Quantifying the Link Between Employee Engagement and Customer Satisfaction in the Car Rental Industry[*]

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November 10, 2016

Abstract

In the retail service industry, employee engagement may play an important role in customer relationship management, as employees often interact directly with customers. This paper investigates the link between employee engagement and customer satisfaction. We first show with a simple analytical model that counter to intuition, depending on cost of effort relative to its payoffs to the employee, the link between employee engagement and customer satisfaction is ambiguous even if higher effort creates value to the customer and may lead to higher customer satisfaction. Thus, it is an empirical question whether the link between employee engagement and customer satisfaction is positive. We analyze this using a unique data set from a large car rental company. Our analysis accounts for the possibility that employee engagement is endogenously determined. We control for unobservables using location and time fixed effects, and also instrumental variables based on location and time varying employee composition. Our analysis confirms that there is a positive effect of employee engagement on customer satisfaction, which can in turn increase customer loyalty. Our findings have implications not just for customer targeting but also firm resource allocation decisions regarding employee motivation.

Keywords: Employee Engagement, Customer Satisfaction, Service Management, Car Rental Industry, Relationship Marketing, Retail Value Chain, Instrumental Variables.

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1 Introduction

The development of a strong service culture that contributes towards better customer-centric practices has been identified as a critical source of competitive advantage (Grönroos, 2007) and financial performance (Homburg, Hoyer, and Fassnacht, 2002) for companies. An important effect of a healthy customer-centric service culture may also be better customer relationship management,[1] including an improvement in the company's ability to satisfy its customers.[2] While much of the recent research on service and customer management has focussed on customer interactions with computer-based systems (e.g., Ansari et. al., 2000; Ansari and Mela, 2003; Bodapati, 2004; Iacobucci, Arabie, and Bodapati, 2000; Kamakura et. al., 1991; Kamakura et. al, 2003; Knott, Hayes, and Neslin, 2002; Li, Sun, and Wilcox, 2005; Rust and Huang, 2014; Ying, Feinberg, and Wedel, 2006), many firm-customer interactions still require the "human touch," most notably in retail services.[3] In the service industry, customers commonly interact with sales representatives, which then gives employees opportunities to add value to the customer experience at the point of consumption. At the point of customer contact, service employees represent the organization and the brand in the customer's eyes.[4] Thus, these employees are a relevant factor in customer and service management (Rust and Chung, 2006), and play an important role in the firm's overall customer satisfaction.[5]

Given this direct interaction between employees and customers in service industries, employee engagement may play an even greater role in customer satisfaction in this sector. In fact, some companies pride themselves as having the most engaged employees (Smith,

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[1] Another argument for a healthy service culture is that the notion of fairness may trickle down from employee to customer (e.g., Bowen, Gilliland, and Folger, 1999; Masterson, 2001). Furthermore, employee empowerment serves as an important mitigator in times of service failures (e.g., Chebat and Kollias, 2000). More generally, (perceived) investments in personnel are associated with higher profits (e.g., Kamakura, Mittal, de Rosa, and Mazzon, 2002; Schlesinger and Heskett, 1991).

[2] See Kamakura et. al. (2005) for a summary of the extensive literature on customer relationship management.

[3] It has been suggested that the reliance on automation, along with concurrent reductions of labor, need not lead to service productivity. In fact, there is evidence that service productivity or quality may be negatively associated with cost-reducing measures to improve production efficiency (e.g., Anderson, Fornell, and Rust, 1997; Oliva and Sterman, 2001; Rust and Huang, 2012, 2014).

[4] See e.g., Zeithaml, Bitner, and Gremler (p. 352, 2009).

[5] Fostering healthy employee engagement may fall under a more general organizational management strategy. See e.g., Beer (2009) and Pfeffer (1998) for comprehensive references.

2012), especially because this may affect customer satisfaction, customer choices and firm performance (Harter, Schmidt and Hayes, 2002, Dotson and Alleny, 2010, Cooper, 2012).[6]

In this paper we study the link between customer satisfaction and location-level (i.e., group-level) employee engagement, in particular employee engagement on customer-centric issues. Our analysis is based on a unique large data-set from the car rental service industry, which allows us to connect customer transactions with a measure of customer-centric employee engagement elicited directly from employees across all North American rental locations.[7] We motivate our analysis by demonstrating using a very simple analytical model that counter to intuition, the relationship between employee engagement and customer satisfaction can be ambiguous depending on cost of effort relative to its payoffs to the employee, even if higher effort creates value to the customer and may lead to higher customer satisfaction. Therefore, it is indeed an empirical question whether the link between employee engagement and customer satisfaction is positive. Consequently, we investigate whether or not location-level employee engagement is linked to higher customer satisfaction, which is a key consumer transaction based performance metric for customer relationship management.[8] Our study is based on customer transaction level measures of customer satisfaction that can be linked to location-level measures of customer-centric employee engagement elicited directly from employees through a survey. We employ an instrumental variables regression approach to establish the causal connection along with exploiting within location and cross time variation. Since employee engagement may be endogenous, we exploit location-time specific variables to build our set of instruments, such as the employee turnover rate last pe-

