# **Product Market Effects of Customer Referencing**

#### **Abstract**

Customer referencing refers to the phenomenon that a firm intentionally reveals its connections to customers to raise its own reputation. In this paper, we rely on textual data about customer referencing in financial reports to examine the association between customer referencing and firms' future product market performance. We first document that a substantial number of firms voluntarily reference customers in financial reports. We find that these firms have a better future performance, consistent with the notion that the customers being referenced certify product quality and enhance a firm's reputation. We also find that the positive association is stronger for firms with a low reputation and those that are risky or facing high product market competition. These results further affirm the product quality certification and reputation enhancement roles of customer referencing. Our study provides new insight into how certification via inter-organizational relationships can be an intangible marketing asset.

**Keywords:** customer referencing; supplier-customer relationships; product market benefits

#### 1. Introduction

Both individuals and corporations tend to enhance their own profiles by disclosing the names of related parties. In the context of marketing, customer referencing is an important and pervasive phenomenon in product market practices. It refers to a company strategically disclosing its connection to customers, either in private or public communications, to demonstrate the credibility and attractiveness of its products or services (Salminen, 1997; Salminen and Möller, 2004, 2006). Customer information is one of firms' most important intangible assets (Srivastava et al., 1998; Gupta and Lehmann, 2003). How firms rely on customer information to influence product market outcomes is an interesting and important question. However, to date no studies have provided any large-sample evidence on how the use of customer information affect a firm's product market performance. One possible reason is that customer referencing occurs through various avenues, such as websites, posters, reference lists/programs, press releases, articles in trade journals, promotional seminars, or even in private communication between the firm and its potential and existing customers. This makes it difficult to systematically obtain comparable data across different platforms to conduct a comprehensive study, including cross-sectional analyses based on product market features, of the relation between customer referencing and product market outcomes.<sup>1</sup>

In this study, we use firm-level textual data on customer referencing in financial reports as a proxy for firms' propensity for the practice. <sup>2</sup> According to the requirements of the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board

<sup>&</sup>lt;sup>1</sup> Examples of customer referencing can be found on the websites of large firms, including IT firms such as Microsoft, Dell, IBM, SAP and Sun Microsystems; industrial technology providers such as ABB; and service providers such as Eaton. An example of Microsoft's Customer Reference Program can be found at: <a href="https://www.microsoft.com/hk/casestudies/">https://www.microsoft.com/hk/casestudies/</a>. Appendix A provides examples of referencing via websites and other channels.

<sup>&</sup>lt;sup>2</sup> The use of textual data to measure firm-specific conditions, especially when the conditions are difficult to proxy for using traditional techniques, has become increasingly common in the literature. For example, Li, Lundholm and Minnis (2012) develop a measure of competition based on management's disclosures in their 10-K filings and find that firms' rates of diminishing marginal returns on new and existing investment vary significantly with their measure. While admittedly noisy, the measures the paper develops permit the study of interesting economic phenomena.

(FASB), firms must disclose major customers if their purchase amount accounts for 10% or more of the firm's total annual sales. However, while the disclosure of major customer information is driven by compliance, a significant number of firms voluntarily disclose customer information even if sales to these customers do not reach the cutoff. In this paper, we employ the customer information voluntarily disclosed in financial reports to proxy for firms' propensity for customer referencing, and then to investigate how customer referencing affects firms' product markets and financial performance. In addition to allowing for systematic (and replicable) data collection, another advantage of using the customer disclosure in financial reports to study customer referencing is that the data is available for 1976 onwards. Appendix B provides an illustration of such disclosure in financial reports.

The hypothesis on the product market effect of customer referencing is not without tension. On the one hand, under the proprietary cost argument, when a firm discloses information about its customers, competitors can scrutinize the information and determine whether they can use it to gain their competitive advantage in their product market. For example, competitors may induce the disclosed customers to switch to them. The potential loss of customers, as well as the costs of retaining customers (e.g., lower prices, higher marketing expenses and more customer support) can adversely affect a firm's future performance (e.g., Fudenberg and Tirole, 2000; Esteves, 2009; Naumann et al., 2010). In addition to competitors' actions, customer referencing could drive away customers that prefer privacy. For example, a customer may wish to avoid being disclosed due to possible adverse information spillover effects, should the firm face difficulties (Chen et al., 2013; Cen et al., 2014). Hence, proprietary costs channel predicts a negative effect for customer disclosure on firm performance.

On the other hand, customer referencing may lead to a better future performance due to customer certification of a firm's quality. First, current customer contracts can serve to certify a firm's product or service quality and properties by showing that it has successfully passed through current customers' selection process, which help it attract sales and decrease expenses such as marketing expenses and input costs from its suppliers. For example, the prior marketing literature finds that firms use current customers as references to reduce potential buyers' perceived risks, uncertainty and searching costs and to gain a competitive advantage over its competitors (e.g., Salminen and Möller, 2004, 2006; Jalkala and Salminen, 2010; Ruokolainen and Aarikka-Stenroos, 2016). In addition, current customers also certify a firm's ability to fulfill implicit claims, such as after-sales service, a continuing supply of products and the long-term availability of product components, which are important considerations in making purchase decisions (Telser, 1980; Klein and Leffler, 1981; Bull, 1987). Second, given the importance of sales to firms' financial performance, current customers can signal a firm's ability to fulfill the claims of a broad array of stakeholders. Contracts with customers, especially reputable ones, indicate that a firm can receive sustainable cash flow and thereby make timely payments to suppliers, lenders and employees. As a result, suppliers and lenders might be willing to offer better credit terms, and employees might require a smaller compensating wage differential. Hence, the certification channel predicts that customer referencing will have a positive effect on future firm performance.

In analyzing the customer disclosure data from 1976 to 2016, we find evidence consistent with the certification channel. Specifically, after controlling for firm and year fixed effects and other firm characteristics, we find that firms that reference customers have significantly higher asset turnover in the following year. These firms also report a higher gross margin and spend less on selling, general and administration (SGA) expenses per dollar of sales. In general, these firms experience better overall performance in terms of their return on assets (ROA). As for economic significance, these firms have asset turnover, gross margin

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<sup>&</sup>lt;sup>3</sup> Appendix A provides some real-world examples of firms using customers as a reference to attract new buyers. For example, Microsoft Hong Kong Limited provides information about Hong Kong customers on its website. SAP reveals its customers in airport posters ads and its conference presentations.

and ROA that are higher by 1.9%, 2.5% and 1.1%, respectively, and an SGA-to-sales ratio that is lower by 1.3%.

We conduct some robustness analyses. First, we develop alternative measures of customer referencing such as counting the number of customers referenced and whether the firm has referenced at least one customer with a non-trivial sales contribution. Our results are robust to these alternative proxies. Since customer reputation determines how much of an impact referencing has on firm performance, we also construct measures of customer referencing that consider the reputation of the customers being referenced. In the baseline regressions, we use industry-adjusted dependent variables because performance ratios are highly industry-dependent and may be affected by extraneous industry shocks. We repeat the analyses using non-industry-adjusted measures and find qualitatively similar results. Furthermore, we demonstrate that our main findings are robust to the use of the instrumental variable approach to mitigate endogeneity concerns.

To gain further insight into the certification channel, we run several cross-sectional analyses to examine how the association between customer referencing and future performance varies across different firms. First, we investigate whether the effect of customer referencing on future performance varies with a firm's own reputation. When potential buyers and suppliers are uncertain about cooperating with a firm that has a low or an unestablished reputation in the product market, the firm can gain reputation transfer from its customers (Helm and Salminen, 2010; Jalkala and Salminen, 2010). For example, this strategic reputation transfer from high to low reputation partners is widely used in marketing activities like co-branding, ingredient-branding and sponsorships (Norris, 1992; Rao et al., 1999; Wally and Hurley, 1998; Bengtsson and Servais, 2005). Consistent with a greater reputation spillover to firms that need a reputation boost, we find evidence that customer referencing leads to an even better performance when a firm's reputation is low.

Next, we investigate how the disclosure of customer information influences riskier firms' future performance. Suppliers of riskier firms face a high default risk. Customers also have concerns about such firms' ability to perform implicit claims and avoid supply disruption, which may lead to substantial costs for customers (e.g., Chopra and Sodhi, 2004; Tomlin, 2006). Therefore, riskier firms have a greater need to show evidence of their competence, thereby providing reassurance to potential buyers and suppliers. Consistent with our expectation, we find that the positive effect of customer referencing on future firm performance is stronger for risker firms.

Finally, we investigate the effect of customer referencing on the future performance of firms with high product market competition. Firms with more competition need to differentiate themselves more to achieve a better performance than their industry peers and signaling customers' high reputation is one important way of doing so (Irvine and Pontiff, 2008; Hoberg et al., 2014; Kubick et al., 2015; Booth and Zhou, 2015). Consistent with expectation, we find that the effect of customer referencing on performance is stronger among firms that face high competition.

Our study makes several contributions. First, we contribute to research on interorganizational relationships as a source of firm value (e.g., Amir and Lev, 1996; Lev, 2001;
Fee and Thomas, 2004; Patatoukas, 2012). The results in our paper suggest that current
customers are more than just current and future income sources. The presence of customers
can also be an intangible asset, specifically, a valuable marketing tool that can promote future
purchases by the firm's potential and existing customers, which, in turn, improves the firm's
performance (Ruokolainen and Igel, 2004; Tomas Gomez-Arias and Montermoso, 2007;
Ruokolainen and Aarikka-Stenroos, 2016). To the best of our knowledge, our paper is the
first to provide large-sample, multi-faceted analyses of the link between customer referencing
and firm performance, as well as how the link varies in the cross-section with important firm

characteristics such as the extent of the competition in its product market.

Second, our findings also add to the evolving literature on limited attention to inter-firm links (e.g., Cohen and Frazzini, 2008; Madsen, 2017). Although customer referencing is common in practice, there has been limited large-sample, in-depth analysis of this issue. In this paper, we do so by relying on a data technique that is increasing common in the literature: the use of textual data to construct proxies for large samples of firms. Thus our paper also contributes to the literature on the disclosure of customers in financial reports that focuses on the mandated disclosure of information about major customers (e.g., Hertzel et al., 2008; Pandit et al., 2011; Ellis et al., 2012; Li et al., 2018). Our work complements and contrasts with this research by focusing on the voluntary disclosure of information about non-major customers and examining the link between customer referencing and product market benefits.

Finally, our study contributes to the information spillover literature. The prior literature finds that information from a firm's disclosure has externalities and influences other firms (Foster, 1981; Han and Wild, 1990; Freeman and Tse, 1992; Pandit et al., 2011; Badertscher et al., 2013). We document a special type of information spillover in which the customer's reputation spills over to the firm and provides it with certification. An interesting finding in our paper is that the reputation spillover from customers is greater if the firm itself is not of high reputation.

The rest of this paper is organized as follows. Section 2 reviews prior literature and develops the hypotheses. Section 3 describes the data and research design. Section 4 reports the main findings and robustness tests. Section 5 covers some cross-sectional analyses and Section 6 concludes.

### 2. Literature review and hypothesis development

Customer referencing refers to the phenomenon of firms intentionally disclosing their

relationships with current customers to provide concrete, practical evidence of their products' creditability (Salminen, 1997; Salminen and Möller, 2004, 2006). It is a common marketing practice. For example, Microsoft, who provides descriptions of its business with key customers on its website, describes its relationship with Uber as follows: "Millions of people worldwide have embraced Uber as a new means of reliable transportation and flexible income. To safeguard against fraud and enhance both driver and rider peace of mind, Uber uses the Face API, part of Microsoft Cognitive Services, to help ensure the driver using the app matches the account on file. The extra verification step is fast, works on all smartphones and in dim light, and scales to more than 1 million driver-partners. By using the Face API, Uber saved months of development work, time it could devote to tailoring the user experience." Other real-life examples of customer referencing can be easily found on the website of many other large firms. The marketing materials of many companies, such as advertisements and brochures, also commonly mention their customers' names, especially their more reputable customers. Even universities engage in referencing by highlighting their more prominent alumni on their websites and in other marketing outlets.

However, the association between customer referencing and future performance is unclear. Customer information is viewed as proprietary, thus disclosing it can bring costs to a firm. Ellis et al. (2012) and Li et al. (2018) find that firms are unwilling to reveal customer names when the proprietary cost is high. Under the proprietary cost argument, when a firm discloses information about its customer lists and its sales amounts to those customers, competitors may scrutinize this information and develop competitive strategies (e.g., offering a lower price) to compete with the firm. A customer may change its supplier if a competitor offers a better price (Naumann et al., 2010). Not surprisingly, losing customers adversely affects the firm's sales. Competitors' actions, such as more aggressive attempts to attract the

<sup>&</sup>lt;sup>4</sup> https://customers.microsoft.com/en-us/story/uber.

firm's existing customers (Fudenberg and Tirole, 2000; Esteves, 2009), might also increase the firm's costs of retaining these customers (e.g., marketing expenses).

