Why Salespeople Avoid Big-Whale Sales Opportunities

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Why Salespeople Avoid Big-Whale Sales Opportunities

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Abstract

Contrary to the intuition that salespeople gravitate toward big-whale sales opportunities, in reality they often avoid them. To study this phenomenon, the authors integrate contingent decision-making and conservation-of-resources theories to develop and test a framework of salespeople's decision making when prospecting. Study 1 reveals that the performance impact of salesperson initial judgment of opportunity magnitude follows an inverted U-shape, indicating that salespeople's avoidance of large opportunities results from rational benefit–cost analyses due to their conservation of resources. Interestingly, salespeople use a calibration decision-making strategy (i.e., calculating expected benefits by accounting for conversion uncertainty) at the portfolio rather than prospect level, in solution- but not product-selling contexts. Ignoring this calibration effect can lead to under- or overestimation of conversion rates of up to 100%. Study 2 shows that salespeople's past performance success and experience bias this calibration. Simulations reveal that when high performers or inexperienced salespeople believe their portfolio magnitude is large and conversion uncertainty low, they are less concerned about resource conservation and improve their quota attainment by 50%. Study 3 confirms the theoretical mechanism. These findings shed new light on salespeople's decision making and suggest ways for sales professionals to improve effectiveness when prospecting.

Keywords

salesperson judgment, uncertainty, solution selling, prospecting, conservation-of-resources theory

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Central to a firm's customer acquisition is salesperson prospecting, which involves identifying sales opportunities among potential customers. Prior research on salesperson prospecting has underscored its importance not only for firms' customer relationship management (CRM) but also for salesperson performance (e.g., Sabnis et al. 2013). However, more than 40% of salespeople report that prospecting is challenging and full of uncertainty, taking on average 25% of their time (Brontén 2014). Whereas some practitioners emphasize the pursuit of large prospects because these "big whales" help firms and salespeople achieve rapid sales growth, others warn against prioritizing such prospects because they can easily drain salesperson and company resources (Horstmann 2017). Moreover, "in the time it takes to land one major deal, [the salesperson] could have closed five smaller deals" (Frost 2017). Although practitioners appear to recognize salespeople's benefit–cost trade-offs when prospecting, academic research has not systematically examined this important phenomenon.

Marketing research on salesperson prospecting has developed along two major streams. One stream focuses on salesperson judgment of market opportunities, such as market demand for a new brand, customer needs, and expected performance (e.g., Hall, Ahearne, and Sujan 2015; Homburg, Wieseke, and Bornemann 2009; Wieseke, Homburg, and Lee 2008). This research stream shows a linear positive relationship between customer demand judgment and salesperson performance. The other stream emphasizes the role of salespeople as decision makers in dealing with various types of uncertainty, such as salespeople's general risk aversion, context-specific uncertainty, or salesperson idiosyncratic characteristics (e.g., Ahearne et al. 2010; Brown, Ganesan, and Challagalla 2001; Misra, Coughlan, and

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Narasimhan 2005; Syam, Hess, and Yang 2016; Ulaga and Kohli 2018). Although these research streams provide useful insights into the information salespeople use in their decision making, three important research gaps exist.

First, when prospecting, salespeople typically identify multiple potential opportunities but pursue only some of them. However, research is scant on the potentially curvilinear impact of salesperson judgment of opportunity magnitude—defined as a salesperson's judgment of the size of an opportunity—on sales performance. Although anecdotal evidence suggests that salespeople focus on large opportunities, other sources allude to major drawbacks in pursuing them. Opening this black box can be useful for improving companies' prospecting effectiveness. Second, there is a lack of understanding of how conversion uncertainty affects salespeople's decision making when prospecting. A focus on conversion uncertainty is important, because prospecting is costly for the firm and for salespeople. Third, little is known about how such decision making varies between salespeople and selling contexts. Knowledge of these contingencies help sales managers to effectively manage salesperson prospecting behavior.

To address these gaps, we seek answers to three key questions. First, what is salespeople's benefit–cost trade-off after they form an initial judgment of opportunity magnitude, and how does this affect their sales performance? The focus on initial judgments is based on prior research that underscores the importance of a primacy effect in both decision making and salesperson–customer interactions (Eisenkraft 2013; Hall, Ahearne, and Sujan 2015). Second, how does a salesperson's initial judgments of opportunity conversion uncertainty change the sales performance outcome of the benefit–cost analysis? Given that salespeople's compensation generally depends on conversion, understanding the effect of opportunity conversion uncertainty, or a salesperson's initial judgment of the likelihood to convert an opportunity into a deal, is important. Third, what are important boundary conditions of the effects of these initial judgments? We focus on two sets of moderators: (1) the selling context (i.e., product vs. solution selling) and (2) key salesperson characteristics (i.e., past performance success and salesperson experience). In doing so, we also explore the role of information level (i.e., prospect and portfolio levels) in salesperson decision making.

To answer our questions, we develop and test a contingency framework of salespeople's decision making when prospecting for market opportunities in a sequence of three studies. For theoretical foundation, we integrate research on contingency decision making (Payne, Bettman, and Johnson 1992) and conservation of resources (COR) (Hobfoll 1989). We augment these theories with field notes from in-depth interviews with sales professionals. While Studies 1 and 2 rely on multisource field data, Study 3 is a scenario-based experiment to provide evidence of the benefit–cost analysis as the underlying mechanism. Together, this multimethod approach allows us to rigorously triangulate the effects and unpack the theoretical mechanisms.

This research makes several contributions. First, we contribute to the emerging literature on salesperson judgment and decision making when prospecting by unpacking the underlying decision process. We provide theoretical arguments and strong empirical evidence that explains why salespeople avoid big-whale prospects. Specifically, we show that, based on their initial judgment of opportunity magnitude, salespeople conduct a benefit–cost analysis under resource constraints to decide which opportunity to pursue. This analysis results in an inverted U-shaped relationship between magnitude and performance. Spotlight analyses show that a one-standard-deviation (SD) increase in opportunity magnitude lowers salespeople's conversion rate by 10%.

Second, we provide insights into the effect of conversion uncertainty on the salesperson decision-making process when prospecting. The results show that when selling solutions, salespeople use a calibration decision-making strategy, in which the effects of opportunity magnitude are conditional on conversion uncertainty. However, this strategy occurs only at the portfolio level, underscoring the role of salesperson portfolio as a decision-making context. Ignoring the calibration effect in estimating performance outcomes may lead to under- or overestimation of conversion rates of up to 100%. When selling products, salespeople use a compensatory decision-making strategy that accounts for the effects of portfolio magnitude and conversion uncertainty in an additive manner. These findings extend prior work (e.g., Ulaga and Kohli 2018) on uncertainty in personal selling and salesperson decision making.

Third, we provide empirical evidence for how, in a solution-selling context, the calibration effect varies depending on salesperson past performance success and experience. The results suggest that when faced with high levels of conversion uncertainty, high performers and inexperienced salespeople perform much worse because their resource-conserving tendency makes them more sensitive to the cost increases associated with uncertainty. Simulations reveal that their quota attainment can suffer by as much as 50%. These insights extend prior research focusing on the salesperson–customer dyad in business-to-business (B2B) marketing and retail encounters (e.g., Hall, Ahearne, and Sujan 2015; Mullins et al. 2014).

Background Literature and Conceptual Framework

Salespeople are generally assigned to a territory or a customer segment, and their sales opportunities can be self-generated or assigned (Sabnis et al. 2013). Within a given period, they move these sales opportunities through a funnel from prospects to closed sales deals. At any given time, salespeople form a judgment of the magnitude of specific sales prospects, with a certain level of conversion uncertainty. Prior research on salesperson prospecting provides useful insights into why salespeople fail to follow sales leads, how their judgment of opportunities linearly influences their performance, and how they deal with uncertainty. However, it has not examined why and when salespeople pursue or avoid big opportunities. To shed light on these issues, we view salesperson prospecting as decision making under resource constraints. In this section, we first briefly review the relevant literature and then present our conceptual framework.

Prospecting as Decision Making Under Resource Constraints

Decision-making frameworks. Two major decision-making frameworks are the benefit–cost framework (Beach and Mitchell 1978) and perceptual frameworks, such as prospect theory (Tversky and Kahneman 1981). In their review of these two frameworks, Payne, Bettman, and Johnson (1992) posit that the former provides insights into rational decision making under multiple alternatives while the latter is useful in explaining cognitive biases and heuristics in decision making. In their review, they also underscore task and individual characteristics, such as willingness to bear uncertainty, as important contingencies of individual decision making.

COR theory. Unlike the majority of general decision-making frameworks that assume away any resource constraint, COR theory emphasizes that people "strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources" (Hobfoll 1989, p. 513). Furthermore, people must invest resources to gain resources, and those who experience a lack of resources attempt to conserve remaining resources (Halbesleben et al. 2014). We argue that COR theory is particularly relevant in the context of B2B salespeople's prospecting for three reasons. First, unlike simple, low-effort choices between two lotteries, the pursuit of a prospect is costly—salespeople need to invest their time, effort, and resources in converting prospects into sales (Sabnis et al. 2013). Second, uncertainty in prospecting brings salespeople's resource constraints to the fore. Unlike gambling, which can be replayed, a forgone sales opportunity might be gone for good, and a failure to convert opportunities represents a loss of resources. Thus, salespeople need to balance between risk seeking and COR. Third, salespeople differ in terms of resource constraints (Sabnis et al. 2013).

Contingency Framework of Salesperson Decision Making When Prospecting

We integrate decision-making frameworks with COR theory to propose a contingency framework of salesperson decision making when prospecting. Our framework focuses on the initial judgments of sales opportunities in terms of magnitude and conversion uncertainty. First, although salespeople encounter multiple market opportunities, they only invest their resources into converting some of them. The benefit–cost framework suggests that this decision is based on rational benefit–cost analyses of opportunity magnitude before action (Beach and Mitchell 1978). COR theory offers a similar explanation that the pursuit of an opportunity is a trade-off between resource acquisition (e.g., the expected benefits of a sale) and resource conservation (e.g., the costs of resources expended on pursuing the opportunity). Second, salespeople make this decision under uncertainty. In line with contingency decision-making frameworks and COR theory, we expect that salespeople's benefit–cost analysis of opportunity magnitude is contingent on conversion uncertainty. This is because uncertainty prevents action by obfuscating "whether the potential reward of action is worth the potential costs" (McMullen and Shepherd 2006, p. 139; see also Halbesleben et al. 2014; Payne, Bettman, and Johnson 1992).

Third, task and personal factors represent additional contingencies that distort the rational benefit–cost analyses. We focus on two sets of contingencies. The first is the selling context (i.e., product vs. solution selling), in which a product denotes a physical object that can be sold in a transactional way (e.g., lamps) and a solution refers to a product-service system (e.g., smart lighting) that requires a relational process and tailoring. Solution selling represents a more uncertain task than product selling (Tuli, Kohli, and Bharadwaj 2007; Ulaga and Kohli 2018). Examining the selling context is important because many firms that shift from product to solution selling often struggle to cope with the inherent greater uncertainty (e.g., Fang, Palmatier, and Steenkamp 2008; Ulaga and Kohli 2018). The second set includes two salesperson characteristics related to the propensity to conserve resources under uncertainty. Past performance success refers to salesperson quota attainment in the previous quota period. Salesperson experience refers to a salesperson's time in the sales territory, with the company, and in the sales profession (Ahearne et al. 2010). We focus on these two moderators because prior research suggests these factors are related to how salespeople deal with uncertainty and conserve resources (Halbesleben et al. 2014; Hobfoll 1989; Sabnis et al. 2013).

