THE UNIVERSITY OF CHICAGO

SEEKING ADVICE IN THE WORKPLACE: ATTRIBUTIONS TO COMPETENCE, CREDIT, AND COLLABORATION

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Acknowledgments

Graduate school is hard. It has always been hard, and it will always be hard. I think it is because of the delayed gratification of all the hard work you exert throughout the years. Not just delayed gratification, but the uncertainty around whether or not there will be any gratification at all. There is a looming though, constant and unwavering, screaming "what if this is all for nothing? What if... after all of this... I end up failing". That part is difficult to overcome, but it taught me to be persistent and steadfast and to continue to work even when the reward is not abundantly clear.

However, I mostly believe grad school takes its toll on students because people who enter grad school care. We care a lot. We would not give 5 years of our lives to go down a path that is winding and ambiguous. We would not go to the institution we chose if we did not care about the opinions of the faculty that guide us. Everything we do is a product of our desire to explore things that are intrinsically important to us, and a desire to impress our professors.

The professors' opinions that I always held in high regard are on my committee, and I thank them for their support even when I did not have to courage to reach out and ask for help. George Wu has been there for me throughout a lot of life-defining moments. He helped me through some moments when I could not have done it on my own. He always showed an interest in me as a person, a friend, and a student. He was there for me when I had my son, my accident, and when I was struggling with the pandemic and figuring out my future. No matter what, he was there. No matter what, I'll forever be grateful.

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and interesting. Alex Imas was there at a critical time in my life when I was looking for any excuse to fail. He called me out when I needed it and instilled a fire in me that propelled me to the finish line. He reignited a desire to find the greatness within me that I lost sight of long ago.

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Last, but not least, Kayla and Ezra. I love you with every fiber of my being. Everything I did throughout the past 5 years, I did because I thought it would give us a better future. Kayla, you kept me in the game. You heard all of my doubts and saw my struggle, but you knew I would regret quitting even when I was convinced it was my only option. You've always known me better than I know myself. I could not have done this without your love and support. You've been by my side ever since we were 13 years old. I'm excited for our future together and cannot wait to see what we accomplish.

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You and me, bud.

Motivating Example & Theoretical Framework

Motivating Example

The decision to seek advice is complex. There are conflicting motivations highlighting performance benefits and possible consequences to reputation. Achieving a goal, completing a task, or solving a problem all generally benefit from advice.

In this dissertation, I posit that the decision to seek advice is triggered by an internal acknowledgement of a person's deficiency of information, ability, or competence. When attempting to solve a problem, an individual faces three possible choices to overcome this deficiency. First, they could go it alone and make do, marching forward in the face of possible failure. Second, they could take their time to learn the required skill or acquire information to they are lacking. Or third, they could go to an outside advisor (or a group of advisors) and ask for help. The critical question investigated throughout this dissertation: Imagine three otherwise identical people end up with the same outcome but take these three distinct paths. How would you assign them credit, and how confident would you be in their ability to perform a similar task in the future?

In order to motivate this question and the entirety of this research program, imagine yourself as a senior consultant at a management consulting firm. A new client comes into the office to present their business problem for you to solve. The problem, in your eyes, is straightforward: How can they advertise their product to gain market share in South America? You assign a junior consultant to work on this case on their own.

After three weeks, the junior consultant comes back to you with a solution to pitch to the client and sells the client on this idea. The outcome is an unambiguous success. You reward this junior client with 100% of the credit for this win, and are confident in their ability to work on future projects involving international consumption markets.

Now, imagine that you learned the following information; this junior client asked for advice from several other consultants when coming up with this solution. Would you decrease

the amount of credit you bestow upon the junior client? Would your confidence in his or her ability to conquer international markets wane? Or perhaps, you might change you evaluation of that person's collaborative ability?

Throughout this dissertation, I will systematically vary critical variables to examine whether these judgments and attributions change depending on situational and personal factors. For instance, would your reactions differ if you knew this junior consultant was of high ability? What if he or she exerted a great deal of effort before seeking the advice of their colleagues? Finally, would you be more forgiving if they sought the advice on a highly difficult task, relative to an easy task?

In real world work environments, colleagues often first observe the outcome of another person's behavior and then assign credit, blame, competence, etc. When they learn about the path they took to get to the outcome, they make adjustments. For instance, imagine learning of an accomplishment. Throughout this dissertation, I aim to understand how these factors influence judgments of advice seekers. When and why does advice seeking effect the credit received for success and the task-specific competence for similar tasks in the future?

The scope of this dissertation is not to explore when and why people seek advice, but rather how others judge people when they observe advice-seeking behavior. The judgments we will focus on are not comprehensive, but are motivated by outcomes and judgments that are of interest to any prospective advice-seeker: How much credit they receive for the final outcome, and how much competence are they bestowed are with for similar tasks in the future. While completing a task, I make salient the path they take in getting to the final outcome. Did they solve this task entirely on their own, did they seek advice from another individual, or did they make the effort to learn the skills required to properly execute the task?

The credit, competence, and collaboration attributions given to these individuals, I argue, is dependent upon the decision of whether they decide to seek advice. Throughout a series of seven studies, I explore environmental and task attributes that moderate the reactions

and judgments on advice seekers.

Theoretical Framework

This research project starts with an empirical observation: Across many situations workers fail to seek advice or under-use available advice when it would improve their performance on-the-job (Morishima 1991). One potential answer to this puzzle is that actors are over-confident. They over-estimate their abilities and knowledge, and hence, under-value truly useful advice (Yaniv & Foster 1997; Yaniv 2000). But, there is a second answer to this puzzle that is the focus of the present research: When an actor seeks advice from another, the advice-seeking act broadcasts social signals that may decrease the actor's credit for successful performance, and even damage his or her reputation for competency or motivation in a work setting.

The focus of the present research is on the kinds of inferences an observer will make towards a worker who seeks advice, or not. Thus, I am not studying *the advice-seeker's* cognitions and behaviors directly. Rather, I am studying the thought processes of *an observer*, who is of concern to the actor. This is important because actors are concerned with observers' evaluations of their competency and motivation. Knowing how observers actually make credit and competency judgments is a good start to understanding the impact of this factor on actors who are considering whether to seek advice.

In order to make progress on this complex and subtle social situation, I will make several simplifying assumptions. First, I will assume that the worker is interested in maximizing his or her performance, as well as signaling reputation for competency, motivation, and being a good organizational citizen. There are many nuances to the advice-seeking situation that have been the subject of research in other laboratories. For example, advice-seeking can be deliberately used to establish social relationships with an esteemed colleague, or to flatter a colleague, or for other impression management purposes (Brooks, Gino, & Schweitzer 2015; Schaerer, Tost, Huang, Gino, & Larrick 2018). In the present research I will ignore

an worker's possible higher order impression management motivations, and my research methods minimize the potential for influences of those factors.

Second, the present experiments are based on an idealized work situation in which a worker (the worker) is assigned a knowledge task (e.g., solving a problem, making a decision, constructing a report) and has the option of working unaided or asking for advice (a third option is available in some scenarios, in which the worker can defer work and invest effort to acquire relevant skills or information). The worker's performance is fixed and he or she will always succeed at the assigned tasks with advice. The attributes (competence, power, status, etc.) of the potential advisor and the relation between the worker and the advisor are fixed. And, the point of view is fixed to the perspective of a neutral, external observer. This allows us to cleanly assess the kinds of inferences that mediate the causal influence of advice-seeking on assessments of the worker's competency and motivation.

The diagram below (Figure 1) depicts the inference chain that is of primary interest in this research. Note that most of the conditions associated with the advisor-worker relationship are fixed (performance = success, relationship = manager-worker) or manipulated in a precise manner (e.g., worker's response to ask for advice). Conditions associated with the observer are reflected in the form of inference, judgment, and evaluation ratings.

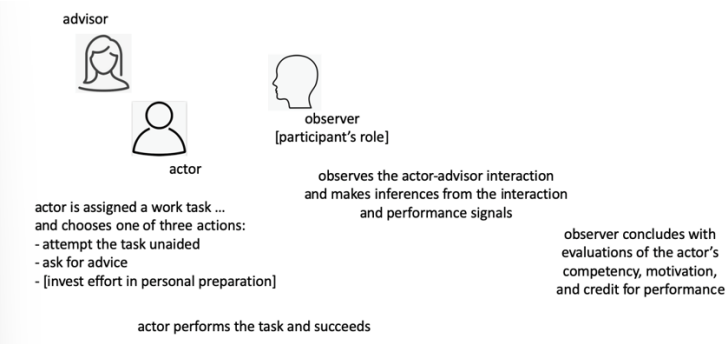

Figure 1: Hypothetical Depiction of Advice Seeking Scenario

Assigning credit for work products is surprisingly complex, even though judgments are naturally and intuitively generated. One model proposed to describe how an observer makes credit-assignment assessments in a workplace is based on a principle of contribution-credit

equity (Gerstenberg, & Lagnado, 2015; Lagnado, Gerstenberg, & Zultan 2013). If, for example, two workers complete a task but one invests more time or more effort in performing the task, that worker will receive more credit for the completion. Some theorists have summarized this evaluation as an equation (Adams, 1965; Walster, Berscheid, & Walster, 1973), proposing that workers receive credit according to the ratio of the outcome (credit in this example, or perhaps a monetary bonus) of their performance divided by their performance inputs, e.g., outcome/input. Furthermore, a fair or proper allocation of credit (and rewards like bonus payments) should assign outcomes such that ratios are equal across workers (see Harris, 1976, for a discussion of alternative formulations). For our purposes, it is sufficient to imagine a fixed quotient of "credit related" to the value of the work product to the manager or the organization, that will be divided between individuals contributing to the successful completion of a work product. If a worker completes the product unassisted, she receives all the credit; if she asks advice and then completes the project, she receives a fraction of the total credit related to her assessed contribution.

Building further on the research literature on social judgments of credit and responsibility, we hypothesize that credit for a performance is related to the observer's perception of the causal contributions of the worker and the advisor to task completion. Research has converged on the conclusion that causal credit is related to assessments of the necessity of each party's contributions to the completion of the task (Alicke, Mandel, Hilton, Gerstenberg, & Lagnado, 2015; Lagnado, Gerstenberg, & Zultan 2013). For our purposes, a general concept of counterfactual causal credit should suffice to motivate empirical measures of the two workers' contributions (worker and advisor) to completing a single, unitary work product (the basic scenario in the present research). In our experiments, we ask participants (in the role of observers) to judge the probability that the task would have been completed without the advisor's advice. In our scenarios, the task is always successfully completed (either by the worker or by the worker with the advisor's help), so we assume that the probability of completion with the advisor's input is 1. We also assume that the probability the task would

have been completed without the worker's inputs is zero. Putting these pieces together, we conclude that the causal credit (and responsibility) allocation to the worker would be probability of completion **without** the advisor's input; and credit to the advisor is 1 minus the probability of completion **without** the advisor's input.

There is one more component of the responsibility assessment inference system. In situations in which an observer is assessing an worker's performance, observers usually consider ability and motivation (effort) when performing a task (of known difficulty) and succeeding (or failing) to achieve a solution. Following Anderson & Butzin (1974), interpreting a judgment schema suggested by Heider (1958), we assume this inferential schema can be summarized in a simple theoretical function:

$$P_i = f(A_i, E_i, D_j).$$

where P_i is the outcome performance of worker i, A_i is the ability of worker i, E_i is the amount of effort worker i exerts, and D_j is the level of difficulty of task j. Advice-seeking will impact an observer's inferences about the worker's *ability* and *effort*.

When breaking down this function, we assume the partial derivation of function f with respect to A_i to be positive, $\frac{\partial f}{\partial A_i} \geq 0$. This means that holding effort, E_i, and difficulty, D_j, constant, the higher ability will leader to better performance outcomes. We also assume the partial derivative of effort to be positive $\frac{\partial f}{\partial E_i} \geq 0$, meaning holding all else constant, more effort will lead to better outcomes. Finally, we assume the partial derivative for task difficulty to be negative, $\frac{\partial f}{\partial E_i} \leq 0$. The more difficult a task is, holding ability and effort constant, the performance outcome will decrease in value.

In general, seeking advice will lower attributions of *ability* or *effort*. One way to explain the trade-off between *ability* and *effort* versus *advice*, is to add a term to the equation that represents the perceived impact of *advice* on *performance*.

$$P_i = f(A_i, E_i, V_i, D_j).$$

where P_i, A_i, E_i, and D_j are all the same, however V_i is the overall effect from the advice given to worker i. We assume this parameter to be positive, however, it is possible advice could hurt the outcome if the advice is misguided. Nevertheless, we assume all other partial derivatives to hold the same sign as before, and add an additional assumption of a positive partial derivative from the advice parameter V_i, $\frac{\partial f}{\partial V_i} \geq 0$. Intuitively, this would mean that holding ability, effort, and difficulty constant, advice will always increase the performance of worker i.

To summarize, we propose first that workplace credit is allocated to the worker (worker) and advisor according to an equity rule: more credit for the worker means less credit for the advisor (and conversely). Second, we assume that within the constraints of our stimulus scenarios, that the worker's credit for the successful completion of the work product or task is inferred from judgments of the worker's ability and effort. And third, to the extent that the advisor's contributions is judged to be causally important, credit will be "subtracted" from the worker.

To specify the exact pattern those effects in our behavioral experiments, we will supplement the social judgment equations with some verbal hypotheses about inferences of competency and credit. These verbal hypotheses are provided when I delve into the observer's reactions to advice-seeking.

What Motivates Advice Seeking?

Advice seeking is a relational decision (Bonaccio & Dalal 2006). Seeking the advice from another individual can yield interpersonal gains in their relationship. This is due to the signal of respect and perceived expertise that the advice-seeker sends to the potential advisor

(Schaerer, Tost, Huang, Gino, & Larrick 2018). Moreover, advice-seeking individuals may hinder the relationship with those they did not seek advice from (Blunden, Logg, Wood Brooks, John, & Gino 2019). Although I acknowledge the obvious interpersonal effects from seeking advice, I partially control for this by removing the "judge" (our study participants) from the equation and give them the role of an outside observer. Thus, the advice-seekers cannot and will not seek the advice from the judges.

We were careful to make performance enhancement the primary motivation for workers to seek advice in the present experimental scenarios. There are some nuances to the performance enhancement motivation. Advice increases the probability of successful completion of the worker's task, but it can also save time and effort.

By removing the interpersonal outcomes to seek advice, I highlight the primary motivation for individuals to seek advice in my experiments: improve their performance in the problem solving task. When individuals acknowledge that their outcome would benefit from the reliance on others, they acknowledge a deficiency in their ability to complete the task on their own. This acknowledgment is the primary motivation to seek advice, the primary signal from seeking advice, as well as the primary barrier blocking people from pursuing outside counsel.

If we consider the advice-seeking decision from a rational worker's perspective (in our simplified experimental scenarios), we might write a conceptual equation to summarize the net value of seeking and using advice from a peer or supervisor. Each of the terms in this equation could be scaled and weighted to predict the worker's expected outcome, and to predict whether or not he or she seeks advice. Quantification of this conceptual formula is outside the scope of the present research; where our focus is on the observer's judgments of an worker who always seeks advice.

$$p(A) = f[(p(S|A = 1) - p(S|A = 0)))+$$

$$((E|A = 1) - (E|A = 0)) - ((C|A = 1) - (C|A = 0)) - R].$$

where $p(A)$ is the probability of seeking advice. From this model, I assume the decision to seek advice is a function of the following parameters. $p(S)|A = 1$ is the probability of success given the receipt of advice, and $p(S)|A = 0$ is the probability of success without any advice. Put together is the overall benefit from seeking advice. Aside from increasing performance, advice also serves another purpose: reducing the effort required by the worker. This effort reduction is model by the predicted amount of effort with $(E|A = 1)$ and without $(E|A = 0)$ advice. These benefits are weighed against various costs. These costs are primarily modeled in competency reputations, where $C|A = 1$ is the perceived competency of the worker with advice, and $C|A = 0$ is the perceived competency of workers that do not seek advice. We assume $C|A = 0 > C|A = 1$. Finally, there is a final parameter of R, which is a collection of other reputation costs associated with seeking advice. Simply put, individuals primarily seek advice when they are not confident in their ability to solve the problem on their own. They either lack the necessary task-relevant information, the ability to perform the task, or the confidence in their solution. Finally, I entertain one final motivation to seek advice; to save time and effort. When someone acknowledges their deficiency, they may also acknowledge the time it would take to learn the necessary skills required to succeed. Asking for advice from others may be a strategy employed to subvert this extra effort in favor to saving time and mental energy.