Even without competitor's actions, firms' disclosure choice could drive away customers that prefer privacy. For example, a customer may wish to avoid being disclosed due to potential spillover effects, especially when supplier firms are subject to crises, scandals or lawsuits. Prior literature finds that suppliers in trouble have an adverse impact on customers (e.g., Chen et al., 2013; Cen et al., 2014). Existing and potential buyers that do not want to be disclosed would avoid doing business with firms that tend to disclose customer information, leading to these firms' decreased future performance. Accordingly, the proprietary cost channel predicts that firm performance would be negatively affected by customer referencing.

In contrast, a firm that references customers may have a better future performance due to the certification role of the referenced customers. First, current customer contracts serve to certify the firm's product or service quality. It is widely accepted that customer-base information is among firms' most important intangible assets (Srivastava et al., 1998; Gupta and Lehmann, 2003). Firms that provide service, have constantly evolving product lines, launch new products or enter new markets may have to confront potential buyers' significant credibility concerns about product or service quality (Ruokolainen and Igel, 2004; Ruokolainen and Aarikka-Stenroos, 2016). Such firms face significant difficulties in attracting purchases and charging high prices for their products. Advertising and promotion activities are among the ways to gain customers' attention and ease their concerns. However, current customers that have purchased and successfully used a firm's product (or service) potentially offers more concrete evidence of the product quality. While evidence of competence presented in a firm's own advertising may be viewed as biased, evidence provided via customer reference is seen as more independent because it is from third party. Using case studies and surveys, prior literature shows that firms use their current customers

as references to reduce potential buyers' perceived risks, uncertainty and searching costs and to gain a competitive advantage over competitors (Salminen, 1997; Salminen and Möller, 2004, 2006; Ruokolainen and Igel, 2004; Jalkala and Salminen, 2010; Ruokolainen and Aarikka-Stenroos, 2016). Therefore, because of customers' certification effects, firms are able to attract more new customers while decreasing advertising and promotional expenses.

Second, contracts with current customers also certify a firm's reputation in fulfilling stakeholders' implicit claims. From the perspective of a firm's suppliers, whether they will provide favorable pricing and other contract terms to the firm depends on its reputation for honoring implicit claims, such as timely payment, a commitment to continuing demand for a product or service, a specified image for a product or service (Bowen et al., 1995; Costello, 2013). From the perspective of customers, implicit claims such as after-sales service, a continuing supply of products and the long-term availability of product components are among potential buyers' important considerations in making a purchase decision (Telser, 1980; Klein and Leffler, 1981; Bull, 1987). By revealing a contract with a customer, especially a reputable one, a firm signals that it is well able to effectively maintain cooperation with stakeholders and that it has stable cash inflows needed to make timely payments to suppliers. Accordingly, the firm's suppliers are more willing to provide favorable pricing and other terms that decrease its input costs and potential buyers are also more willing to purchase (Fombrun and Shanley, 1990; Roberts and Dowling, 2002; Shamsie, 2003). Accordingly, the customer certification channel predicts a positive relation between customer referencing and firm performance.

Given the tension in the hypothesis, it is an empirical question as to whether customer referencing helps firms improve future performance. We expect to observe a positive (negative) relation between customer referencing and future performance under the certification (proprietary cost) channel. Although there is tension underlying this research

question, we predict, on balance, that firms are likely to have rational expectations that they will achieve better product market performance when they reference customers, especially since they have discretion over whether or not to engage in customer referencing and then in terms of which specific customers to disclose. Formally, we state this hypothesis as follows:

H1: Firms that reference customers have a better future performance than those that do not.

New customers and suppliers may be more uncertain about firms that have a low reputation in the product market. Therefore, such firms can gain reputation transfer from their current customers (Helm and Salminen, 2010; Jalkala and Salminen, 2010). Helm and Salminen (2010) propose that the worse a firm's reputation is in its own market or among its stakeholders, the more favorable the reputation transfer effect via current customers' disclosure will be. Such a strategic reputation transfer from high to low reputation partners is also widely used in marketing activities like co-branding, ingredient-branding, and sponsorships (Norris, 1992; Rao et al., 1999; Wally and Hurley, 1998; Bengtsson and Servais, 2005). For example, Rao et al. (1999) find that the market acceptance for a new product by a low reputation firm is higher when it is co-branded with a high reputation brand. Falkenreck (2009) also finds that using reputation transfer makes it easier for a firm to enter a new market in which it is unknown. Based on the certification channel, low reputation firms are more likely to benefit from customer referencing. Therefore, we expect the association between customer referencing and future performance to be stronger for low reputation firms. We state this hypothesis as follows:

H2: The effect of customer referencing on future performance is stronger among low reputation firms.

Riskier firms are usually unattractive to customers due to supply continuity concerns. Supply disruption risk is an important customer consideration, especially for industrial customers (e.g., Chopra and Sodhi, 2004; Tomlin, 2006), because supply disruption may

induce huge losses for the customer, such as production disruption loss and sales loss. In addition, riskier firms are also unattractive to suppliers because they have a high probability of default. Therefore, riskier firms have a greater need to offer evidence of their ability to maintain supply continuity and meet payment commitments, thus providing reassurance to potential customers and suppliers. Based on the certification channel, firms signal their ability by showing that they have successfully passed through their current customers' selection process. Hence, we expect that the association between customer referencing and future performance is stronger for riskier firms. This hypothesis is stated as follows:

H3: The effect of customer referencing on future performance is stronger for riskier firms.

Firms constantly interact with peer firms in the same industry competing for the same customers and struggling for market share. Firms that face high product market competition have more difficulties differentiating themselves from their competitors, so they are less likely to earn high abnormal profits and have persistent profitability and cash flow (Irvine and Pontiff, 2008; Hoberg et al., 2014; Kubick et al., 2015; Booth and Zhou, 2015). Such firms are also less likely to have a high market share in the industry because customers can easily switch to their competitors. Furthermore, suppliers may also have concerns about such firms' commitment to timely payment and continuing demand. Therefore, they have a greater need to offer evidence of their products' quality or their ability to fulfill stakeholders' implicit claims, thereby differentiating themselves from their competitors. Based on the certification channel, the customers being referenced can significantly help such firms stand out from their competitors by certifying the firms' quality and other abilities. Hence, we expect the effect of customer referencing on future performance to be more pronounced for firms facing high product market competition. We state our last hypothesis as follows:

H4: The effect of customer referencing on future performance is stronger for firms that face high product market competition.

### 3. Data and research design

#### 3.1 Sample selection

### 3.1.1 Measure of customer referencing using firm-year-customer data

We start by using data on the disclosure of customer information in the Compustat Segment Files from 1976 to 2016. While these files contain data about major customers, which firms disclose per SEC and FASB requirements, they also include information about non-major customers (Ellis et al., 2012). The files provide information about customers' names, the dollar amount of purchases and the customer type (e.g., company and geographic region). We first remove non-company customers because the focus of our paper is on referencing specific customers. In addition, many of our analyses require more information about the customers (e.g., customer reputation) and such information is only available for and comparable across company customers. This sample restriction decreases the number of firm-year-customer observations from 508,827 to 298,081. To differentiate between mandatorily and voluntarily disclosed customers, we calculate the sales contribution ratio for each customer by dividing the sales to a customer by the firm's annual sales. Following Ellis et al. (2012), customers with a contribution ratio equal to or greater than the 10% threshold are classified as mandatorily disclosed customers. Customers that fall below that threshold are treated as voluntarily disclosed.

Figure 1 presents the fraction of customers that have been voluntarily or mandatorily disclosed from 1976 to 2016, as reported in the Compustat Customer Segment Files. The x-axis and the y-axis indicate the sales contribution and fraction of customers, respectively.

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<sup>&</sup>lt;sup>5</sup> The database broadly records four types of customer information, i.e., company (59%), geographic region (19%), market (15%) and governments (7%).

<sup>&</sup>lt;sup>6</sup> Among the 298,081 firm-year-customer observations, around 18% are missing the dollar amount of purchase. We treat those cases as voluntary disclosures, as the mandatory disclosure rule requires the firm to disclose this information (many firms disclose the percentage of sales to the customer and the database records the data by translating the percentage into a dollar amount). In other words, we reasonably assume that missing values are primarily due to a firm's voluntary choice to not disclose their customers' purchase amounts. Our results are robust if we drop observations with missing purchase data.

Specifically, a customer's sales contribution ratio is the sales to the customer divided by the firm's total sales in a year. The height of each bar represents the percentage of total customers that are within a specific interval of the contribution ratio. The width of each bar is 1%. For example, the highest bar shows that approximately 7% of total customers have a sales contribution of 10%-11%. In the figure, we do not show customers with a sales contribution ratio of greater than 41% so that we can focus on the region around and below the 10% threshold, which separates mandatorily from voluntarily disclosed customers.

The first ten bars relate to voluntarily disclosed customers. If firms only disclose major customers, as mandated, we would expect the height of these bars to be zero. The figure shows that this is clearly not the case. For example, approximately 6% of total customers contribute less than 2% to the firm's annual sales (i.e., aggregating the first and second bars). Since so many customers are voluntarily disclosed, it seems reasonable to suspect that at least some of the disclosing firms have strategic reasons for doing so. It is this phenomenon that motivates us to use the voluntarily disclosed customer information as a proxy for a firm's customer referencing propensity.

### [Insert Figure 1 here]

Using the above firm-year-customer observations, we construct our firm-year indicator variable of customer referencing, *CUS\_REF*. We consider a firm to have engaged in customer referencing in a particular year if it discloses at least one customer that satisfies all of the following three conditions: i) the customer is disclosed with a specific company name; ii) the customer contributes less than 10% to the firm's current annual sales, i.e., the customer is a non-major customer; iii) the customer is not a major customer for the previous year. The first condition is a necessary one for customer referencing, which essentially means a firm's disclosure of the names of customers to boost its own profile. The second and third conditions are to capture the discretionary use of customer referencing by the firm.

Specifically, the second condition is imposed because the disclosure of major customers is mandated. The third condition excludes cases where the firm is providing some sales updates about a previously disclosed major customer and any attempts at customer referencing are limited, at best. In sum, using the data from the Compustat Segment Files, we construct a dataset based on whether or not a firm in a particular year has engaged in customer referencing.

### 3.1.2 Sample of firm-year observations

We then merge our firm-year data on *CUS\_REF* with firm-year observations from the Compustat Annual File to construct other variables. These variables include various measures of financial performance that we use as our dependent variables and a set of control variables. Following prior literature, we exclude utilities (SIC 4900–4999) and financial firms (SIC 6000–6999). To execute a comprehensive regression analysis, we only retain firm-year observations with no missing values to construct all dependent and control variables in our main regression analysis (see equation 1 below). After the above procedures, we have a final sample of 98,781 firm-year observations from 1976 to 2016. We summarize the sample selection process in Table 1, Panel A.

Table 1, Panel B tabulates the industry distribution of the sample. While firms in the manufacturing and services industries account for 77% of our total sample, the percentage of firms that engage in customer referencing is relatively similar across different industries, ranging from 19% to 27%.

#### [Insert Table 1 here]

### 3.2 Empirical methodology

We use the following model specification to examine the relation between firms' customer referencing propensity and their future performance, particularly their product market performance:

$$\begin{split} &Performance = \beta_0 + \beta_1 CUS\_REF + \beta_2 MAJ\_CUS + \beta_3 CUS\_CON \\ &+ \beta_4 SGRW + \beta_5 SIZE + \beta_6 LEV + \beta_7 CASH + \beta_8 TANGI + \beta_9 SEG + \beta_{10} AGE \\ &+ \beta_{11} SGA + Firm \ Fixed \ Effects + Year \ Fixed \ Effects + \varepsilon \ . \end{split} \tag{1}$$

In equation (1), the unit of analysis is the firm-year observation. All independent variables are characteristics of firm i calculated in year t and the dependent variable is the performance of firm i measured in year t+1. <sup>7</sup> Specifically, the dependent variable, *Performance*, is one of four industry-adjusted measures of operating performance in the next year: asset turnover (ATO), gross margin (GM), SG&A expenses-to-sales (SGA) and return on assets (ROA). ATO is the ratio of sales to beginning-of-year total assets adjusted by industry mean asset turnover. GM is measured as sales minus the cost of goods sold, divided by sales. SGA is the ratio of selling, general and administrative expenses to sales. Missing values for selling, general and administrative expenses are set to zero. ROA is the ratio of income before extraordinary items to the beginning-of-year book value of total assets.

