

# SUCCESSFULLY BIDDING FOR ONLINE PROJECTS: THE IMPACT OF PROJECT-FOCUSED MESSAGES

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## Abstract

*When searching for projects on online platforms, potential bidders (providers) have minimum search costs and therefore can bid for new projects quite easy and fast. To strengthen their profile, they typically complement their actual bid with a cover letter. This letter contains either a rather project-focused and bid-specific message or it is more general, trying to enhance the provider's profile more generally. In this paper, we study if and how the message complementing a provider's bid affects his chance to win a project via an online project platform. Based on data collected from the platform getacoder.com, we study more than 13,000 bids from over 900 projects. In brief, we find that bids with a project-focused message are more likely to be selected by a client. Referring to the importance of the communication strategy during the negotiation phase, we complement Gefen and Carmel (2008), who – using a similar approach – investigated mainly the impacts of location and reputation on winning projects offered online.*

**Keywords:** Online Project Platform, Bid Message, Real Data Analysis

## 1. Introduction

Online project platforms<sup>1</sup> offer projects providers and contractors a market-like approach for allocating projects to bidders; the project is awarded to the most competent bidder. On such platforms, a client contracts a provider to perform a project – for a fixed amount (usually with milestone payments) or on an hourly basis.

Online project platforms serve clients that want to 'outsource' projects, as they bring them together with providers (Aspray et al. 2006; Lin et al. 2010; Niederman et al. 2006; Prikladnicki et al. 2007). As intermediaries, they set up the contact and contractual issues within outsourcing transactions. Thus, they typically allow for reducing the client's costs of IT and administrative related operations (Caraway 2010). Further, they may help with handling HR-related tasks and operational growth (Ketler and Walstrom 1993) beyond offering core software development services, technical writing, data entry, or virtual assistant support. Well-known platform

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<sup>1</sup> In this paper, we use the term 'online project platform' for platforms that connect clients seeking to outsource projects with providers.

examples include elancer.com, odesk.com, guru.com, vworker.com (formerly rentacoder.com), and getacoder.com.

When researching outsourcing decisions, several authors (Aubert et al. 2004; Bahli and Rivard, 2003; Chang et al. 2012; Ellram et al. 2008; Loebbecke and Huyskens 2006; Logan 2000) have drawn upon transaction cost and agency theory (e.g., Eisenhardt 1989; Williamson 1995). In particular, considering principal-agent settings, Bolton and Dewatripont (2005) as well as Snir and Hitt (2004) have investigated the impact of loyalty and previous relationships. Gefen and Carmel (2008) started with investigating the role of the provider's location, especially with respect to potential labor arbitrage. Lin et al. (2010) studied how different contract forms change the importance of providers' reputation for winning a project. Others (Fjermestad and Saitta 2005; Gonzalez et al. 2006a; Lacity et al. 2010; Pallais 2012; Sidhu and Volberda 2011) have analyzed communication and cultural facets in the context of awarding projects online.

In our project, we focus on one specific communication aspect. We investigate the provider's message included in his bid description. In particular, we study if and how a provider's communication strategy during the early negotiation phase drives a client's decision to award him a project on an online project platform. This issue gains importance with the increased availability of online project platforms and the increasing number of clients and providers using those platforms.

For providers, online project platforms simplify search for projects as they make them available in a standardized, categorized, and searchable way, thus lowering their transaction costs. Providers themselves often reduce their transaction costs further by making use of template bid description which offers the fast and easy placing of bids. When using bid templates, providers frequently apply for many offerings in order to increase their chance of gaining at least one new project.<sup>2</sup>

Clients, however, in their desire to reduce their transaction costs, aim at reducing the bid number and thus the required effort to evaluate the bids. They typically dislike generalized bid descriptions based on templates; they may even consider them as a proxy for sorting out unqualified or unwanted providers. To shortlist applicants, some clients even adopt a 'read-check' approach asking potential bidders to write a code-word to ensure that they have indeed read the description and are aware of the project requirements.

We organize the remainder of this paper as follows: Section 2 outlines the research setting and develops our research hypotheses. Section 3 describes our data collection, before Section 4 presents the descriptive statistics of our sample. Section 5 introduces the empirical model. Section 6 shows the results, and Section 7 concludes with a summary and suggestions for future research.