Strategies to Overcome the "Need" for Advice

Past research has shown that individuals seek advice when they are motivated to improve their performance on a given task. However, individuals accept the risk of lower performance

and are reluctant to seek advice when their reputation for competency is salient (Brooks, Gino, & Schweitzer 2015).

In the Brooks et al. experiments, participants worked on the same task and experienced the same average level of confidence in their ability, but they altered their decisions to seek advice depending on the importance of their reputation for competency. The obvious strategy people use when faced with a challenging task is to ask for advice. This is the response we focus on in the present research, where the primary worker always asks for advice. The alternative strategy selected by some of the Brooks et al. participants, is to work on the task without outside advice. This strategy blocks inferences from the advice-seeking signal that the participants lack ability or motivation. Of course, the workers are also risking a "hit" to their reputation for competency, as their probability of success is presumably lower without advice.

A third strategy, that was not available in the Brooks et al. experiments (or in the present research), is to use additional resources to learn the necessary skills and information needed to succeed. For instance, in the example of a junior consultant who asked other consultants for advice, the consultant could utilize the firm's research on South American markets and other information, to acquire the knowledge to construct a good solution.

Realistically, these three strategies could yield different levels of success depending on the situation. In some settings, seeking advice from others could lead to a better outcome than searching for the information on your own. In other settings, advice may yield insufficient information and guidance when compared with online resources and reports. However, in the present experiments, every participant will experience the same outcome, controlling for the quality of the solution across the various workers.

Chapter 1: Advice Seeking

The overall purpose of Chapter 1 is to explore advice seeking and reactions to advice seeking by a knowledge-task worker. The critical reactions captured throughout Chapter 1 are competence and collaborative attributions observers make about the advice-seeker. Moreover, I also measure the credit given to the advice-seeker for the final product or solution. Finally, I measure the causal credit assigned to the advice-seeking worker, shedding light on how impactful the advice was to the final outcome. I developed a theoretical framework and model to guide the choice of moderating variables for each study.

The research reported in Chapter 1 shows that the worker's ability and effort significantly affect judgments of the worker. Advice seekers who are of high ability and exerted high effort are judged favorably compared with advice seekers of low ability who exert low effort. The most surprising effect obtained in the studies reported in Chapter 1 is the lack of movement in the credit ratings. Asking for advice inherently lowers the amount of credit received for the final product, however, exerting more effort before seeking advice does not increase the percentage of credit the worker receives relative to others who exerted low effort.

The decision to seek advice can be formally broken down into a cost-benefit model: the predicted gain from receiving advice versus the predicted cost from ascertaining said advice. When we observe an aversion to seeking advice, the cause is commonly taken to be an overestimation of the cost of seeking information, instead of an underestimation of the benefit from the advice (Brooks, Gino, & Schweitzer 2015).

A few examples of this aversion to seeking advice include men being more reluctant than women to seek medical advice or mental health assistance in an attempt to preserve their perceived strength (Galdas, Cheater, & Marshall 2005, Wenger 2011). Adolescents are reluctant to ask for help from their parents so as to be perceived as more independent (Boldero & Fallon 1995, Fallon & Bowles 1999). Employees are reluctant to ask for advice when completing their tasks because they are sensitive to their perceived competence (Lee 1999).

For instance, employees sought advice when their pay was outcome-based, but did not when it was tied to their perceived competence (Brooks, Gino, & Schweitzer 2015).

With every decision, individuals forgo advice in an attempt to *keep* something else. If an individual values this attribute more than the benefit from seeking advice, they will consistently avoid advice seeking.

In Chapter 1, we start with a setting in which participants are making judgments of hypothetical employees. Throughout the chapter, I attempt to better understand how ability, effort, task difficulty, and the gender of the advice seeker affect judgments of competence, collaboration, and credit of the advice seeker.

The experimental paradigm is as follows: participants are exposed to the advice-seeking behavior of the agent. In this request, they learn about the ability reputation of the agent, the difficulty of the task at hand, and the amount of effort exerted before sending the advice seeking request. Varying the levels of each of these moderators, I aim to shed light on how people react to these factors when making judgments of competency, collaboration, and credit for the advice-seeking agent.

Conditional on seeking advice, does the amount of weight one puts on the advice impact perceptions of their competence? Much of the advice seeking literature has focused on the "weight-of-advice" (WOA) people give to outside information when updating their prior beliefs (Harvey & Fischer 1997; Yaniv & Foster 1997). Sometimes people ask for advice but do not update at all (Tost, Gino, & Larrick 2012; See et al. 2011), while in other situations, people fully incorporate the advice as their final opinion. For example, in much of that research, the WOA is the dependent variable, exploring how power and confidence significantly decrease the weight-of-advice (De Wit et al. 2017). By varying the WOA a seeker puts on

a giver's opinion, I document the relationship between perceived competence in those that fully discount, equally weight, or fully weight the advice.

In Chapter 1, the first study will explore the the world's most popular advice-seeking website. Study 1 aims to understand how personal attributes, as well as attributes within the advice request, lead to reputational outcomes for the advice seeker. Study 2 aims to understand how the ability and effort of the worker, and the difficulty of the task, effect judgments of an advice-seeking worker. Study 3 builds on Study 2 to explore whether effects are heterogeneous across genders. Finally, in Study 4, I progress past the advice-seeking domain and assume all workers seek some sort of advice. With advice-seeking fixed at 1, Study 4 aims to understand the costs associated with *taking advice*.

Study 1: What is a "Good" Request for Advice? Evidence from Stack Overflow

The purpose of this dissertation is to explore the situational and personal factors that influence reactions to advice-seeking behavior. For much of this dissertation, I will obfuscate the details of the advice-seeking request and focus on the dynamic situation in which the request is being sent. However, it is important to understand the strategies people take when seeking advice and how others react.

In this study, I explore the contents of thousands of advice-seeking requests and determine what factors lead to a reputational boost for the advice-seeker. Through this study, I learn how a person can devise an advice-seeking request to signal effort and ability, as described in our mental model of advice-seeking reactions.

In order to accomplish this goal, I use publicly available data from Stack Overflow. Stack Overflow is a community-based question-and-answer (Q&A) site, which mainly depends on the willingness of their members to answer others' question. In fact, when formulating

requests on Q&A sites, members are not simply seeking for information.

Understanding the dynamics of the participation, both in asking, answering, and "up-voting", is essential to improving the value of crowd-sourced knowledge on the platform and in organizations. Educating employees to formulate questions properly is beneficial not only for the information seekers, since it increases the likelihood of receiving support, but also for the whole organization, since it enhances effective knowledge-sharing behavior.

Stack Overflow serves as a platform for users to ask and answer questions, and through membership and active partition, to vote questions and answers up or down similar to Reddit. Users of Stack Overflow can earn reputation points and "badges"; for example, a person is awarded 10 reputation points for receiving an "up" vote on a question or an answer to a question, and can receive badges for their valued contributions. Users unlock new privileges with an increase in reputation like the ability to vote, comment, and event edit other people's posts.

As of March 2021, Stack Overflow has over 14 million registered users, and has received over 21 million questions and 31 million answers.

Throughout this exercise, I develop a framework of factors influencing the success of questions in Stack Overflow. Specifically, I focus on actionable factors that can be prescribed to others when writing their own advice seeking requests. Namely, I focus on the effort exerted, the presentation quality, and the prior reputation (i.e., ability) of the advice-seeker.

I analyzed a dataset of 87,751 questions from March 2018 to June 2019, extracted from the official Stack Overflow dump. I estimated a logistic regression analysis to estimate the probability of success of a question. This study will provide a general framework regarding the advice-seeker and request attributions that lead to the success of a question.

In order to predict the success of a question on Stack Overflow (N = 87,751), we assume the following form of a logistic regression model:

$$pr(Success) = \beta_0 + \beta_1 Weekend + \beta_2 Afternoon + \beta_3 Word.Count + \beta_4 Code +$$

$$\beta_5 URL.Response + \beta_6 Reputation + \epsilon$$

A "successful" question in Stack Overflow means a user posted a question, and this question was responded to and up voted. "Unsuccessful" questions are ignored and given down votes to display the community's dissatisfaction. Specifically, a question will be given a score of 1 if it has a positive score ($upvotes > 0$) and received a solution to the problem at hand.

Critical Factors of Successful Questions

Using the theoretical model of advice-seeking reactions to guide the choice of critical factors in this analysis, I chose to focus on the effort displayed within the request, and the ability reputation of the advice-seeker, which is publicly displayed next to the questions they ask.

Effort

Previous research has found that providing information in a manner that promoted readability and comprehension is regarded as the strongest indicator of the quality of a question (Asaduzzaman, Mashiyat, Roy, & Schneider 2013). In the Stack Overflow dataset, this can be broken down into two metrics. First, Stack Overflow uses a set of textual metrics (e.g., word count, use of uppercase, presence of URLs, etc.) to feed a queue of supposed low-quality question, which are then analyzed by a selected subset of high-reputation users with moderation privileges. These metrics have been previously used by Ponzanelli et al. (2016) to develop an automated approach for the identification of high vs. low quality questions in Stack Overflow.

The most critical community guideline when drafting a question is Stack Overflow, it is a technical-developed platform, users can include a snippet of their code they are struggling to troubleshoot. Without this code, it is assumed that the poster has not clearly conveyed their problem or has not attempted to solve the problem on their own (meaning they have

yet to write any code).

By merging the question dataset with the response dataset, we create a dummy variable that gauges the effort of the advice-seeker to solve their problem before posting a question. When the top comment for a question includes a URL to another Stack Overflow page, this is highly predictive of this question having been previously posted and answered on the site.

Overall, to gauge the effort of the advice-seeker, we use the following factors:

1. **Word Count:** How many words are included in the overall post.
2. **Code:** Dummy variable to indicate whether the poster included an example of their past work.
3. **Response URL:** Dummy variable to indicate whether the top comment included a URL directed towards another Stack Overflow page.

Ability

The users' status, expressed through reputation score, resulted among the best predictors of success of requests in online communities (Althoff, Danescu-Niculescu-Mizil, Jurafsky 2014). In their research, the users with higher status in the community object were more likely to receive the help requested. We use the reputation score on Stack Overflow as a control to explore the more dynamic and actionable items listed above in the effort section.

Results

In order to estimate the predicted probability that a question posted to Stack Overflow is successful, I build a logistic regression with the variables listed above. For added controls, I include the timing of the post both by the day (Weekend Dummy: Weekday vs. Weekend), and the time of day (Time of Day Dummy: Before 12 pm, After 12pm).

The results from this model are displayed in Table 1. As for the timing of the post, questions posted during the weekend and in the afternoon are more likely to be successfully

answered than posted during the weekday and in the morning. This timing effect is not indicative of the quality of the questions, but an insight into the structure of this community. When a question is posted with various "tags" or "keywords", members who subscribe to those topics get an update. Because members who answer questions are not compensated, it is intuitive to assume that they answer questions during their off-work hours. Thus, it important to post questions when the potential solvers are able to respond to the question-post notification.

When analyzing the results of our effort factor, we find that the word count yields a negative effect on the predicted probability of success for a question, indicating that advice seeking requests should be short, concise, and to the point. Questions that do not provide a sample code to supplement their questions are harshly punished, indicating that proof of prior effort is important for composing a successful and positive advice-seeking request. Finally, if the top comment for a question includes a URL from Stack Overflow (indicating this question is not novel and has been solved in the past), yields a strong effect in our logistic model. When a member posts a question that has been solved in the past, the members react by down-voting the post and decrease the reputation score of the advice-seeker.

Now that we know that effort is important in determining the success of an advice seeking request, how does the reputation score impact how others response to posts of a similar nature? Controlling for effort, we find that people with a high reputation score are significantly more likely to yield a successful post. This coefficient and effect serves two purposes. First, it acts as a control to explore post quality while holding the reputation of the advice seeker constant. Next, it sheds light on the importance of having a good reputation when seeking advice, as you are significantly more likely to receive help even with a low quality advice seeking request.

Table 1: Components of a Successful Question for Stack Exchange Submissions (Study 1)

	Dependent variable:
	Coefficients
Weekend	0.09***
	(0.03)
Afternoon	0.14***
	(0.04)
Word.Count	-0.19***
	(0.088)
Code	0.75***
	(0.19)
URL.Response	−0.35***
	(0.131)
Reputation Score	1.17***
	(0.22)
Observations	87,541
R^2	0.269
Adjusted R^2	0.231
Residual Std. Error	1.016 (df = 87,540)
F Statistic	37.915*** (df = 5; 87,541)
Note:	*p<0.1; **p<0.05; ***p<0.01

Discussion

In this study, I studied behavior on Stack Overflow, the world's largest platform for people to seek and give advice. Using more than 87,000 questions, I aimed to learn about the important factors within an advice seeking request that yields a positive response from community members.

These results can be used to substantiate the model I proposed in the introduction. Recall that this model takes the following form:

$$P_i = f(A_i, E_i, V_i, D_j).$$

First, this study highlights the important of the first three parameters in the model. The ability/reputation of the advice-seeker is important when people judge the quality of their advice-seeking request, as evidenced by the "Reputation Score" in our model. The amount of effort exerted on the problem before seeking advice positively influences judgments of the advice-seeker. This effort can be broken down into two components from the coefficients in our model. The most intuitive link between effort and the results above is word count, however, this decreases the perceived quality of the question. This, in our opinion, does not signify effort but poor structuring and framing; for instance, these questions could be long-winded and indirect. However, the inclusion of code in the question is a strong indications of past effort to solve the problem on their own. In my follow-up studies, I am better able to frame and display effort to the study participants.

In Study 1, we learn that effort and ability are both important determinant of success of the question for advice, and the reputational consequences from making the request. For a worker, it is important to ask questions when it is convenient for the potential advice-givers to respond. It is important to be concise and to the point, but also to demonstrate prior effort before turning to others for advice. Moreover, it is important to use the accessible resources before seeking the advice from others.

Study 2: Seeking Advice: Ability, Effort, and Task Difficulty

I use an established theoretical model to understand the consequences of advice-seeking. By precisely manipulating ability, effort, and task difficulty, I can identify the conditions in which the advice is given greater credit for the final outcome (and the worker is given less personal credit).

This model is used to judge the full process of task completion; specifically, effort could be split into pre and post-advice (e.g., an employee could exert 1 hour of effort before the advice, and only 10 minutes after). In Study 2, I focus on the amount of effort exerted on the task *before* the advice is requested.

In the present study, I manipulate the ability and reputation of the worker, the amount of effort exerted on the task before asking for advice, and the perceived difficulty of the task. Using these manipulation, I explore how these factors impact judgments of the *worker's* competence and collaboration ratings. I also examine judgments of the *work* with the amount of credit the worker should receive for the final product.

After understanding key judgments of the worker and their work, I use the established theoretical model to understand the *Advice* parameter. By manipulating ability, effort, and task difficulty, I can better understand the conditions in which the advice is given larger weight towards the final outcome (and the worker is given less).