[6]For example, Howard Schultz, Chairman and CEO of Starbucks has been quoted as saying, "We built the Starbucks brand first with our people, not with consumers. Because we believed that best way to meet and exceed the expectations of our customers was to hire and train great people, we invested in employees." Some of the conceptual underpinnings for investing in employee engagement come in part from the "the happy-productive worker hypothesis" (see e.g., Herzberg, Mausner, and Snyderman, 1959, Barley and Kunda, 1992). However, the empirical evidence on this has been mixed (see e.g., Brayfield and Crockett, 1955, Vroom, 1964, Iaffaldano and Muchinsky, 1985, Staw and Barsade, 1993).

[7]Other work about group-level performance has been focused on team management (e.g., Cohen and Bailey, 1997), group cohesiveness (e.g., Wilderom, Hur, Wiersma, Van Den Berg, and Lee, 2015), work relationships (e.g., Kim, Gazzoli, Qu, and Kim, 2015), and prosocial behavior (e.g., George and Bettenhausen (1990).

[8]Two other papers study a similar setting as us. Yao, Yang, and Gatignon (2014) investigate the role of reservation gaps between the time of reservation and the time of consumption on upselling, while Ni, Shen, and Zhu (2015) explore the potential tensions between upselling and customer satisfaction.

riod,[9] and several other time varying characteristics of employee composition at the location level.

We also investigate implications of the link between customer satisfaction and employee engagement in the context of retail value chains. In particular, our analysis tests the validity of the retail (or service) value chain framework (Heskett et. al., 1994), which posits customer satisfaction as an intermediate node in the link between employee engagement and customer loyalty (i.e., retention). To test for this, we show that customer satisfaction has a positive effect on repeat purchasing. Having established the link between employee engagement and customer satisfaction, this result provides evidence in favor of the retail value chain.

Our findings also suggest that location-level employee engagement may play an important role as a marketing mix intervention. Marketing mix interventions in general may have heterogeneous effects across different users, e.g., business versus leisure customers. Motivated by the managerial implications of our findings for segmentation and targeting, we uncover asymmetric patterns across different types of users in the link between location-level employee engagement and customer satisfaction. In particular, we investigate whether or not location-level employee engagement is related differently to customer satisfaction between casual and business customers, and weekend and weekday customers. We find that location-level employee engagement is more strongly related to customer satisfaction among business and weekend customers.

There is an extensive literature on customer relationship management and retail value chains. Studies that focus primarily on customer relationships and satisfaction include Bolton (1998), Chandrashekaran et. al. (2007), Dotson and Allenby (2010), Fornell, Rust, and Dekimpe (2010), Grewal, Chandrashekaran, and Citrin (2010), Krishnan et. al. (1999), Lapré and Tsikriktsis (2006), Mittal and Kamakura (2001), Rust and Zahorik (1993), Seiders et. al. (2005), Van Dolen et. al. (2002), and Verhoef, Franses, and Hoekstra (2001). Furthermore, some of the research about customer satisfaction has revolved around the impact of proxies for satisfaction on various firm performance measures (e.g., Denizci and Li, 2009; Fornell, Morgenson, and Hult, 2016; Jacobson and Mitzik, 2009; Luo, Homburg, and

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[9]We refer readers to Sunder, Kumar, Goreczny, and Maurer (2016) for a recent study about the drivers behind salesperson turnover.

Wieseke, 2010; Mittal et. al., 2005; Sun and Kim, 2013). Much of the work on retail value chains has been about the impact of employee satisfaction on customer satisfaction (e.g., Loveman, 1998; Maxam and Netemeyer, 2003), or employee satisfaction or employee performance on customer satisfaction, sales, and firm performance (e.g., Dotson and Allenby, 2010; Evanschitzky, Groening, Mittal, and Wünderlich, 2011; Evanschitzky, Wangenheim, and Wünderlich, 2012; Maxham, Netemeyer, and Lichtenstein, 2008; Netemeyer and Maxham, 2007; Kumar and Pansari, 2016).

The most relevant studies to ours are the latter that focus on various aspects of the retail value chain, as we study the empirical link between employee engagement and customer satisfaction, and then the link between customer satisfaction and customer loyalty.[10] Our research contributes to this literature. We first show using a simple analytical model that the relationship between employee engagement and customer satisfaction may be ambiguous even if greater employee effort is valued by the customer and may increase customer satisfaction. Therefore, it is an empirical question whether there is a positive link between employee engagement and customer satisfaction. This motivates our empirical analysis. Building on past work (e.g., Loveman, 1998, Maxam and Netemeyer, 2003) our engagement scores are directly elicited from the employees *ex ante*,[11] and focus on the employee's customer-centric engagement level. One advantage of an employee reported measure would be that it would more likely capture engagement per se whereas a manager reported measure may capture an *ex post* outcome of engagement, rather than engagement in itself.[12] More importantly, we account for the possibility that employee engagement is endogenously determined, which

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[10]Kumar (2016) offers a comprehensive discussion about the evolution and importance of research that links customer satisfaction with loyalty.