Operating performance measures are highly industry-dependent and may be affected by industry shocks. Therefore, we adjusted each performance measure by its industry mean in each year. Specifically, for all firms available in Compustat with the same 4-digit SIC code, we calculate the industry mean in each fiscal year and subtract the industry mean from the raw value of each performance measure. A positive and higher value of those industry-adjusted measures indicates a better performance than industry peers. By taking into account the cross-sectional variation within an industry, we are able to focus on the relative performance of firms that engage in customer referencing. Using industry-adjusted performance is also more aligned with our research focus on product market effect, given that

<sup>&</sup>lt;sup>7</sup> For simplicity, both subscriptions for firm and year are omitted throughout the paper.

<sup>&</sup>lt;sup>8</sup> When calculating the industry mean for each variable, we require each industry-year to have at least five observations. In other words, if an industry-year has less than five observations, it is dropped, leaving us with a final sample of 98,781 firm-year observations.

firms within the same industry compete with each other.<sup>9</sup>

The variable of interest is the proxy for the customer referencing propensity as defined earlier, i.e., *CUS\_REF* is an indicator if at least one referenced customer satisfies the following three conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year. We argue that customer referencing serves as verification of the firm's product quality and its ability to fulfill stakeholders' implicit claims, thereby helping it attract new sales, decrease costs and improve its future performance. To the extent that customer referencing is associated with a better future performance, the coefficient on *CUS\_REF* is expected to be significantly positive. <sup>10</sup>

In equation (1), we control for the whether there is any major customer for which the company name is specifically disclosed (MAJ\_CUS); customer concentration (CUS\_CON); sales growth rate (SGRW); size (SIZE); leverage (LEV); cash and cash equivalents (CASH); asset tangibility (TANGI); the number of business segments (SEG); firm age (AGE) and selling, general and administrative expenses (SGA) in the current year. Specifically, MAJ\_CUS is an indicator variable equal to one if a firm discloses a major customer with an identifiable name, zero otherwise. The prior literature finds that customer concentration has a significant influence on firm performance (Patatoukas, 2012; Irvine et al., 2016; Hui et al., 2016), so we control for CUS\_CON. CUS\_CON is measured as the customer-sales-based Herfindahl-Hirschman Index, using the sales contribution ratio of all customers. SGRW is the increase in sales for this year divided by sales for the previous year. SIZE is the natural logarithm of the book value of total assets. LEV is the ratio of total debt to total assets. CASH is cash and cash equivalents divided by total assets. TANGI is net property, plant and

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<sup>&</sup>lt;sup>9</sup> As reported in Table 5, our results showing a positive association between customer referencing and future firm performance are robust to the use of non-industry-adjusted measures.

<sup>&</sup>lt;sup>10</sup> Since dependent variable *SGA* is an inverse measure of operating performance, i.e., a lower value represents a better performance, the regression coefficient of *CUS\_REF* is expected to be significantly negative when the dependent variable is *SGA*.

equipment scaled by total assets. *SEG* is the natural logarithm of the number of business segments reported by the firm. *AGE* is the natural logarithm of the number of years since the firm appears for the first time in the Compustat database. Finally, to control for increases in performance due to firm advertising or other promotional activities, we also add the ratio of selling, general and administrative expenses to sales (*SGA*) as an additional control variable. We summarize the variable definitions in Appendix C. All continuous variables are winsorized at 1% and 99% of their respective distributions to reduce the influence of outliers.

We also include firm and year fixed effects in the model. By including firm fixed effects, we are able to control for the unobserved time-invariant firm characteristics that influence future performance and investigate the effect of customer referencing on firm performance. We use robust standard errors clustered by firm to address the issue of heteroscedasticity and within-firm serial correlation in the error terms.

# 3.3 Descriptive statistics

Table 2, Panel A presents the summary statistics for the variables used in our main regression. The mean value of *CUS\_REF* is 0.226, suggesting that approximately 23% of firms engaging in customer referencing in their financial reports. The mean value of *MAJ\_CUS* is 0.515, indicating that about 52% of the firms disclose at least one major customer and the customer name is also specifically disclosed. The summary statistics for the other variables are largely consistent with prior studies (e.g., Irvine et al., 2016; Hui et al., 2016).

Table 2, Panel B reports the pairwise correlations between performance measures and our customer referencing proxy. As expected, *ATO* is positively correlated with *GM* and *ROA*, but negatively so with *SGA*. The Pearson correlations between *CUS\_REF* and the firm performance measures suggest that firms that engage in customer referencing tend to have lower asset turnover and SGA expenses and higher gross margin and ROA. The negative

Pearson correlation between *CUS\_REF* and asset turnover contradicts our prediction, probably because other firm characteristics are not controlled.

### [Insert Table 2 here]

### 4. Empirical results

### 4.1 Customer referencing and future performance

In this section, we investigate whether and how customer referencing behavior is associated with future performance. As noted earlier, we posit that customer referencing through disclosing customer information serves as verification of the firm's product quality and signals its ability to perform stakeholders' implicit claims, thereby helping it attract new sales, decrease costs and improve its future performance. To the extent that customer referencing is associated with a better future performance, the coefficient on *CUS\_REF* is expected to be significantly positive.

Table 3 presents our main results. Column 1 shows the association between customer referencing and future asset turnover. After controlling for firm characteristics as well as firm and year fixed effects, we find a significantly positive association between current year customer referencing and future year asset turnover. Specifically, the coefficient on CUS\_REF in column (1) is 0.019 with a t-value of 2.40, which suggests that firms that engage in customer referencing have a higher future asset turnover, i.e., 1.9% higher than firms that do not. This finding indicates that customer referencing indeed helps firms attract new sales.

In column 2, customer referencing is significantly associated with gross margin in the next year. The coefficient on *CUS\_REF* is 0.025 with a t-value of 3.11, which suggests that firms that engage in customer referencing have a higher future gross margin, i.e., 2.5% higher than firms that do not. This finding is consistent with our prediction that customer referencing helps firms decrease input costs.

We further examine whether customer referencing helps improve operating efficiency by focusing on future selling, general and administrative expenses. We find that the coefficient on *CUS\_REF* in column 3 is -0.013 with a t-value of -2.10. This result shows that firms that reference customers have future selling, general and administrative expenses (scaled by annual sales) that are 1.3% lower than firms that do not. The negative association documented above might indicate that firms engaging in customer referencing can help to reduce operating expenses, particularly advertising and other promotional expenses, possibly because customer referencing can substitute for advertising activities.

In addition, we examine the effect of customer referencing on the future overall performance captured by return on assets. We find a significantly positive association between customer referencing and *ROA*. Specifically, the coefficient on *CUS\_REF* in column 4 is 0.011 with a t-value of 3.25, which suggests that firms that reference customers have a higher future ROA. The coefficient indicates that for such firms, the ROA in the following year is 1.1% higher than those that do not. Hence, customer referencing appears to have a statistically and economically significant association with future profitability.

In terms of the control variables, the results are generally consistent with prior literature. The results of the association between the disclosure of major customer and future firm performance are mixed. The coefficient on *MAJ\_CUS* is insignificant in columns 1 and 4 but significant in columns 2 and 3. The mixed results could indicate that the disclosure of major customers has limited certification/signaling effects. First, the disclosure of major customers is mandatory, meaning that the firms did not choose to disclose with the intention of self-promotion. In addition, even if the major customers are not disclosed, given their importance, stakeholders might already be aware of them even without the disclosure. We find that *CUS\_CON* is negatively associated with asset turnover, gross margin and ROA, and positively associated with selling, general and administrative expenses. This finding is

generally consistent with the prior literature documenting adverse effects of customer concentration on future performance (Irvine et al., 2016; Hui et al., 2016). We also find that sales growth is positively associated with future performance while cash holding and asset tangibility are negatively associated with it. Firm size is associated with better performance in terms of return on assets and operating expenses, but it leads to lower asset turnover. More leverage improves asset turnover and gross margin but worsens overall performance. The number of business segments has a negative impact on gross margin and return on assets. Firm age is negatively related to asset turnover. Finally, we find that the current year ratio of selling, general and administrative expenses is negatively associated with future year asset turnover and return on assets.

Overall, the above results are consistent with our prediction in H1, suggesting that firms that engage in customer referencing have a better future performance than those that do not.

### [Insert Table 3 here]

#### 4.2 Robustness checks

In this section, we conduct a series of robustness checks to evaluate whether our baseline results are sensitive to variable construction methods or an alternative story.

### 4.2.1 Alternative measures of customer referencing

We now consider the robustness of the results to alternative measures of customer referencing. First, in seeking to refine the measure of customer referencing, we make some minor modifications to the primary proxy (CUS\_REF). The primary proxy assumes that a firm engages in customer referencing as long as at least one non-major customer is disclosed. The reasons for this assumption are twofold. First, it is not clear that there is a linear (or even monotonic) relation between the number of non-major customers disclosed and future performance. For example, it is likely that if a firm engages in customer referencing to obtain product certification to boost its future performance, it might first disclose the customers that

have the largest impact, meaning that each additional disclosed customer will have a declining or no marginal effect. Second, it facilitates the interpretation and discussion of the later cross-sectional analyses. Nevertheless, we examine whether our results are robust to the use of a continuous variable that counts the number of disclosed non-major customers. Specifically, the continuous measure, *CUS\_REF1*, is defined as natural log of the number of referenced customers that satisfy the following three conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year.

In our primary measure of customer referencing (CUS\_REF), we consider all non-major customers to be voluntarily disclosed with the intention of customer referencing for product certification. One might think that customer referencing is more likely to be effective when the firm voluntarily discloses relatively more important (e.g., higher sales contribution) non-major customers. Stated differently, when firms voluntarily disclose more important non-major customers, they are more likely to be truly engaging in customer referencing. Hence, we construct an alternative measure of customer referencing that excludes the disclosure of customers with sales of less than 1%. Specifically, CUS\_REF2 is defined as an indicator if at least one referenced customer satisfies the following three conditions: (1) a sales contribution of less than 10% but not equal to or more than 1%; (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year.

Another concern of our primary measure is that if a firm voluntarily discloses a non-major customer that is expected to become a major customer due to increased purchases in the following year, the better next-year performance might simply reflect the customer's increased purchases. If so, disclosing the customer might not be viewed as an attempt by the firm to engage in customer referencing by relying on the certification from the disclosed customer to attract new sales from other customers or to lower marketing expenses. To

address this concern, we construct an alternative measure (*CUS\_REF3*) by further requiring the referenced non-major customer to not be a major customer in the following year.

As reported in Table 4, Panel A, we find consistent results with all of the above three alternative measures. In the first 4 columns, we show that the continuous measure of the count of the number of customers referenced, *CUS\_REF1*, is associated with better future operating performance in terms of higher asset turnover, gross margin, and returns on assets, as well as lower selling, general, and administrative expenses. In columns 5 to 8, we show that the customer referencing measure, *CUS\_REF2*, that further requires the referenced customer to be an important customer, does not change our inference that customer referencing has positive effects of product market performance. We further show that in the last 4 columns, our results still hold with *CUS\_REF3*, which requires the referenced customer to not be a major customer in the following year.

Next, we consider measures of customer referencing that incorporate customer reputation. Prior literature suggests that the reputation of the customer being referenced can have an impact on the referencing's certification and signaling benefits. To maintain its reputation, a customer with a high reputation is more likely to be prudent when selecting suppliers (Ellram, 1990; Choi and Hartley, 1996), so it is more able to certify its suppliers' product or service quality and the other abilities required to successfully fulfill contracts. By revealing that it has successfully passed through a reputable customer's selection process, a firm can thereby utilize its relationship with that customer to reassure potential buyers (Jalkala and Salminen, 2010). Hence, a firm is more likely to be engaging in customer referencing if it discloses the name of relatively more reputable customers. In the section, we examine the robustness of our results to measures of customer referencing that take customer reputation into account.

To establish whether a customer has a high reputation, we need to obtain some

information about it, for example, its listing status and financial data. We attempt to obtain this information from the Compustat Annual File and the CRSP Stock File, which is the approach used in the literature on supplier-customer relationships (e.g., Fee and Thomas, 2004; Pandit et al., 2011; Ellis et al., 2012). First, we match the customer name to a listed company name in the Compustat/CRSP Merged Database. <sup>11</sup> Then we can obtain financial information for the matched customers from this database.