Overview of Studies

To test our conceptual framework, we conducted three studies using multiple methods. We provide an overview of our conceptual framework, hypotheses, and the studies in Figure 1. Study 1 focuses on how salesperson initial judgments of opportunity magnitude determine the actual conversion of a prospect into a sale, which in the aggregate influences the salesperson conversion rate at the portfolio level. In doing so, we also investigate how salespeople calibrate opportunity magnitude for opportunity conversion uncertainty and whether such calibration differs between product and solution selling. In Study 2, we examine the heterogeneity of such calibration effect, with a focus on salespeople's past performance success and experience. The dependent variable in Study 2 is salesperson quota achievement, which is theoretically connected with the conversion rate examined in Study 1. In Study 3, a scenario-based experiment, we elucidate the underlying benefit–cost mechanism and the role of resource slack. Table 1 summarizes the key concepts in our framework and corresponding operational measures.

Study 1: Understanding the Interplay Between Opportunity Magnitude and Conversion Uncertainty

Study 1 examines the interaction effect between opportunity magnitude and conversion uncertainty in product- and solution-

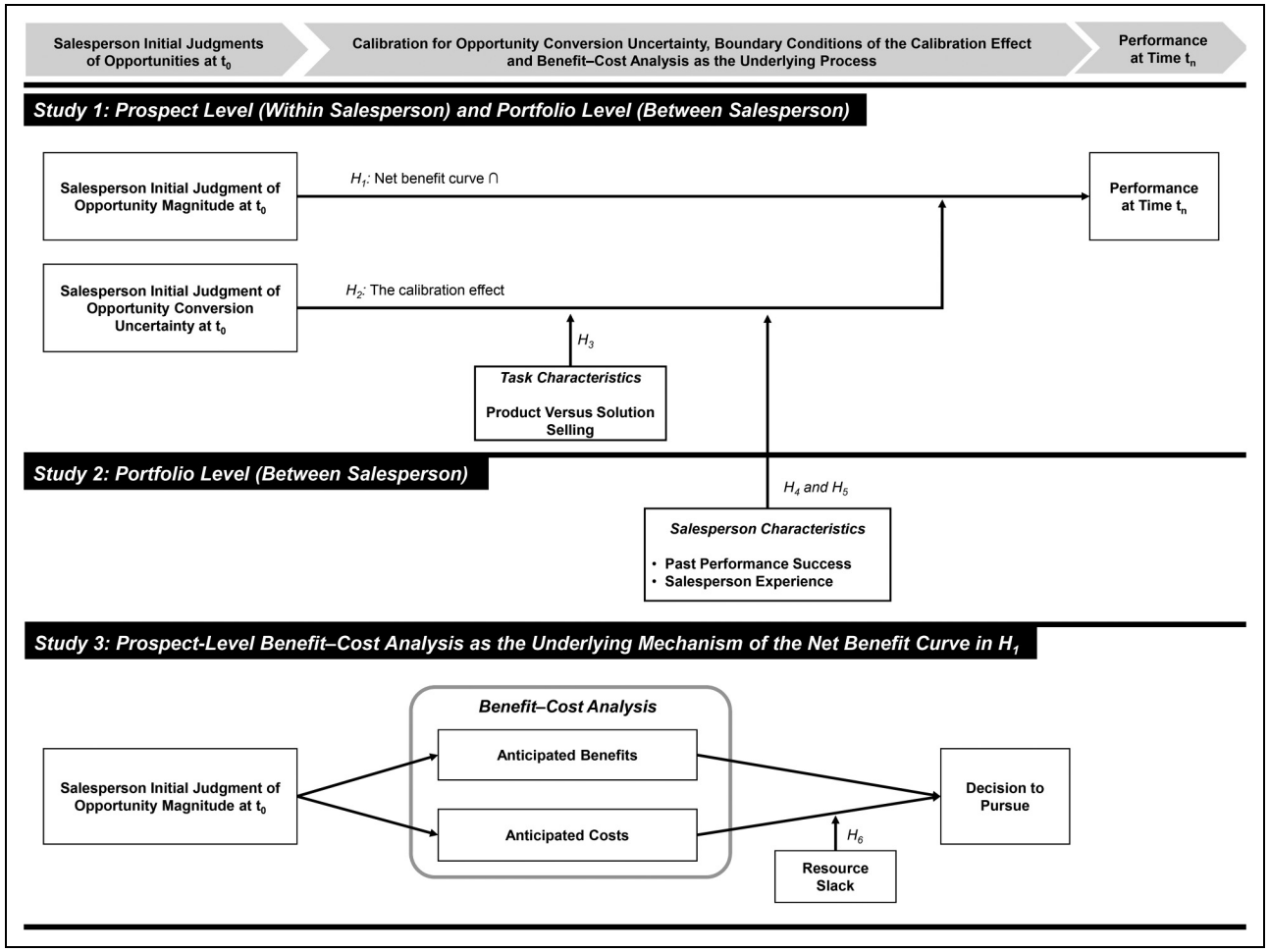

Figure 1. A contingency framework of salesperson decision making when prospecting and overview of three studies.

selling contexts at both the prospect and portfolio levels. We supplement our theoretical development for this study with verbatim quotes from a qualitative study of seven salespeople (for a description of respondents, see Web Appendix W1).

Study 1 Hypothesis Development

Benefit–cost analysis of opportunity magnitude. We predict that the effect of opportunity magnitude on salesperson performance follows an inverted U-shaped relationship. This is due to two countervailing underlying mechanisms: a linear positive effect from potential benefits of pursuing an opportunity and a curvilinear effect from potential costs of such pursuit. We follow Haans, Pieters, and He's (2016) recommendation to visually summarize this benefit–cost analysis in Figure 2, Panel A. On the one hand, the higher the magnitude of the opportunity, the greater the extrinsic and intrinsic benefits of pursuing a sizable opportunity. Extrinsic benefits take the form of potential compensation and recognition from the selling firm, whereas intrinsic benefits include the potential enjoyment in pursuing sizable opportunities and the learning associated with the pursuit (Bowman and Narayandas 2004; Deci and Ryan 1985).

On the other hand, pursuing a sizable opportunity entails substantial explicit and implicit costs. Salespeople incur explicit costs when pursing an opportunity because they need to invest resources, such as time and effort (Sabnis et al. 2013). Implicit costs refer to the opportunity costs of such pursuit because when pursuing an opportunity, salespeople must forgo other opportunities (Stone 2015). As the opportunity magnitude increases, both explicit and implicit costs accelerate significantly because salespeople are constrained by limited resources and information-processing capacity (Hobfoll 1989; Sabnis et al. 2013; Syam, Hess, and Yang 2016). One senior salesperson of a software company explained this issue succinctly:

> Big opportunities? Um, the pros. The prospect of earning a load of money.… Second, obviously it's also more satisfying or fulfilling.… So, it's more complex, which is also like a nice challenge. Plus, you learn the most from complex deals and bigger deals.… But it costs a lot of time and whatever time you spend on one deal you cannot reinvest anymore in smaller deals. So, there's always a trade-off.

Therefore, when both potential benefits and costs are considered, the effect of opportunity magnitude on salesperson performance will incrementally increase at first, but after a threshold,

Table 1. Overview of Key Concepts and Operationalizations in Studies 1 and 2.

Key Concepts	Description and Conceptual Meaning	Conceptual Foundations	Operationalization	Study 1	Study 2	Representative Studies
Performance Outcome						
Sales performance	Degree to which the salesperson obtains a desired outcome	Ahearne et al. (2010)	*Prospect-level performance*: A binary measure, where 0 reflects no deal and 1 reflects that a deal has been made (objective likelihood of conversion)	✓		Smith, Gopalakrishna, and Chatterjee (2006); Mayberry, Boles, and Donthu (2018)
			Portfolio-level performance: The ratio of prospects that are successfully turned into deals in a salesperson's portfolio (objective conversion rate)	✓		Own operationalization
			Salesperson performance: Percentage of quota attainment		✓	Ahearne et al. (2010)
Initial Cues and Judgment Formation						
Opportunity magnitude	The size of a potential sales option	Kumar, Petersen, and Leone (2013)	*Prospect magnitude*: Log-transformed salesperson initial judgment of revenue for a prospect (i.e., deal magnitude in $)	✓		Mayberry, Boles, and Donthu (2018)
			Portfolio baseline magnitude: The mean of all prospects' magnitude in a salesperson' portfolio	✓		Own operationalization
			Portfolio magnitude: Reflective four-item construct capturing a solution-selling salesperson's initial estimates in terms of the size of order intake, sales volume, revenue, and profits of their entire portfolio.		✓	Van der Borgh, De Jong, and Nijssen (2019)
Opportunity conversion uncertainty	The subjective likelihood of being able to convert an opportunity into a desired sales outcome	McMullen and Shepherd (2006)	*Prospect conversion uncertainty*: Categorical measure differentiating among high, medium, and low levels of likelihood to convert a prospect into a paying customer within six months (−1, 0, and 1), based on salesperson initial judgment.	✓		Own operationalization
			Portfolio baseline conversion uncertainty: The average of prospect conversion uncertainty across all the prospects in a salesperson's portfolio	✓		Own operationalization
			Portfolio conversion uncertainty: Reflective four-item construct capturing a salesperson's initial judgment of uncertainty for realizing anticipated outcomes for solution selling for their entire portfolio (in terms of size of order intake, sales volume, revenue, and profits)		✓	Own operationalization

(continued)

Table 1. (continued)

Key Concepts	Description and Conceptual Meaning	Conceptual Foundations	Operationalization	Study 1	Study 2	Representative Studies
Contingencies						
Salesperson characteristics	Differences in motivation, attitude, or risk propensity that determine whether a salesperson is willing to bear uncertainty or not	McMullen and Shepherd (2006); Payne, Bettman, and Johnson (1992)	*Past performance success*: The percentage of quota achieved in the previous quota cycle		✓	Mayberry, Boles, and Donthu (2018)
			Salesperson experience: Composite measure consisting of three measures of sales experience (i.e., time in sales territory, time with the company, and time in the sales profession). We z-scored these scores and averaged them to form an overall experience index.		✓	Ahearne et al. (2010)
Task characteristics	Various dimensions, descriptors, or attributes of a particular organizational position that determine task execution and/or outcomes	Payne, Bettman, and Johnson (1992)	Binary measure indicating whether a prospect requires product selling or solution selling	✓		Mayberry, Boles, and Donthu (2018)
Information levels	Denotes the reference class of judgments, distinguishing between judgment about the specific case or the aggregate of multiple cases	Sniezek and Buckley (1995)	Data are separated into information at the single case level (prospect information) and aggregate level (portfolio baseline information)	✓		Own operationalization

the costs to act on moderate to large opportunities outweigh their benefits. Thus,

> **H_1:** All else being equal, salesperson judgment of opportunity magnitude has a curvilinear, inverted U-shaped effect on salesperson performance.

Opportunity magnitude–conversion uncertainty calibration. By itself, conversion uncertainty can be a source of benefits for salespeople because uncertainty stimulates positive feelings and excitement (Shen, Fishbach, and Hsee 2015). However, conversion uncertainty also increases costs of pursuing—both explicit costs (i.e., salespeople need to exert greater effort to convert highly uncertain opportunities) and implicit costs (i.e., highly uncertain opportunities carry higher opportunity costs). Under the compensatory decision-making strategy, salespeople assess the benefits and costs of opportunity magnitude and conversion uncertainty in an additive manner. However, our interviews suggest that salespeople at times calibrate for conversion uncertainty in a multiplicative rather than additive manner. For example, one solution-selling salesperson was very clear on his decision-making strategy to deal with conversion uncertainty:

> When I take a look at a deal that has a very high certainty, so say you've a 90% closing chance, but it's very small in size, and you have a very big deal that has a small closing chance. Yeah, I can just multiply it [size by uncertainty] and see where I get the most buck for my uncertainty, so to speak. Even though it's very simple, it's pretty effective.

