review*, the researchers examine the link between FRQ and holding costs by focusing on the trading decisions of transient institutional investors.

"The general finding is that poor financial reporting quality made the value strategy less appealing to short-term investors," Goodman said. "The momentum strategy, in contrast, became more appealing." The researchers also find that poor FRQ increases the holding period for positions in value stocks, but does not do so for momentum stocks.

Analyzing institutional investor data from 1981 to 2013, they used the volatility of unexpected accruals—non-cash assets and liabilities—to assess financial reporting quality. Volatile accruals can obscure a firm's economic performance and create what the researchers describe as a "noisier earnings signal."

This noisier signal means that uninformed investors may not revise their valuation of the firm until they've seen more quarters of earnings realizations. This could result in a longer wait before a price correction occurs, producing higher holding costs for an investor.

For investors looking for quick turnarounds, holding a position to wait for a price correction means that their short-term excess portfolio returns are dampened and they incur the opportunity cost of missing out on other potentially profitable investments. As a result of these holding costs, when transient institutions buy stocks in firms with poor FRQ, they are less likely to invest heavily in value stocks, which rely on a price correction, and more likely to invest heavily in momentum stocks, whose returns are inherently more short-term. "There is this incentive to choose investment opportunities that will resolve in a quicker fashion, given that other people are evaluating your performance," Goodman said.

Poor FRQ increases the amount of time that an institution holds a position in a value stock, but does not increase the amount of time that an institution holds a position in a momentum stock. Before the value stock can be sold, other investors have to revise their beliefs in the value of the company. "A value strategy can take years to resolve, and so we're thinking maybe having better accounting information can help the strategy end in a quicker fashion because the investors are getting better information and revising their beliefs," Goodman said.

The research shows that while poor FRQ can potentially produce big returns for informed investors, holding costs can mitigate these returns when a trading strategy relies on more precise financial reporting for a price correction. "As accountants, we're most interested in how accounting information affects different economic decisions," Goodman said. "In this context, it's a nice way to say that accounting information, by influencing how the trading strategies resolve, affects the institutional investors' decision of how they allocate their funds, the investment decisions they make."



# Seeking a Bigger Slice of the Pie: Employees Exit Firms When Their Relational Capital Increases Suddenly

By Melvin Durai

A low-ranked golfer stuns the sports world by winning the Masters Tournament, one of the four major championships. The victory raises the profile of not just the golfer, but also his agent, who is able to attract more clients and endorsement opportunities through his relationship with the Masters champion.



Source:  
Heejung Byun

The sports agent is enjoying a boost in his relational capital. In professional and business service industries, employees are valued not just for their knowledge and skills, but also for the external relationships they're able to cultivate. Such relationships can help a talent agent get an audition for a client with a top Hollywood director, or an attorney land a contract for his firm with a major corporation.

Relational capital—the value associated with external relationships—usually increases gradually, but what happens when it increases suddenly, as in the case of the sports agent?

The employee is more likely to head for the exit, according to research by Heejung Byun, assistant professor of strategic management in Purdue University's Krannert School of Management.

Collaborating with Joseph Raffiee of USC's Marshall School of Business and Martin Ganco of Wisconsin School of Business, Byun found that the sudden or discontinuous increase in relational capital increases the likelihood that the employee will either join another firm or pursue entrepreneurship.

"It makes them open their eyes to outside opportunities," Byun said. Because wages are sticky in their current firm, their financial incentive to move elsewhere is greater, as a result of the sudden boost in relational capital.

"You want to be able to capture a bigger portion of the pie that you created," Byun said. "In order to capture a bigger portion of the pie that you created, you might as well go outside. You will be able to capture an even bigger portion if you create your own firm. That's what entrepreneurship is." Entrepreneurship is a more likely outcome than joining an established firm, the researchers found. This impulse to create a new firm is even stronger when the employee is on the periphery of the firm's core activities, as might be the case, for example, of a dentist working in a hospital or a defense attorney in a corporate law firm.

The researchers revealed their findings in a paper entitled "Discontinuities in the Value of Relational Capital: The Effects on Employee Entrepreneurship and Mobility," published in the November-December 2019 issue of *Organization Science*. Prior studies have implicitly assumed that relational capital grows gradually, but Byun and his co-authors show that it's prone to abrupt and discontinuous increases in value.

For their study, they used a longitudinal database of United States federal lobbyists and lobbying firms constructed from lobbying disclosure reports. The context and data allowed them to isolate relational capital—the political connections of lobbyists. Lobbyists may experience sudden increases in relational capital when politicians connected to them join particular committees or are appointed as committee chairs.

The researchers found that employees on the periphery of the firm's core business are more likely to leave than those near the core.