There is no single commonly accepted way to capture customer reputation. Therefore, we classify a referenced customer's reputation based on the following characteristics: public listing status, market share of sales, and firm size. Publicly listed customers are likely to be more well-known than those that are not. Firms with larger sales have a greater market presence and receive a greater level of public attention, which results in a better reputation (Shamsie, 2003). Prior literature has used a firm's product market share to proxy for reputation (Carter et al., 1998; Megginson and Weiss, 1991; Rau, 2000). Finally, larger firms enjoy greater name recognition than do smaller firms (Fombrun and Shanley, 1990; Williams and Barrett, 2000). Firm size has been used in empirical studies as a proxy for company reputation or overall visibility (Miller, 2006; Bushee and Miller, 2012; Frederickson and Zolotoy, 2015). Accordingly, we construct three alternative measures of customer referencing by further considering the referenced customer's reputation. Specifically, we define CUS\_REF4 (CUS\_REF5 / CUS\_REF6) as an indicator if at least one referenced customer satisfies the following four conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year and (4) the customer is a reputable customer in terms of listing status (market share / firm size).

<sup>&</sup>lt;sup>11</sup> The Compustat Segment File does not assign a Compustat permanent identifier (GVKEY) to disclosed customers. Hence, we need to match the customers to companies in the Compustat Annual and/or CRSP database by name. Obviously, many customers will not be matched and hence are classified as non-listed customers.

Table 4, Panel B presents the results of using the above alternative measures of customer referencing that incorporate customer reputation. The coefficients on *CUS\_REF4* are statistically significant in columns 1, 2 and 4. The t-values are 3.23, 2.21and 2.20 respectively. While the coefficient in column 3 is insignificant (t-value = -1.27), the sign on this coefficient is consistent with earlier results indicating that customer referencing lowers selling, general, and administrative expenses. Columns 5 to 8 present the results of using *CUS\_REF5* and columns 9 to 12 present the results of using *CUS\_REF6*. Results in these columns are similar to those in the first 4 columns. Taken together, the results from this panel suggest that our main findings are robust to alternative measures that incorporate customer reputation, and they also suggest that the average effect of the customer referencing documented in the baseline regression is likely driven by referencing reputable customers.

## [Insert Table 4 here]

# 4.2.2 Use of non-industry-adjusted performance measures

We re-estimate the regressions by replacing the industry-adjusted performance measures with non-adjusted measures. In the baseline regressions, we use industry-adjusted dependent variables, because firm performance measures are highly industry dependent and may be influenced by industry shocks. Industry-adjusted performance measures exclude the influence of industry specificity and are able to capture whether firms perform better than their industry peers. However, the literature on the supply-chain setting uses non-industry-adjusted performance measures (e.g., Patatoukas, 2012; Irvine et al., 2016; Hui et al., 2016). To reconcile our results with those in prior literature, we repeat our main regressions using non-industry-adjusted dependent variables. As shown in Table 5, the results are qualitatively similar to those reported in our baseline regressions. <sup>12</sup>

<sup>&</sup>lt;sup>12</sup> In subsequent tests, our results are similar when using either industry-adjusted or non-industry-adjusted performance. As industry-adjusted performance better captures abnormal performance, we continue to report our results based on the adjusted measures. The results for non-industry-adjusted performance are available upon request.

#### [Insert Table 5 here]

### 4.2.3 Instrumental variable analyses

In addition, we attempt to address the endogeneity issue by taking the instrumental variable (IV) approach. Specifically, we use the industry-level customer referencing propensity (IND\_CUS\_REF) as our IV. This IV is likely to satisfy the inclusion criterion because if a firm is in an industry that typically engages in customer referencing, the firm itself is more likely to do so. However, we recognize that this IV has limitations in satisfying the exclusion criterion. While one might argue that an industry practice of customer referencing is likely to affect a firm's performance via how it affects the firm's customer referencing practice, it is possible that the referencing practices of other firms in the industry can have a direct effect on a firm's performance due to competition for customers.<sup>13</sup>

To implement the IV 2SLS regressions, in the first stage we regress our customer referencing proxy on the industry-level referencing propensity in the current year. As shown in column 1 of Table 6, IND\_CUS\_REF is a significant predictor of a firm's referencing propensity (CUS\_REF). In the second stage, we regress the future performance measures on the instrumented CUS\_REF. The second stage results are shown in columns 2 to 5. The results indicate that customer referencing has a significant positive association with asset turnover, gross margin and return on assets. These results are consistent with our baseline results using OLS estimation. In untabulated analyses, we repeat the IV 2SLS estimation by using the industry-level customer referencing propensity for the previous year as an alternative IV and find similar results.

#### [Insert Table 6 here]

#### 5. Cross-sectional tests

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<sup>&</sup>lt;sup>13</sup> The exclusion criterion essentially requires the instrument be correlated with customer referencing by the firm but (essentially) uncorrelated with firm performance, except through variables we control for such as customer concentration and sales growth. Understandably, finding such an instrument in the context of the relation between firm practices and performance is difficult. Hence, we do not treat our IV regressions as a strong test of causality but as an additional robustness check.

In this section, we conduct a series of cross-sectional tests to shed light on the certification channel through which customer referencing can have an effect on a firm's operating performance.

### 5.1 Firm reputation, customer referencing and future performance

We start by investigating the moderating effect of a firm's own reputation on the relation between customer referencing and future performance. In H2, we argue that a low reputation firm is more likely to benefit from customer referencing activities. Hence, we predict that the positive association between customer referencing and future performance is more pronounced for low reputation firms.

We measure a firm's own reputation via two methods. The first is based on market share. If a firm has a low market share in its industry, it may not be well known or trusted by potential customers, which is suggestive of low reputation. *NEGMKSH* is the sales divided by the total industry sales, multiplied by -1. The second measure is based on firm size. Compared to a large firm, a small firm is less known and trusted by potential customers. *NEGSIZE* is the natural logarithm of the book value of total assets, multiplied by -1. A referenced customer certifies a firm's product quality and its ability to fulfill implicit claims. Therefore, we expect the coefficients on *CUS\_REF* × *NEGMKSH* and *CUS\_REF* × *NEGSIZE* to be significant.

Table 7, Panel A presents the results for the regressions that use market share to measure firm reputation. As shown in the table, the coefficients on the interaction term *CUS\_REF* × *NEGMKSH* are statistically significant in all columns, and the absolute value of the t-values ranges from 1.76 to 2.42. These results suggest that customer referencing helps firms, especially low reputation firms, attract more sales, decrease input and operating costs and thereby improve future overall performance, captured by ROA.

Table 7, Panel B presents the results of using firm size to measure reputation. The coefficients on the interaction term  $CUS\_REF \times NEGSIZE$  are statistically significant in all

columns except column 1. In column 1, the coefficient on the interaction term  $CUS\_REF \times NEGSIZE$  is 0.004 (t-value = 1.14). These results confirm that low reputation firms benefit more from customer referencing activities.

Overall, the above results are generally consistent with our prediction that the positive effect of customer referencing on firm performance is more pronounced for low reputation firms, suggesting that low reputation firms benefit more from the certification role of customer referencing.

## [Insert Table 7 here]

# 5.2 Riskier firms, customer referencing and future performance

Next, we test our third hypothesis by investigating whether the effect of customer referencing on future performance is stronger for riskier firms. In H3, we argue that because customers have concerns about riskier firms vis-a-vis their long-run, stable provision of products and ability to fulfill implicit claims, customer referencing helps such firms increase the credibility of their product quality and signal their responsibility. Hence, we predict that the positive association between customer referencing and future performance is more pronounced for riskier firms.

We use three proxies to measure risk. A firm is risky if: i) it experiences losses during the year, ii) it is financially constrained based on the SA index in Hadlock and Pierce (2010) or iii) it faces financial constraints based on the WW index in Whited and Wu (2006). When a firm experiences losses or has a high probability of financial constraints, new customers may have concerns about its future operation stability and thus be less willing to purchase from it, while suppliers, recognizing the firm's high default risk, are unwilling to offer favorable pricing. Customer referencing mitigates the adverse influence of risk by signaling the firm's ability to provide qualified products and fulfill implicit claims as well as its long-run stability of cash inflows. Therefore, we expect the coefficients on CUS\_REF × LOSS, CUS\_REF ×

SA, and  $CUS\_REF \times WW$  to be significant.

Table 8, Panel A presents the results for the regressions that use losses to proxy for risk. As shown in each column, the coefficient on the interaction term  $CUS\_REF \times LOSS$  is statistically significant and with the predicted signs, which suggests that the positive effect of customer referencing is stronger when the firm experiences losses during the year.

Table 8, Panel B presents the results for the regressions that use the SA index to proxy for risk. Similarly, the coefficients on the interaction terms  $CUS\_REF \times SA$  are statistically significant in all columns. Table 8, Panel C presents the results of using the WW index to measure firm risk. The coefficients on  $CUS\_REF \times WW$  are significant in columns 2 to 4.

Overall, these empirical results are consistent with the prediction that the positive effect of customer referencing on future performance is more pronounced for riskier firms, suggesting that such firms benefit more from the certification role of customer referencing.

### [Insert Table 8 here]

### 5.3 Product market competition, customer referencing and future performance

Finally, we test our last hypothesis by investigating whether the effect of customer referencing on future performance is stronger for firms that face high product market competition. As discussed earlier, customer referencing is more important for these firms because they have a greater need for verification to differentiate themselves from competitors.

We use two measures to proxy for the intensity of product market competition. The first proxy is product similarity, provided by Hoberg and Phillips (2010, 2016). This measure is based on a text-based analysis of firm product descriptions from the annual 10-Ks filed with the Securities and Exchange Commission (SEC). Hoberg and Phillips (2010, 2016) calculate how a firm is similar to every other firm by calculating firm and firm-pairwise word similarity scores and construct a total product similarity measure for each firm. This measure

is available during the period from 1996 to 2015. The higher the value of the product similarity measure (SIMILARITY), the more similar a firm's products are to those of other firms. When a firm has greater product similarity, it is more difficult for it to differentiate itself from its competitors (Hoberg and Phillips, 2016). The second proxy is the widely used Herfindahl-Hirschman Index (HHI), which is the sum of the square of the market share of all firms in each industry. NEGHHI is HHI multiplied by -1, so a higher NEGHHI implies higher competition. Customer referencing mitigates the influence of competition via certification from customers. Therefore, we expect the coefficients on interaction terms CUS\_REF × SIMILARITY and CUS\_REF × NEGHHI to be statistically significant.

As shown in Table 9, Panel A, the coefficients on the interaction term *CUS\_REF* × *SIMILARITY* are significantly positive in columns 1, 2 and 4, indicating that when firms produce non-differentiated products, the firms that engage in customer referencing can have higher sales, lower costs and better overall performance than those that do not. Table 9, Panel B presents the results of using HHI to measure market competition. The coefficients on the interaction term *CUS\_REF* × *NEGHHI* are significantly positive in columns 2 and 4.

Overall, the results are generally consistent with the prediction that the positive effect of customer referencing on future performance is more pronounced for firms that face high product market competition, suggesting that such firms benefit more from the certification role of customer referencing.

### [Insert Table 9 here]

### 6. Conclusion

In this paper, we exploit customer information voluntarily disclosed in financial reports as a proxy for firms' propensity to engage in customer referencing activities and then examine the product market effect of customer referencing. With regards to the product market effect of customer referencing, there are two competing arguments: the proprietary

cost and certification hypotheses. Under the former, firms view customer information as highly proprietary (Ellis et al., 2012; Li et al., 2018). A firm's future performance would deteriorate if a firm's referenced customers become targeted by its competitors (Fudenberg and Tirole, 2000; Esteves, 2009). In the certification argument, a firm may intentionally disclose existing customers to certify, for example, its product quality and properties and other abilities, by revealing that it has successfully passed through the customer's selection process (e.g., Salminen and Möller, 2004, 2006; Jalkala and Salminen, 2010; Ruokolainen and Aarikka-Stenroos, 2016). Firms that engage in customer referencing are therefore able to improve their future performance because of their customers' certification.

Consistent with the certification channel, our results show that firms engaging in customer referencing achieve a better future performance. This finding suggests that customer referencing does indeed certify firms' product quality, properties and reputation for fulfilling long-term implicit claims and hence helps the firm attract new sales and improve its profitability. Our results are robust to alternative measures of customer referencing and firm performance. We also document that this positive effect is more pronounced for low reputation firms, riskier firms and for those that face higher product market competition. These results suggest that customer referencing is more beneficial for firms in some degree of trouble.