Method

Participants

I recruited 787 workers on Prolific to complete a "Short Survey on Advice" (395 female, $M_{age} = 32.88$, $SD = 5.44$). This survey took, on average, 4 minutes and 14 seconds; every worker was paid \$0.50 for completing the survey.

Experimental Design

Participants were asked to read a "hypothetical email" from one employee (Mark) to another employee (Sam). They were asked to read this email carefully as they were asked questions about its contents. If they do not get these questions right, they could not move on in the survey. Overall, 16 participants were dropped from the sample. The contents of the email are shown below:

Hypothetical Email

Hey Sam,

I know we have not had the pleasure of meeting yet; my name is Mark and I work in the logistics department. I started around 3 months ago and am in need of a little advice. I've heard you are excellent at navigating our database using the coding platform, SQL, so I thought I would reach out.

Ability: Low

I just barely passed the SQL tests at the end of our training program, so I am still learning the ropes.

Ability: High

I scored very high marks on the SQL tests in our training program and took multiple coding classes in college, however, I am struggling with this problem.

Task Difficulty & Effort: Low [High]

My manager assigned a task to me, and I am struggling a bit. They said it was an *easy* [*difficult*] task. I've been working on it for about 15/45 [45/1h30min] minutes and am stuck.

In our database, there are two sets of data that I need to merge together. One dataset has our customer order history, and the other has our customer payment history. I need to merge the dataset to create a file with both the orders and payment history.

Can you lend a little advice on how to do this? Again, I have [haven't] worked on this for too long, but I could use a little advice.

Thanks in advance, Mark

Pre-Test: Low & High Effort

When manipulating the effort exerted by the worker before seeking advice, I could have been more explicit and stated "I have [not] spent a lot of effort on this". However, the

manipulation should be altering the perception of effort in the mind of the participant, and not the amount of effort by the hypothetical scenario.

However, "a lot" versus "a little" amount of time may differ depending on the difficulty of the task. For instance, 30 minutes on an easy task may be perceived as a lot, while 30 minutes on a difficult task may be judged to be too little.

I ran a pre-test in order to determine how much effort is expected before seeking advice so I could select stimuli that are proven to convey *low* and *high* effort.

I recruited 125 participants on Prolific (71 female, $M_{age} = 29.87$, $SD = 4.71$) to take a "Short Survey on Working". This survey took, on average, 2 minutes 23 seconds to complete and participants were paid \$0.30 for their submission.

There were two conditions in this pre-test: Low Difficulty and High Difficulty. I manipulated difficulty by framing the task in the following manner:

> Imagine there is an employee at a medium-sized logistics company tasked with merging multiple datasets using SQL. SQL is a coding-platform used for data wrangling and manipulation.
>
> The task is determined to be *easy*[*difficult*] by the manager.
>
> While completing the task, this employee recognized they are going to need some advice in order to figure out the correct solution.
>
> Every time increment below is the amount of time this employee works on the problem before asking for advice.
>
> For every time increment, please rate whether the employee spent too little, just the right amount, or too much time on the task before asking for advice.

After reading the description of the task, every participant was given a list of time increments; each time indicated how much time was spent on the task: 15 minutes, 30 minutes, 45 minutes, 1 hour, 1 hour 15 minutes, 1 hour 30 minutes, 1 hour 45 minutes, 2 hours, Over 2 hours.

For every time increment, they judged the amount of time spent from "Very Much too Little" to "Very Much too Much". Specifically, the response scale was a 5-point Likert scale (1-Very much too little, 2-Too little, 3-Just Right, 4-Too Much, 5-Very Much Too Much).

Every participant had a "switch-point", where they switched from "too little" to "just

right". We looked at the distribution of switch-points and took the mode to determine the time increment that is "just right" for both easy and difficult tasks.

The modal switching point for the easy task was 30 minutes, so we chose 15 and 45 minutes to convey *low* & *high* effort, respectively.

The modal switching point for the difficult task was 1 hour 15 minutes, so we chose 45 minutes and 1 hour 30 minutes to convey *low* & *high* effort in Study 2.

Dependent Measures

Competence

During the study, we asked the participants three questions about the competency of the advice seeker.

1. "On a scale of 1 (Very Incompetent) to 7 (Very Competent), how would you rate Mark and his ability to perform in his new role at Quest Solutions?"

2. "On a scale of 1 (Very Incompetent) to 7 (Very Competent), how would you rate Mark and his ability to navigate the SQL database?"

3. "On a scale of 1 (Very Low Confidence) to 7 (Very High Confidence), how confident are you that Mark will be successful at this new job at Quest Solutions?"

These items correlated with a Cronbach's α of 0.77, so we collapsed participants' responses into a composite, competence score by average across participants' responses to the three questions above.

I will use this composite score when analyzing the main effects below.

Credit

I measured the amount of credit the advice-seeker receives for the final, correct SQL code with the following question:

1. Imagine if Sam replies with some advice for Mark. How much credit (0-100%) should Mark get for the final, correct SQL code submitted to Mark's boss?

Collaboration

The final dependent variable we explored is the perception of collaborative abilities of the advice-seekers. We measured this perception with two questions:

1. "On a scale of 1 (Definitely Not) to 7 (Definitely), would you like to work with Mark on a team?"

2. "On a scale of 1 (Very Uncollaborative) to 7 (Very Collaborative), how would you rate Mark's ability to collaborate?"

These items correlated with a Cronbach's α of 0.81, so I collapsed participants' responses into a composite collaboration score by averaging across participants' responses to the two questions above.

I will use this composite score when analyzing the main effects below.

Results

Through our experimental manipulation, I varied whether participants were exposed to high or low effort, ability, and task difficulty.

The design of this experiments allows us to explore how these manipulations directly impact attributions to competence, credit, and collaboration. Moreover, we can take these attributions and explore how they load into the causal credit of the advice toward the final product.

First, I will explore the main effects from our experimental manipulations towards attributions of competence for the advice-seeker.

Competence: Ability, Effort, and Difficulty

Competency and Ability

The most intuitive relationship between our experimental manipulations and dependent variables is the one between *Ability* and *Competency*. We vary whether or not the advice-seeker has an established history of elevated capabilities and success, which we predict to load into how our participants rate their perceptions of competency.

Results in Figure 2 indicates a relationship to be consistent with our hypothesis. Advice-seekers in the *High Ability* conditions were perceived to be more competent than those in the *Low Ability* conditions ($Competence_{low.ability} = 3.97$, $Competence_{high.ability} = 4.47$, $t = 6.79$, $p < 0.001$).

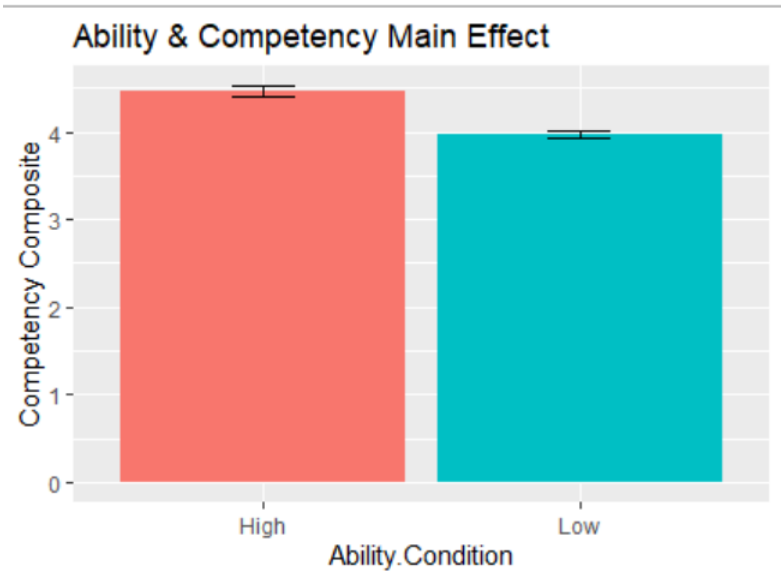

Figure 2: Ability Condition and Competency Rating (Study 2)

We find that exposing your past achievements when soliciting advice from another individual can be an effective tool towards protecting perceptions of your competency. However, from this result, we cannot conclude whether those with a past of low ability would benefit from concealing this information in their request.

Competency and Effort

Next, I explore the relationship between the amount of effort put into the task before asking for advice, and ratings of competency for the advice-seeker.

When an advice-seeker expends a fair amount of effort into the task before asking for advice, they are perceived to be more competent than workers that expend little effort before seeking advice ($Competency_{low.effort} = 4.05$, $Competency_{high.effort} = 4.39$, $t = 4.61$, $p < 0.001$) (see Figure 3).

Figure 3: Effort Conditions and Competency Ratings (Study 2)

From this main effect result, it is important to prescribe potential advice seekers to expend a fair amount of effort on the task before seeking advice from another co-worker. Doing so can protect the perception of your competency and ability to perform in your role at the organization.

Competency and Task Difficulty

The final main effect concerns the relationship between competency and task difficulty. I explore whether individuals with a task that is more difficult or easy will yield differential impacts in perceptions of competency.

The results suggest that individuals seeking advice for a "difficult" task are perceived to be more competent than those seeking advice for an "easy" task ($Competency_{low.diff} = 4.11$, $Competency_{high.diff} = 4.33$, $t = 2.92$, $p < 0.01$) (see Figure 4).

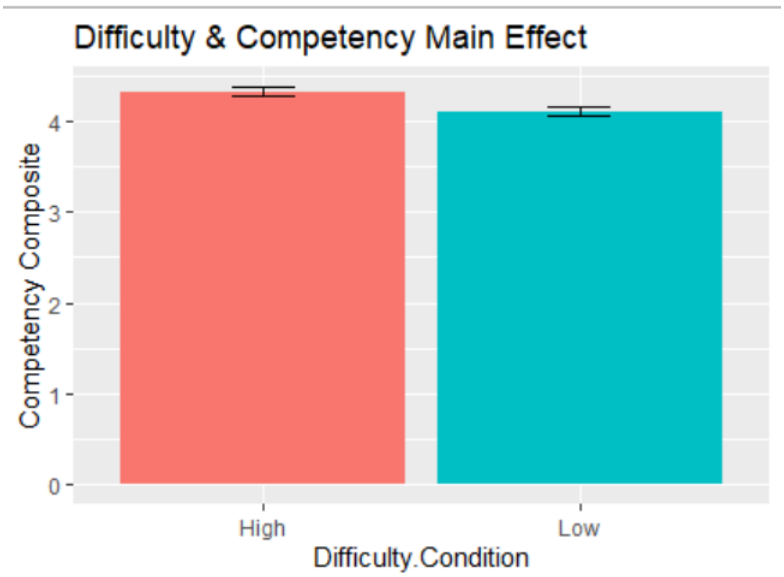

Figure 4: Difficulty Condition and Competency Rating (Study 2)

These findings suggest the power of relaying the difficulty of the task and how that can alter perceptions of competency for advice seekers. When seeking advice, if the task-at-hand is difficult, then one can protect the perceptions of their competency despite acknowledging a lack of ability to complete the task-at-hand on their own.

Testing Interaction Effects: Ability & Effort

We observed three main effects of the manipulated variables: Ability, Effort, and Task Difficulty. Since ability is virtually a synonym of competency, we were not surprised to see that high ability actors were rated as higher in competency. In addition, high effort actors were rated higher in competency, and actors performing a high difficulty task were rated as more competent.

Less obvious, we also observed the key multiplicative interaction effect implied by the Heider attribution model, *Ability* $\times$ *Effort*, on rated competency, but only for the high

difficult task (see Table 1). The omnibus regression model did not show a simple interaction between *Ability* × *Effort* across both levels of Task Difficulty. But, when the regression model is fitted to Low versus High Task Difficulty conditions separately, the interaction is clear for the High difficulty condition. Since this three-way interaction between Ability, Effort, and Task Difficulty was not predicted, this result must be taken as tentative. Ideally, follow-up studies will further explore these effects.

The interpretation of "what is going on" in the High Task Difficulty condition is simple. We observe the pattern of judgments predicted by the Heider Model. What requires speculation is an interpretation of the pattern in the Low Task Difficulty condition. We suspect that when a worker seeks advice on how to perform an easy task that the observer begins to entertain inferences about potential ulterior motives or lack of motivation on the part of the advice-seeker. But the present, first study of this phenomenon does not support confident interpretations.

Competency Discussion

There is a main effect for the ability manipulation (i.e., high ability rated higher competency than low ability). Moreover, there is another simple main effect for the effort manipulation, where individuals that exerted a fair amount of effort were rated as more competent than low effort. Finally, when individual seek advice on difficult tasks, they are seen an more competent than those who seek advice on an easy task.

Credit: Ability, Effort, and Difficulty

In this section, I explore whether ability, effort, or task difficulty alters the amount of credit the advice-seeker receives for the final product.

Table 2: Interacting Ability & Effort (Study 2)

	Dependent variable:			
	Competency		Credit	
	(1)	(2)	(3)	(4)
Ability	0.172***	0.327***	1.384	0.526
	(0.053)	(0.048)	(1.159)	(1.167)
Effort	0.193***	0.148***	−0.845	1.255
	(0.053)	(0.048)	(1.159)	(1.167)
Ability x Effort	0.010	0.097**	−0.750	0.495
	(0.053)	(0.032)	(1.159)	(1.167)
Constant	−0.108**	0.112**	0.574	−0.593
	(0.053)	(0.048)	(1.159)	(1.167)
Difficulty:	Low	High	Low	High
Observations	402	403	402	403
R^2	0.056	0.127	0.006	0.004
Adjusted R^2	0.049	0.121	−0.001	−0.004
Residual Std. Error	1.069 (df = 398)	0.963 (df = 399)	23.227 (df = 398)	23.428 (df = 399)
F Statistic	7.859*** (df = 3; 398)	19.407*** (df = 3; 399)	0.803 (df = 3; 398)	0.511 (df = 3; 399)

*p<0.1; **p<0.05; ***p<0.01

Credit and Ability

When comparing the amount of credit (0-100%) the advice-seeker receives for the final product, we do not find any significant difference between individuals with *low* and *high* ability ($credit_{low.ability} = 60.49$, $credit_{high.ability} = 62.42$, $t = 1.18$, $p = 0.24$) (see Figure 5).

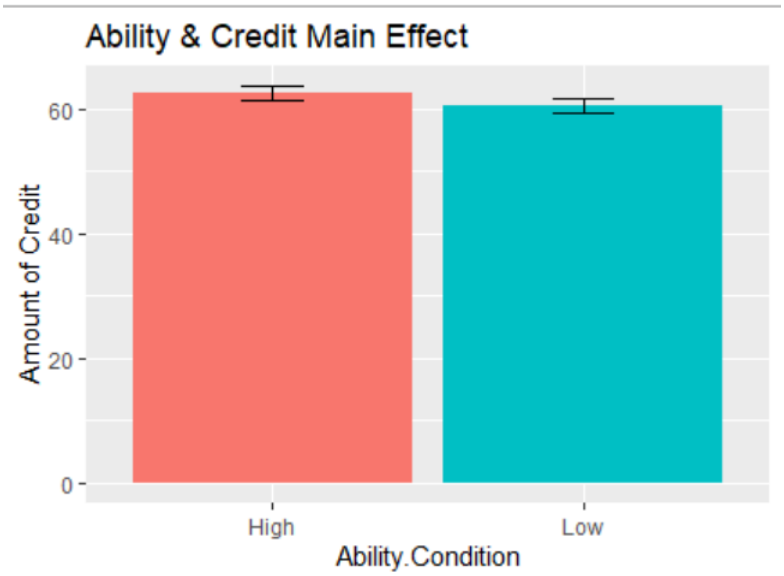

Figure 5: Ability Condition and Credit Ratings (Study 2)

Credit and Effort

When comparing the amount of credit the advice-seeker receives for the final product, we do not find a significant difference between individuals with *low* and *high* effort ($credit_{low.effort} = 61.26$, $credit_{high.effort} = 61.66$, $t = 0.241$, $p = 0.81$) (see Figure 6).