## **2. Research Setting and Hypotheses**

We consider activities on online project platforms as research setting. A client advertises a project with the description, a budget range, and the bidding deadline. A set of providers bid for the project, each with a bid amount, delivery time and a bid description. The client tries to minimize the risk of choosing an inappropriate provider while not knowing much about any of

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2 Empirical data underline such bidding behavior although Gefen and Carmel (2008) point out that previously having lost bids damages a provider's reputation – which is crucial for winning a bid.

them beyond the bid amount, the message included in the bid, and the provider's reputation – in the form of past client feedback. Focusing on the early negotiation phase, we assume a provider's experience, capabilities, and productivity to remain constant.

Further, we assume due to time constraints, a client would benefit from minimizing search and contract costs (Gurbaxani and Whang 1991; Yoo et al. 2011). We therefore expect that the client looks for a shortlist of adequately qualified providers who have included a concrete, project-focused message, referring in detail to the project description. Alternatively, he may find a rather general message written introducing the provider, but not relating to the proposed project. We hypothesize that a client's decision to award a project to a certain provider is impacted by the *type of message* contained in the bid. Thus we have:

*H1: Inclusion of a project-focused message in the bid increases likelihood of winning the contract.*

As we aim at extending previous works, we design our study to specifically control for a provider's reputation (which defines the communication approach of the provider when bidding for a project) and his location.

*Provider reputation* impacts a client's selection decision (e.g., Wang 2002). It acts as a form of warranty that the project will be completed according to the specifications and that the probability of future contract enforcement costs is minimal. Therefore we hypothesize:

*H2: The higher a provider's reputation, the higher is the likelihood of provider's encapsulation of a project-focused message.*

*Location* as a control factor relates to the effect the provider's location has on the clients' selection decision. We distinguish between purchase power differences and culturally different communication styles. Based on the idea of global labor arbitrage (Roach 2003), the value of a typical hourly compensation depends on the purchase power of the residence. Purchase Power Parity (PPP) adjustments reflect such location dependent differences (e.g., Gefen and Carmel 2008; Taylor 2003). Considering the client's selection process at the core of our study, we hypothesize:

*H3: The lower the difference of gross domestic product at purchasing power parity ( $GDP_{PPP}$ ) per capita between client and provider, the higher is the likelihood of provider's encapsulation of a project-focused message.*

### 3. Data Collection

We developed a self-programmed web crawler to collect unbiased, objective, real-world data from the GetACoder website ([www.getacoder.com](http://www.getacoder.com)).<sup>3</sup> To gain insight into the location of clients and providers, we also consulted a traffic analysis provider (Alexa.com).

Figure 1 depicts a typical GetACoder list of projects that are open for bidding.<sup>4</sup> By clicking on the title of a project, one sees the project description and the list of the bids. Client and provider pseudonyms allow for identifying previous relationships based on the project timestamp. The

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<sup>3</sup> For a comparable approach see Gefen and Carmel (2008).

<sup>4</sup> Clients can choose between listing their project publicly with open bidding or a private listing where they invite providers to bid.

GetACoder website also shows a provider's earnings gained via GetACoder and the number of projects he has completed via GetACoder so far.

JOB METER						
USD 1 4 0 , 5 0 8 , 8 9 6						
Estimated Value of Jobs Posted Since 2004						
Title	Type	Average	# Bids	Category	Started	Status
<a href="#">Content Writing</a>	Project	\$0.00	0	Creative Writing , Writing	23 mins ago	
<a href="#">Data Scrape</a>	Project	\$0.00	0	Miscellaneous , Programming	1 hour ago	
<a href="#">Appcelerator Titanium Demo</a>	Project	\$0.00	0	Javascript	2 hours ago	
<a href="#">Appcelerator Titanium Support</a>	Hourly (1 mo)	\$0.00	0	Android , Blackberry/RIM , Javascript	2 hours ago	
<a href="#">CodeIgniter Developer</a>	Project	\$400	2	CSS , PHP , Programming , Website Development , Website Programming	2 hours ago	
<a href="#">Website Complete Re-design</a>	Project	\$913	6	Ecommerce Website , Web Design / Development	4 hours ago	

**Figure 1: GetACoder listing of projects open for bidding (Example)**

Starting with GetACoder's publicly available *listings of closed projects* (for which a winning provider was selected), we collected data regarding the project description, covering project budget (with minimum and maximum) and the client's location. From the *list of bids*, we collected the client's bid amount, each provider's pseudonym, his reputation (from 1=worst to 10=best), his location<sup>5</sup>, and his suggested delivery time. To *identify the winning bids* from the lists of bids, we examined the feedback and time related variables on the client's feedback page. Based on the time of the provider's rating for a client and the project delivery time, we searched for the provider's pseudonym on the client's feedback page.