We refer to this multiplicative strategy as the calibration hypothesis, such that the inverted U-shaped relationship between opportunity magnitude and salesperson performance in H_1 is contingent on conversion uncertainty (McMullen and Shepherd 2006). We again follow Haans, Pieters, and He's (2016) recommendation to visually summarize how conversion uncertainty influences the benefit and cost functions in our arguments in Figure 2, Panel B.

In terms of the benefit function, the (previously noted) solution-selling salesperson's calculus is consistent with both expectancy theory and COR theory (Hobfoll 1989; Vroom 1964). These theories suggest that salespeople calculate the expected benefits of an action by multiplying its benefits by the success odds (i.e., expected benefits = magnitude-based benefits × conversion uncertainty). Thus, when conversion uncertainty is high, the expected benefits of pursuing a large

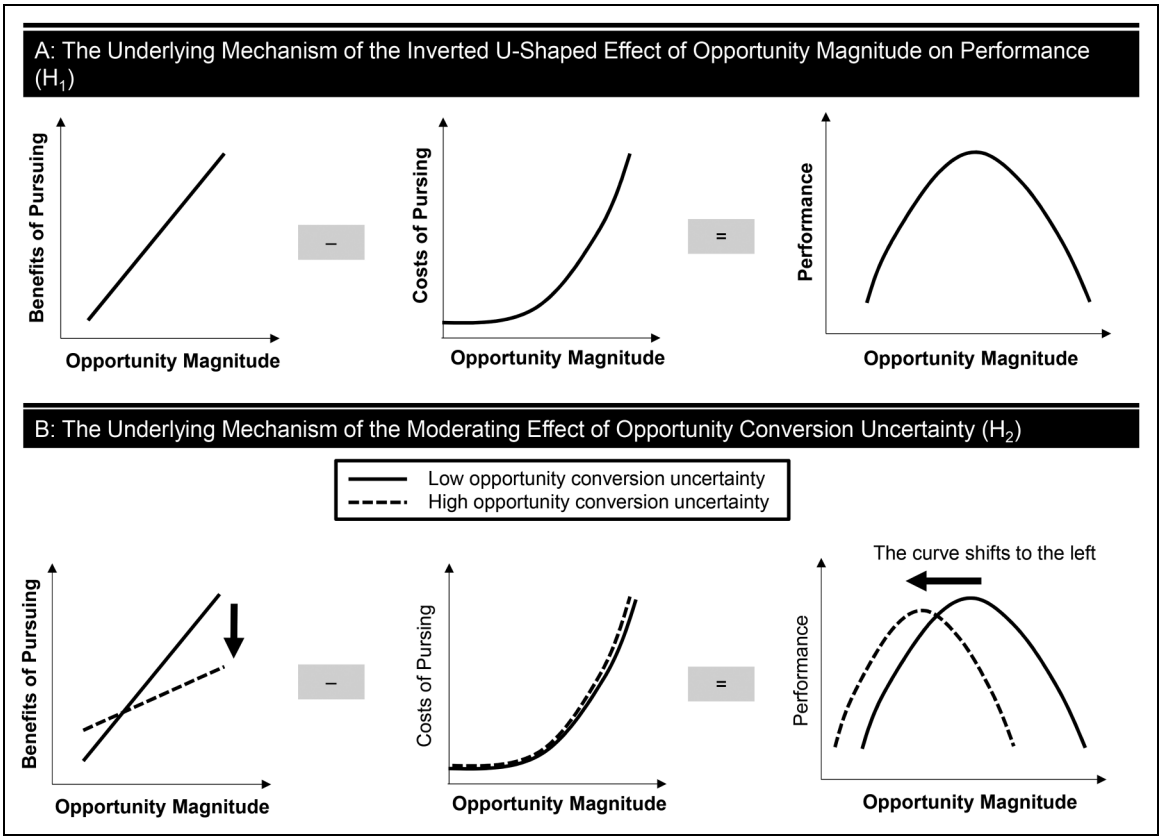

Figure 2. Illustration of theoretical arguments for the inverted U-shaped effect and the calibration effect.
Notes: In Panel A, the inverted U-shaped effect of opportunity magnitude on performance results from a benefit–cost trade-off, where opportunity magnitude has a positive effect on the benefits, both extrinsic and intrinsic, while the costs refer to nonlinearly increasing costs, both explicit and implicit (H_1). In Panel B, the interaction effect of opportunity conversion uncertainty and opportunity magnitude results in a shift of the inverted U-shaped curve to the left. This shift occurs because a high level of opportunity conversion uncertainty weakens the aforementioned benefit function (H_2). Panel B therefore reflects the calibration decision-making strategy in which salespeople take into account opportunity conversion uncertainty by converting the benefits of pursuing an opportunity into expected benefits. The moderating effect of opportunity conversion uncertainty on the cost function is contingent on the heterogeneity of salesperson characteristics, which in the aggregate, may appear as not significant.

opportunity are lower, making it less motivating to pursue. Importantly, this calculus is universal, without evoking any individual characteristics as contingencies. Therefore, conversion uncertainty weakens the slope of the benefit line, shifting the inverted U-shaped effect of opportunity magnitude on salesperson performance to the left.

How do salespeople calibrate for conversion uncertainty in assessing the costs of pursuing an opportunity? As mentioned previously, conversion uncertainty can be positively stimulating for risk seekers but harmfully costly for people who want to conserve resources. In this regard, prior research indicates that salespeople are heterogeneous in their risk-seeking behavior for various reasons, such as their past performance success and their capability (e.g., Mittal, Ross, and Tsiros 2002). Given this heterogeneity, the cost function can swing in either direction, and thus we predict that, in the aggregate, opportunity conversion uncertainty may appear as not having an influence on the cost function. For the leftward shifting effect to occur, opportunity conversion uncertainty only needs to shift the benefit function downward and does not need to change the shape of the cost function (Haans, Pieters, and He 2016). Thus,

H_2: Opportunity conversion uncertainty moderates the effect of opportunity magnitude on salesperson performance, such that it shifts the inverted U-shaped effect of opportunity magnitude on salesperson performance to the left.

Solution- versus product-selling task. Prior research on decision making suggests that, under high levels of situational uncertainty, people search for a relevant reference class to calibrate their judgments (Gigerenzer, Hoffrage, and Kleinbölting 1991; Jones, Jones, and Frisch 1995). However, Ulaga and Kohli (2018) suggest that, beyond outcome uncertainty, such as conversion uncertainty, solution selling has a higher level of need and process uncertainty than product selling. We argue that it is this difference in overall situational uncertainty that causes salespeople to calibrate for conversion uncertainty differently when selling products versus solutions. Specifically, because need and process uncertainties are higher in solution selling, salespeople do not have a reliable frame of reference to count on. By contrast, because need and process uncertainties are lower in product selling, salespeople can confidently draw from their knowledge of customer needs and requirements, the sales process, and product configurations to deal with conversion uncertainty. Therefore, compared with

product-selling salespeople, solution-selling salespeople are more sensitive to conversion uncertainty and tend to calibrate for this uncertainty more intensely. Thus, we expect the weakening effect of conversion uncertainty on the benefits function predicted in H_2 to be stronger in solution- than product-selling contexts.

H_3: The leftward shifting effect of opportunity conversion uncertainty on the inverted U-shaped relationship between opportunity magnitude and salesperson performance is stronger in solution- than product-selling contexts.

Institutional Context

We collected data from a *Fortune* Global 500 firm, a market leader in lighting products and solutions for enterprise customers; at the time of data collection, the company generated more than $25 billion annually in total revenue. The company provides a broad portfolio of lighting offerings, ranging from products (e.g., luminaires, lighting electronics, horticulture lighting) to system solutions (e.g., connected, smart luminaires; lighting management software). Customers come from various industries, such as food and fashion retail, health care, education, sports, municipalities, hospitality, infrastructure, and manufacturing. For its field-based sales approach, the company relies primarily on direct sales, and salespeople are subject to the same compensation and incentive scheme. Salespeople obtain a fixed yearly salary plus commission (maximum 30% of the fixed salary). To explore the impact of initial judgments of opportunity magnitude and conversion uncertainty, we gathered archival data from the company's sales force automation (SFA) system for all prospects within one market. For every prospect, we obtained transaction-level records from January 2016 to May 2017, including initial estimates of opportunity magnitude (i.e., prospect deal size) and conversion uncertainty, updated estimates, and the final sales outcome. The SFA data cover 12,988 B2B prospects, handled by 173 salespeople, who logged 110,278 events in total. We provide supplemental information about the research context and the SFA data in Web Appendix W2.

Manifest Variables

Because we are interested in the performance impact of a salesperson's initial judgments, we aggregated the event-level data to the prospect level. This approach allows us to estimate a two-level model in which prospect-level data (case-specific; within salesperson) are nested within portfolio-level data (baseline; between salesperson).

Focal variables. A unique feature of Study 1 is that we leverage the company's SFA data to operationalize the key variables. We measure opportunity magnitude as the salesperson's initial point estimate of a prospect in terms of revenue. Following Van Heerde, Gijsbrechts, and Pauwels (2008), we log-transform the measure to correct for right-skewness. We measure opportunity conversion uncertainty as a categorical measure that captures the probability of converting a prospect into a deal within six months. We coded these categories as −1 (low), 0 (medium), and 1 (high) to facilitate interpretation and enhance model parsimony (De Haan, Verhoef, and Wiesel 2015). We measure prospect-level performance as a binary measure that indicates the actual conversion of a prospect at the end of the sales cycle (0 = no deal, 1 = a deal). Portfolio-level performance indicates the salesperson's portfolio-level conversion rate, aggregated from their prospect-level actual conversion.

Control variables. To obtain unbiased estimates, we control for the nonlinear effects of uncertainty by including a square term (Ganzach 1997). To zero in on the effects of initial judgments, we control for several time-related dynamics. Specifically, we control for five (e.g., Aguinis and Bakker 2021). First, we control for duration of a sales cycle by including the sales cycle length (Mayberry, Boles, and Donthu 2018). Second, we control for frequency of leads by including workload (Sabnis et al. 2013), measured as the total number of leads under a salesperson's wing during the assessment. Previous studies have shown that workload affects judgments (e.g., Germann, Ebbes, and Grewal 2015). Third, we control for the frequency of uncertainty updates (i.e., process uncertainty), which reflects the total number of changes a salesperson has made after the initial uncertainty estimate. It reflects the doubt inherent in the sales process and filters out variation in the dependent variable after salespeople made their initial judgments, which is the focus of the article. Fourth, we control for accuracy and recency effects by including the difference between the initial and final estimates for opportunity magnitude and uncertainty (magnitude accuracy = [last estimate − first estimate]; conversion uncertainty accuracy = [first estimate − last estimate]). Fifth, we control for timing- and sequence-related dynamics by including time fixed effects. We use dummy variables to account for the prospect's industry (i.e., public, office, retail, and other). We also control for the potentially curvilinear effect of uncertainty because prior research suggests that people respond more rigorously to two ends of the uncertainty continuum than to moderate levels of uncertainty (Ahearne et al. 2010; Syam, Hess, and Yang 2016; Wu and Gonzalez 1996). Web Appendix W3 provides sample descriptives and the correlation matrix.