Credit and Task Difficulty

When comparing the amount of credit the advice-seeker receives for the final product, we, again, do not find a significant difference between individuals working on tasks of *low* and *high* difficulty ($credit_{low.diff} = 62.06$, $credit_{high.diff} = 60.86$, $t = -0.73$, $p = 0.466$) (see Figure 7).

Figure 6: Effort Conditions and Credit Ratings (Study 2)

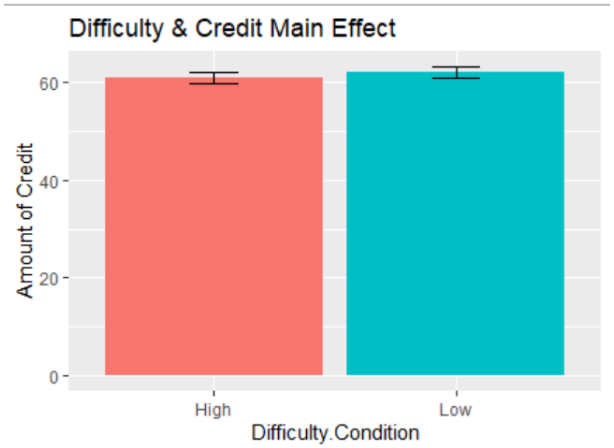

Figure 7: Difficulty Conditions and Credit Ratings (Study 2)

Credit Discussion

The effects from ability, effort, and task difficulty seem to have a systematic rewarding effect on the amount of credit an employee receives for a final product when the final product is an outcome of external advice. Ability, effort, and task difficulty does not increase the amount of credit the worker receives in the end.

Collaboration: Ability, Effort, and Difficulty

Collaboration and Ability

When exploring how the ability of the advice-seeker impacts the collaborative perceptions of the seeker, we find there is a significant difference between *high* and *low* ability advice-seekers ($collab_{low.ability} = 5.05$, $collab_{high.ability} = 5.26$, $t = 2.67$, $p < 0.01$) (see Figure 8).

Figure 8: Ability Conditions and Collaboration Rating (Study 2)

Collaboration and Effort

When exploring how the effort of the advice-seeker impacts the perceptions of collaborative abilities of the seeker, we find a significant difference between advice-seekers that exerted *high* and *low* effort before seeking advice ($collab_{low.effort} = 5.06$, $collab_{high.effort} = 5.25$, $t = 2.21$, $p < 0.05$) (see Figure 9).

Collaboration and Task Difficulty

Finally, we explore whether individuals who seek advice on easy and difficult task differ in how collaborative they are perceived to be. Running a Welch's t-test, we find a marginal

Figure 9: Effort Conditions and Collaboration Rating (Study 2)

difference between the collaborative ratings of advice-seekers in the *low* and *high* difficulty conditions ($collab_{low.difficulty} = 5.09$, $collab_{high.difficulty} = 5.22$, $t = 1.73$, $p = 0.084$) (see Figure 10).

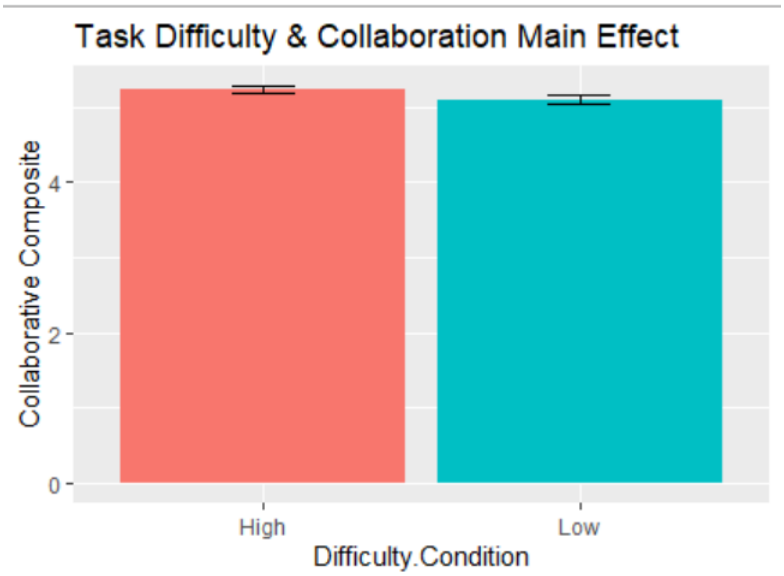

Figure 10: Difficulty Conditions and Collaboration Rating (Study 2)

Causal Credit: How Important was the Advice?

Causal credit is the measurement of the causal chain linking an action and an outcome. In our mental model, this is the *Advice* parameter, the weight advice receives in determining

the final outcome (in our case, that is the final SQL code submitted to the manager).

I measure causal credit by asking the following question:

What is the probability that [employee] would have found the final, correct solution to their problem without the use of any advice? [Scale: 0-100].

Because advice-seeking is both a strategy and tool to overcome a lack of competence or ability *and* a time-saving mechanism, I move my focus on the amount of time saved due to the advice.

Imagine [employee] did not receive any advice, how much extra time would it have taken them to find the final, correct solution to their problem? [Scale: 1-No Extra Time, 7 - A lot of Extra Time]

Finally, I incorporate these to response measurements in a model predicting the *quality* of the decision to seek advice. Although employees will be primarily focused on their attributions of competence, credit, and collaboration, as a researcher, I am interested in understanding where and when people perceive advice-seeking as a strategically sound decision. Thus, I end the survey with the following question:

Was the employee's decision to seek advice a good decision, or a poor decision? [Scale: 1-Very Poor Decision to 7-Very Good Decision]

Casual Credit Result

As mentioned above, the causal credit will measure the perceive causal effect of the advice on the final outcome (product).

In order to understand our moderators' effect on the causal credit given to the advice, we build the following regression model:

$$Causal.Credit = \beta_0 + \beta_1 Ability + \beta_2 Effort + \beta_3 Difficulty + \epsilon.$$

The results from this regression are outlined in Table 3 below.

Table 3: Causal Credit: Ability, Effort, Difficulty (Study 2)

	Dependent variable:
	causal_credit
Ability	5.540^{***}
	(1.548)
Effort	-1.599
	(1.549)
Difficulty	0.543
	(1.549)
Constant	48.432^{***}
	(1.547)
Observations	805
R^2	0.017
Adjusted R^2	0.013
Residual Std. Error	21.966 (df = 801)
F Statistic	4.652^{***} (df = 3; 801)
Note:	*p<0.1; **p<0.05; ***p<0.01

These results indicate that high ability workers shield their credit and reduce the amount of causal credit given to the advice received. However, exerting more effort or working on a more difficult task yields a null effect.

Time Saved

Briefly, I intend to explore whether participants ability, effort, and task difficulty effected the amount of extra time it would take the employee to solve the problem without the use of any advice.

$$ExtraTime = \beta_0 + \beta_1 Ability + \beta_2 Effort + \beta_3 Difficulty + \epsilon.$$

Table 4: Extra Time: Ability, Effort, & Difficulty (Study 2)

	Dependent variable:
	extra_time
Ability	-0.115^{*}
	(0.062)
Effort	0.21^{**}
	(0.062)
Difficulty	0.018
	(0.062)
Constant	3.418^{***}
	(0.062)
Observations	805
R^2	0.006
Adjusted R^2	0.002
Residual Std. Error	0.874 (df = 801)
F Statistic	1.478 (df = 3; 801)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 4 shows that he ability of the employee reduces the amount of estimated extra time it would take to solve the problem without the use of any advice. While the amount of effort exerted significantly increases the estimated extra time required to find the solution.

Quality of Advice-Seeking Decision

Finally, I wish to better understand whether participants rated the decision to seek advice as a "good" or "bad" decision. Broadly speaking, participants responded with their opinion on whether or not the employee should have sought advice, or continued to work on their own.

The first model I use to understand this effect is to include our main experimental moderators: ability, effort, and difficulty.

$$Decision.Quality = \beta_0 + \beta_1 Ability + \beta_2 Effort + \beta_3 Difficulty + \epsilon.$$

Table 5: Decision Quality: Ability, Effort, & Difficulty (Study 2)

	Dependent variable:
	advice_quality
Ability	-0.252***
	(0.063)
Effort	0.237***
	(0.063)
Difficulty	0.126**
	(0.063)
Constant	2.106***
	(0.063)
Observations	805
R^2	0.041
Adjusted R^2	0.037
Residual Std. Error	0.897 (df = 801)
F Statistic	11.388*** (df = 3; 801)
Note:	*p<0.1; **p<0.05; ***p<0.01

From the results in Table 5, the quality of the decision to seek advice decreases with ability, increases with effort, and increases with difficulty. Employees of high ability were

expected to work on their own. Employees who exerted a high amount of effort were clever to seek advice, and employees working on a difficult task were smart to seek advice.

Causal Credit Discussion

As stated earlier, causal credit is a phenomena where people attempt to assign credit to a given option. If multiple actions and one outcome is observed, people attempt to derive the importance for each action towards the final outcome.

In Study 2, we varied ability and effort from the worker, and the difficulty of the task. Depending on these conditions, we aimed to understand multiple evaluations of the advice and advice-request. First, we measured causal credit. Second, we measured how much time the worker saved by seeking advice. Finally, I aimed to understand whether people perceive the decision to seek advice as a high or low quality decision.

Workers with a high ability reputation shield their credit when seeking advice; people are more likely to assume that they would have been able to solve the problem on their own. Observers also believe workers with high ability would save less time when seeking advice. Most importantly, the quality of the decision to seek advice decreases when the workers have high ability.

Workers who exerted a high amount of effort were perceived to save more time when seeking advice. Moreover, the quality of their decision to seek advice increases as their effort increases. Finally, difficulty does not yield many of the effects I predicted. The causal credit given to the advice did not change given the difficulty of the task. Also, difficult task workers were not perceived to save more time given their decision to seek advice. However, when workers were assigned a difficult task, the quality of their decision to seek advice increased.

Study 3: Gender and Advice-Seeking Reactions

Study 2 aimed to systematically test our mental model of reactions to advice-seeking behaviors in the form of attributions towards the advice-seeker. The current study explores the possibility of a gender moderator. If I frame this current research program as an investigation into attributions towards advice-seekers, and use the results to prescribe advice-seeking behavior to employees who under seek or use advice, then it is important to fully understand the presence of heterogeneity in our critical attributions.

From prior research on signals/behaviors and reactions, it is well known that two people can perform the same action and yield vastly different reactions from observers. For instance, women are generally perceived to be more demanding and uncooperative than men when negotiating for a higher salary, even when controlling for similar negotiation tactics (Babcock, Laschever, Gelfand, & Small 2003; Bowles, Babcock, & Lai 2007). Black job candidates are perceived to be more demanding than white job candidates when they negotiate for a higher salary after receiving an offer (Hernandez, Avery, Volpone, & Kaiser 2019). Finally, women in academia have a lower predicted probability of receiving tenure than men when they engage in the same amount of co-authored work before their tenure review (Sarsons, 2017).

Some subgroups of individuals, particularly women and underrepresented minorities, are punished more for executing the exact same behavior and choices as others. In this study, I aim to explore whether women are judged more harshly than men when they seek advice from a colleague.

Moreover, I explore whether women can strategically choose their advice-giver to dampen the differential impact they may, or may not, receive. Past research suggests that women and minority can skirt the negative effects of negotiations by having someone advocate on their behalf. Importantly, this mediating effect only holds if they have an advocate outside of their subgroup (Babcock & Laschever 2009).

Combining these two considerations, this current study will vary the gender of the advice-seeker, advice-receiver, and the ability of the advice-seeker.

Method

Participants

For this study, I recruited 809 participants on Prolific to complete this survey for $0.70. On average, it took 5 minutes 43 seconds to complete the survey.

Experimental Design

I use a 2 (Sender Gender: Male, Female) x 2 (Receiver Gender: Male, Female) x 2 (Sender Ability: Low, High) factorial design to yield a total of 8 survey conditions.

In this survey, participants were tasked with reading a hypothetical email from one employee to another. This hypothetical email contained information regarding the advice-seeker, the task at hand, and critically, an acknowledgment of struggle paired with a request for advice.

Hypothetical Email

Hey Jacob [Elizabeth],
I know we have not had the pleasure of meeting yet; my name is Mark [Jennifer] and I work in the logistics department. I started around 3 months ago and am in need of a little advice. I've heard you are excellent at navigating our database using the coding platform, SQL, so I thought I would reach out.

Ability: Low

I just barely passed the SQL tests at the end of our training program, so I am still learning the ropes.

Ability: High

I scored very high marks on the SQL tests in our training program and took multiple coding classes in college, however, I am struggling with this problem.

My manager assigned a task to me, and I am struggling a bit. In our database, there are two sets of data that I need to merge together. One dataset has our customer order history, and the other has our customer payment history. I need to merge the dataset to create a file with both the orders and payment history.

Can you lend a little advice on how to do this?

Thanks in advance,
Mark [Jennifer]

Dependent Variables

During the study, we asked the participants three questions about the competency of the advice seeker.

1. "On a scale of 1 (Very Incompetent) to 7 (Very Competent), how would you rate Mark and his ability to perform in his new role at Quest Solutions?"

2. "On a scale of 1 (Very Incompetent) to 7 (Very Competent), how would you rate Mark and his ability to navigate the SQL database?"

3. "On a scale of 1 (Very Low Confidence) to 7 (Very High Confidence), how confident are you that Mark will be successful at this new job at Quest Solutions?"

These items correlated without with a Cronbach's α of 0.77, so we collapsed participants' responses into a composite, competence score by averaging across participants' responses to the three questions above.

I will use this composite score when analyzing the main effects below.

I measured the amount of credit the advice-seeker receives for the final, correct SQL code with the following question:

1. Imagine if Sam replies with some advice for Mark. How much credit (0-100%) should Mark get for the final, correct SQL code submitted to Mark's boss?

The final dependent variable we explored is the perception of collaborative abilities of the advice-seekers. We measured this perception with two questions:

1. "On a scale of 1 (Definitely Not) to 7 (Definitely), would you like to work with Mark on a team?"

2. "On a scale of 1 (Very Uncollaborative) to 7 (Very Collaborative), how would you rate Mark's ability to collaborate?"

These items correlated without with a Cronbach's α of 0.81, so I collapsed participants' responses into a composite collaboration score by averaging across participants' responses to the two questions above.

Results

The primary purpose of this study is to explore whether gender moderates reactions to advice-seeking behavior, and attributions towards the advice-seeker's competence, collaboration, and credit for the final product. This work is motivated by the desire to detect and document any heterogeneity in treatment effects, and to accurately prescribe advice-seeking behaviors to employees.

I break down our results by the three main conditions in our experimental design: ability, sender gender, and receiver gender. In each of these conditions, we will explore effects on competence, credit, and collaboration. Finally, I plan to also explore the causal credit given to the advice depending on the gender of the advice-seeker.

Ability

The results from the ability conditions largely replicate the results from Study 2. Thus, I find a significant effect on competence and collaboration, and a null effect on credit.

Ability & Competence

Consistent with results from Study 2, I found participants ranked employees with a track record of high accomplishment and ability to be more competent than employees that "just barely passed" the tests from the training program. Employees framed as "high ability" were given an average score of 4.56, while employees framed as "low ability" were given an average score of 3.94 ($t = 8.78$, $p < 0.0001$) (see Figure 11).