During ten days (2012-03-11 to 2012-03-21), we collected data for 3,605 projects that were IT-related and requested a fixed-amount bid (filtering out hourly paid projects). From those 3,605 projects, 1,548 were closed (bidding time ended). For  $N_p=911$  of those 1,548 closed projects, we could identify the winner. These  $N_p=911$  projects received  $N_b=13,473$  bids. We could only monitor publicly listed projects. We had to exclude cases where we could not identify the winner because the bidding process was private (invitation only) and or still open.

In the next step, we evaluated whether the bid description contained a project-focused message or not. To that end, we used binary coding (1 for yes, 0 for no). We used human raters to assess whether the cover letter was targeted and therefore applied inter-rater agreement statistics to analyze the collected data and the raters' assessments. In more detail, twelve raters were recruited from a pool of laboratory assistants (University of Frankfurt, Department of Informatics). Using an online system, the raters coded if a bid description contained a project-focused message or not. They processed messages in chunks of three. To measure inter-rater agreement, we used a matrix-based evaluation system and computed kappa statistics (Mackinnon 2000). The raters had

<sup>5</sup> Based on the location, we used the Gross Domestic Product at Purchase Power Parity (GDPPPP) per capita provided by the International Monetary Fund (2012) to calculate the relative importance of the bid amount for the provider in terms of purchase power.

taken a separate training session with coding five messages each, before we assigned them to the standard rating.

We compared each rater evaluation with the one supplied by another rater. In case of agreement, the raters continued with the next message and both raters received one point in their accounts – based on an exchange rate of 100 points equaling USD 12.5. In case of a disagreement between two raters, a third rater was asked to evaluate the message; the 'wrong' rater was penalized by deducting one point from his account balance. The average compensation for a rater was about USD 43. On average, raters evaluated 1,822.2 reviews during a period of two weeks for the total of  $N_b=13,473$  bid messages in our database. With  $\kappa=0.92$ , the average agreement between the raters was high (Carletta 1996).

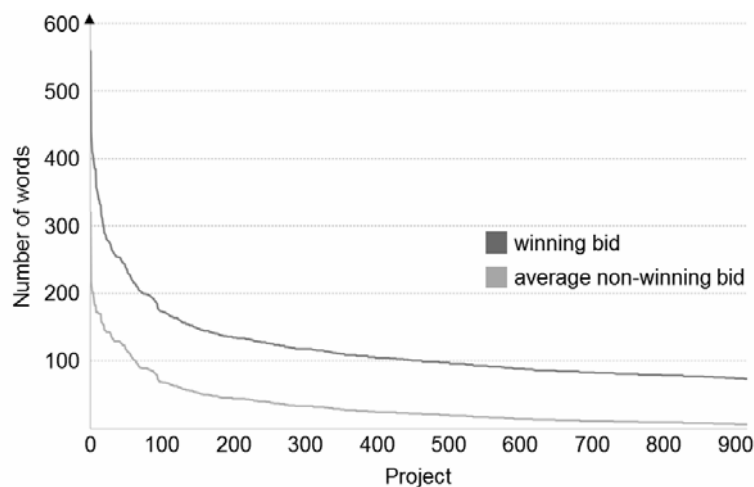
#### 4. Descriptive Statistics

We show the descriptive statistics for winning projects in Table 1.