Empirical Strategy

Levels of analysis and centering. As is true in many B2B selling contexts, salespeople are responsible for a portfolio of prospects. In the "Study 1 Hypothesis Development" subsection, we use the term "opportunity" without specifying whether this opportunity is at the prospect or portfolio level. However, previous studies in decision making (e.g., Jones, Jones, and Frisch 1995; Tversky and Kahneman 1974, 1981) show that people (1) can leverage two levels of information (case-specific and base-rate) and (2) use a reference point. From a multilevel perspective, portfolio baseline judgments are essentially salesperson-level constructs that capture between-salesperson variation, serving the

function of the base-rate information about the sales territory. Prospect-level judgments reflect within-salesperson judgment about specific prospects relative to each salesperson's portfolio baseline judgments (Chan 1998). Because assuming that an effect existing at a higher level will generalize to a lower level (or vice versa) can be erroneous (Chen, Bliese, and Mathieu 2005), we employ multilevel modeling techniques to estimate the impact of a salesperson's initial judgments of opportunity magnitude and conversion uncertainty on performance and test the effect at the prospect (case-specific) and portfolio (baseline) levels. Conceptually, people tend to rely heavily on the mean value in their decision making (Harrison and March 1984)—akin to a salesperson's baseline. Therefore, in Study 1, we examine the portfolio average magnitude and average conversion uncertainty as the reference points at the portfolio level and refer to these as portfolio baseline magnitude and conversion uncertainty.

We specify a multilevel model using Mplus 8.3 (Muthén and Muthén 2017). To allow for unbiased estimates at the between and within levels, we decompose the manifest variables into uncorrelated latent "between" and "within" components (Preacher, Zhang, and Zyphur 2016). Latent means of focal variables are estimated at the between level, while "pure" within-person effects are estimated in the within-level portion of the model. This specification is necessary for teasing apart prospect- and portfolio-level effects (Preacher, Zhang, and Zyphur 2016).

Estimation. The complexity of the model and the use of a binary dependent variable did not allow use of robust maximum likelihood estimation techniques because of a lack of model convergence. As an alternative, we employed Bayesian estimation techniques and therefore specified a Bayesian multilevel probit model. We estimate two sets of models for the pooled (no separation of selling contexts), product-selling, and solution-selling data, respectively. Models 1–3 are main-effects-only models, and Models 4–6 are the interaction-effects models. All the manifest variables are standardized to aid in interpretation, with the exception of conversion uncertainty. We provide details on the model specification and estimation in Web Appendix W4.

Endogeneity considerations. The effect of opportunity magnitude and conversion uncertainty on performance may be endogenous, because common unobserved factors may influence both predictors and outcomes in our model (due to, e.g., simultaneity, measurement error, omitted variables). Following prior studies (Germann, Ebbes, and Grewal 2015; Sande and Ghosh 2018; Vomberg, Homburg, and Gwinner 2020), we address endogeneity in three ways: (1) by adopting a rich data-modeling approach, (2) by controlling for endogeneity due to omitted variables, and (3) by checking for endogeneity due to selection bias. Because we consider a multilevel setting, we need to address endogeneity at each level (Magnotta, Murtha, and Challagalla 2020). We correct for Level 1 endogeneity using a control function procedure (Sande and Ghosh 2018) and check for robustness with an instrument-free Gaussian copula approach (Park and Gupta 2012). We control for Level 2 (cross-level) endogeneity in our multilevel latent covariate model by allowing a correlation between random intercepts and slopes (Antonakis, Bastardoz, and Rönkkö 2021). A direct test of the random-effects assumption (Wald $\chi_1^2 = 2.226$, $p = .136$) indicates that Level 2 endogeneity is not a concern (Antonakis, Bastardoz, and Rönkkö 2021). Web Appendix W4 provides further details of model-free evidence of inverted U-shaped relationship, robustness checks of adding higher-order terms and seasonal variation to the empirical model, and endogeneity corrections.

Results

We present the results of our tests for H_1 and H_2 for solution selling at the portfolio level before discussing the differences between solution selling and product selling (H_3). In the "Discussion" section, we explore differences across portfolio and prospect levels.

Benefit–cost analysis of opportunity magnitude. Table 2 shows the results of the analyses. To test H_1, we follow a rigorous three-step procedure (Haans, Pieters, and He 2016). First, we find a significant, negative effect of (opportunity magnitude)^2 on salesperson performance for solution selling (Model 3: $\gamma_{02} = -.142$, $p < .001$). We plot this effect in Panel A of Figure 3, which shows an inverted U-shape. Second, we formally test that the marginal effects on the left side of the turning point of the inverted U-shape are positive and significant and those on the right side of the turning point are negative and significant. Mathematically, we test whether $\gamma_{01} + 2\gamma_{02}X_L$ is positive and significant and $\gamma_{01} + 2\gamma_{02}X_H$ is negative and significant, where X_L and X_H represent low and high values of opportunity magnitude within the data range, respectively. For portfolio baseline magnitude, the results confirm this pattern (for details, see Web Appendix W5). Third, we examine whether the turning point (i.e., X) is located within the data range. Taking the first derivative of the Level 2 equation specified for Model 3 and setting it to zero yields a turning point X of $-\gamma_{01}/2\gamma_{02}$. We found that the turning point is 2.52 SD below the mean value and within the data range ($X_{solution} = -2.52$ SD; 95% confidence interval [CI] = [−4.15, −1.38]). Overall, these results confirm an inverted U-shaped relationship between opportunity magnitude and salesperson performance for solution selling, in support of H_1.

Opportunity magnitude–conversion uncertainty calibration hypothesis. To test H_2, we add the interaction term $(\text{magnitude} \times \text{uncertainty})_{ij}$ to the equation. The results of Model 6 in Table 2 confirm that the interaction is significant and negative in the solution-selling context ($\gamma_{03} = -.663$, $p < .01$). However, we cannot determine significance from the estimated interaction term alone in a nonlinear model (probit) with nonlinear interaction terms (Wiersema and Bowen 2009). Therefore, we formally test how the turning point changes as conversion uncertainty changes. To do so, we derive the turning point "magnitude*" (X*) by setting the first derivative of Model 6's equation with respect to X to zero. Then, we take the derivative of the turning point with respect to conversion uncertainty (Z) to show how the turning point

Table 2. Study 1—Results of Multilevel Probit Analyses: Effect of Initial Judgment on Performance Outcomes.

	Step 1									Step 2[a]									
	Model 1: Pooled			Model 2: Products			Model 3: Solutions			Model 4: Pooled			Model 5: Products			Model 6: Solutions			
	b		SD	b		SD	b		SD	b		SD	b		SD	b		SD	Hyp.
L2: DV = Portfolio-Level Performance																			
Magnitude (γ_{01})	−.536	***	.149	−.301	*	.162	−.716	**	.232	−.562	***	.178	−.377	*	.198	−.240		.303	
Magnitude^2 (γ_{02})	−.264	***	.056	−.225	**	.066	−.142	***	.045	−.261	***	.056	−.234	***	.069	−.161	***	.048	H_1
Uncertainty (γ_{04})	−1.136	***	.249	−1.026	***	.269	−1.541	**	.481	−1.248	***	.262	−1.086	***	.279	−1.556	***	.466	
Magnitude × Uncertainty (γ_{03})	—		—	—		—	—		—	.051		.158	.108		.175	−.663	**	.227	H_2/H_3
L1: DV = Prospect-Level Performance																			
Magnitude (β_{1j})	−.456	***	.075	−.410	***	.062	−.536	***	.155	−.393	***	.052	−.414	***	.065	−.484	***	.159	
Magnitude^2 (β_{2j})	−.142	***	.026	−.158	***	.022	−.098	**	.038	−.123	***	.019	−.157	***	.022	−.129	***	.043	
Uncertainty (β_{4j})	−.932	***	.112	−.877	***	.105	−.571	*	.258	−.911	***	.094	−.885	***	.104	−.510	***	.259	
Magnitude × Uncertainty (β_{3j})	—		—	—		—	—		—	−.017		.040	.011		.045	−.053		.086	
Controls																			
Uncertainty^2 (L2)	.323		.275	.249		.304	1.100	*	.515	.394	***	.273	.251		.309	.929	*	.508	
Uncertainty^2 (L1)	−.093		.080	−.129		.083	−.167		.228	−.058		.077	−.126		.079	−.235		.237	
Process uncertainty	−.270	***	.016	−.288	***	.017	−.204	***	.040	−.276	***	.016	−.290	***	.017	−.207	***	.040	
Sales cycle length	.092	***	.021	.088	***	.023	.015		.142	.087	***	.020	.091	***	.022	.069		.144	
Magnitude accuracy	−.047	***	.012	−.026	*	.013	−.095	***	.035	−.047	***	.013	−.027	*	.013	−.096	**	.035	
Uncertainty accuracy	.820	***	.028	.835	***	.031	.675	***	.073	.819	***	.028	.834	***	.031	.684	***	.073	
Workload	−.004		.008	.002		.008	−.008		.019	−.002		.006	.003		.007	−.010		.019	
ÊMagnitude[b]	.020		.039	−.006		.038	.168		.119	−.023		.032	−.008		.039	.114		.124	
Magnitude × ÊMagnitude	−.006		.015	−.011	*	.016	.096	*	.058	−.038	**	.016	−.012		.017	.149	**	.066	
ÊUncertainty	.062	*	.030	.015		.028	−.095		.070	.000		.027	.015		.029	−.112		.071	
Uncertainty × ÊUncertainty	.109	***	.021	.106	*	.018	.191	***	.047	.095	***	.016	.103	***	.020	.194	***	.048	
IMR	−1.291	***	.084	−1.416	***	.088	−2.292	***	.593	−1.027	***	.079	−1.423	***	.087	−2.112	***	.592	
Industry fixed effects	Yes			Yes			Yes			Yes			Yes			Yes			
Time fixed effects	Yes			Yes			Yes			Yes			Yes			Yes			
Constant (γ_{00})	1.364	***	.202	1.282	***	.161	1.465		.833	1.199	***	.156	1.220	***	.173	1.101		.866	
Pseudo-R^2: L2/L1	.795/.554			.645/.545			.805.716			.801/.509			.678/.543			.831/.713			
n (prospects)/N (salespeople)	12,988/173			10,991/166			1,997/121			12,988/173			10,991/166			1,997/121			

*$p < .05$.
**$p < .01$.
***$p < .001$; unstandardized coefficients.
[a]To determine the extent of bias in our estimates (Haans, Pieters, and He 2016), we also tested an extension of Models 4–6, in which we included Magnitude^2 × Uncertainty at L2 (γ_{05}) and L1 (β_{5j}). The results for these models showed nonsignificant effects. The results show that neither interaction is significant ($\gamma_{05} = .064$, $p > .05$; $\beta_{5j} = .002$, $p > .05$).
[b]We also tested the robustness of our findings by controlling for endogeneity using the instrument-free Gaussian copula approach. Findings are similar when compared with the control function approach reported in this table. For details of the results of these additional analyses, see Web Appendix W4.
Notes: L2 = portfolio level; L1 = prospect level. Magnitude = opportunity magnitude; Uncertainty = opportunity conversion uncertainty. IMR = inverse Mills ratio.