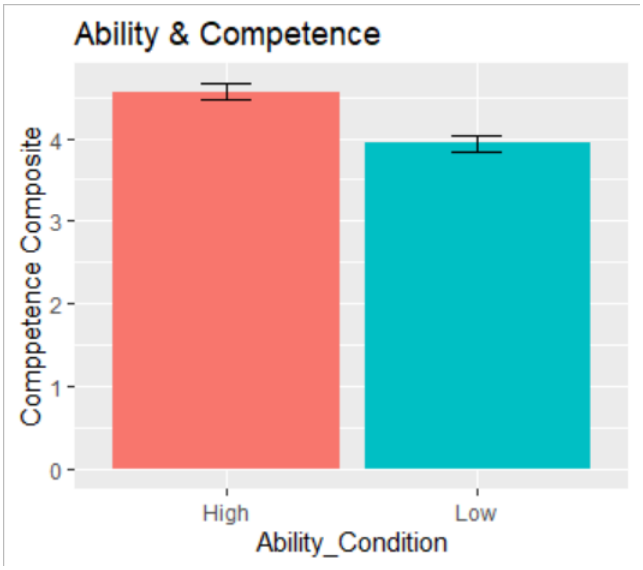

Figure 11: Collapsing Across Gender: Ability Conditions & Competence Ratings (Study 3)

Importantly, the ability condition was not moderated by the gender of the advice seeker, as evidence in Table 6 below, meaning that a female and male employee of "high ability" did not yield any differences in the final determination of their competence.

Ability & Credit

Up until this point, we have yet to find a significant modifier for the percentage of credit an employee should receive for the final product. In line with the past results, I again find a null effect. Participants gave the same amount of credit to employees in the high and low ability conditions ($Credit_{low.ability} = 58.64$, $Credit_{high.ability} = 57.88$, $t = -0.45$,p = 0.65)($seeFigure2$).

Table 6: Advice-Seeker Gender, Ability, and Competence Attributions (Study 3)

	Dependent variable:
	competence
ability_cond	0.663^{***}
	(0.101)
gender_sender	0.127
	(0.103)
ability_cond x gender_sender	-0.075
	(0.143)
Constant	3.874^{***}
	(0.072)
Observations	809
R^2	0.089
Adjusted R^2	0.086
Residual Std. Error	1.016 (df = 805)
F Statistic	26.282^{***} (df = 3; 805)
Note:	*p<0.1; **p<0.05; ***p<0.01

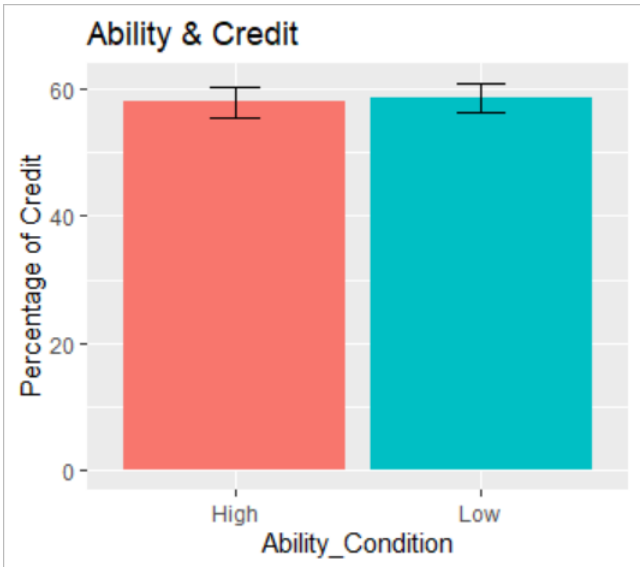

Figure 12: Gender, Ability, and Credit (Study 3)

Ability & Collaboration

As it relates to attributions towards the collaborative ability of the employee, participants ranked high ability employees to be more collaborative than low ability employees ($Collab_{low.ability} = 5.07$, $Collab_{high.ability} = 5.33$, $t = 3.75$, $p < 0.001$) (see Figure 13).

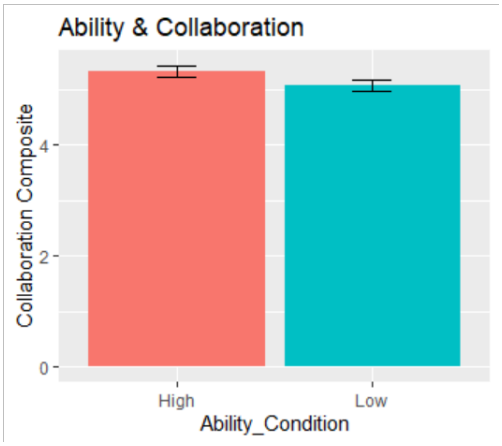

Figure 13: Collapsing Across Gender: Ability Condition and Collaboration Rating (Study 3)

Ability Discussion

In Study 3, we replicated the effects found from Study 2. Participants rated employees of high ability to be more collaborative and competent. However, participants did not give high ability employees more credit for the final product when compared with a low ability employee who also asked for advice in pursuit of task completion.

Gender of the Advice-Seeker

This is the critical section of analysis and results for Study 3. From prior literature, we expect to find that participants will give different reactions towards the same behavior because of the sub-group membership of the focal employee. Here, I explore whether women are punished more harshly for seeking advice than man when attemping to solve problems and complete tasks in the workplace.

Advice-Seeker Gender & Competence

Contrary to past work on gender, minorities, and reactions to observed behaviors, I find no significant difference in competence ratings across male and female employees that seek advice. Participants rated male advice-seekers 4.21 on a 7-point scale of competency, while they rated female advice-seekers 4.31 ($t = 1.34$, $p = 0.18$) (see Figure 14).

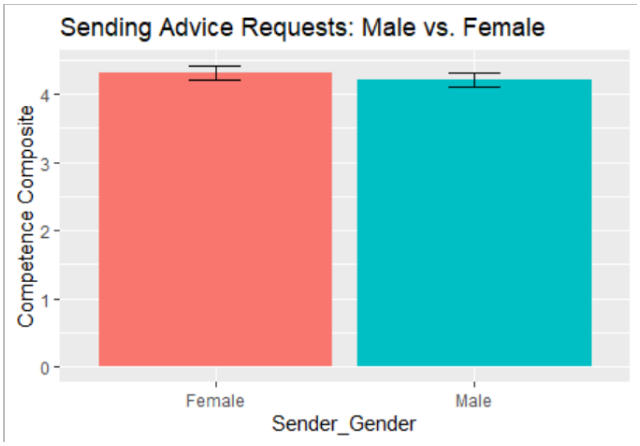

Figure 14: Gender of Advice Seeker and Competency Ratings (Study 3)

Advice-Seeker Gender & Credit

In line with our past results from Study 2 and earlier tests in Study 3, I, again, find a null effect on credit. Meaning, participants gave the same amount of credit across employees, regardless of their gender ($Credit_{female} = 57.52$, $Credit_{male} = 58.98$, t $= -0.88$, $p = 0.377$) (see Figure 15).

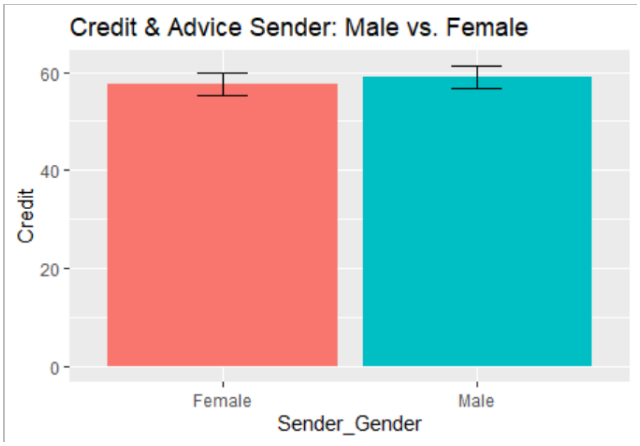

Figure 15: Gender of Advice Seeker and Credit Ratings (Study 3)

Stepping back, it is still unclear whether participants do not discriminate against gender when estimating how causal the advice was to their final product. I will explore this avenue later on when addressing the "causal credit" of the advice, and whether the advice is perceived and weighted differently depending on the gender of the advice-seeker.

Advice-Seeker Gender & Collaboration

Participants did not discriminate based on the gender of the advice seeker when rating how collaborative they were. Female advice-seekers and male advice-seekers yielded no significant difference in collaboration composite scores ($Collab_{female} = 5.19$, $Collab_{male} = 5.22$, $t = -0.39$, $p = 0.70$) (see Figure 16).

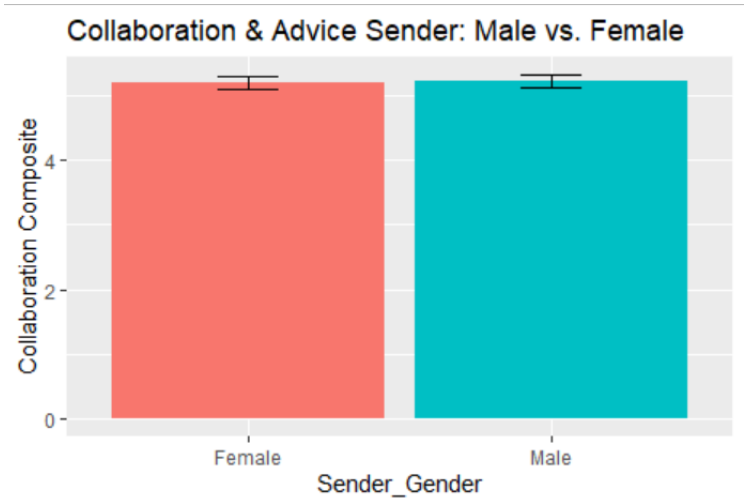

Figure 16: Gender of Advice Seeker and Collaboration Ratings (Study 3)

Advice-Receiver Gender Results

To keep this section brief, the gender of the employee who received the advice request did not significantly affect ratings of competence ($Comp_{female} = 4.32$, $Comp_{male} = 4.20$, 1.69, $p = 0.09$), credit ($Credit_{female} = 58.42$, $Credit_{male} = 58.07$, t $= 0.21$, $p = 0.83$), or collaboration ($Collab_{female} = 5.23$, $Collab_{male} = 5.18$, $t = 0.79$, $p = 0.43$).

Causal Credit Results

Causal credit is the measurement of the causal chain linking an action and an outcome. In our mental model, this is the *Advice* parameter. In plain language, it is the weight the advice receives in determining the final outcome (in our case, that is the final SQL code submitted to the manager).

I measure causal credit by asking the following question:

What is the probability that [employee] would have found the final, correct solution to their problem without the use of any advice? [Scale: 0-100].

Because advice-seeking is both a strategy and tool to overcome a lack of competence or

ability *and* a time-saving mechanism, I move my focus on the amount of time saved due to the advice.

Imagine [employee] did not receive any advice, how much extra time would it have taken them to find the final, correct solution to their problem? [Scale: 1-No Extra Time, 7 - A lot of Extra Time]

Finally, I incorporate these to response measurements in a model predicting the *quality* of the decision to seek advice. Although employees will be primarily focused on their attributions of competence, credit, and collaboration, as a researcher, I am interested in understanding where and when people perceive advice-seeking as a strategically sound decision. Thus, I end the survey with the following question:

Was the employee's decision to seek advice a good decision, or a poor decision? [Scale: 1-Very Poor Decision to 7-Very Good Decision]

I will exclusively focus on the gender of the advice-seeker to explore significant differences in the causal credit results.

First, I explore the weight of the advice in the final product. Much like the credit results above, there is no significant difference between the causal credit rating of the advice when the seeker of the advice was a female (53.86) or male (55.48) ($t = -1.07$, $p = 0.28$), meaning that female and male employees were given the same predicted probability of completing the task on their own.

Not only were they given the same probability of obtaining the solution on their own, but men and women would reach the solution in the same amount of time ($ExtraTime_{female} = 3.32$, $ExtraTime_{male} = 3.29$, $t = 0.54$, $p = 0.59$), (see Table 2).

Finally, in a model predicting the quality of the decision to seek advice, I find that the

probability of finding the correct solution to be a non-significant factor in estimating the perceived quality of the decision (see Table 7). However, if finding the solution will take a lot of extra time, then the perceived quality of the decision increases.

Table 7: Quality of the Decision to Seek Advice (Study 3)

	Dependent variable:
	quality_request
extra_time	0.099***
	(0.036)
probability_correct	0.002
	(0.001)
Constant	2.254***
	(0.165)
Observations	809
R^2	0.017
Adjusted R^2	0.014
Residual Std. Error	0.848 (df = 806)
F Statistic	6.853*** (df = 2; 806)
Note:	*p<0.1; **p<0.05; ***p<0.01

Discussion

Study 3 demonstrates that gender does not play a significant role in observers' reactions to advice-seeking behavior. This means female and male employees are treated similarly when both are advice-seeking workers.

At the end of this Chapter, I will conclude with prescriptions and direction for workers that are reluctant to seek advice. These prescriptions will not differ depending on the gender of the perspective worker, despite past research highlighting how men and women employees are treated differently in the workplace.

External validity from Study 3 is in question due to the unknown managerial experience

of our study participants. It would be a worthwhile endeavor to replicate these studies in a real work environment with managers and employees as the study participants.

All in all, gender does not play a significant role in observer's reactions to advice-seeking behavior. Moreover, the decision quality for advice-seeking hinges on the amount of time it will save you.

Study 4: Degree of Advice Taking and Perceptions of Competence

Study 4 aims to extend our research on advice taking by exploring the consequence of a worker making a judgment that relies on advice to various degrees. Workers tasked with making a quantitative estimate incorporate an advisor's estimate to various degrees, ranging from ignoring the advice to relying completely on the advice. Specifically, we aim to understand how perceived competence is effected by the observed "Weight-of-Advice" the judge displays when reacting to a co-worker's advice. We use "Weight-of-Advice" as our independent variable, and observe the consequences of relying on ("weighting") advice to various degrees.

Study 1 was an observational study that explores the attributes within an advice request predicting reputational consequences as a result of seeking advice. Studies 2 and 3 explored barriers and consequences of seeking advice. Study 4 is a natural extension towards understanding the consequences of seeking advice. However, in this study, I assume advice-seeking and move to the advice integration process (Yaniv & Kleinberger 2000). In this study, I explore consequences of taking advice. Taking advice is a dynamic decision making process; decision makers engage in interactive processes in order to build the relevant information basis. When individuals seek advice, they must make choose how much to weight this advice (Harvey & Fischer 1997; Sniezek & Buckley 1995).

Receiving advice often exposes the decision maker to a potential conflict between her own initial opinion and the advice, and hence to a complex process of combining opinions occurs.

Past research on advice taking has often explored personal and environmental factors that lead others to incorporate others' advice into their own actions. Advice taking has been

linked theoretically (Jungermann 1999) and empirically (Yaniv & Kleinberger 2000; Yaniv & Milyavsky 2006) to the quality of the advice. Not surprisingly, judges discount poor (inaccurate) advice more than they discount good/accurate advice, although they may also discount good advice (Gardner & Berry 1995; Lim & O'Connor 1995; Yaniv & Kleinberger 2000). Research on factors influencing the willingness to take advice has often focused on the level of expertise of the judge (i.e., the person making the particular decision or judgment) (Harvey & Fischer, 1997; Soll & Larrick 2009), the judge's perceptions of the advisor (Gino, Shang, & Croson 2009), or features of the specific decision making task at hand, such as task difficulty (Gino & Moore 2007).

Within the advice-taking literature, individuals are said to "take advice" when they modify their own initial judgment based on a recommendation or judgement from another source. A robust finding is that people tend not to alter their judgment much based on inputs from others (Harvey & Fischer 1997). This phenomena is known as "egocentric discounting" (Yaniv 2004), echoing a long tradition in social and cognitive psychology that shows that people tend to persevere in their beliefs in the face of new information (Nisbett & Ross 1980).