Our study contributes to the literature by providing large-sample evidence of the product market effect of customer referencing. In addition, in contrast to the prior customer disclosure literature, which focuses on benefits in the capital market, this study investigates the role of customer referencing in reducing information asymmetry between suppliers and potential customers.

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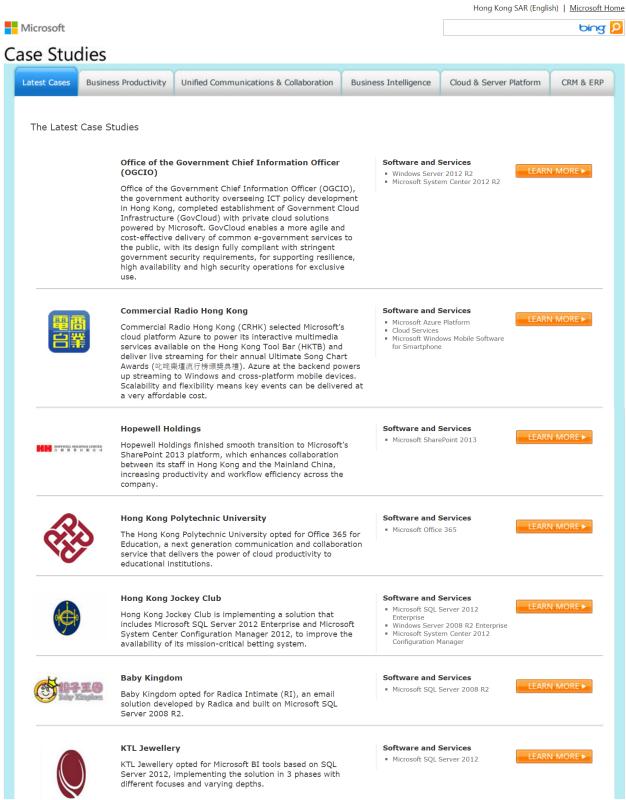
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# Appendix A: Examples of customer referencing in practice Figure 1: Customer references examples from the website of Microsoft Hong Kong



Source: <a href="https://www.microsoft.com/hk/casestudies/">https://www.microsoft.com/hk/casestudies/</a>

Figure 2: Customer references examples on SAP's posters and conference presentation cover





Figure 2 (c)

THE BEST-RUN E-BUSINESSES RUN SAP

# Oracle Integration at SAP



Dr. Christian Graf

## Appendix B: An example of the voluntary disclosure of customers in financial reports

The following paragraphs are excerpted from Analysts International Corporation's 10-K form. While the sales contributions of both Bank of America Corporation and Lexmark International, Inc. each comprise less than 10% of its annual sales, Analysts International voluntarily discloses them and provides detailed information about its relationship with these customers.

#### **FORM 10-K**

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended January 3, 2004

Commission file number 0-4090

#### ANALYSTS INTERNATIONAL CORPORATION

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#### Bank of America Corporation

During the last year our business with Bank of America Corporation, one of the world's leading financial services companies, has grown appreciably. Headquartered in Charlotte, North Carolina, Bank of America has an extensive branch network with more than 4,200 locations in 21 states and the District of Columbia. Because our geographic presence closely aligns with their national network, we have become one of the customer's five prime staffing vendors, managing an extensive subsupplier network to meet their business objectives. Additionally, by drawing from our base of minority and/or women-owned suppliers, we have been able to exceed Bank of America's goals in diversity supplier spend.

Revenue from services provided to Bank of America was approximately 5% and 2% for the fiscal years ended January 3, 2004 and December 28, 2002, respectively.

## Lexmark International, Inc.

For over ten years, Analysts International has provided staffing services for Lexmark International, Inc., a Lexington, Kentucky based company that is a leading developer, manufacturer and supplier of laser and inkjet printers, multifunction products, associated supplies and services. In fiscal 2003, Lexmark chose Analysts International as one of three prime vendors to continue to provide staffing services. The parties signed a service agreement for staffing on June 27, 2003. The initial term of the agreement continues through June 27, 2005. Lexmark has the option to extend the term for up to three consecutive one-year periods. During the last year Lexmark engaged Analysts International's Managed Services Group to implement the Peopleclick, Inc. Vendor Management System (VMS), a web-based application for managing temporary labor resources. Under this agreement, Analysts International also provides consolidated billing for all of Lexmark's contract suppliers, and training and process management for the VMS tool and system. Because the agreement was not fully implemented until the end of fiscal 2003, revenue from this portion of the business will be realized beginning in fiscal 2004.

Revenue from services provided to Lexmark was approximately 5% and 2% of revenue for the fiscal years ended January 3, 2004 and December 28, 2002, respectively.

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# **Appendix C: Variable definitions**

This appendix summarizes the definitions of the variables used in the paper. The uppercase characters in the parentheses in the right column of the table refer to the item names in the COMPUSTAT database. All dependent variables are measured in year t+1, while all independent variables are measured at year t, as indicated by their subscripts.

Dependent varia	bles:
ATO	The industry-mean-adjusted asset turnover at year $t+1$ , calculated as the asset turnover minus the industry mean value. The asset turnover is defined as sales (SALE) divided by the beginning-of-year book value of total assets (AT) and the industry mean is calculated using all available observations in the Compustat universe with the same fiscal year and two-digit SIC code.
GM	The industry-mean-adjusted gross margin at year $t+1$ , calculated as the gross margin minus the industry mean value. The gross margin is defined as the difference between sales (SALE) and the cost of goods sold (COGS), divided by sales (SALE); the industry mean is calculated using all available observations in the Compustat universe with the same fiscal year and two-digit SIC code.
SGA	Industry-mean-adjusted selling, general and administration expenses at year <i>t</i> +1, calculated as the selling, general and administration expenses minus the industry mean value. The selling, general and administration expenses is defined as selling, general and administration expenses (XSGA) scaled by sales (SALE) and the industry mean is calculated using all available observations in the Compustat universe with the same fiscal year and two-digit SIC code.
ROA	The industry-mean-adjusted return on assets at year $t+1$ , calculated as the return on assets minus the industry mean value. The return on assets is defined as income before extraordinary items (IB) divided by the beginning-of-year book value of total assets (AT) and the industry mean is calculated using all available observations in the Compustat universe with the same fiscal year and two-digit SIC code.
Nonadj_ATO	The non-industry-adjusted asset turnover, defined as sales (SALE) divided by the beginning-of-year book value of total assets (AT).
Nonadj_GM	The non-industry-adjusted gross margin, defined as the difference between sales (SALE) and the cost of goods sold (COGS), divided by sales (SALE).
Nonadj_SGA	Non-industry-adjusted selling, general and administration expenses, defined as selling, general and administration expenses (XSGA) scaled by sales (SALE).
Nonadj_ROA	The non-industry-adjusted return on assets, defined as income before extraordinary items (IB) divided by the beginning-of-year book value of total assets (AT).
Key independent	t variable:
CUS_REF	The primary measure of customer referencing propensity. It is an indicator variable equal to 1 if at least one referenced customer satisfies the following three conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed and (3) the customer is not a major customer for the previous year. Otherwise, it equals to 0.
Alternative meas	sures of customer referencing:
CUS_REF1	Natural log of the number of referenced customers that satisfy the following three conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed (3) the customer is not a major customer for the previous year.
CUS_REF2	An indicator if at least one referenced customer satisfies the following three conditions: (1) a sales contribution of less than 10% but equal to or more than 1%; (2) the company name is specifically disclosed and (3) the customer is not a major customer for the previous year.
CUS_REF3	An indicator if at least one referenced customer satisfies the following four conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year and (4) the customer is not a major customer the following year.
CUS_REF4	An indicator if at least one referenced customer satisfies the following four conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year and (4) the customer is a reputable customer in terms of listing status, i.e., the referenced customer is a listed company.

CUS_REF5	An indicator if at least one referenced customer satisfies the following four conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year and (4) the customer is a reputable customer in terms of market share, i.e., the customer's market share is above the industry-year median.
CUS_REF6	An indicator if at least one referenced customer satisfies the following four conditions: (1) a sales contribution of less than 10%, (2) the company name is specifically disclosed, (3) the customer is not a major customer for the previous year and (4) the customer is a reputable customer in terms of firm size, i.e., the customer's total assets are above the industry-year median.
Other variables: (	in alphabetical order)
AGE	Firm age measured by the natural logarithm of the number of years since the first time the firm appears in the Compustat database.
CASH	Cash and cash equivalents (CHE) scaled by total assets (AT).
CUS_CON	Customer concentration calculated as the customer-sales-based Herfindahl-Hirschman Index, using the sales fraction of all disclosed customers.
IND_CUS_REF	Instrumental variable defined as the industry-level customer referencing propensity, calculated as the voluntary disclosure rate of identifiable customer names in each industry-year.
LEV	Leverage ratio defined as total liability (LT) divided by total assets (AT).
LOSS	A dummy variable equal to one if income before extraordinary items (IB <sub>t</sub> ) is negative and zero otherwise.
MAJ_CUS	An indicator variable equal to one if a firm mandatorily disclosed a major customer (purchasing more than 10% of the firm's annual sales) with an identifiable company name, equal to zero otherwise.
NEGHHI	An inverse measure of the Herfindahl-Hirschman Index (HHI), calculated as negative one times HHI. HHI is the sum of the square of the market share of all firms in each two-digit SIC industry.
NEGMKSH	An inverse measure of market share, calculated as negative one times the firm's fraction of annual sales to the total revenue of the two-digit SIC industry.
NEGSIZE	An inverse measure of firm size, calculated as negative one times the natural logarithm of total assets (AT <sub>t</sub> ).
SA	Hadlock and Pierce's (2010) SA index. i.e., $SA = -0.737SIZE + 0.043SIZE^2 - 0.040AGE$ , where SIZE is the natural log of total assets and AGE is the number of years the firm has been in the Compustat database.
SEG	The natural logarithm of the number of business segments reported by firms.
SGA	Selling, general and administration expenses (XSGA) scaled by sales (SALE).
SGRW	Sales growth rate of sales from year $t$ -1 to year $t$ , i.e., SGRW = (SALE $_t$ –SALE $_{t-1}$ ) /SALE $_{t-1}$ .
SIMILARITY	Firm-year-level product similarity measure introduced by Hoberg and Phillips (2016), which is based on a textual analysis of firm product descriptions from annual 10-Ks filed with the SEC.
SIZE	Firm size measured by the natural logarithm of total assets (AT).
TANGI	Net property, plant and equipment (PPENT) scaled by total assets (AT).
WW	Whited and Wu's (2006) WW index. i.e., WW = $-0.091$ CFO $-0.062$ DIV $+0.021$ TLTD $-0.044$ SIZE $+0.102$ ISGRW $-0.035$ SGRW, where CFO is the ratio of operating cash flow to lagged total assets; DIV is an indicator that equals 1 if the firm pays cash dividends, 0 otherwise; TLTD is the ratio of long-term debt to total assets; SIZE is the natural log of total assets; ISGRW is the firm's industry average sales growth; SGRW is the firm's own sales growth rate from year $t$ -1 to year $t$ .

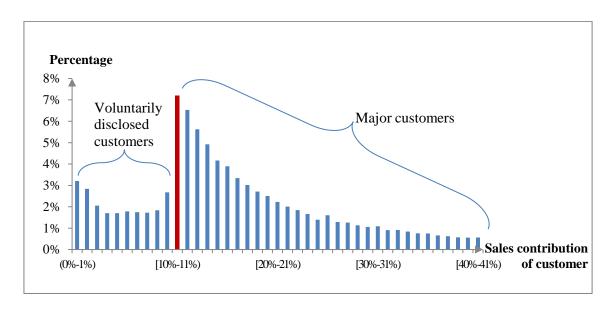


Figure 1 Distribution of disclosed customers

This figure depicts the distribution of customers from 1976 to 2016. The x-axis and the y-axis indicate the sales contribution and percentage of customers, respectively. A customer's sales contribution ratio is equal to sales to the customer divided by the firm's total sales in a year. The height of each bar represents the percentage of total customers that are within a specific interval of contribution ratio. The width of each bar is 1%, meaning that the sales contribution is between x% and (x+1)%. Customers with a sales contribution greater than 41% are excluded to give a clearer illustration of the distribution of voluntarily disclosed customers.

# Table 1 Sample selection and distribution

Panel A shows the details of the sample selection procedure and Panel B shows the distribution of the firm-year observations across different industries, as well as the frequency of customer referencing ( $CUS\_REF = 1$ ) in each industry.  $CUS\_REF$  is an indicator of at least one referenced customer satisfying the following three conditions: a sales contribution of less than 10%, the company name is specifically disclosed and the customer is not a major customer for the previous year.