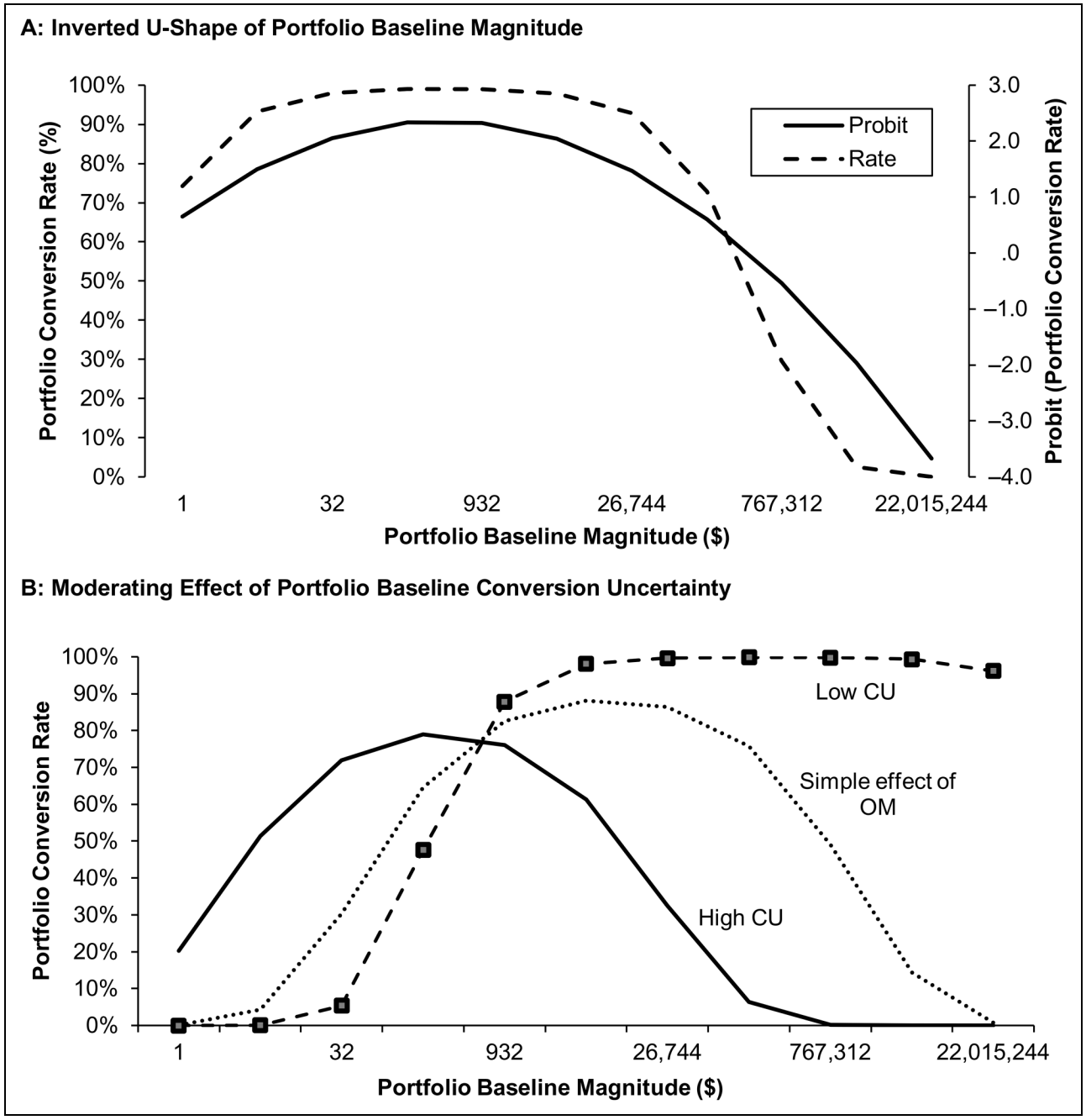

Figure 3. Study 1: inverted U-shape and the moderating effect of opportunity conversion uncertainty in solution selling.
Notes: High/low moderator values = ±1 SD. CU = conversion uncertainty; OM = opportunity magnitude.

changes as conversion uncertainty changes, yielding $\delta X^*/\delta Z = (-\gamma_{02}\,\gamma_{05})/[2(\gamma_{02})^2]$. We find that this term is significant and negative ($b = -2.032$, $p < .01$), in support of H_2.

Solution- versus product-selling task hypothesis. To test H_3, we compare the results for the two selling tasks (see Table 2). At the portfolio level, in contrast with the significant and negative interaction in the solution-selling context (Model 6: $\gamma_{03} = -.663$, $p < .01$), we find no interaction effect of opportunity magnitude and conversion uncertainty on salesperson performance for product selling (Model 5: $\gamma_{03} = .108$, $p > .10$). Testing the difference between solution versus product selling reveals significant differences at the portfolio level ($\Delta[\gamma_{03\_Solution}; \gamma_{03\_Product}] = .771$, $p < .01$), in support of H_3.

Discussion

Study 1 provides evidence of an inverted U-shaped relationship between opportunity magnitude and sales performance, across levels and selling context. However, we only find evidence of the calibration hypothesis for the solution-selling context at the portfolio level. This suggests that salespeople respond differently

to opportunities of different magnitude, depending on the baseline conversion uncertainty of their portfolio of solution prospects. To illustrate the impact of this effect, we ran a simple counterfactual analysis and compared the calibration model with a compensatory model (i.e., fixing the interaction coefficient γ_{03} to zero). The results show that under certain conditions the compensatory model over- or underestimates conversion rates by almost 100% (e.g., predict 100% conversion, 0% "true" value). For large opportunity magnitude (>~$26.750), the compensatory model overestimates conversion rates by up to 30% for high conversion uncertainty but underestimates conversion rates by up to 90% for low conversion uncertainty. Overall, these results highlight the importance of the calibration model.

We also found that the information level (i.e., prospect- and portfolio-level) matters. While prior research on decision making generally focuses on two simple choices, it might be cognitively impossible for salespeople to constantly make decisions at the prospect level while juggling a portfolio of prospects in their sales funnel. Consistent with this notion, our findings in Table 2 suggest that salespeople adopt a simpler compensatory decision-making strategy at the prospect level (i.e., that accounts for conversion uncertainty in an additive/subtractive manner) but rely on a more complex decision-making strategy at the portfolio level (i.e., a calibration strategy that accounts for conversion uncertainty in an interactive manner, using portfolio baseline information) for solution selling. In practice, salespeople generally have an idea about this so-called portfolio baseline in their assigned territory, such as the average magnitude and uncertainty of their portfolio. They then assess individual opportunities relative to this baseline and prioritize accordingly (Sniezek and Buckley 1995; Tversky and Kahneman 1974).

Study 2: Examining the Heterogeneity of the Calibration Effect in Solution Selling

Although Study 1 shows that salespeople calibrate for opportunity conversion uncertainty when selling solutions at the portfolio level, it does not investigate how salespeople differ in their calibration. Study 2 focuses on salespeople's past performance success and experience as two key boundary conditions that bias their rational calibration of benefit–cost analyses. Empirically, a test of these contingencies is a three-way interaction test of the two-way interaction in H_2.

Study 2 Hypothesis Development

Past performance success. We first focus on how past performance success influences the way salespeople calibrate their benefit function for conversion uncertainty differently. Compared with salespeople with low past performance, those with high past performance have a higher sense of competence. As a result, they are more risk-seeking and view uncertain opportunities as challenging and intrinsically motivating (Mittal, Ross, and Tsiros 2002; Thaler and Johnson 1990). To these high performers, the intrinsic benefits associated with high conversion uncertainty may outweigh the potential loss of extrinsic benefits. By contrast, salespeople with low past performance repulse opportunities that have high conversion uncertainty. This aversion arises because these highly uncertain opportunities not only threaten their potential extrinsic benefits (e.g., losing compensation and rewards) but also represent an unreliable path to achieve intrinsic benefits (e.g., bolstering their lack of competence; see Deci and Ryan 1985). Thus, the downward shift of the benefit function created by opportunity conversion uncertainty (predicted in H_2) is weaker among salespeople whose past performance success is high (vs. low).

In terms of the cost function, being successful in the prior period induces high performers to be more sensitive to opportunity conversion uncertainty for two reasons. First, consistent with COR theory, they are likely to slow down to conserve their resources to reduce stress (Hobfoll 1989). Empirical evidence shows that people tend to hold back after achieving a goal before working on the next goal (e.g., a resetting period; Casas-Arce and Martinez-Jerez 2009; Kivetz, Urminsky, and Zheng 2006). Second, high performers are more sensitive to high implicit costs associated with high conversion uncertainty because opportunities that can be converted with certainty allow them to maintain their status (e.g., Marr and Thau 2014). Therefore, for high performers, opportunity conversion uncertainty is likely to shift their cost function upward more strongly. This upward shift is especially strong when opportunity magnitude is large because large opportunities require them to invest much more resources. By contrast, while salespeople whose past performance was less successful are also sensitive to the opportunity costs associated with high conversion uncertainty, their main concern is to prove themselves to the firm. Therefore, these poor performers need to exert greater efforts and cannot afford to conserve their resources. As a result, poor performers' cost function shifts upward less strongly when opportunity conversion uncertainty is high.

Taken together, compared with salespeople who are low past performers, high performers view opportunities with high conversion uncertainty as more beneficial but also more costly. In prospecting, although all salespeople have limited resources (Sabnis et al. 2013), high performers are more inclined to conserve their resources than poor performers. Thus, for high past performers, we predict that the upward shifting effect of conversion uncertainty on the cost function will outweigh its downward yet weaker shifting effect on the benefit function. As a result, the expected net benefits of pursuing an opportunity will be lower when conversion uncertainty is high, causing the inverted U-shaped relationship between opportunity magnitude and salesperson performance to shift more strongly to the left (Haans, Pieters, and He 2016).

> **H_4:** The greater salesperson past performance success, the stronger is the leftward shifting effect of opportunity conversion uncertainty on the inverted U-shaped relationship between opportunity magnitude and salesperson performance.

Salesperson experience. We argue that because experienced salespeople differ from less experienced salespeople in terms

of resources, they calibrate their benefits and costs under conversion uncertainty differently. First, they have better network-based resources in the form of relationships they have built over time. Second, they are more knowledgeable about various aspects of the sales process (e.g., customers, the market, the competition, the company), another resource critical for success in prospecting (Sabnis et al. 2013).

In terms of the benefit function, the resources accumulated over time make experienced salespeople believe they are more capable, resulting in more risk-seeking behavior (Mittal, Ross, and Tsiros 2002; Thaler and Johnson 1990). For them, the challenge associated with uncertain opportunities can be intrinsically motivating. Because experienced salespeople are more strongly motivated by intrinsic than extrinsic benefits (e.g., Cron, Dubinsky, and Michaels 1988), the intrinsic benefits associated with high conversion uncertainty may outweigh the potential loss of extrinsic benefits. By contrast, the lack of capability and resources makes inexperienced salespeople more concerned about potential losses of both intrinsic and extrinsic benefits at high levels of opportunity conversion uncertainty (Mittal, Ross, and Tsiros 2002). Therefore, the downward shifting effect created by opportunity conversion uncertainty on the benefit function is stronger among inexperienced salespeople than experienced ones.

In terms of the cost function, the abundance of aforementioned resources makes experienced salespeople less concerned about COR when pursuing opportunities with high conversion uncertainty. Conversely, given their lack of resources, inexperienced salespeople are more concerned about conserving their limited resources and are more sensitive to the costs associated with high conversion uncertainty (Halbesleben et al. 2014; Hobfoll 1989). Thus, opportunity conversion uncertainty is likely to create a weaker upward shift of the cost function among experienced than inexperienced salespeople. Taking the benefit and cost effects together, experienced salespeople expect greater net benefits when conversion uncertainty is high. For them, the inverted U-shaped relationship between opportunity magnitude and salesperson performance shifts less strongly to the left (Haans, Pieters, and He 2016).