Study 4 aims to extend the research on advice taking by exploring the consequences of judges abandoning their initial opinion in favor of the opinion of the advisor. Specifically, we aim to understand how perceived competence is effected by the observed "Weight-of-Advice" the judge displays when reacting to advice. Although "weight-of-advice" has normally been the dependent variable in prior research on advice (i.e., how can we get others to listen to advice). However, we will operationalize this measure as our independent variable and observe the consequences of taking advice.

The measure we use is the "Weight-of-Advice" (WOA) Harvey & Fischer 1997 and Yaniv & Foster 1997. This measure gauges the extent to which participants revised their estimates

in the direction of the advisor's estimate. The WOA ratio is equal to 0 when the advice has no influence on the final estimate, and to 1 when the final estimate is identical to the advice. Participants who are equally well informed should equally weight their own and another person's estimate (WOA = 0.5; Soll & Larrick 2009). We measure WOA with the following fraction:

$$WOA = \frac{Estimate_{final} - Estimate_{initial}}{Advice - Estimate_{initial}}.$$

Experimental Design

Participants

We recruited 448 participants on Prolific (255 female, $M_{age} = 29.74$, $SD = 10.33$). They were paid \$0.40 to complete this task, which took, on average, 4 minutes and 11 seconds.

Procedure

Participants were told they were in the first stage of a two-stage experiment. The first part was to organize teams, and the second part would be a competitive team event with a prize for the top-performing group. In the first stage of the experiment, participants were told they would observe the actions of various past participants and rate them on various attributes. They were then told a partner would be selected based on their ratings. The second stage of the experiment was to give participants an incentive to provide accurate ratings of participants, as their payment was tied to their team's subsequent performance.

Design

We include a control condition, where participants viewed their prospective partner reject the offer of request and made an estimate. In the other five conditions, participants saw

their prospective partner accept the offer of advice, then are randomly assigned to observe this prospect weight the advice with a certain magnitude (WOA = 0, 0.25, 0.5, 0.75, 1.00).

We used the average of three items to index perceived competence ("This personal is very capable of solving problems", "I feel very confident about this person's skills", and "This person is well qualified"), adapted from Mayer and Davis's (1999) measure of ability. For each item, participants chose a value from a seven-point scale (from 1 = strongly disagree to 7 = strongly agree).

In order to increase the realistic nature of our observation component, we use a screen-recorded video of a simulated confederate completing the estimation task.

In the video, our participants viewed a simulated confederate asked to complete the following task:

"In 10 seconds, please give us your best answer of the following question: How many trees are located in New York City?"

After they submitted their estimate, they were given the opportunity to ask for advice with the following options "Ask Participant 5540 for Advice" or "Submit Final Answer".

Table 8: Experimental Stimuli for Study 4

WOA	Initial	Advice	Final
Control	2,000,000	N/A	2,000,000
0	2,000,000	4,000,000	2,000,000
0.25	2,000,000	4,000,000	2,500,000
0.50	2,000,000	4,000,000	3,000,000
0.75	2,000,000	4,000,000	3,500,000
1	2,000,000	4,000,000	4,000,000

We also captured measures of warmth; asking participants the following questions ("This person is warm", "This person would not knowingly do anything to hurt me", "This person is friendly", and "I like this person"; Cronbach's $\alpha = 0.79$).

Results

Competence When participants observed the simulated confederate deny the offer of advice, they rated them with a mean competence rating of 5.60 ($SD = 1.8$). When compared with a confederate who accepted the offer of advice, but completely discounted the advice (WOA = 0), we did not observe a significant difference between their ratings of competence ($M_{zero} = 5.34$, $SD_{zero} = 2.19$, $t = 0.70$, $p = 0.48$).

When the simulated confederate does start to weight the advice, we do not observe a significant decrease in perceived competence in the WOA=0.25 condition ($M_{0.25} = 4.99$, $SD_{0.25} = 2.2$, $t(146) = 1.53$, $p = 0.13$). The decrease in perceived competence becomes and remains significant at our WOA = 0.5 condition ($M_{0.5} = 4.86$, $SD_{0.5} = 2.05$, $t = 2.11$, $p = 0.04$).

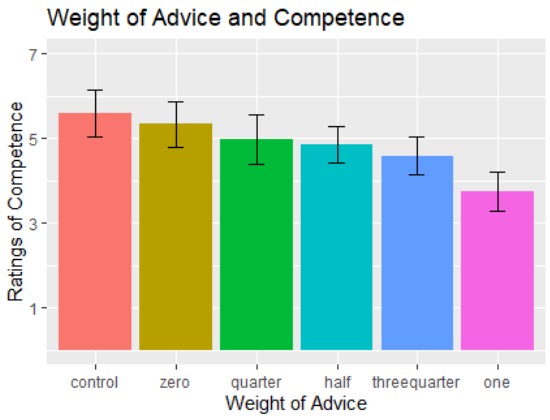

Figure 17: The Competence Cost of Taking Advice (Study 4)

I ran a linear regression model with competence as the dependent variable and WOA

as the independent variable (0, 0.25, 0.5, 0.75, 1) we find a significant, negative relationship between WOA and competence. The more people incorporate advice into their own judgments, the less competent they are perceived to be (see Table 8).

Table 9: Advice Taking and Competence (Study 4)

	Dependent variable:
	competence
WOA	-1.427^{***}
	(0.314)
Constant	5.421^{***}
	(0.192)
Observations	373
R^2	0.053
Adjusted R^2	0.050
Residual Std. Error	2.141 (df = 371)
F Statistic	20.606^{***} (df = 1; 371)
Note:	$^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01

Discussion

In Studies 2 and 3, I explored the effect of seeking advice on perceived competence, credit, and collaboration depending various situational and personal factors. Study 4 establishes that seeking advice is not necessarily damning to perceived competence, but abandoning your initial estimate and heavily weighing the advice of others' poses a threat to competence.

It is worth noting that competence was negatively correlated with quality of answer. The correct answer to "how many trees are located in New York City" is 5.2 million. With an initial guess of 2 million, and the advice of 4 million, any adjustment towards the advice yields a more accurate answer for the participants. However, when rating competence with the correct answer unknown, taking advice can harm your competence even if it is increasing

the quality of your decision.

Chapter 1 Discussion

The overall purpose of Chapter 1 is to explore advice seeking and reactions to advice seeking behavior. The critical reactions captured throughout Chapter 1 are the competence and collaborative attribution to the advice-seeker. Moreover, I also capture the credit given to the advice-seeker for the final product or solution. Finally, the causal credit for the advice is measured, shedding a light on how impactful the advice was to the final outcome. I developed a theoretical framework and model to guide the choice of moderating variables for each study. The overarching effects from the moderating variables are outlined below.

In Chapter 1, I found the ability and effort significantly benefits judgments of the advice seeker. Advice seekers who are of high ability and exerted high effort are judged favorably compared with advice seekers of low ability and exert low effort.

Study 3 examines whether the gender of the advice-seeker or potential advisor moderates any of the effects in Study 2. Contrary to past work on subgroup actions and reactions/attributions, I found no effect of gender on attributions of competence, credit, or collaboration.

Finally, in Study 4, I explore whether ratings of competency reacts to the amount of advice taken. We find that seeking advice does not significantly decrease ratings of competency. However, fully departing from your initial position in favor of the new information (e.g., advice from the advisor) is associated with a significant decline in the attributions of their competence.

The most surprising effect throughout Chapter 1 is the lack of movement in the credit ratings. Asking for advice inherently lowers the amount of credit received for the final product, however, exerting more effort before seeking advice does not increase the percentage

of credit you receive, relative to others who exerted low effort.

Overall, Chapter 1 provides an empirical overview of an understudied topic. Past work has established advice seeking as an under utilized social tool in the workplace. While many barriers to advice have been documented, not much work has been conducted on attributions toward advice seekers. This chapter is a step toward filling this gap, with more work required to better uncovered the counterfactual comparisons across advice and non-advice seekers.

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Chapter 2: Perceptions of Leaders who Seek Advice

In the English language, "advice" is defined as a "recommendation regarding a decision or course of conduct: counsel" (Meriam-Webster's collegiate dictionary). Hoffman et al. (2009) define advice-seeking as the "act of asking others for assistance, information, guidance, or support" (p. 1262). Seeking and taking advice has been associated with various gains in personal and professional settings. Organizations observe efficiency gains when employees share information (give advice) across teams (Haas & Hansen 2007; Larrick & Soll 2006; Surowiecki 2003). People feel more confident in their own ability after receiving advice (Kleinberger 2000). However, research shows that people systematically avoid seeking advice or help in times of need (Lee 1997; Lee 2002; Van der Vegt et al. 2006). When they do receive advice, they usually underweight others' advice (Bonaccio & Dalal 2006; Yaniv 2004; Yaniv & Kleinberger 2000).

The largest barrier to seeking advice in times of need is the loss of perceived competence (Lee 2002; Wood Brooks, Gino, & Schweitzer 2015). Put differently, agents do not seek advice because they believe the advisor will think they are less competent. As a result, agents often persist with a task on their own. Although this barrier has been established in the literature for over a decade, very little research has examined whether this worry is justified. Are advice-seekers *really* seen as less competent?

To date, there is only one paper that I am aware of exploring perceptions of competence on advice seeking behavior. Brooks, Gino, & Schweitzer (2015) establish two main effects. When participants are paid based on their performance in 10 tasks, they routinely ask for help. However, when participants' payment is tied to perceptions of their competence, the most common path to completion included no advice seeking behavior. This finding shows that people perceive advice and help seeking advice as threats to perceived competence.

Throughout multiple studies, Brooks, Gino, & Schweitzer (2015) establish a effect connecting advice-seeking and competence: advisors do not diminish advice seekers' competence level. However, the experimental design uses a specific type of advice seeking behavior; one that we deem "before" task advice-seeking. Before the task starts, study participants receive one of two messages from an "automated confederate". In the "advice-seeking" condition, participants receive the following message, "Hey, good luck. Do you have any advice on the upcoming task?" In the "no advice-seeking" condition, they receive the following message "Hey, good luck."

In Studies 5 and 6, we progress the experimental paradigm from Chapter 1 towards a more realistic organizational environment. An environment where both the advice-seeker and the study participant (observer) are part of a work organization with assigned roles and hierarchy.

Chapter 2 aims to accomplish 3 goals. First, Study 5 attempts to adapt and validate an experimental procedure from Kennedy & Anderson (2017). This procedure will construct a hierarchy within study participants; the validation will come from measuring the propensity to seek advice given participants' assigned level in the hierarchy. From past research, individuals at higher levels should be less likely to seek advice.

Study 6 aims to understand how individuals at each level are judged when they decide to seek advice. Finally, in Study 7, I aim to understand how leaders who seek advice influence the subsequent actions of their subordinates.

Study 5: Advice Seeking Rates in the Hierarchy

In Study 5, we ask the simple question: Do individuals in high-ranking positions ask for advice? We expect to observe the patterns previously reported in the advice-taking literature. Namely, when individuals find themselves in a high ranking position within a hierarchy, they are less likely to seek advice, compared to an individual in a lower status position in the

organization.

Behavioral differences across hierarchical ranks is not isolated to help/advice-seeking decisions. For example, higher ranking individuals are less likely to engage in principal dissent (Kennedy & Anderson 2017), and more unethical behavior (Georgesen & Harris 1998; Gruenfel et al. 2008; Kipnis 1972).

Different components of hierarchical rank, such as power and status, seem to be distinguishable from one another both conceptually and empirically (Magee & Galinsky 2008). Sometimes people feel powerful with very little status (Anicich, Fast, Halevy, & Galinsky 2015; Fast, Halevy, & Galinsky 2012), while at other times people are high status and feel powerless (Fragale, Overbeck, & Neale 2011). However, hierarchical rank in most organizations and groups is correlated with both power and status (Tost 2015).

The bulk of research connecting hierarchical rank and advice behaviors have largely focused on the willingness to take advice. Broadly speaking, when someone ranks high in an organization or in a position of power, they are less likely to update their prior opinion in favor of updating toward the advice (Tost, Gino, & Larrick 2012; See, Morrison, Rothman, & Soll 2011; De Wit, Scheepers, Ellemers 2017).

We extend this research by moving towards advice seeking and ask the following question: Do individuals in high-ranking positions ask for advice? We expect to follow the patterns presented in the advice taking literature. When individuals find themselves in a high ranking position within a hierarchy, they will be less likely to seek advice.

It is important to establish this trend of advice seeking behavior; where advice-seeking rates differ by hierarchical position. While Study 5 aims to understand whether or not high ranking individual seek advice - Study 6 will aim to understand the consequences high rank-

ing individuals face when they are observed engaging in advice seeking behavior.

Participants

We recruited 204 participants on Prolific (113 female, $M_{age} = 31.22$, $SD = 13.64$). They were paid \$0.50 to complete this task, which took, on average, 5 minutes and 26 seconds.

Procedure

In this study, participants were randomly assigned to a position of high or low rank within a group, following the procedure in Anderson & Kennedy (2017). A key component of the manipulation was that rank was ostensibly afforded to individuals by their online work group, similar to how individuals in organization usually receive promotions from within the group as opposed to some external force.

Assigning Hierarchical Rank

The following experiment had 2 conditions (Hierarchical rank: High, Low), the hierarchy consisted of 5 individuals, 2 high ranking and 3 low ranking. In order to assign hierarchical rank, this experiment was broken down into 3 main components. First, participants were put into a chat space for a random period of time between 1 and 2 minutes while other participants filtered in. In this chat space, they were given the following information:

Please wait here while we waiting for the rest of your participant group, feel free to chat and get to know each other. This should not take long. The following survey will have 3 components.
First, you'll be asked to fill out a personal questionnaire about your various skills. Then, you'll vote to see who will be the Team Leaders. Finally, you all will complete a task individually and compute a group score. Of course, more information on each of these steps will be provided later on.

After the chat space, participants were separated and asked to fill out a personal questionnaire based on the one used in Leary et al. (2001) and Kennedy & Anderson (2017). Every participant was asked to rank their skills in the following domains: mathematics, leadership, public speaking, and social skills on a scale of 1 (Very Low) to 7 (Very High). Their responses were recorded as their "Resume" to be displayed to the other participants.

After completing their resume, they waited a random period of time between 25 and 45 seconds before moving on the voting procedure. Every participant was shown the "Resumes" of the other 4 participants and given the following instructions:
You have 10 points to allocated across the 4 other study participants. Please give points to the individuals you would like to promote to Team Leader. You can vote for just 1 person, or all 4, but you must use all 10 of your points.

After the voting procedure, individuals were given false feedback and randomly assigned to the high ranking role (Team Leader) or the low ranking role (Team Member). Individuals in the high ranking condition were shown the following message: *"Congratulations, other participants gave you 17 points, making you a* ***Team Leader****"*. Individuals in the low ranking condition read this message: *"Other participants gave you 17 points, making you a* ***Team Member****"*.

Experimental Task

Following the same tasks used in Wood Brooks, Gino, & Schweitzer (2015), I chose to use a math problem.

Everyone was tasked with solving for x:

$$\frac{450x}{4} = 225$$

With two options at their disposal: (1) "Submit Your Answer" and (2) "Ask for Advice".

When participants chose to submit their answer, they were directed to the answer submission page. When they chose to ask for advice, they were given the following advice:

"The first step to solve for x, is to multiply both sides by 4. Then you are left with $450x = 900$. When you are ready to submit an answer, click 'Next'."