Panel A. Sample selection

	# of firm-year -customer observations	# of firm-year observations
All available data extracted from Compustat Segments – Customer Database, 1976-2016	508,827	
Excluding non-company customers	(210,746)	
	298,081	120,742
To further exclude:		
(1) without a match in Compustat Fundamentals Annual Files		(22)
(2) utilities (SIC code 4900-4999) and financial firms (SIC code 6000-6999)		(10,664)
(3) observations with missing data to construct required variables		(11,275)
Final sample size	_	98,781

Panel B. Sample distribution by industry

	Number of	% of	% of
	observations	the total	CUS_REF=1
Agriculture, Forestry, And Fishing (SIC code 0100-0999)	389	0.39%	24.70%
Mining (SIC code 1000-1499)	7,234	8.34%	23.60%
Construction (SIC code 1500-1799)	1,007	1.02%	22.90%
Manufacturing (SIC code 2000-3999)	56,578	57.29%	22.20%
Transportation, Communications, Electric (SIC code 4000-4899)	5,831	5.90%	26.50%
Wholesale and Retail Trade (SIC code 5000-5999)	6,065	6.14%	19.40%
Services (SIC code 7000-8999)	19,203	19.44%	23.20%
Public Administration and non-classifiable (SIC code 9100-9999)	1,475	1.47%	23.00%
Total (Average)	98,781	100.00%	22.60%

# **Table 2 Descriptive statistics**

Panel A reports the summary statistics for the variables used in our main regression to test the effect of customer referencing on future performance. Panel B presents the pairwise correlation coefficients between the key variables in our main regression. The Pearson's correlation coefficients are shown in the lower triangle while the Spearman's rank correlations are presented above the diagonal. The number of firm-year observations in our final sample is 98,781. All continuous variables are winsorized at 1% and 99%. Variable definitions are summarized in Appendix C. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

Panel A. Summary statistics

	Mean	Std. Dev.	P25	Median	P75
ATO	0.112	0.743	-0.336	-0.029	0.387
GM	0.011	0.298	-0.101	0.016	0.167
SGA	-0.008	0.326	-0.191	-0.069	0.066
ROA	0.029	0.283	-0.027	0.073	0.172
CUS_REF	0.226	0.419	0.000	0.000	0.000
MAJ_CUS	0.515	0.500	0.000	1.000	1.000
CUS_CON	0.125	0.180	0.014	0.055	0.154
SGRW	0.158	0.352	-0.030	0.101	0.287
SIZE	4.389	2.348	2.684	4.288	6.025
LEV	0.508	0.266	0.291	0.494	0.692
CASH	0.193	0.220	0.027	0.101	0.289
TANGI	0.276	0.239	0.086	0.201	0.402
SEG	0.435	0.638	0.000	0.000	0.693
AGE	2.227	0.928	1.609	2.197	2.944
SGA	0.311	0.281	0.109	0.226	0.418

	1	2	3	4	5	6
1. ATO	1	-0.061***	-0.217***	0.311***	0.002	-0.001
2. <i>GM</i>	$0.015^{***}$	1	0.395***	0.326***	-0.005	-0.014***
3. SGA	-0.205***	$0.249^{***}$	1	-0.422***	-0.051***	-0.019***
4. ROA	$0.174^{***}$	0.354***	-0.508***	1	$0.042^{***}$	-0.002
5. CUS_REF	-0.012***	0.013***	-0.069***	$0.062^{***}$	1	$0.014^{***}$
6. MAJ_CUS	-0.006*	-0.009**	-0.034***	$0.020^{***}$	$0.014^{***}$	1

## **Table 3 Customer referencing and future performance**

The table presents the baseline results for the average effect of customer referencing on future firm performance. In each column, the dependent variable is one measure of industry-adjusted performance in year t+1: asset turnover (ATO), gross margin (GM), selling, general, and administrative expenses (SGA), and return on assets (ROA). All independent variables are calculated in year t. The variable of interest,  $CUS\_REF$ , is the primary measure of customer referencing propensity. It is an indicator of at least one referenced customer satisfying the following three conditions: a sales contribution of less than 10%, the company name is specifically disclosed and the customer is not a major customer for the previous year. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*\*, \*\*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
CUS_REF	0.019**	0.025***	-0.013**	0.011***
	(2.40)	(3.11)	(-2.10)	(3.25)
$MAJ\_CUS$	0.011	0.016**	-0.016**	0.002
	(1.27)	(2.02)	(-2.13)	(0.49)
CUS_CON	-0.036	-0.327***	$0.084^{**}$	-0.068***
	(-1.18)	(-7.05)	(2.36)	(-4.16)
SGRW	0.040****	0.035***	-0.025***	0.004
	(9.93)	(5.55)	(-5.17)	(1.51)
SIZE	-0.363***	0.007	-0.050***	0.045***
	(-44.87)	(1.05)	(-8.44)	(12.94)
LEV	0.198***	0.034**	0.059***	-0.176***
	(12.88)	(2.08)	(3.76)	(-16.50)
CASH	-0.832* <sup>***</sup>	-0.259***	0.440****	-0.004
	(-26.08)	(-6.64)	(12.51)	(-0.24)
TANGI	-0.560***	-0.161***	-0.018	-0.234***
	(-11.59)	(-3.39)	(-0.43)	(-10.63)
SEG	0.013	-0.027***	0.001	-0.020***
	(1.58)	(-4.24)	(0.20)	(-6.07)
AGE	-0.100****	-0.006	-0.012	-0.008*
	(-8.92)	(-0.63)	(-1.46)	(-1.65)
SGA	-0.117****	$0.029^{**}$		-0.102***
	(-17.08)	(1.99)		(-17.77)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.634	0.516	0.563	0.587

#### Table 4 Alternative measures of customer referencing

The table presents a robustness check using alternative measures of customer referencing. In Panel A, we first consider a continuous measure (*CUS\_REF1*) to capture the number of customers the firm references. Based on the primary measure, we further restrict the sales contribution of the referenced customer to be equal to or more than 1% (*CUS\_REF2*) or require the referenced customer to not be a major customer the following year (*CUS\_REF3*). In Panel B, we redefine the measure to capture the referencing of reputable customers. The referenced customer is considered reputable if it is a listed company (*CUS\_REF4*), its market share is above the industry median (*CUS\_REF5*), or its total assets are above the industry median (*CUS\_REF6*). In each column, the dependent variable is one measure of industry-adjusted performance in year *t*+1: asset turnover (*ATO*), gross margin (*GM*), selling, general, and administrative expenses (*SGA*), and return on assets (*ROA*). All independent variables are calculated in year *t*. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*, \*\*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

Panel A. Alternative measures of	customer re	ferencing with	minor modifi	cations to CUS	RFF
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Panel A. Alter						ations to CU						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8	(9)	(10)	(11)	(12)
	ATO	GM	SGA	ROA	ATO	GM	SGA	ROA	ATO	GM	SGA	ROA
CUS_REF1	0.023***	0.022***	-0.011**	0.010***								
	(3.01)	(3.18)	(-2.02)	(3.11)								
CUS_REF2					$0.022^{**}$	0.023***	-0.021***	0.012***				
					(2.52)	(2.77)	<b>(-3.51)</b>	(3.30)				
CUS_REF3									$0.018^{**}$	0.026***	-0.014**	0.012***
									(2.18)	(3.07)	(-2.18)	(3.32)
$MAJ\_CUS$	0.011	$0.016^{**}$	-0.016**	0.002	0.010	$0.015^{*}$	-0.015**	0.001	0.012	$0.016^{**}$	-0.015*	0.002
	(1.34)	(2.04)	(-2.14)	(0.51)	(1.18)	(1.87)	(-2.08)	(0.36)	(1.40)	(1.97)	(-1.95)	(0.43)
$CUS\_CON$	-0.035	-0.328***	$0.084^{**}$	-0.068***	-0.036	-0.328***	$0.083^{**}$	-0.068 <sup>***</sup>	-0.031	-0.317***	$0.087^{**}$	-0.066 <sup>***</sup>
	(-1.17)	(-7.06)	(2.37)	(-4.18)	(-1.18)	(-7.06)	(2.35)	(-4.18)	(-1.01)	(-6.76)	(2.40)	(-3.96)
SGRW	$0.040^{***}$	0.035***	-0.025***	0.004	0.040***	0.035***	-0.025***	0.004	0.040***	0.035***	-0.026***	0.003
	(9.94)	(5.55)	(-5.17)	(1.51)	(9.94)	(5.55)	(-5.17)	(1.51)	(9.86)	(5.27)	(-5.16)	(1.11)
SIZE	-0.363 <sup>***</sup>	0.007	-0.050***	0.045***	-0.363 <sup>***</sup>	0.007	-0.050***	0.045***	-0.362 <sup>***</sup>	0.008	-0.050***	0.046***
	(-44.89)	(1.04)	(-8.44)	(12.93)	(-44.87)	(1.07)	(-8.45)	(12.96)	(-44.62)	(1.22)	(-8.45)	(13.16)
LEV	0.198***	$0.034^{**}$	0.059***	-0.176***	$0.198^{***}$	$0.034^{**}$	0.059***	-0.176* <sup>**</sup>	0.197***	$0.032^{**}$	$0.062^{***}$	-0.179***
	(12.87)	(2.08)	(3.76)	(-16.50)	(12.89)	(2.09)	(3.75)	(-16.49)	(12.77)	(2.01)	(3.88)	(-16.64)
CASH	-0.832***	-0.259***	0.440***	-0.004	-0.832***	-0.259***	0.440***	-0.004	-0.822***	-0.264***	0.438***	-0.005
	(-26.09)	(-6.65)	(12.51)	(-0.24)	(-26.08)	(-6.64)	(12.50)	(-0.23)	(-25.72)	(-6.74)	(12.41)	(-0.32)
<i>TANGI</i>	-0.560****	-0.161* <sup>**</sup> *	-0.018	-0.235***	-0.560***	-0.161***	-0.017	-0.234* <sup>***</sup>	-0.546***	-0.162***	-0.024	-0.232***
	(-11.60)	(-3.40)	(-0.43)	(-10.63)	(-11.60)	(-3.39)	(-0.43)	(-10.63)	(-11.27)	(-3.39)	(-0.57)	(-10.37)
SEG	0.013	-0.027***	0.001	-0.020***	0.013	-0.027***	0.001	-0.020***	0.013	-0.026***	0.001	-0.020***
	(1.56)	(-4.24)	(0.20)	(-6.07)	(1.57)	(-4.24)	(0.24)	(-6.08)	(1.57)	(-4.13)	(0.18)	(-5.97)
AGE	-0.100 <sup>***</sup>	-0.006	-0.012	-0.008*	-0.100 <sup>***</sup>	-0.006	-0.012	-0.008*	-0.096 <sup>***</sup>	-0.004	-0.012	-0.007
	(-8.90)	(-0.63)	(-1.46)	(-1.65)	(-8.93)	(-0.66)	(-1.47)	(-1.67)	(-8.52)	(-0.44)	(-1.42)	(-1.53)
SGA	-0.117***	$0.029^{**}$		-0.102***	-0.117* <sup>***</sup>	$0.029^{**}$		-0.102***	-0.117***	$0.030^{**}$		-0.103***
	(-17.08)	(1.99)		(-17.77)	(-17.08)	(1.99)		(-17.76)	(-16.97)	(1.98)		(-17.60)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781
adj. $R^2$	0.634	0.516	0.563	0.587	0.634	0.516	0.563	0.587	0.635	0.517	0.566	0.591