Variable	Mean	Std. Dev.	Min	Max
<i>Project Related Variables</i>				
Minimum budget (in USD)	183.120	572.740	0	5,000
Maximum budget (in USD)	510.474	1,375.014	0	10,000
Average bid offer (in USD)	416.351	1,078.922	0	17,400
Winning bid amount (in USD)	335.858	908.293	1.5	15,000
Number of bids	16.132	16.643	1	84
Number of words in project description	104.038	130.573	1	1,267
<i>Client</i>				
Client feedback	6.7	4.6	0	10
Client GDP per capita adjusted for PPP (in USD)	37,661	16,935	0	89,000
<i>Provider</i>				
Contracted delivery time (days)	8.426	11.924	0	90
Provider finished projects in total	40.627	43.380	0	214.0
Provider's overall feedback (from 1=worst to 10=best)	8.7	2.7	0	10
Provider's earnings (in USD)	5,945.872	7,966.526	0	44,124.0
Provider feedback before bidding for the project (scale 1-10)	8.6	2.9	0	10
Provider earnings before bidding for the project (in USD)	176.969	218.129	0	2,500
Provider GDP <sub>PPP</sub> per capita (in USD)	6,103	13,086	497	64,000
<i>Client - Provider</i>				
Difference in GDP <sub>PPP</sub> per capita (in USD)	31,558.390	21,060.990	-48,565.0	87,920.0
Provider worked together with that particular client before (in %)	1.8	3.8	0	1
Client and Provider with the same level of GDP <sub>PPP</sub> per capita (in %)	6	23.7	0	1
<i>Bid messages</i>				
Length of winning message (number of words)	34.250	36.472	6	320
Length of non-winning message (number of words)	5.974	5.476	4	1,257

**Table 1: Descriptive statistics for winning projects ( $N_p=911$ )**

Considering the  $N_p=911$  projects, a project received on average 16 bids. The average minimum project budget was USD 183 and the average maximum one was USD 510. The average bid amounted to USD 416. On average the winning bid was lower than the average bid of the respective project. 1.8% of projects involved a provider and a client who had cooperated before on at least one past project. The average reputation that a winning provider received from a client after project delivery was 8.58 (from 1=worst to 10=best), so the clients' satisfaction with the received service was generally high. The average project delivery time was eight days. Regarding the location, 6% of providers and clients had had the same GDP<sub>PPP</sub> per capita level. The average client GDP<sub>PPP</sub> per capita was USD 37,661 and the average provider GDP<sub>PPP</sub> per capita was USD 6,103. The length of the bid messages across the winning bids (Figure 2) is statistically different between winning and non-winning bids (Mann-Whitney test:  $p=0.000$ ,  $Z=-2.46$ ). About half of the winning bid messages have less than 100 words.



**Figure 2: Distribution of the length of winning and average length non-winning bid description**

As Table 2 shows, 63% of the 911 winning bids contained a project-focused message. However, only 45% of the 12,562 non-winning bids included project-focused messages. The message in the winning bids was higher than the average non-winning bid message in 25.4% of the cases.

Criteria	Count	Percent	Total
<i>Winning bid</i>			911
Containing project-focused message	572	63	
Containing non-project-focused message	339	37	
<i>Non-winning bid</i>			12,562
Containing project-focused message	6,961	45	
Containing non-project-focused message	5,601	55	
<i>Winning vs. non-winning bids</i>	-	-	911
Length of the winning bid higher than the	190	25.4	

**Table 2: Classification of messages for collected bids**

## 5. Model Specification

We use a standard logistic regression approach that takes into account the nominal nature of our dependent variable  $Bid_{(winning - non-winning)}$ . The model is robust in case of variance-covariance inequalities across the groups of categorical variables (Esbensen et al., 2002). This is useful in case ambiguity arises in the categorization performed by the raters. We perform an ordered logistic regression on a gradual basis between two models.

Model 1 does not include the  $\Delta LENGTH_{winning}$ , whereas Model 2 includes  $\Delta LENGTH_{winning}$ . This allows us to evaluate the control effect of the difference on the message length. We consider two following models:

### [Model 1]

$$Bid_{(winning - non-winning)} = \beta_0 + \beta_1 \times PROJECTFOCUSED + \beta_{21} \times LENGTH \\ + \beta_{22} \times \Delta LENGTH_{winning} + \beta_3 \times \Delta_{cp} GDP_{PPP} + Y_{project} + e$$