Results

Individuals in the high ranking, Team Leader, condition were not significantly more confident in their math skills ($M_{leader} = 3.61$, $M_{member} = 3.46$, $t = -0.74$, $p = 0.46$), leadership qualities ($M_{leader} = 4.44$, $M_{member} = 4.31$, $t = -0.61$, $p = 0.72$), public speaking skills ($M_{leader} = 3.62$, $M_{member} = 3.84$, $t = 1.26$, $p = 0.22$), or social skills ($M_{leader} = 5.43$, $M_{member} = 5.29$, $t = -0.67$, $p = 0.50$). Thus the randomization equally distributed talent across role assignments.

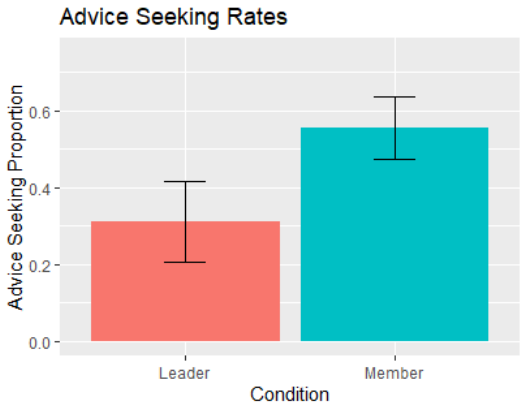

Figure 18: Advice Seeking Rates: Member vs. Leader (Study 5)

Although these two groups were equal in their self-evaluated math skills, Team Leaders were significantly less likely to seek advice than Team Members ($M_{leader} = 0.31$, $M_{member} =$

0.55, $z = -3.61$, $p < 0.001$) when attempting to solve a mathematics problem (see Figure 18).

Members were also significantly more likely to solve the problem correct ($M_{leader} = 0.41$, $M_{member} = 0.62$, $z = -3.43$, $p < 0.001$.).

We conducted a logistic regression on the decision to seek advice, controlling for their role (0 = member, 1 = leader), math skill, social skill, leadership qualities, and public speaking skills (see Table 9).

Table 10: Probability of Seeking Advice: Self-Reported Skills & Assigned Role (Study 5)

	Dependent variable:
	Advice
role	-0.192^{***}
	(0.064)
math	-0.101^{***}
	(0.022)
social.skills	0.0003
	(0.021)
leadership	-0.076^{***}
	(0.023)
public.speaking	0.024
	(0.026)
Constant	1.140^{***}
	(0.180)
Observations	204
Log Likelihood	-123.473
Akaike Inf. Crit.	258.946
Note:	$^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01

As expected, when controlling for their self-evaluated skills, we still find a significant effect on role. An assignment to the Team Leader condition significantly decreases the prob-

ability of seeking advice. Moreover, as expected, an increase in their self-evaluated math skills decreases their willingness to seek advice. Finally, as their self-evaluated score for "leadership qualities" increases, their willingness to seek advice significantly decreases.

Discussion

In this study, we find evidence that high status in a hierarchy significantly decreases people's willingness to seek advice. 55% of Team Members chose to seek advice, resulting in 62% of Members submitting the correct answer, while only 31% of Team Leaders chose to seek advice, resulting in 41% of Leaders submitting the correct answer.

The most novel contribution to the advice seeking literature is the introduction of hierarchy while controlling for perceived abilities in the domain of interest. We also document a change in behavior when in pursuit of task completion, directed by the perceived status of the individual. Broadly speaking, we are aware that high ranking individuals are reluctant to seek advice or ask for help. This change in behavior can be explained by a variety of factors. Could the assignment to this role alter their perceived competence? Do they think leaders are supposed to be individualistic and self-sufficient?

In Study 6, we embed this effect in the framework laid out in Chapter 1, and observe how the judgment and attributional consequences of seeking advice differs when the advice-seeker is a Team Leader versus a Team Member. Broadly speaking, I aim to explore whether Team Leaders are judged more harshly than Team Members when their advice seeking behavior is revealed. This difference in competence costs could explain why Leaders are less likely to seek advice.

Study 6: When High vs. Low Ranking Individuals Seek Advice

In this study, we aim to understand whether leaders' lower probability of seeking advice is partly due to a cost in their perceived competence, when their advice-seeking behavior is revealed.

What does it mean to be a leader? In the past, leadership scholars considered charisma, intelligence, and other personality traits to be the key to effective leadership (Bass 1960). However, recent research has found effective leadership qualities highly heterogeneous and context specific (Dillard 2000). A portion of leadership research has spent the last decade systematically breaking down leadership behaviors as personal pursuits towards 4 primary goals. Yukl (2012) proposed 4 meta-categories in its taxonomy of hierarchical behavior. Each meta-category has a different primary objective, but the objectives all involve determinants of performance. For task-oriented behaviors, the primary objective is to accomplish work in an efficient and reliable way. For relations-oriented behaviors, the primary objective is to increase the quality of human resources and relations (i.e., "human capital"). For change-oriented behaviors the primary objectives are to increase innovation, collective learning, and adaptation to the external environment. Finally, external leadership behavior, the primary objectives are to acquire necessary information and resources and to promote and defend the interests of the team or organization.

Although understanding the behaviors that lead to better outcomes is important, I believe it is equally important to understand the expectations of the employees and how employee expectations may distort the optimal behavior of a leader. For instance, people perceive leaders to be high in competence (Judge, Colbert, Illies 2004; Kouzes & Posner 1990), emotionally stable (Kerr, Garvin, Heaton, Boyle 2006; Sadri 2012), and honest (Kouzes & Posner 1990).

Perceptions of leaders influence the behavior of leaders. If a leader is perceived to be low

in ability or unfit for the job, they may put on a facade and forgo advice in scenarios when they would benefit. If they are seen to be uncaring, they may give their employees a day off to increase the boss-employee relationship.

In the Study 5, we showed hierarchical rank and leadership status led to a decrease in advice-seeking behavior, an effect on the task-oriented behavior of leaders. In this study, we aim to understand whether this change in leadership behavior is partly due to their increased competence cost when their advice seeking behavioral is revealed.

Participants

We recruited 605 (297 female, $M_age = 33.2$) participants on Amazon's Mechanical Turk (MTurk). We paid each participant \$0.50 for completing this survey. The average completion was 5 minutes and 21 seconds.

Procedure

We follow a 2 (Advice Seeker Role: Member, Leader) x 2 (No Advice, Advice) factorial design. Participants were told to review the performance of one person from their team and submit a report.

Constructing a Hierarchy Following the procedure from Study 5, we experimentally produced a hierarchy via resumes, voting, and random assignment to role (Team Member or Team Leader).

To assign hierarchical rank, this experiment was broken down into 3 main components. First, participants were put into a chat space for a random period of time between 1 and 2 minutes while other participants filtered in. In this chat space, they were given the following

information:

Please wait here while we waiting for the rest of your participant group, feel free to chat and get to know each other. This should not take long. The following survey will have 3 components.
First, you'll be asked to fill out a personal questionnaire about your various skills. Then, you'll vote to see who will be the Team Leaders. Finally, you all will complete a task individually and compute a group score. Of course, more information on each of these steps will be provided later on.

After the chat space, participants were separated and asked to fill out a personal questionnaire based on the one used in Leary et al. (2001) and Kennedy & Anderson (2017). Every participant was asked to rank their skills in the following domains: mathematics, leadership, public speaking, and social skills on a scale of 1 (Very Low) to 7 (Very High). Their responses were recorded as their "Resume" to be displayed to the other participants.

After completing their resume, they waited a random period of time between 25 and 45 seconds before moving on the voting procedure. Every participants was shown the "Resumes" of the other 4 participants and given the following instructions:
You have 10 points to allocated across the 4 other study participants. Please give points to the individuals you would like to promote to Team Leader. You can vote for just 1 person, or all 4, but you must use all 10 of your points.

After the voting procedure, individuals were given false feedback and randomly assigned to the high ranking role (Team Leader) or the low ranking role (Team Member). Individuals in the high ranking condition were shown the following message: *"Congratulations, other participants gave you 17 points, making you a* ***Team Leader****"*. Individuals in the low ranking condition read this message: *"Other participants gave you 17 points, making you a* ***Team Member****"*.

Experimental Task

In this study, I am not focused on the choice of whether or not individuals seek advice, but how individuals judge others that do. Thus, we revert back to the experimental task used in Studies 2, 3, and 4, we expose individuals to the advice seeking actions of others, and ask them to judge their competence and warmth.

We do so with the following script:

As a Team Member[Executive], it is your job to review the work of a Team Executive[Member] and submit a report over their actions. This helps us keep track of performance throughout the group task.

Participants view individuals solve the math problem from Study 5 either with or without advice.

After observing either a Team Member or Executive seek advice when attempting to complete the task, they were asked three questions relating to their competence. Our main dependent measure is perceived competence of the advice seeker (i.e., Leader/Member 8421). We captured this measure by asking participants to evaluate this person using three items to measure competence ("Leader/Member 8421 is very capable of solving problems", "I feel very confident about Leader/Member 8421's skills", and "Leader/Member 8421 is well qualified"), adapted from Mayer and Davis's (1999) measure of ability. For each item, participants chose a value from a seven-point scale (from 1 = strongly disagree to 7 = strongly agree). These items were closely related (Cronbach's $\alpha = 0.88$), therefore I collapsed across the three measure with a composite competence rating by averaging across their responses.

Results

It is important to note that all judgments are being made across hierarchical rank. A member always judged the actions of a leader, and a leader always judged the actions of a member. When a Team Leader observes a Team Member seek advice in during their task-

completion effort, they did not significantly decrease the perceived competence of the Team Member ($M_{mem.advice} = 4.50$, $M_{mem.no.advice} = 4.78$, $t = -0.81$, $p = 0.421$). In contrast, Team Members punished a Team Leader when their advice seeking behavior was revealed ($M_{lead.advice} = 5.18$, $M_{lead.no.advice} = 5.96$, $t = -2.61$, $p < 0.01$), (see Figure 15).

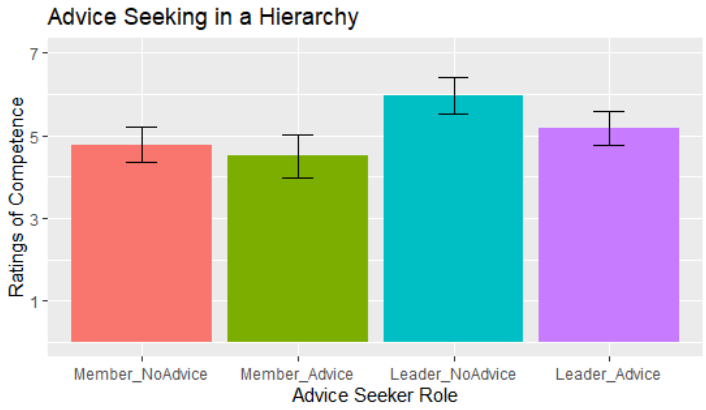

Figure 19: Competence Ratings: Team Leaders vs. Members

We found that leaders are down-rated compared to lower-status individuals when both seek advice. While this may not be the primary cause for decreases in advice seeking behavior as people climb the status ladder, it is likely to contribute to the tendency for leaders to be less likely to seek advice.

Discussion

From Study 5, we know that leaders are less likely to seek advice when attempting to complete a task than lower-ranking team members, although this advice seeking led to higher accuracy and quality responses. While this may seem like a sub-optimal choice brought on by various organizational factors, a possible explanation would be the expected difference in reputational cost for the same action.

As shown in Study 6, we found that leaders are judged more harshly than lower-ranking individuals when both seek advice. While this may not be the primary cause for changes in

advice seeking behavior as people climb the hierarchical ladder, it sheds light on a possible rationalization for the observed differences.

Study 7: Preferences for a Leader

In Study 6, the scope of the experiment was narrow, concerned only with the perceived competence of leaders when their advice seeking behavior is revealed. In Study 7, my aim is to enrich this experiment to better isolate and understand the full consequence of advice-seeking behavior. The focal phenomenon in Study 7 is the contagious effect of advice-seeking behavior. While leaders may be seen as less competent when they are observed seeking advice, as shown in Study 6, they may also increase the advice-seeking behavior in others. Does a leader who seeks advice induce team members to seek advice in subsequent task?

Subordinates may prefer a leader willing to seek advice. When seeking advice, leaders may experience an increase in their warmth ratings while team members remain constant. When we allow participants to share their global opinion on the leader, we can observe the full effect of leaders seeking advice.

The most critical part of this study is the contagious effect of advice-seeking behavior. While leaders may be seen as less competent when they are observed seeking advice, as shown in Study 6, they may increase the advice-seeking behavior others. For instance, does a leader that seeks advice induce team members to seek advice in subsequent tasks? On the other hand, can a team member influence the actions of team leaders?

Procedure

We replicate the procedure outlined in Study 6. First, participants fill out a resume and rate themselves on various metrics. False feedback is reported to participants and a rank is randomly assigned to the participants (team member vs. team leader).

Once the hierarchy is assembled, participants observed either a team leader or team member complete a task either with or without the use of advice. The observed task is the Raven's Progressive Matrix.

After observing the other participant complete the task, they are then asked a series of questions regarding the other individual. We measure the differences in judgements between advice seekers and non-advice seekers, and how that difference is moderated by their rank. Finally, participants are asked to solve a math problem on their own. We measure the difference in advice-seeking rates across people who observed a leader [member] seek advice or not.

Dependent Measures and Hypotheses

Competence We measure competence using the 3-item measurement used in prior studies. We also include the warmth ratings as used in Study 4 from Chapter 1. We expect to replicate the effect from Study 6, and find that leaders are the only rank punished for seeking advice when it pertains to their perceived competence.

Collaboration However, I expect to see leaders exclusively yield a positive increase in collaborative attributions with advice seeking behavior because the expectations around leaders make advice seeking behavior yield a higher signal of humility.

Expectations of Independence All individuals have expectations cast upon them, es-

pecially workers with responsibilities. Some people are expected to do their work in groups, while others are expected to be independent. I hypothesize that leaders are expected to be more independent in their work. These expectations are broken when advice seeking behavior is revealed. *Please indicate how much you agree with the following statement (1 = Strongly Disagree, 7 = Strongly Agree). "I expected Team Leader [Member] 8220 to complete the math problem without any help."*

Contagious Advice Seeking Behavior

After observing someone else complete a task and cast judgments upon this person, our participants were then faced with a different task (a different math problem) and given the option to seek advice.

Here, we attempted to connect the downstream consequences of exposed advice seeking behavior. For instance, if an advice seeking leader is seen as less competent, but more warm, and more wanted as a retained teammate, this may increase the advice seeking rates of others. Thus, the question of whether or not to seek advice becomes more complicated. If you only care about how competent you seem, you do not seek advice. However, if you are attempting to increase the advice seeking behaviors within your organizations, a useful strategy is to publicly seek advice, even if you are the boss.

Results

First, I will analyze the results of judgments and attributions towards the focal agents. The two attributions I measure are the competence and collaboration ratings for both members and leaders who do and do not seek advice.

Hierarchical Level, Advice-Seeking, and Competence

This section of results is a direct replication of Study 6. In line with past results, I find a significant difference on the competence ratings for leaders who differ in advice seeking behavior ($Comp_{Leader.NoAdvice} = 4.35$, $Comp_{Leader.Advice} = 5.12$, $t = 4.11$, $p < 0.001$), and no significant difference for members ($Comp_{Member.NoAdvice} = 3.98$, $Comp_{Member.Advice} = 4.11$, $t = 1.31$, $p = 0.42$), (see Figure 20).