Table 4 - Cont'd

Panel B. Redefined measures that capture the referencing of reputable customers

Panel B. Rede	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8	(9)	(10)	(11)	(12)
	ATO	GM	SGA	ROA	ATO	GM	SGA	ROA	ATO	GM	SGA	ROA
CUS_REF4	0.028***	$0.018^{**}$	-0.008	$0.008^{**}$								
	(3.23)	(2.21)	(-1.27)	(2.20)								
CUS_REF5					0.034***	0.023***	-0.007	$0.011^{***}$				
					(3.78)	(2.68)	(-1.10)	(2.98)	***	**		***
CUS_REF6									0.034***	0.023**	-0.008	0.012***
		**	**		0.044	**	**		(3.79)	(2.56)	( <b>-1.26</b> )	(3.21)
MAJ_CUS	0.011	0.016**	-0.015**	0.002	0.011	0.016**	-0.015**	0.002	0.011	0.016**	-0.015**	0.002
	(1.35)	(1.97)	(-2.09)	(0.45)	(1.36)	(1.99)	(-2.08)	(0.47)	(1.36)	(1.98)	(-2.09)	(0.48)
CUS_CON	-0.036	-0.329***	0.085**	-0.069***	-0.036	-0.329***	0.085**	-0.069***	-0.036	-0.329***	0.085**	-0.069***
CORY	(-1.19)	(-7.08)	(2.39)	(-4.21)	(-1.20)	(-7.09)	(2.39)	(-4.22)	(-1.21)	(-7.09)	(2.39)	(-4.22)
SGRW	0.040***	0.035***	-0.025 <sup>***</sup>	0.004	0.040	0.035***	-0.025 <sup>***</sup>	0.004	0.040***	0.035***	-0.025***	0.004
	(9.92)	(5.54)	(-5.16)	(1.50)	(9.92)	(5.54)	(-5.16)	(1.50)	(9.92)	(5.54)	(-5.16)	(1.50)
SIZE	-0.363***	0.007	-0.050***	0.045***	-0.363***	0.007	-0.050***	0.045***	-0.363***	0.007	-0.050***	0.045***
	(-44.90)	(1.07)	(-8.46)	(12.96)	(-44.90)	(1.07)	(-8.47)	(12.96)	(-44.90)	(1.07)	(-8.46)	(12.95)
LEV	0.198***	0.034**	0.059***	-0.176***	0.198***	0.034**	0.059***	-0.176***	0.198***	0.034**	0.059***	-0.176***
	(12.88)	(2.09)	(3.76)	(-16.50)	(12.88)	(2.09)	(3.76)	(-16.50)	(12.88)	(2.09)	(3.76)	(-16.50)
CASH	-0.832***	-0.259***	0.440***	-0.004	-0.832***	-0.259***	0.440***	-0.004	-0.832***	-0.259***	0.440***	-0.004
	(-26.07)	(-6.64)	(12.51)	(-0.23)	(-26.08)	(-6.65)	(12.51)	(-0.23)	(-26.08)	(-6.65)	(12.51)	(-0.23)
<i>TANGI</i>	-0.559***	-0.161***	-0.018	-0.234***	-0.559***	-0.160***	-0.018	-0.234***	-0.559***	-0.160***	-0.018	-0.234***
	(-11.59)	(-3.38)	(-0.43)	(-10.62)	(-11.59)	(-3.38)	(-0.44)	(-10.61)	(-11.59)	(-3.38)	(-0.44)	(-10.61)
SEG	0.013	-0.027***	0.001	-0.020***	0.013	-0.027***	0.001	-0.020***	0.013	-0.027***	0.001	-0.020***
	(1.58)	(-4.19)	(0.17)	(-6.03)	(1.59)	(-4.19)	(0.16)	(-6.03)	(1.58)	(-4.19)	(0.17)	(-6.03)
AGE	-0.100***	-0.006	-0.012	-0.008*	-0.100 <sup>***</sup>	-0.006	-0.012	-0.008*	-0.100 <sup>***</sup>	-0.006	-0.012	-0.008*
	(-8.93)	(-0.68)	(-1.43)	(-1.69)	(-8.92)	(-0.68)	(-1.43)	(-1.68)	(-8.92)	(-0.68)	(-1.43)	(-1.69)
SGA	-0.117***	0.029**		-0.102***	-0.117****	$0.029^{**}$		-0.102***	-0.117****	$0.029^{**}$		-0.102***
	(-17.08)	(1.98)		(-17.77)	(-17.08)	(1.99)		(-17.77)	(-17.08)	(1.99)		(-17.77)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781	98,781
adj. $R^2$	0.634	0.516	0.563	0.587	0.634	0.516	0.563	0.587	0.634	0.516	0.563	0.587

## Table 5 Non-industry-adjusted performance measures

The table presents a robustness check using non-industry-adjusted measures of firm performance. In each column, the dependent variable is one measure of non-industry-adjusted performance in year t+1: asset turnover ( $Nonadj\_ATO$ ), gross margin ( $Nonadj\_GM$ ), selling, general, and administrative expenses ( $Nonadj\_SGA$ ), and return on assets ( $Nonadj\_ROA$ ). All independent variables are calculated in year t. The variable of interest,  $CUS\_REF$ , is the primary measure of customer referencing propensity. It is an indicator of at least one referenced customer satisfying the following three conditions: a sales contribution of less than 10%, the company name is specifically disclosed and the customer is not a major customer for the previous year. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*\*, \*\*\* and \*\* denote significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	Nonadj_ATO	Nonadj_GM	Nonadj_SGA	Nonadj_ROA
CUS_REF	0.018**	0.023***	-0.013**	0.008**
	(2.23)	(2.89)	(-2.10)	(2.44)
$MAJ\_CUS$	0.013	$0.014^*$	-0.018**	0.002
	(1.48)	(1.75)	(-2.37)	(0.41)
CUS_CON	-0.036	-0.326***	0.082***	-0.069***
	(-1.16)	(-7.02)	(2.30)	(-4.33)
SGRW	0.043***	$0.036^{***}$	-0.025***	0.004
	(10.36)	(5.60)	(-5.08)	(1.57)
SIZE	-0.374***	0.002	-0.048***	0.042***
	(-44.98)	(0.36)	(-8.04)	(12.42)
LEV	0.203***	$0.030^{*}$	0.061****	-0.183***
	(12.66)	(1.84)	(3.86)	(-17.29)
CASH	-0.847***	-0.263 <sup>***</sup>	0.448***	-0.001
	(-25.87)	(-6.70)	(12.63)	(-0.07)
<i>TANGI</i>	-0.558***	-0.173***	-0.027	-0.225***
	(-11.24)	(-3.60)	(-0.66)	(-10.50)
SEG	0.011	-0.023****	0.001	-0.018***
	(1.34)	(-3.68)	(0.12)	(-5.59)
AGE	-0.107 <sup>***</sup>	-0.003	-0.013	-0.007
	(-9.21)	(-0.34)	(-1.51)	(-1.61)
SGA	-0.121****	$0.029^{*}$		-0.105***
	(-17.09)	(1.94)		(-18.23)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.704	0.532	0.586	0.613

## **Table 6 IV-2SLS estimator**

The table presents a robustness check using an IV approach to address endogeneity concerns. Specifically, we use the industry level propensity for customer referencing ( $IND\_CUS\_REF$ ) as the instrumental variable of  $CUS\_REF$ . The first stage results are presented in column 1 while the second stage results are presented in the other 4 columns. In each of the last four columns, the dependent variable is one measure of industry-adjusted performance in year t+1: asset turnover (ATO), gross margin (GM), selling, general, and administrative expenses (SGA), and return on assets (ROA). All independent variables are calculated in year t. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*, \*\*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Dep. Var. =	$CUS\_REF$	ATO	GM	SGA	ROA
IND_CUS_REF	0.814***				
	(28.63)				
Instrumented		0.128**	$\boldsymbol{0.067}^*$	-0.010	0.041**
CUS_REF		(2.09)	(1.87)	(-0.30)	(2.14)
MAJ_CUS	-0.060****	$0.017^*$	0.019**	-0.016 <sup>**</sup>	0.004
	(-9.99)	(1.90)	(2.26)	(-2.05)	(0.91)
CUS_CON	-0.113***	-0.023	-0.322***	$0.084^{**}$	-0.064***
	(-7.38)	(-0.74)	(-6.91)	(2.34)	(-3.90)
SGRW	-0.002	0.040***	0.036***	-0.025***	0.004
	(-1.27)	(9.98)	(5.56)	(-5.17)	(1.53)
SIZE	0.015***	-0.365 <sup>***</sup>	0.006	-0.050***	0.044***
	(4.56)	(-44.51)	(0.95)	(-8.37)	(12.74)
LEV	$0.009^{*}$	0.197***	0.033**	0.059***	-0.177* <sup>**</sup> *
	(1.87)	(12.80)	(2.06)	(3.76)	(-16.54)
CASH	-0.015	-0.831***	-0.259***	0.440***	-0.003
	(-1.07)	(-26.01)	(-6.63)	(12.50)	(-0.21)
TANGI	0.024	-0.562***	-0.162***	-0.018	-0.235***
	(1.12)	(-11.62)	(-3.41)	(-0.43)	(-10.66)
SEG	0.022****	0.010	-0.028***	0.001	-0.021***
	(4.23)	(1.25)	(-4.32)	(0.19)	(-6.22)
AGE	-0.030***	-0.096***	-0.004	-0.012	-0.007
	(-4.90)	(-8.46)	(-0.46)	(-1.44)	(-1.40)
SGA	-0.008***	-0.116***	0.030**		-0.102***
	(-3.04)	(-16.88)	(2.01)		(-17.73)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781	98,781
adj. $R^2$	0.376	0.633	0.516	0.563	0.586

## Table 7 Low reputation firms, customer referencing and future performance

The table presents the results for the moderating effect of a firm's own reputation on the relation between customer referencing and future performance. Firm reputation is measured by market share in Panel A and firm size in Panel B. To investigate whether the product market effect of customer referencing is stronger for firms with a low reputation, we interact the customer referencing measure ( $CUS\_REF$ ) with NEGMKSH (negative one times market share) and NEGSIZE (negative one times firm size), respectively. In each column, the dependent variable is one measure of industry-adjusted performance in year t+1: asset turnover (ATO), gross margin (GM), selling, general, and administrative expenses (SGA), and return on assets (ROA). All independent variables are calculated in year t. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*, \*\*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

Panel A. Firms with a low market share

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
$CUS\_REF \times NEGMKSH$	1.107**	0.486**	-0.326*	0.206*
	(2.42)	(2.33)	<b>(-1.91)</b>	(1.76)
CUS_REF	0.024***	0.027***	-0.014 <sup>**</sup>	0.012***
	(2.93)	(3.10)	(-2.15)	(3.24)
NEGMKSH	-5.300***	0.866***	-1.150***	2.371***
	(-5.66)	(2.92)	(-4.43)	(10.30)
MAJ_CUS	0.011	0.016**	-0.015**	0.001
	(1.35)	(1.97)	(-2.08)	(0.34)
CUS_CON	-0.037	-0.327***	0.083**	-0.067***
	(-1.21)	(-7.04)	(2.35)	(-4.12)
SGRW	$0.040^{***}$	0.035***	-0.025***	0.004
	(9.95)	(5.55)	(-5.16)	(1.50)
SIZE	-0.371***	0.009	-0.052***	0.048***
	(-44.90)	(1.24)	(-8.45)	(13.55)
LEV	0.194***	0.034**	0.058***	-0.174***
	(12.63)	(2.13)	(3.70)	(-16.35)
CASH	-0.828***	-0.260***	0.441***	-0.006
	(-25.95)	(-6.66)	(12.53)	(-0.38)
TANGI	-0.557***	-0.161***	-0.017	-0.236***
	(-11.54)	(-3.40)	(-0.41)	(-10.70)
SEG	0.010	-0.026***	0.000	-0.019***
	(1.22)	(-4.18)	(0.08)	(-5.67)
AGE	-0.101****	-0.006	-0.012	-0.007
	(-8.99)	(-0.62)	(-1.47)	(-1.60)
SGA	-0.117***	0.029***		-0.102***
	(-17.10)	(2.00)		(-17.76)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.635	0.516	0.563	0.587

Table 7 - Cont'd

Panel B. Small firms

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
CUS_REF × NEGSIZE	0.004	0.008**	-0.007**	0.008***
	(1.14)	(2.54)	(-2.42)	(4.74)
CUS_REF	$0.038^{*}$	0.063***	-0.044**	0.049***
	(1.83)	(3.24)	(-2.53)	(4.75)
NEGSIZE	0.362***	-0.009	0.052***	-0.046***
	(44.20)	(-1.30)	(8.59)	(-13.28)
$MAJ\_CUS$	0.010	$0.015^{*}$	-0.015 <sup>**</sup>	0.001
	(1.22)	(1.91)	(-2.04)	(0.27)
CUS_CON	-0.035	-0.325***	$0.082^{**}$	-0.066***
	(-1.14)	(-7.01)	(2.31)	(-4.04)
SGRW	0.040***	0.036***	-0.025***	0.004
	(9.94)	(5.56)	(-5.17)	(1.53)
LEV	0.198***	0.034**	0.058***	-0.176***
	(12.90)	(2.11)	(3.74)	(-16.49)
CASH	-0.832***	-0.259***	0.440***	-0.004
	(-26.09)	(-6.64)	(12.51)	(-0.24)
TANGI	-0.559***	-0.161***	-0.018	-0.234***
	(-11.59)	(-3.39)	(-0.44)	(-10.63)
SEG	0.013	-0.027***	0.001	-0.020***
	(1.59)	(-4.23)	(0.19)	(-6.05)
AGE	-0.100***	-0.006	-0.013	-0.007
	(-8.91)	(-0.60)	(-1.49)	(-1.59)
SGA	-0.116***	0.029***		-0.102***
	(-17.06)	(2.00)		(-17.75)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.634	0.516	0.563	0.587