"If you are essential to the firm, you would probably have bigger bargaining power in negotiating your wages," Byun said. "Another reason is that much of the value that you create for the firm will be tied to the firm itself. So the firm should be providing complementary assets. You alone cannot create that much value. You need what the firm has: the office space, your core colleagues, and all the other complementary assets that the firm provides."

Non-core employees may have an easier time finding other options, he said. "They'll benefit less from the firm's complementary assets and they will have less bargaining power. That's why they will leave the firm upon discontinuous increase in their relational capital."

The lesson for firms, the researchers write, is that they "may have difficulty retaining high potential employees if their potential manifests too quickly." Firms should be particularly wary when they recruit "high potential employees as a means to diversify into new business areas where they do not have complementary assets."

# Displaying Restaurant Hygiene Scores on Yelp: Does it Help Improve Food Safety?

*By Melvin Durai*

One in six Americans gets sick each year from foodborne diseases, resulting in more than 3,000 deaths, according to the Centers for Disease Control and Prevention. About 60 percent of these illnesses can be traced to restaurants, a figure that could be lowered significantly if more restaurants complied with food safety standards.



Source:  
Daisy Dai

Health inspectors try to enforce these standards by making unannounced visits to restaurants and giving them hygiene scores. But once a restaurant receives a low score, does it have enough incentive to improve?

Publicizing low scores may give restaurants enough incentive. That's been the case in Los Angeles, where restaurants are required to display their scores on their doors. But such requirements do not exist in most cities. Some health departments have created websites where consumers can search for scores, but not many people visit these sites.

Consumers are increasingly more likely to visit sites such as Yelp, TripAdvisor, Foursquare and OpenTable, where they can search for restaurants and read reviews. Would posting hygiene scores on these sites be effective in informing consumers and nudging restaurants to improve?

Research by Weijia (Daisy) Dai, assistant professor in Purdue's Krannert School of Management, and Michael Luca, associate professor in Harvard Business School, has helped answer this question. The researchers found that consumers do respond to such postings, but the response from restaurants is weaker than they expected.

Their research suggests that local departments of health would benefit from more innovative ways to disclose restaurant hygiene scores.

"For more salient information, consumers do respond more, which suggests that the posting of scores is useful to consumers and the design does matter," said Dai, who conducted her research while working at Lehigh University in Pennsylvania.

The researchers collaborated with Yelp to launch the Local Inspector Value-Entry Specification (LIVES) initiative, which allows local health agencies to post hygiene inspection results on the site. San Francisco Department of Health (SFDPH) was an early participant, posting scores since January 2013 and becoming the focus of the current study.



Revealing their results in a paper entitled "Digitizing Disclosure: The Case of Restaurant Hygiene Scores," published in the May 2020 issue of American Economic Journal: Microeconomics, the researchers found that when restaurants were shown with low scores indicating poor restaurant hygiene (70 or lower out of 100), consumer leads (intention to purchase) decreased by 12 percent.

In general, every 10 percent drop in hygiene score resulted in a 4 percent decrease in consumer leads. A "lead" is a marketing metric for consumer interests and intent to purchase, measured in this study through actions such as requesting directions to the restaurant, clicking on the restaurant's URL, and making calls to the restaurant.

Dai expected the consumer response to be greater, considering that restaurants with low scores had committed multiple violations, such as storing food at the wrong temperature or neglecting to eliminate pests. "Consumers should pay attention to that," Dai said. "We thought that the effect would be larger, but it was not."

Wondering if consumers would respond to a more prominent notification, the researchers began implementing hygiene alerts in October 2015. An alert is a text box posted on a restaurant listing that informs consumers that the restaurant has received a food safety rating categorized by inspectors as "poor," which puts the restaurant in the bottom 5th percentile based on hygiene scores in San Francisco.

As expected, the alerts caused more consumers to avoid restaurants with poor scores. Consumer leads decreased by a further 7 percent and consumer reviews dropped by a further 11 percent following the hygiene alert.

The response from restaurants was less encouraging: hygiene scores did not trend upward. But after the alerts were implemented, restaurants with poor scores were less likely to get a poor score in their subsequent inspections.

"For this small set of restaurant owners, the alerts are going to be more salient and attract more attention," Dai said.

Posting the scores on Yelp does not seem as effective as displaying them on restaurant doors, as happens in Los Angeles. A hallmark study by economists Ginger Jin and Philip Leslie in 2003 showed that the mandatory door postings led to a significant improvement in hygiene grades and decline in foodborne diseases.

"The restaurant owners themselves have to post the scores on their own doors, so there's kind of a shaming effect," Dai said. "The restaurants would naturally have more incentive to try to improve. But if the score is on the internet somewhere, they can just put their heads in the sand and pretend they didn't notice it."



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