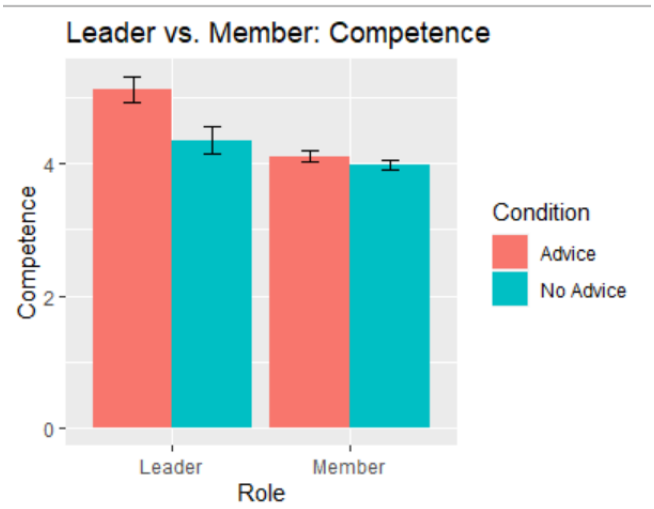

Figure 20: Competency: Leaders vs. Members (Study 7)

From the results in Study 6 and 7, I find that participants adjust their ratings of competence for leaders once they learn about their advice seeking behavior. In order to explore the mechanism driving this differential effect, I elicit expectations of independence and attempt to measure the moderating effect expectations have on competence and collaboration ratings.

Expectations of Independence & Collaboration Ratings

First, I explore whether participants have different expectations for the behavior of team members and team leaders. From these results, I find that participants have higher expectations of independence for team leaders than team members ($ExpectedInd_{member} = 3.48$, $ExpectedInd_{leader} = 4.29$, $t = 4.09$, $p < 0.001$), (see Figure 21).

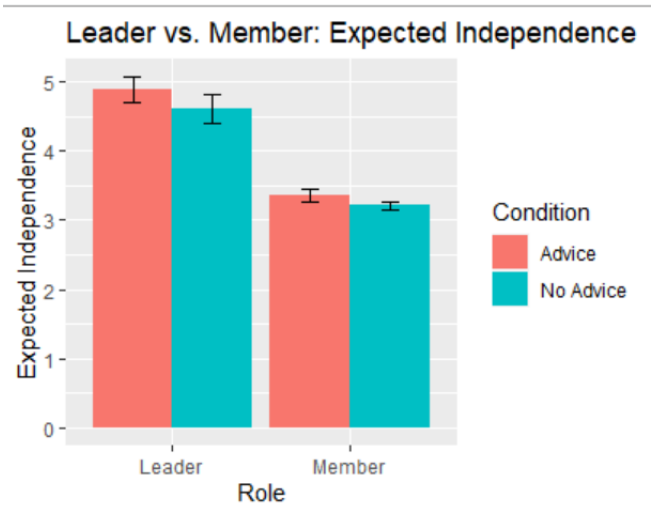

Figure 21: Expected Independence: Leader vs. Member (Study 7)

Now, we build a moderation model to explore whether the difference in competence reactions is driven by the elevated expectations of independence for leaders.

$$Competence = \beta_0 + \beta_1 Advice + \beta_2 Exp.Ind + \beta_3 Advice \times Exp.Ind + \epsilon$$

This model isolates the correlational effect of advice and expected independence on ratings of competence, and highlights the moderating effect of seeking advice in front of a participant with higher expectations of independence (see Table 10). From this model, we find that advice significantly decreases ratings of competence, while expectations of independence yields a null effect on ratings of competence. However, when interacted with one another, we find a strong, negative effect on perceived competence. Meaning that seeking advice is harmful on its own, however, seeking advice when you are expected to work alone increases your penalties.

Hierarchical Level, Advice-Seeking, and Collaboration

While leaders may be exclusively penalized in their ratings of competence, they may also exclusively find a boost in the ratings of their collaborative abilities. In this study, participants did, in fact, rate leaders who seek advice as more collaborative than leaders who

Table 11: Moderating Effect of Expected Independence (Study 7)

	Dependent variable:
	Competence
Advice	-0.19^{*}
	(0.084)
Exp.Ind	-0.07
	(0.047)
Advice x Exp.Ind	-0.23^{***}
	(0.041)
Constant	3.190^{***}
	(0.220)
Observations	406
Log Likelihood	-137.4
Akaike Inf. Crit.	311.977
Note:	$^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01

do not seek any advice ($Collab_{Leader.NoAdvice} = 3.52$, $Collab_{Leader.Advice} = 3.91$, $t = 3.87$, $p < 0.001$). However, participants did not significantly alter their ratings of collaboration for members depending on their advice seeking choice ($Collab_{Member.NoAdvice} = 3.25$, $Collab_{Member.Advice} = 3.40$, $t = 1.55$, $p = 0.29$) (see Figure 22).

Contagious Nature of Advice Seeking Behavior

The final section of results for this study aims to explore whether there are downstream benefits to seeking advice as a leader. From Study 6 and the replication in this current study, I find a penalty to competence for leaders who seek advice. Moreover, I find a collaboration attribution benefit exclusively for leaders who seek advice. Now, I aim to understand whether leaders who seek advice inspire their colleagues to seek advice when they work on their own tasks.

In this study, participants watched a "member" or "leader" complete a task either with

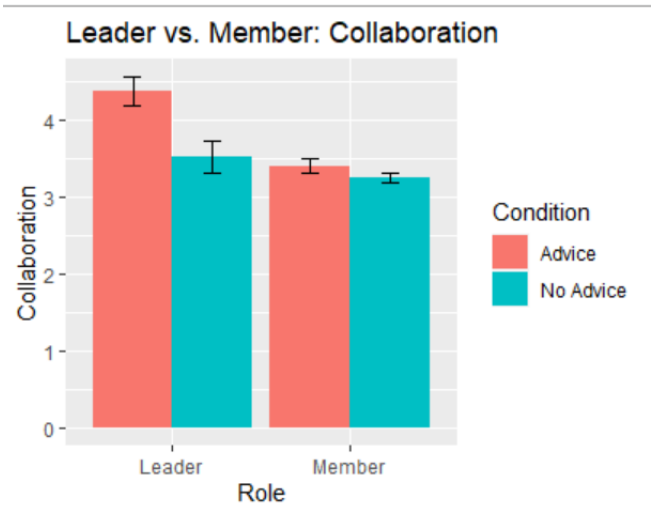

Figure 22: Collaboration: Leader vs. Member (Study 7)

or without the use of advice. After responding to our survey to rate the focal agent on the various dimensions, they were asked to complete a task before finishing the study. In this task, participants were given the choice to seek advice or complete the task on their own.

Figure 23 below displays the proportion of participants who sought advice in the follow up study:

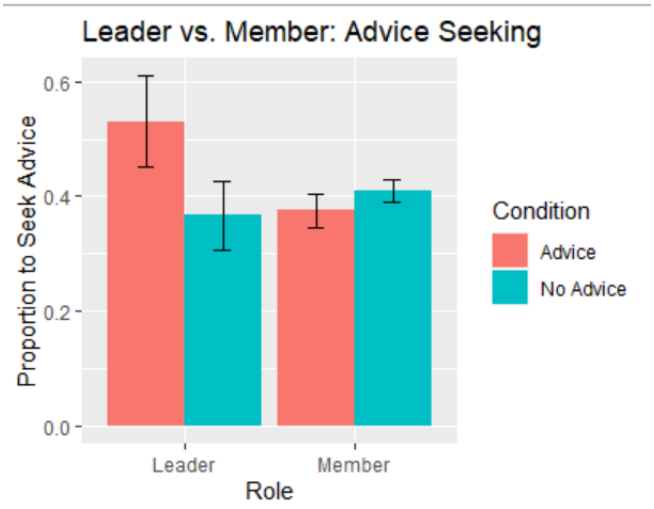

Figure 23: Subsequent Advice Seeking: Following the Leader (Study 7)

We find that participants were significantly more likely to seek advice after observing a team leader complete the task with the use of advice.

Chapter 2 Discussion

Leaders are reluctant to seek advice, either due to overconfidence or an acute awareness of the potential for losses in their perceived competence. Leaders are perceived to be less competent when they seek advice, because they are expected to be more independent in their working habits. However, leaders are perceived to be more collaborative when they do engage in advice-seeking behavior. Lower status team members, who seek advice, do not show the same benefit in perceived collaborativeness.

The most novel result from Chapter 2 is the downstream consequence of a leader's advice seeking behavior on co-workers. People do, in fact, "follow the leader" when it comes to advice seeking behavior. If managers find themselves in a position where they would like their employees to seek more advice from one another, the first step managers can take is to publicly exhibit advice seeking behaviors.

In Chapter 2, I document that team leaders are significantly less likely to seek advice on a simple math problem, even when the advice leads to a greater probability of success. I then measure whether leaders' perceived competence is punished to a greater extent when their advice seeking behavior is exposed to others. Finally, I attempt to take a broader scope to the situation and measure the competence, collaboration, expectations of independence, and downstream advice-seeking behavior. When put together, these results tell a coherent and intuitive story.

Leaders are reluctant to seek advice; either due to overconfidence or an acute awareness of the potential for lost competence. Leaders are perceived to be less competent when they seek advice, because they are expected to be more independent in their working habits. However, leaders are perceived to be more collaborative when they do engage in advice-seeking behavior, while team members do not see the same benefit.

An interesting result from Chapter 2 is the "follow the leader" effect. If a leader wants to motivate their employees to seek advice and share knowledge with each other, they must be willing to publicly seek advice as well.

In the literature of advice-seeking decision-making, there is a strong normative claim that individuals under-seeking and under-utilize advice (Lee 1999; Yaniv & Foster 1997; Yaniv 2000). Some people may be reluctant to seek-advice in fear of loss of competence (Wood Brooks, Gino, & Schweitzer 2015), while others may under-estimate the prosocial motivation of the prospective advisor (Zhao & Epley 2022). Past research has focused on documenting an advice-seekers estimates of consequence, this research focuses on the actual degree of consequence. Some research, like in Zhao & Epley (2022), spanned the full cycle and documented estimated and actual consequences to answer the question of miscalibrated beliefs. In their research, they find that people are reluctant to seek help because they believe no one wants to help them. Moreover, in human nature, people are reluctant to make or request others to do something counter to their preferences. This belief held by possible help-seekers was overexagerated, as they underestimated the motivation of others to provide help to those in need.

This current research cannot lay claim to whether there are miscalibrated beliefs in consequences of seeking advice. This is a fruitful path for future research to focus on.

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General Discussion

The goal of this dissertation was to better understand when and why people judge others for seeking advice. A lot of prior work has shed light on why people do not seek advice. This work establishes two main effects that motivate our study: 1) People do not seek advice as much as they should, 2) Individuals and Organizations would operate more efficiently if advice seeking was more commonplace. The mechanism behind the first effect is, primarily, overconfidence and an overestimation of the cost from seeking advice.

However, this this is the first academic exploration in the actual cost from advice-seekers. I decided not to focus on the decision to seek advice, but move to the understudied topic of judging advice-seekers. Moreover, I decided to focus my attention on employees in the workplace because of the documented barriers to advice and the efficiency gains established in the literature.

In Chapter 1, I explored how individual characteristics of the employee impact their cost from seeking advice. From these studies, we find that having an established reputation of "high ability" affords the employee some leeway when seeking advice. Simply put, advice-seeking employees with this "high ability" reputation are seen as more competent than advice-seeking employees without this reputation. This effect is intuitive, but it highlights some possible strategies to protect your competency reputation when seeking advice; make sure you highlight your past accomplishment. A surprising result from Chapter 1 was the lack of movement in credit as a result of high and low effort. Employees who exerted a high amount of effort before seeking advice did not received more credit for the final product when compared to employees who exerted low effort before seeking advice. If we assume a worker who worked independently would receive 100% of the credit, we can reasonably conclude that seeking advice cuts your credit from 100% to around 58%. This difference is dramatic and could lead to some interesting downstream effects like bonus and promotion decisions.

Moreover, task difficulty yielded a null effect for all main effects in competency, credit,

and collaboration. This is suspicious and should be re-evaluated with follow up studies. The method in which we manipulated task difficulty may not have been powerful enough to meaningfully affect the study participants.

From Chapter 1, we also learned that gender is not a significant modifier when it comes to judging employees who seek advice. This was important to test, as now I can prescribe both men and women the same strategies when faced with a task that may require some advice.

Finally, after I established that ability reputations product competency, effort does not protect credit, and difficulty does not affect anything, I study the effect of *taking advice*. Assuming all employee seek and receive the same advice, I find that incorporating advice from an outside advisor has its consequences. There is a monotonic relationship between weighting the advice from an advisor, and the perceived competence of the employee.

Moving on to Chapter 2, I establish a new goal to study advice seeking and its consequences in a hierarchical organization. Adapting experimental procedures from prior work, I construct a hierarchy and assign roles to study participants. From this work, I find that individuals assigned to be in higher status positions are significantly less likely to seek advice. Due to this difference in advice-seeking rates, members outperform team leaders. This effect could partially be driven by overconfidence and power, however, in Study 6, I establish that the effect can also be partially driven by team leaders are more harshly penalized for seeking advice. In Study 7, I find this effect to be driven by higher status individuals having a higher expectation of independence.

Team leaders may care about their perceived competence and are aware of the effect established in Study 6 - thus, bolstering their aversion to seeking advice. However, leaders may not *only* care of their perceived competence. As prior literature has noted, organizations realize large efficiency gains when knowledge sharing and advice-seeking is prevalent in their employees. In Study 7, I find that leaders who seek advice influence their employees towards a more regular advice-seeking mindset. Broadly speaking, team members follow their leader;

if their leader is willing to seek advice when they are in need of help, then they should seek advice as well.

Limitations of Present Research & Directions for Future Research

Throughout this dissertation, I attempted to design the experiments to mimic real-life, work environments. Throughout Chapter 1, I chose an email as the mode of communication, a realistic work-related task, and gave the advice-seeking employee a back story common of a new employee. In Chapter 2, I attempted to experimentally build an organization to obtain a hierarchical structure. However, when judging the external validity of these results, there are limitations present in the subject pool. The background of our survey participants is unknown; their experience in a work-setting similar to the one I attempted to mimic may be limited. Moreover, their experience as a leader in an organization may also be limited.

How could the subject pool's lack of experience undermine the external validity within this dissertation? Let us revisit Chapter 2 Study 5 (Advice Seeking Rates in the Hierarchy). In this experiment, I find those who are selected to be Leaders are less likely to seek help when attempting to solve a math problem. If our participants are inexperienced in the role of a leader, their behavior may be a reflection of what *they believe* a leader should do. In order to increase the external validity of these experiments, I would prescribe future work to be directed towards replicating these studies within actual organizations, or collect controls of work experience to condition on.

Moreover, the design of these experiments intentionally removed the observers from the situation and given the role of a 3rd-party observer. While this design choice was an attempt to remove any inter-personal effects that arise from seeking advice (Wood Brooks, Gino, & Schweitzer 2015), this also undermines the external validity of the results. Very rarely does the opinion of 3rd party observers play a role in a work-setting. However, the opinion of close colleagues, direct supervisors, and direct subordinates are the driving force behind the reputation formation of any given employee. This is a limitation that can be

nullified by replicating these studies in real-work settings, where the scenarios are modified to induce study participants to imagine a specific colleague (their boss, employee, coworker). This strategy of replication will also build in prior reputation and relationships, which could play a pivotal role in judging advice-seeking employees. While I focus on the established quality attributes within hypothetical employees (see Chapter 1 Studies 2 & 3), past relationships between the observer and the advice-seeker could nullify these results or alter them significantly.

The final limitation of this present research is its narrow focus on a success after advice-seeking behavior. The motivation of this research was to understand how the different paths people take to success alters the perception of that person. The critical divergent paths was advice-seeking behaviors. However, this research is unable to extrapolate to resulting attributions from seeking/avoiding advice on the path to failure. This is an open question in the literature that needs to be addressed to fully cover the consequences of advice-seeking behavior.