H_5: The greater salesperson experience, the weaker is the leftward shifting effect of opportunity conversion uncertainty on the inverted U-shaped relationship between opportunity magnitude and salesperson performance.

Institutional Context

In Study 2, we corroborate Study 1's findings and examine the postulated boundary conditions of salespeople's calibration for conversion uncertainty in solution selling at the portfolio level. We collected data from the sales organization of a large firm ($16.4 billion in total revenue per year). The firm, which operates in the B2B market, provides information and technology solutions (e.g., workspace systems, data center solutions, managed services, security) to customers in industries such as finance, government, education, transport, service, retail, and media. Field-based salespeople are grouped according to the industries the firm serves, with each assigned a territory. All the salespeople are subject to the same compensation and incentive scheme and obtain a fixed yearly salary plus commission (with a progressive plan for all sales beyond quota). Using a survey instrument, we collected information about the salespeople's perceptions of their portfolios. Of the 248 salespeople, 211 completed the questionnaire (85% response rate). Consistent with the length of the average sales cycle, we collected objective salesperson performance from the firm's records six months after the survey.

Measures

In Study 2, we examine the portfolio magnitude and conversion uncertainty in the aggregate at the portfolio level. Thus, portfolio magnitude corresponds to opportunity magnitude, and portfolio conversion uncertainty corresponds to opportunity conversion uncertainty.

Focal variables. To measure portfolio magnitude, we use the expected customer demand scale from Van der Borgh, De Jong, and Nijssen (2019). The scale has four items that cover salespeople's judgment of the opportunity magnitude in terms of order intake, sales volume, revenue, and profits for the solutions in their portfolio. To measure portfolio conversion uncertainty, we developed a new scale that asks salespeople to assess their degree of (un)certainty about the portfolio magnitude. We inversely coded the scores to obtain uncertainty scores. We obtained salesperson past performance success (in the previous quota cycle) and salesperson performance from company databases. We used the percentage of quota achievement, as previous studies indicate that it accurately captures measurable task performance output while accounting for situational factors (Ahearne et al. 2010). Following previous studies (e.g., Ahearne et al. 2010), we operationalize salesperson experience as a composite measure consisting of three separate measures of experience: time in sales territory, time with the company, and time in the sales profession.

Control variables. We control for nonlinear effects of uncertainty by including a squared term (Ganzach 1997). Dummy variables account for salespeople's industry. We also account for individual characteristics that may influence their judgments (i.e., age and workload). Finally, we control for salesperson trait competitiveness, measured with a scale from Brown, Cron, and Slocum (1998). Web Appendix W6 provides measurement scales and descriptives of Study 2.

Empirical Strategy

Validation of measurement model. A confirmatory factor analysis of the measures indicated good model fit ($\chi^2_{41} = 88.108$, $p < .01$; comparative fit index = .950; Tucker–Lewis index = .933; root mean square error of approximation = .074; square root mean residual = .045; Bagozzi and Yi 2012). The scales achieved sufficient reliability, with composite reliabilities between .77 and .90 and average variances extracted exceeding.50 for all constructs, indicating reliability. The average variance extracted

of each construct exceeds the average variance shared with any other construct, providing evidence of discriminant validity. In addition, all factor loadings are significant ($p < .01$) and have standardized values ranging from .65 to .91, thus demonstrating convergent validity of the constructs. To examine the effects of opportunity magnitude, conversion uncertainty, past performance success, and salesperson experience on salesperson performance, we specified a multilevel model in Mplus 8.3 (Muthén and Muthén 2017) to control for the nesting of the data. We provide the model specification in Web Appendix W7.

Endogeneity considerations. The effect of salesperson opportunity magnitude and conversion uncertainty on sales performance may be spurious as a result of omitted variables (e.g., group-level factors) and correlation between independent variables and the error terms. For example, a sales manager's and coworkers' judgments may influence a salesperson's judgments and performance outcomes. To control for possible endogeneity in our analyses, we adopted Garen's (1984) control function procedure. Web Appendix W7 provides further details.

Results

We present the results of our retests of the main effects of the opportunity magnitude (H_1) and calibration (H_2) hypotheses for solution selling at the portfolio level. We then report the findings regarding the boundary conditions of past performance and salesperson experience (H_4 and H_5).

Main effect of opportunity magnitude. We report the results in Table 3. To retest H_1 about the inverted U-shaped effect of opportunity magnitude on salesperson performance, we again rely on the three-step approach. First, in line with our results from Study 1, we find that opportunity magnitude^2 has a significant, negative effect (Model 7: $\zeta_2 = -.059$, $p < .05$). Second, we formally test marginal effects. We find that the slope is positive and significant for low values of opportunity magnitude and negative and significant for high values (see Web Appendix W5). Third, we calculate the turning point. The estimated turning point is just above the average of the opportunity magnitude scale (i.e., mean + .36 = 3.55), with an estimated CI well within the data range (95% $CI_{raw\ score} = [3.02, 4.78]$). These results confirm the inverted U-shaped relationship between opportunity magnitude and salesperson performance, corroborating H_1.

Moderating role of conversion uncertainty. To retest H_2, we add $\zeta_6(\text{magnitude} \times \text{uncertainty})_{jh}$ to the equation and test its significance. Model 8 in Table 3 shows that the interaction is significant and negative ($\zeta_6 = -.044$, $p < .05$). We estimate the change in the turning point using the same approach we reported in Study 1. The result again confirms H_2, as the change in the turning point is negative and significant ($b = -.301$, $p < .05$).

Salesperson characteristics as moderators. To test the moderating role of past performance success and salesperson experience, we extend Model 8's equation and test ζ_{11} and ζ_{16}. Model 10 in Table 3 shows that ζ_{11} is negative and significant ($\zeta_{11} = -.058$, $p < .05$), in support of H_4. By contrast, ζ_{16} is not significant ($\zeta_{16} = .016$, $p > .10$) and thus does not support a shifting effect, as postulated in H_5. Instead, we find a significant, negative curvilinear moderating effect of salesperson experience ($\zeta_{17} = -.070$, $p < .01$), suggesting a flipping effect.

We performed several additional robustness checks of our results. First, we used the Wilcoxon rank-sum test ($p = .270$) to compare respondents and nonrespondents. The tests showed no significant differences between respondents and nonrespondents, alleviating concerns about self-selection bias in our sample. Second, results from Ramsey's regression error specification test (RESET) ($\chi^2 = 1.14$, $p = .285$) alleviate concerns about omitted variables. Third, the maximum variance inflation factors is 3.62, well below the threshold value of 10 (Hair et al. 2003), indicating no multicollinearity issues. Fourth, to test heteroskedasticity we conducted the Cameron–Trivedi test ($p = .337$) and Breusch–Pagan test ($p = .269$), neither of which was significant, thus alleviating concerns about heteroskedasticity in our results.

Discussion

The results of Study 2 not only corroborate the key findings of Study 1 in a different context but also reveal the boundary conditions of salesperson calibration. Figure 4, Panel A, reveals that high past performance success triggers COR, whereas low past performance success provokes more risk-seeking behavior. Salespeople with high past performance success perform best under low uncertainty, whereas those with low past performance success do better under high uncertainty (see right-hand and left-hand sides, respectively). Figure 4, Panel B, shows that highly experienced salespeople perform best under the most challenging situations (low/moderate opportunity magnitude; high conversion uncertainty). However, the left-hand side shows that for inexperienced salespeople, high conversion uncertainty dampens quota achievement significantly. These findings suggest that less experienced salespeople tend to conserve resources under high conversion uncertainty, whereas highly experienced salespeople are more willing to bear uncertainty because they have more resources available.

Study 3: Unpacking the Benefit–Cost Mechanisms in Prospecting

Study 3, a scenario-based experiment, has three objectives. First, we replicate the inverted U-shaped effect of opportunity magnitude on sales performance in a controlled setting. Second, we unpack the underlying benefit–cost mechanism of this effect assumed in Studies 1 and 2. Third, we examine the role of resource slack to show the appropriateness of using COR theory.

Study 3 Hypothesis Development

According to COR theory, salespeople with limited resources are more likely to conserve them than those with abundant resources

Table 3. Study 2: Results (Solution-Selling Context).

	Robust Maximum Likelihood Estimates												
	Model 7			Model 8			Model 9			Model 10			
Portfolio	**b**		**SD**	**b**		**SD**	**b**		**SD**	**b**		**SD**	**Hyp.**
Magnitude (ζ_1)	.042		.043	.040		.043	.057		.041	.098	**	.038	
Magnitude^2 (ζ_2)	−.059	*	.026	−.074	**	.029	−.075	**	.028	−.116	***	.030	H_1
Uncertainty (ζ_3)	−.087	**	.037	−.088	*	.038	−.121	*	.056	−.098		.059	
Past performance success (ζ_4)	.040		.027	.042		.028	.037		.039	.034		.037	
Salesperson experience (ζ_5)	.015		.078	.029		.078	.071		.108	.035		.109	
Moderation Effects													
Magnitude × Uncertainty (ζ_6)	—		—	−.044	*[a]	.025	−.044		.027	−.066	*	.028	H_2
Magnitude^2 × Uncertainty (ζ_7)	—		—	—		—	.026		.016	.018		.013	
Magnitude × Past perf. success (ζ_8)	—		—	—		—	−.051		.037	−.026		.034	
Uncertainty × Past perf. success (ζ_9)	—		—	—		—	−.054		.037	−.012		.043	
Magnitude^2 × Past perf. success (ζ_{10})	—		—	—		—	.007		.026	−.023		.032	
Magn. × Uncert. × Past perf. success (ζ_{11})	—		—	—		—	—		—	−.058	*	.027	H_4
Magn.^{2} × Uncert. × Past perf. success (ζ_{12})	—		—	—		—	—		—	−.022		.016	
Magnitude × Salesperson exp. (ζ_{13})	—		—	—		—	−.107	*	.064	−.142	*	.059	
Uncertainty × Salesperson exp. (ζ_{14})	—		—	—		—	.041		.039	.150	*	.079	
Magnitude^2 × Salesperson exp. (ζ_{15})	—		—	—		—	.024		.041	.075	*	.033	
Magn. × Uncert. × Salesperson exp. (ζ_{16})	—		—	—		—	—		—	.016		.044	H_5
Magn.^{2} × Uncert. × Salesperson exp. (ζ_{17})	—		—	—		—	—		—	−.070	**	.024	
Controls													
Age	.019		.049	.017		.048	.015		.051	.014		.056	
Workload	−.123	***	.038	−.119	***	.037	−.113	**	.038	−.101	**	.038	
Trait competitiveness	.029		.041	.037		.040	.033		.040	.054		.040	
Dummy Govt. & Edu.	−.018		.147	−.020		.148	−.049		.123	−.010		.142	
Dummy Industry & Transport	−.074		.110	−.075		.112	−.134		.107	−.102		.130	
Dummy Services, Retail & Media	.014		.110	.006		.112	−.031		.105	.044		.136	
Uncertainty^2	.054	**	.020	.041	*	.020	.035		.022	.027		.022	
Constant	1.826	***	.087	1.841	***	.089	1.890	***	.079	1.876	***	.100	
Pseudo-R^2	.161			.171			.208			.250			
Log-likelihood	−800.078			−798.029			−793.395			−788.232			
Log-likelihood χ^2 diff. test (d.f.)[b]	—			5.07(1)*			11.33(7)			344.20(4) ***[c]			
N (salespeople)	211			211			211			211			

*$p < .05$.
**$p < .01$.
***$p < .001$; unstandardized coefficients.
[a]To determine the extent of bias in our estimates (Haans, Pieters, and He 2016), we also examined an extension of Model 8 in which we added Magnitude^2 × Uncertainty (ζ_7) to our equation. The results show that the coefficient of this interaction is not statistically different from zero ($\zeta_7 = .018$, $p > .10$) and does not improve model fit ($\chi^2_1 = .660$, $p > .10$). See also Web Appendix W7.
[b]When using the MLR estimator in Mplus, a log-likelihood difference test statistic is calculated using log-likelihoods and scaling correction factors for the null and alternative models.
[c]Model fit of Model 10 is also significantly better than that of Model 8 ($\chi^2_1 = 41.97$, $p < .001$).
Notes: Magnitude = opportunity magnitude; uncertainty = opportunity conversion uncertainty.