### [Model 2]

$$Bid_{(winning - non-winning)} = \beta_0 + \beta_1 \times PROJECTFOCUSED + \beta_2 \times LENGTH \\ + \beta_3 \times \Delta_{cp} GDP_{PPP} + Y_{project} + e$$

with

$Bid_{(winning - non-winning)}$	Bid winning or non-winning
$PROJECTFOCUSED$	{0 ("no"), 1 ("yes")}
$LENGTH$	Number of words in the message
$\Delta LENGTH_{winning}$	Word count of winning bid message compared to average word count of non-winning bid message
$\Delta_{cp} GDP_{PPP}$	Difference in GDP per capita adjusted for PPP (in USD) between client and provider location
$Y_{project}$	Project competition measured via number of bids placed, winning bid amount compared to the average non-winning bid amount and the project delivery time
$e$	Error term
$\beta_0$	Constant

We model the probability of a bid winning as a continuous variable between 0 and 1. Thus we can assess the probability of winning a project in a ratio approach with the estimation model. McKelvey and Zavoina's (1975)  $R^2$  provides as an indicator of model fit. We can interpret the coefficients similar to a standard OLS approach.

## 6. Results

We show the result of the logistic regression models for all bids on the collected projects ( $N_b=13,473$ ) in Table 3.

	<b>Model 1</b>	<b>Model 2</b>
$Y1_{\text{project}}$ : Number of bids	-0.0655*** (-22.45)	-0.0678*** (-22.16)
$Y2_{\text{project}}$ : Winning bid higher than the average bid amount	-0.736*** (-8.58)	0.000312*** (5.16)
$Y3_{\text{project}}$ : Delivery time	0.000270* (0.13)	-0.0168*** (-3.76)
LENGTH	-0.00850*** (-7.60)	-0.00452** (-3.01)
$\Delta_{cp}GDP_{PPP}$	0.00000996*** (3.60)	0.00000910** (3.27)
<i>PROJECTFOCUSED</i>	0.182** (2.41)	0.230** (3.05)
$\Delta LENGTH_{\text{winning}}$		-0.599*** (-4.52)
Constant	-0.682*** (-7.58)	-0.858*** (-9.84)
N	13,473	13,473
McKelvey and Zavoina's $R^2$	0.41	0.42

t statistics in parentheses. Levels of significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

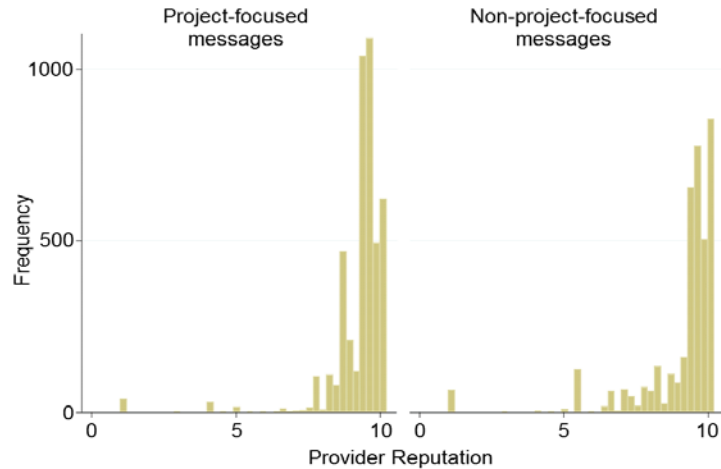
**Table 3: Results of the logistic regression analysis**

As *PROJECTFOCUSED*, the coefficient for the independent variable, is positive and highly significant (*McKelvey and Zavoina's*  $R^2$ ) for both models, we support H1. Including a project-focused message increases the probability to win a project. In turn, higher competition among providers negatively affects the probability to win the project (the number of bids placed for a project and the winning bid amount being higher than the average bid amount, which in turn results in a negative coefficient). Further, a longer delivery time significantly reduces the probability to win a project.