## Table 8 Riskier firms, customer referencing and future performance

The table presents the results for the moderating effect of a firm's own risk on the relation between customer referencing and future performance. Firm risk is measured by the presence of operating loss in Panel A and the extent of financial constraints, i.e., Hadlock and Pierce's (2010) SA index in Panel B and Whited and Wu's (2006) WW index in Panel C. To investigate whether the product market effect of customer referencing is stronger for riskier firms, we interact the customer referencing measure ( $CUS\_REF$ ) with LOSS (indicator for operating loss), SA (the SA index) and WW (the WW index), respectively. In each column, the dependent variable is one measure of industry-adjusted performance in year t+1: asset turnover (ATO), gross margin (GM), selling, general, and administrative expenses (SGA), and return on assets (ROA). All independent variables are calculated in year t. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

Panel A. Loss firms

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
CUS_REF × LOSS	0.042***	0.058***	-0.031***	0.022***
	(3.59)	(3.93)	<b>(-2.91)</b>	(3.84)
CUS_REF	0.002	0.002	-0.000	0.002
	(0.20)	(0.40)	(-0.04)	(0.75)
LOSS	-0.218***	-0.111****	0.099***	-0.070****
	(-29.96)	(-14.84)	(16.06)	(-20.87)
$MAJ\_CUS$	0.010	$0.015^{*}$	-0.015**	0.002
	(1.23)	(1.94)	(-2.06)	(0.43)
CUS_CON	$-0.056^*$	-0.335***	0.092***	-0.074 <sup>***</sup>
	(-1.89)	(-7.25)	(2.62)	(-4.58)
SGRW	0.031***	0.032***	-0.021 <sup>***</sup>	0.001
	(7.89)	(4.95)	(-4.32)	(0.47)
SIZE	-0.369***	0.004	-0.047***	0.043***
	(-46.18)	(0.65)	(-8.03)	(12.56)
LEV	0.223***	0.045***	0.047***	-0.169* <sup>***</sup>
	(14.45)	(2.78)	(2.99)	(-15.53)
CASH	-0.835***	-0.260***	0.437***	-0.005
	(-26.68)	(-6.73)	(12.52)	(-0.29)
<i>TANGI</i>	-0.491***	-0.129***	-0.050	-0.213***
	(-10.26)	(-2.72)	(-1.21)	(-9.75)
SEG	0.018**	-0.024***	-0.001	-0.019* <sup>***</sup>
	(2.26)	(-3.88)	(-0.22)	(-5.70)
AGE	-0.091***	-0.002	-0.016 <sup>*</sup>	-0.005
	(-8.22)	(-0.20)	(-1.90)	(-1.06)
SGA	-0.099****	0.038**		-0.097***
	(-14.69)	(2.54)		(-16.78)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.641	0.518	0.565	0.590

Table 8 - Cont'd

Panel B. Financially constrained firms (Hadlock and Pierce's (2010) SA index)

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
$CUS\_REF \times SA$	$\boldsymbol{0.017}^*$	0.017**	-0.014**	0.018***
	(1.90)	(2.10)	<b>(-1.98)</b>	(3.93)
CUS_REF	$0.068^{**}$	0.071***	-0.051 <sup>**</sup>	0.059***
	(2.39)	(2.76)	(-2.17)	(4.05)
SA	0.202****	-0.036	0.111****	-0.262 <sup>***</sup>
	(6.22)	(-1.31)	(4.68)	(-17.05)
MAJ_CUS	0.010	$0.015^{*}$	-0.015**	0.001
	(1.21)	(1.93)	(-2.04)	(0.25)
CUS_CON	-0.041	-0.324***	0.078**	-0.056***
	(-1.36)	(-6.98)	(2.20)	(-3.47)
SGRW	0.041***	0.035***	-0.024***	0.002
	(10.28)	(5.52)	(-4.99)	(0.77)
SIZE	-0.288****	-0.005	-0.010	-0.050***
	(-20.75)	(-0.42)	(-1.19)	(-9.28)
LEV	0.176***	0.038**	0.046***	-0.147***
	(11.37)	(2.27)	(3.00)	(-14.11)
CASH	-0.821***	-0.261***	0.445***	-0.018
	(-25.82)	(-6.67)	(12.67)	(-1.13)
TANGI	-0.544***	-0.163***	-0.010	-0.253***
	(-11.23)	(-3.42)	(-0.25)	(-11.47)
SEG	0.010	-0.026***	-0.000	-0.017***
	(1.26)	(-4.16)	(-0.08)	(-4.92)
AGE	-0.074***	-0.010	0.001	-0.040***
	(-6.25)	(-0.99)	(0.13)	(-7.82)
SGA	-0.118***	0.030***		-0.100****
	(-17.07)	(2.02)		(-17.81)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.635	0.516	0.564	0.595

Table 8 - Cont'd

Panel C. Financially constrained firms (Whited and Wu's (2006) WW index)

Tanci C. Pinanciany con	(1) (2) (3) (4)					
	ATO	$\widetilde{GM}$	SGA	ROA		
CUS_REF × WW	-0.008	0.153**	-0.121**	0.118***		
	(-0.13)	(2.15)	(-2.09)	(3.55)		
CUS_REF	0.010	0.059***	-0.036**	0.032***		
_	(0.57)	(2.83)	(-2.08)	(3.43)		
WW	-0.936***	-0.982***	1.172***	-0.807 <sup>***</sup>		
	(-9.11)	(-7.35)	(9.85)	(-13.04)		
MAJ_CUS	0.009	0.015*	-0.015**	0.001		
	(1.08)	(1.88)	(-2.04)	(0.21)		
CUS_CON	-0.023	-0.310***	$0.074^{*}$	-0.045***		
	(-0.74)	(-6.15)	(1.96)	(-2.83)		
SGRW	0.013***	-0.007	0.034***	-0.036***		
	(2.20)	(-0.94)	(4.97)	(-9.94)		
SIZE	-0.372***	-0.035***	0.003	0.005		
	(-39.30)	(-3.94)	(0.34)	(1.20)		
LEV	0.200***	0.052***	0.042**	-0.138***		
	(12.15)	(2.95)	(2.52)	(-12.14)		
CASH	-0.681***	-0.244***	0.408***	0.011		
	(-21.01)	(-5.86)	(11.00)	(0.67)		
TANGI	-0.485***	-0.143***	-0.042	-0.176***		
	(-9.57)	(-2.84)	(-1.00)	(-8.14)		
SEG	0.009	-0.027***	-0.001	-0.016***		
	(1.08)	(-4.30)	(-0.21)	(-5.19)		
AGE	0.001	0.003	0.003	-0.011 <sup>**</sup>		
	(0.08)	(0.22)	(0.33)	(-2.19)		
SGA	-0.110***	$0.033^{*}$		-0.091***		
	(-15.36)	(1.90)		(-14.66)		
Firm FE	Yes	Yes	Yes	Yes		
Year FE	Yes	Yes	Yes	Yes		
N	90,668	90,668	90,668	90,668		
adj. $R^2$	0.645	0.519	0.569	0.593		

## Table 9 Product market competition, customer referencing and future performance

The table presents the results of testing the moderating effect of product market competition on the relation between customer referencing and future performance. In Panel A, we use the product similarity measure introduced by Hoberg and Phillips (2016) as a proxy for product market competition. The sample period for Panel A is from 1996 to 2015, as the data for product similarity is only available during this period. In Panel B, we use the Herfindahl-Hirschman Index (HHI) calculated based on the annual sales of member firms in each industry to measure the extent of product market competition. To investigate whether the product market effect of customer referencing is stronger for firms facing higher competition, we interact the customer referencing measure (*CUS\_REF*) with *SIMILARITY* (the product similarity measure) and *NEGHHI* (negative one times the HHI), respectively. In each column, the dependent variable is one measure of industry-adjusted performance in year *t*+1: asset turnover (*ATO*), gross margin (*GM*), selling, general, and administrative expenses (*SGA*), and return on assets (*ROA*). All independent variables are calculated in year *t*. Variable definitions are summarized in Appendix C. Firm and year fixed effects are included and the t-values in the parentheses are based on robust standard errors clustered by firm. \*\*\*, \*\*\* and \* denote significance at the 1%, 5% and 10% levels, respectively.

Panel A. Firms with high product similarity

Tunerri. Tirins with ingh pro	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
CUS_REF ×SIMILARITY	0.005***	0.012**	-0.000	0.002**
	(3.26)	(2.12)	(-0.09)	(2.30)
CUS_REF	-0.009	-0.023	-0.007	-0.004
	(-0.75)	(-1.25)	(-0.60)	(-0.72)
SIMILARITY	0.004	-0.017**	0.001	-0.001
	(1.60)	(-2.25)	(0.26)	(-0.52)
MAJ_CUS	-0.002	0.012	-0.005	0.000
	(-0.23)	(0.91)	(-0.45)	(0.08)
CUS_CON	0.084**	-0.231**	0.021	-0.012
	(1.98)	(-2.49)	(0.34)	(-0.52)
SGRW	0.041***	0.046***	-0.019**	0.002
	(7.45)	(3.38)	(-2.25)	(0.50)
SIZE	-0.352***	0.021	-0.044* <sup>*</sup> **	0.043***
	(-29.87)	(1.39)	(-3.96)	(7.22)
LEV	0.116*** <sup>*</sup>	0.143****	0.019	-0.095 <sup>***</sup>
	(4.81)	(3.25)	(0.63)	(-3.90)
CASH	-0.482***	-0.267 <sup>***</sup>	0.369***	0.031
	(-11.85)	(-3.94)	(6.88)	(1.33)
TANGI	-0.229***	-0.142	0.002	-0.162***
	(-3.25)	(-1.60)	(0.02)	(-4.17)
SEG	0.004	-0.028***	0.005	-0.015***
	(0.43)	(-3.42)	(0.83)	(-4.14)
AGE	0.064***	0.032	-0.026	0.009
	(2.88)	(1.05)	(-1.21)	(0.91)
SGA	-0.077***	$0.048^*$		-0.067***
	(-8.84)	(1.75)		(-7.56)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	37,584	37,584	37,584	37,584
adj. $R^2$	0.722	0.561	0.584	0.553

Table 9 - Cont'd

Panel B. Firms in an industry with a low HHI

	(1)	(2)	(3)	(4)
	ATO	GM	SGA	ROA
CUS_REF × NEGHHI	-0.028	0.152***	0.014	0.051**
	<b>(-0.49)</b>	(2.77)	(0.33)	(2.25)
CUS_REF	0.014	0.049***	-0.010	0.019***
	(1.24)	(3.29)	(-1.03)	(3.46)
NEGHHI	0.191**	-0.013	0.002	0.052**
	(2.43)	(-0.33)	(0.04)	(2.25)
MAJ_CUS	0.011	$0.016^{**}$	-0.016**	0.002
	(1.30)	(2.00)	(-2.13)	(0.49)
CUS_CON	-0.036	-0.327***	0.084**	-0.068***
	(-1.18)	(-7.05)	(2.36)	(-4.15)
SGRW	0.040***	0.035***	-0.025***	0.004
	(9.97)	(5.55)	(-5.17)	(1.52)
SIZE	-0.364 <sup>***</sup>	0.007	-0.050***	0.044***
	(-44.93)	(1.06)	(-8.41)	(12.85)
LEV	$0.197^{***}$	0.034**	0.059***	-0.177***
	(12.85)	(2.08)	(3.76)	(-16.53)
CASH	-0.832* <sup>**</sup> *	-0.259***	0.440***	-0.004
	(-26.09)	(-6.63)	(12.51)	(-0.22)
TANGI	-0.559***	-0.161***	-0.018	-0.234***
	(-11.61)	(-3.39)	(-0.43)	(-10.63)
SEG	0.013	-0.027***	0.001	-0.020***
	(1.58)	(-4.23)	(0.20)	(-6.06)
AGE	-0.101***	-0.006	-0.012	-0.008*
	(-9.04)	(-0.67)	(-1.47)	(-1.77)
SGA	-0.117***	0.029***		-0.102***
	(-17.10)	(1.99)		(-17.78)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	98,781	98,781	98,781	98,781
adj. $R^2$	0.635	0.516	0.563	0.587