(Halbesleben et al. 2014; Hobfoll 1989). For the former, small opportunities do not provide significant resources, whereas large opportunities are prohibitively resource straining. Thus, the indirect negative effect of opportunity magnitude on willingness to pursue an opportunity through costs is amplified when salesperson resource slack is limited. For these salespeople, the total indirect effect of opportunity magnitude through benefits and costs follows an inverted U-shape. By contrast, salespeople with high resource slack are motivated to pursue larger opportunities because they have the resources and, by mobilizing them, can gain even more resources (Halbesleben et al. 2014). For these salespeople, the total indirect effect of opportunity magnitude through benefits and costs is convex. Thus,

H_6: Salesperson resource slack buffers the negative effect of costs on salesperson willingness to pursue an opportunity. As a corollary, the total indirect effect of opportunity magnitude on salesperson willingness to pursue an opportunity follows an inverted U-shape only when salesperson resource slack is low.

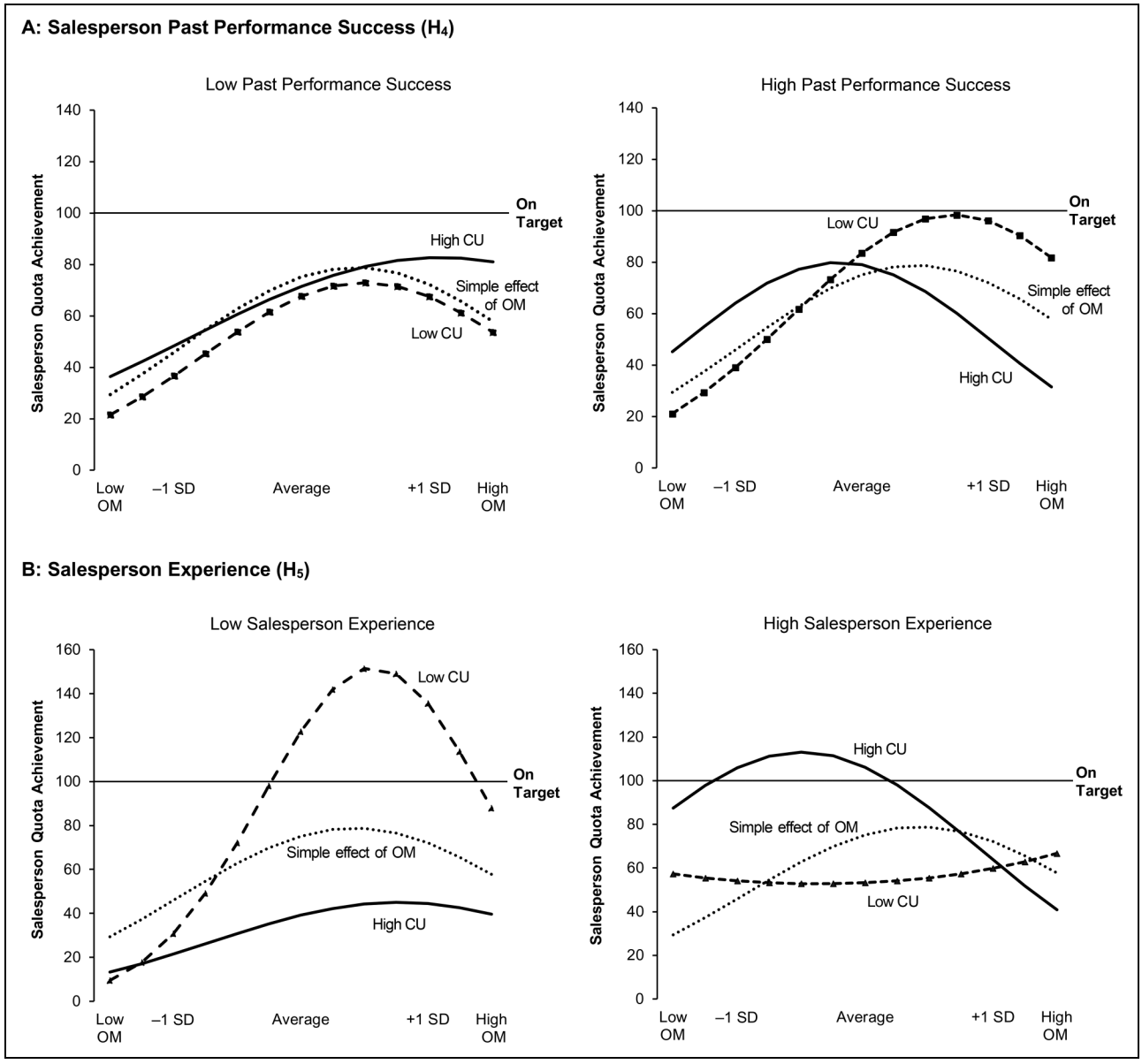

Figure 4. Study 2: three-way moderating effects (opportunity magnitude × opportunity conversion uncertainty × salesperson characteristics).
Notes: High/low moderator values = ±1 SD. CU = conversion uncertainty; OM = opportunity magnitude.

Method and Results

Sample and procedure. Given the consistent findings of an inverted U-shape across levels, in Study 3 we focus on the prospect level. We partnered with a prominent market research firm to access a diverse panel of salespeople from various industries. The research firm randomly recruited 216 experienced salespeople (64% 36–45 years of age, 62% male, 53% in the information technology industry) for our between-subjects experiment.

We then randomly assigned them to one of five scenarios. Each scenario informed participants that they were assigned a territory where the typical revenue of a prospect was $50,000. We included this portfolio baseline information to ensure the design matches with Study 1 and real-life selling contexts. They identified a new sales lead (Prospect A) with a specific opportunity magnitude. In line with data from Study 1, we set the opportunity magnitude at five levels: $1,000, $10,000, $50,000, $250,000, and $1,000,000. After participants read the scenario, we assessed their willingness to pursue Prospect A, anticipated costs, and anticipated benefits on a seven-point scale (1 = "strongly disagree," and 7 = "strongly agree") and their resource slack for prospecting activities. We used the natural variation of salespeople's resource slack in their jobs, as previous research shows that resource slack affects people's framing of costs and benefits in decision making (Zauberman and Lynch 2005). Post hoc tests indicated that resource slack was not differently distributed between treatment groups ($F = .30$; $p > .10$), thereby providing evidence that the

manipulation itself did not affect participants' perceptions of resource slack. We included the manipulation check, attention and realism checks and demographic questions.

Results. Analysis of variance revealed significant between group differences in willingness to pursue the prospect ($F(4, 211) = 2.835$, $p = .025$). Specifically, willingness to pursue is significantly greater ($p < .05$) in the \$50,000 condition (5.50) than in the small (\$1,000; 4.75) or large (\$1,000,000; 4.96) conditions. Thus, we replicate the inverted U-shaped effect of opportunity magnitude found in Studies 1 and 2. We then specified the path model of the Study 3 panel in Figure 1. We find that the effect of costs on willingness to pursue is contingent on resource slack ($b = .242$, $p < .01$). To test the mediating benefit–cost mechanism and the COR effect, we examined the "instantaneous conditional indirect effect" of opportunity magnitude on willingness to pursue, with salesperson resource slack as the moderator (Hayes and Preacher 2010). The results show that when resource slack is low, the total indirect effect of opportunity magnitude through the two mediators is only significant at moderate levels of opportunity magnitude ($\theta_{opp.mag=2} = .111$, $p < .05$). When resource slack is high, moderate to high levels of opportunity magnitude translate significantly into willingness to pursue ($\theta_{opp.mag=5} = .202$, $p < .01$). These results lend support to H_6 and our contention that, under resource constraints, the inverted U-shaped effect of opportunity magnitude operates through the benefit–cost mechanism. For further details, see Web Appendix W8.

General Discussion

Integrating decision-making and COR theories, we develop and test a framework of salesperson decision making when prospecting in three multimethod studies. Together, the empirical evidence explains why salespeople avoid big-whale sales opportunities.

Theoretical Contributions

Our research stems from the idea that salespeople differ from participants in studies that focus on low-effort, constraint-free, and repeatable choices (Lam and Van der Borgh 2021). First, the potential benefits—extrinsic and/or intrinsic—of salespeople's decisions are consequential rather than trivial. Second, given their resource constraints and the ephemeral nature of sales opportunities, their costs—explicit and/or implicit—are not negligible. Third, their decision-making context abounds with uncertainties. Our findings confirm and provide novel insights into the theoretical importance of these differences for research on salespeople's decision making, especially when prospecting.

Benefit–cost analysis in salesperson prospecting. We provide strong empirical evidence that in deciding on which opportunities to pursue, salespeople conduct a benefit–cost analysis based on their initial judgment of opportunity magnitude. We show that the relationship between initial judgment of opportunity magnitude and actual conversion follows an inverted U-shape, regardless of selling task (product vs. solution selling) and information level (prospect vs. portfolio). This finding debunks the intuition that salespeople gravitate toward big-whale opportunities, an insight that extends current understanding of salesperson prospecting behavior. Our result also confirms that salespeople's initial judgment of opportunity magnitude exerts a strong impact on their subsequent behavior and performance, even after controlling for transient phases. This finding complements prior research on salesperson intuition (Hall, Ahearne, and Sujan 2015) and on primacy and anchoring effects (Tversky and Kahneman 1974).

Salesperson calibration for conversion uncertainty. We also found that solution-selling salespeople take into consideration opportunity conversion uncertainty in their benefit–cost analysis. Due to this calibration, the inverted U-shaped relationship between opportunity magnitude and performance shifts to the left. This shift implies that salespeople are generally more risk-seeking when opportunity magnitude ranges from small to moderate and risk-averse when opportunity magnitude is large. The counterfactual analyses we conducted show that the calibration effect reduces misspecification of conversion rates by up to 100%, when compared with the estimates from a compensatory decision strategy in which uncertainty is simply factored in as an extra cost. This finding provides a more nuanced understanding of the differences between salespeople's decision-making strategies (i.e., calibration vs. compensatory) when prospecting. Furthermore, it joins two separate streams of research on salesperson decision making, one focusing on salesperson judgment of demands and the other on uncertainty.

Selling contexts and calibration. Compared with product selling, solution selling is full of uncertainties (e.g., need, process, outcome; Ulaga and Kohli 2018). Although these uncertainties are likely to influence salesperson behavior, salesperson behavior and decision making in solution selling has not received much academic research. We contribute to the literature by showing that salespeople indeed use different decision-making strategies in solution selling versus product selling. Specifically, they rely on a calibration decision-making strategy only in solution selling and only at the portfolio level. At the prospect level, regardless of the selling context, salespeople assess each individual opportunity relative to their portfolio baseline in terms of magnitude and conversion uncertainty using a compensatory strategy in which a large magnitude can make up for high uncertainty (and vice versa).