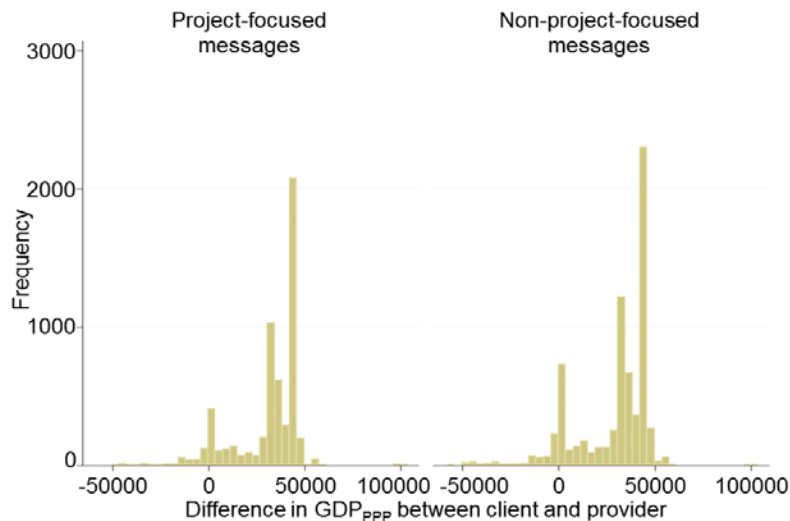
To investigate the relation between a provider's reputation (from 1=worst to 10=best) and the likelihood that his bids contain a project-focused message, we perform a non-parametric Mann-Whitney test ( $p=0.018$ ,  $Z=-2.353$ ). The significant difference, supporting H2, shows that project-focused messages more often come from providers with a better reputation (see Figure 3).

Examining the relation between the difference in income between a clients' and a provider's location ( $GDP_{PPP}$ ) and a bid containing a project-focused message, we performed another Mann-Whitney test ( $p=0.000$ ,  $Z=5.870$ ). Supporting H3, it suggests that non-project-focused messages often come from providers residing in low income economies (see Figure 4).





**Figure 3: Distribution of provider reputation (from 1=worst to 10=best)**



**Figure 4: Distribution of the difference in GDP<sub>PPP</sub> per capita between client and provider locations**

## 7. Discussion and Future Research

With this empirical research using real-world data<sup>6</sup>, we investigated what kind of bidding message would increase a provider's chance of being successful on an online project platform. In particular, we analyzed whether a project-focused message in a provider's bid is advantageous to a rather general one. In summary, we found that bids containing project-focused messages increase a provider's chance to win a project.

Our results show that it is recommendable to clearly target the advertised project with a focused bid and cover letter. We show that the giving into the temptation to 'copy and paste' one's bid

<sup>6</sup> In spite of challenges in sufficiently meeting control factors, we hope to overcome sampling concerns raised with regard to other data collection approaches (e.g., Gefen and Carmel 2008; Gonzalez et al. 2006b).

message using a necessarily general bid template is likely to lead to a disadvantage. While including a project-focused message strengthens a provider's chance to win a project. We find that the average length of 'winning' cover letters is 34 words. Hence we doubt that the time needed to write such letter serves as counter-argument. Rather, we think, bidders might offer 'impulse bids' as we know them from other online auctions buyers and sellers (Ariely and Simonson 2003). Finally, we find a remarkably high level of customer satisfaction (average rating 8.58 on a scale from 1 to 10). Not having data for any sound comparison, we think this maybe explained by the fact that only some online project platforms make the cover letter of the first bid available, i.e. that only those with a satisfaction levels allow other to see.

We complement earlier studies on bidding on online project platforms as we introduced the bid message content as parameter. We controlled for the provider's reputation, so we can neither confirm nor contradict Gefen and Carmel (2008) that reputation, trust, and loyalty are the most important determinants of a client's choice. We cannot comment on their insights that labor arbitrage or a client's preference for domestic providers barely impacts a client's decision for a certain provider.

Of course our study has some weaknesses which we hope to be able transfer into a more advanced future research design. Firstly, the short observation period of ten days might have limited the quality of our insights. One could easily extend the data collection period due overcome above- or below-average competition in the supply or the demand for projects due to seasonality. Secondly, a panel approach may help evaluating a provider's tendency to use the same cover letter on every bid (fixed effect approach). However, when applying a panel approach instead of our design with human raters, one will have to overcome privacy issues that limit investigating subsequent communications between provider and client. Thirdly, we see the risk of two different kinds of selection bias: Only investigating privately listed projects certainly limits the generalizability of our insights. Identifying a winning bid based on a provider's feedback for a client allows us to only include 'successfully finished' projects in our analysis. Whereas data access constraints seem to limit data collection designs in any real world setting, one may want to top for controlled experiments instead. Finally, instead of having human raters assessing bid messages, one may want to use automated text-analysis methods such as readability indexes (Korfiatis et al. 2012) to assess a bid message 'quality' and thus predict the probability for a bid to win or not.

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