Salesperson characteristics and calibration in solution selling. We find that salesperson past performance success and salesperson experience are important contingencies of salespeople's decision-making process under uncertainty (i.e., calibration). The interaction plots (Figure 4) suggest that salespeople who have achieved past performance success and/or have low experience tend to conserve their resources and become more risk averse when selling

solutions. They perform better under low or average than high conversion uncertainty conditions. Experienced salespeople are able to overcome this cautious approach.

Our findings also address the contrast between the COR perspective (Hobfoll 1989) and the risk-seeking perspective based on research on risky choice, such as gambling (Thaler and Johnson 1990). While the latter perspective is not specific to the selling context, the COR argument is uniquely relevant to the personal selling context, as it accounts for the notions that (1) salespeople are subject to resource constraints and their efforts are costly and (2) salespeople need to conserve resources to avoid stress in the long run (Sabnis et al. 2013). Therefore, researchers who apply decision-making theories to the context of personal selling will benefit from accounting for the uniqueness of salespeople as decision makers.

Information level and calibration. Our findings highlight a dual information-processing framework in salesperson decision making when prospecting for solution-selling opportunities (Sherman, Beike, and Ryalls 1999; Tversky and Kahneman 1974). Under these conditions, we find that salesperson performance is a function of two processes. At the prospect level, salespeople rely on a simple compensatory model in their decision making, such that a large magnitude can make up for high uncertainty (and vice versa). At the portfolio level, they integrate information about both the magnitude and uncertainty of the prospects they targeted in a more complex calibration model. In this decision-making strategy, conversion uncertainty interacts with opportunity magnitude in driving salesperson portfolio performance. This insight is a meaningful step toward a better understanding of salespeople's prioritization of resources and the importance of considering salesperson characteristics in prospecting. It also sheds first light on potential differences between findings at the prospect level and those at the portfolio level (i.e., a lack of homology) and calls for additional multilevel research of this kind.

Managerial Implications

Our findings provide both managers and salespeople with several new insights into salesperson decision making when prospecting. We underscore key performance implications of our findings by simulating several what-if analyses using the parameters from our results.

Managing salespeople's avoidance of large opportunities. The results from three studies consistently show that, all else being equal, salespeople are likely to gravitate toward medium-sized opportunities, leaving smaller and larger opportunities unattended. Using simulated data from Study 1, we find that a salesperson with a prospect whose magnitude equals their baseline opportunity magnitude of ~$26,750 will have an 86.5% probability of successful conversion. Yet receiving a new prospect that is 1 SD larger in terms of magnitude (~$143,250) will decrease the conversion odds by more than 15%. This effect is due to the propensity to conserve resources when there are constraints, as Study 3 further shows that the anticipated costs only affect salespeople's pursuit of large prospects when operating under resource constraints.

Thus, to assuage salespeople's avoidance of big-whale deals, managers can leverage their firms' CRM databases. Specifically, a manager can use historical CRM data to calculate the baseline estimates of opportunity magnitude (and conversion uncertainty) for *each salesperson*. Then, the manager can use this information to match marketing-generated prospects with a salesperson's portfolio baseline, because a large difference in opportunity magnitude between a new opportunity and the salesperson baseline is demotivating and decreases conversion success. Furthermore, when necessary, managers should alter salespeople's benefit–cost calculus when prospecting. For example, they should provide salespeople who work on relatively large opportunities with extra benefits (both extrinsic and intrinsic) and additional resources (to relax the resource constraints), thereby increasing the likelihood of conversion. In addition, managers could pair salespeople with peers with larger portfolio baselines to create ad hoc sales teams to follow up. Such a temporary arrangement can reduce the costs for the focal salespeople.

Salesperson calibration for conversion uncertainty in solution selling. Our findings show that salespeople's decision-making strategy differs between solution and product selling. For product selling, salespeople rely on a compensatory decision-making strategy at both prospect and portfolio levels. For solution selling, however, they rely on a calibration decision-making strategy, which is noncompensatory in nature, with conversion uncertainty acting as the calibrator of opportunity magnitude at the portfolio level. This calibration effect underscores the important role of portfolio-level information, in terms of both magnitude and conversion uncertainty, in salesperson decision making for solutions. Thus, sales managers should pay close attention to this important "between-salespeople" difference when reallocating prospects for maximum effect. Continuing with the previous example from the simulated data, a sales manager could intuitively decide to allocate the solution-selling prospect of ~$143,250 to a salesperson with a portfolio baseline magnitude of about the same size (i.e., ~$143,250). However, if this salesperson's portfolio baseline conversion uncertainty is 1 SD higher, the probability of closing the deal decreases by 36.2%. To reduce conversion uncertainty, managers can play an active role by, for example, using more behavior-based control to curtail salespeople's pursuit of highly uncertain opportunities and providing them with more frequent feedback. Firms can also leverage advanced sales analytics capabilities to decrease uncertainty in opportunity costs and train salespeople how to use the information in their prospecting decisions.

Boundary conditions of conversion uncertainty calibration for solution selling. Our results indicate that past performance success and experience can alter the way salespeople calibrate for conversion uncertainty. Thus, these two variables are important for managers as well as salespeople. In a post hoc analysis, we used Study 2's results to predict salesperson quota achievement

Table 4. Study 2: Managerial Insights into Boundary Conditions of Salesperson Prospecting in Solution Selling.

A: Post Hoc Analysis for Study 2

Moderating Role of Salesperson Past Performance Success (H_4)

	Low Past Performance Success (−1 SD)			High Past Performance Success (+1 SD)		
	Conversion Uncertainty			Conversion Uncertainty		
Magnitude	**1 SD Lower**	**Average**	**1 SD Higher**	**1 SD Lower**	**Average**	**1 SD Higher**
1 SD lower	36%	40%	48%	39%	50%	64%
Average	68%	67%	71%	84%	81%	79%
1 SD higher	67%	76%	83%	96%	70%	50%

Moderating Role of Salesperson Experience (H_5)

	Low Salesperson Experience (−1 SD)			High Salesperson Experience (+1 SD)		
	Conversion Uncertainty			Conversion Uncertainty		
Magnitude	**1 SD Lower**	**Average**	**1 SD Higher**	**1 SD Lower**	**Average**	**1 SD Higher**
1 SD lower	29%	28%	27%	54%	76%	106%
Average	106%	75%	53%	53%	75%	106%
1 SD higher	118%	84%	60%	60%	62%	64%

B: Managerial Takeaways

Observation from Data	Suggested Managerial Action
Regardless of past performance success, salespeople's quota attainment is worst when they gravitate toward highly certain but small opportunities.	Point out the importance of "bread-and-butter" prospects, as salespeople may ignore them while such prospects could be of strategic importance.
Salespeople with greater past performance success perform relatively well when portfolio opportunity is large and conversion uncertainty is low.	Give these salespeople a large portfolio but also help them reduce conversion uncertainty (to help them conserve resources).
Salespeople with lower past performance success tend to perform better for relatively larger and more uncertain portfolios.	Give these salespeople a larger, more uncertain portfolio to challenge them, while also providing opportunities to recuperate from poor past performance.
Inexperienced salespeople perform better for relatively larger, but certain portfolios.	Reduce conversion uncertainty (e.g., via information provision, training) and provide them with larger portfolios.
Experienced salespeople tend to perform especially well for relatively small to moderate portfolio magnitude with relatively high conversion uncertainty.	Challenge these salespeople with opportunities that have high conversion uncertainty, while ensuring the portfolio itself is not too large.

Notes: 100% = on-target performance. Shaded boxes reflect higher levels of quota achievement.

under various combinations of levels of salespeople's past performance success and experience (±1 SD as high and low values). Drawing on the results summarized in Table 4, Panel A, we derive the most effective managerial actions for managing salesperson prospecting in Table 4, Panel B. Three insights are worth noting. First, regardless of past performance success, salespeople's quota attainment is the worst when they gravitate toward highly certain but small opportunities. Second, salespeople who performed well in the past are most likely to "hit" quota again when the portfolio opportunity is large and conversion uncertainty is low (96%). Nevertheless, these high performers become average performers when conversion uncertainty and portfolio magnitude are average (ranging from 50% to 79%). Therefore, an effective way to manage high performers' prospecting is to give them a large portfolio but also help them reduce conversion uncertainty. This combination allows them to conserve resources while also maintaining high levels of performance. By contrast, salespeople who performed poorly in the past can achieve a quota attainment as high as 83% when they have a large portfolio and conversion uncertainty is high. The increase in opportunity magnitude is more motivating to these poor performers—they are willing to exert greater efforts without conserving resources to prove themselves. Thus, an effective, but perhaps counterintuitive, way to manage poor performers' prospecting is to give them a larger, more uncertain portfolio to challenge them.

Third, when conversion uncertainty is reduced, inexperienced salespeople who handle a large portfolio can go from zero to hero, as their quota attainment increases from 60% to 118%. Inexperienced salespeople also achieve low quota (under 30%) when their portfolio is small, regardless of

conversion uncertainty. Therefore, an effective way to manage inexperienced salespeople's prospecting is to reduce conversion uncertainty and provide them with ample opportunities. By contrast, experienced salespeople do not perform well when their portfolio opportunity is large, regardless of conversion uncertainty (range: 60%–64%). However, they thrive under high conversion uncertainty and when their portfolio is moderate in size, with a quota attainment exceeding 100%. Thus, an effective way to manage experienced salespeople is to challenge them with opportunities that have high conversion uncertainty, while ensuring the portfolio opportunity itself is not too large.

What do these results mean for salespeople? Our results show that salespeople need to be cognizant of potential biases created by their past performance success and experience. This is because these biases can significantly improve or impair their sales performance, as indicated by the aforementioned potential gains and losses in quota attainment. By changing the benefit–cost analysis and reducing factors that drive conversion uncertainty (e.g., learn from peers, ask managers for support, form ad hoc teams), salespeople can become more effective in closing big-whale deals and hitting their targets despite conversion uncertainty.

Limitations and Future Research Directions

While our research covers three empirical contexts and our data came from multiple sources, this article has several limitations. First, although opportunity magnitude and conversion uncertainty are two of the most important factors in salesperson decision making, they are by no means the only factors. In our research, we included several contingencies and control variables to account for heterogeneity. Nevertheless, we urge further research to consider other aspects as contingencies of salesperson calibration, such as salesperson perceptual accuracy in forming judgments of opportunity magnitude and uncertainty, customer characteristics, competition, and the source of the sales leads (Payne, Bettman, and Johnson 1992; Sabnis et al. 2013). Future research could also explore how managers can influence salesperson calibration (e.g., through incentives, by changing baseline conversion uncertainty via altering the composition of self-generated and assigned leads). Moreover, the nature of uncertainty itself and how it affects judgment and decision making could be further explored. Second, we focus on portfolio baseline magnitude and conversion uncertainty as the frames of reference for how salespeople form relative comparisons of prospects in their portfolios. Although this focus is both theoretically and empirically justified, further research could examine other reference points as suggested in the judgment–decision making literature (e.g., sales goals, status quo, minimum requirement). Other measures of magnitude, such as customer lifetime value, could also be examined.

Third, we control for several time-related effects in Study 2 but did not examine the dynamics. Although the first impression generally serves as the anchor point, people adjust their anchors as they receive new information (Tversky and Kahneman 1974). Further research could examine how salespeople update their judgment of uncertainty over time by exploring how this effect manifests itself in salesperson prospecting. Fourth, we focus on salesperson past performance success and salesperson experience as moderators, but other moderators may exist, such as control systems and training. Finally, although theoretical arguments exist in support of the moderating role of salespeople's past performance success and experience, future research could explicitly test how these contingencies influence the underlying benefit–costs analysis.

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