[11]Our estimation sample is constructed such that employee engagement measures precede the date of the transactions. See Section 3 for details.

[12]As is well understood in the literature on survey design, measuring the subjective engagement state of an employee is fraught with problems. This is an important and worthwhile area of research but beyond the scope of this paper, as it has been for much of this literature. An alternative in the literature has been to adopt an external (but equally subjective) measure obtained through a rating assigned by a manager about employee performance *ex post* (interaction with customer). An exception is Maxham, Netemeyer, and Lichtenstein (2008) that obtains both internal self-reported measures of employee satisfaction and external manager reported measures of employee performance. Netemeyer and Maxham (2007) show that both self-reported and manager reported ratings of employee performance are correlated with customer satisfaction ratings, although, the former are more weakly linked. One implication of this finding for our research is that if anything it should make it less likely for us to find a positive link between employee engagement and customer satisfaction in our context, i.e., our direct employee engagement measures should bias the results against us instead of in our favor.

to the best of our knowledge hasn't been done in the literature. Therefore, in our empirical approach we control for unobservables using location and time fixed effects, and also make use of instrumental variables that help create exogenous variation in employee engagement. Our analysis confirms that there is indeed a link between employee engagement and customer satisfaction, and also customer loyalty. Our findings have implications for managers in allocating resources and improving implementation of employee engagement programs.

The rest of the paper is organized as follows. Section 2 presents the simple analytical model and Section 3 the data. In Section 4 we describe the empirical analysis and summarize the results. Finally, in Section 5 we conclude discussing managerial implications of our findings while also acknowledging some limitations of our analysis, and based on these offering a few thoughts regarding future research.

2   A Simple Microfoundations Model to Motivate the Empirics

Our empirical analysis will be focused on establishing an empirical link between customer satisfaction and employee engagement. To ensure that this relationship can be posed as an empirical question, we verify using a simple microfoundations model that there need not be a positive correlation between customer satisfaction and employee engagement.

We consider a very simple scenario in which an employee must decide how much effort (e) to allocate towards satisfying a customer. We model customer satisfaction based on a consumer's expected utility from the decision to rent a car conditional on any extra effort made by the employee. In the event that the employee's effort is successful and the customer is satisfied from the car rental decision, the employee receives a bonus of w. Such incentive mechanisms are potentially profit maximizing (e.g., Hauser, Simester, and Wernerfelt, 1994) and common in the service industry, especially in North America. However, effort yields a personal cost of c to the employee. The customer is satisfied if the difference between her *ex ante* utility of U_0 *prior* to the interaction with the employee, and an *ex post* utility of U_1 *after* the actual interaction with the employee is positive, where these utilities are defined

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as:

$$U_0 = \delta + \varepsilon_0, \tag{1}$$

$$U_1 = \delta + \phi(\alpha, e) + \varepsilon_1. \tag{2}$$

Here, we interpret δ as the mean utility that is derived from the service characteristics; in our car rental setting for empirical analysis, these characteristics may relate to either the user (e.g., loyalty tier of user), the product (e.g., car rental class) or rental trip characteristics (e.g., channel that rental is booked through, duration of rental). Furthermore, $\phi(\alpha, e)$ is interpreted as the value added (from customer's perspective) of the interaction with the employee above and beyond the expected mean utility δ.[13] The value added in the utility is a joint function of the employee efforts, e, and the level of employee engagement created by the firm that is represented by an effort multiplier parameter α. We assume that $\frac{\partial \phi}{\partial \alpha} \geq 0$, $\frac{\partial \phi}{\partial e} \geq 0$ and $\frac{\partial^2 \phi}{\partial \alpha \partial e} \geq 0$. For example, α may be large if managers take into account suggestions about how to better serve customers as made by employees. In contrast, if the work environment is not supportive of employees, then there may be significant leakage in terms of the impact of employee effort on sales productivity (i.e., α would be small). Finally, ε_0 and ε_1 are idiosyncratic preference shocks for the consumer.

Given these utility functions, in expectation the customer will be satisfied if and only if $U_1 > U_0$ (i.e., *ex post* utility exceeds *ex ante* utility); in other words, if the value added $\phi(\alpha, e)$ exceeds some idiosyncratic term, $\tilde{\varepsilon} = \varepsilon_0 - \varepsilon_1$. With this notation in place, we can then write out the payoff function (π) for the employee as,

$$\pi = w \Pr(U_1 > U_0) - ce ,$$

which can in turn be re-written as,

$$\pi = w F_{\tilde{\varepsilon}}(\phi(\alpha, e)) - ce , \tag{3}$$

where $F_{\tilde{\varepsilon}}$ is the CDF of $\tilde{\varepsilon}$.

For a given level of engagement by the firm, α, cost to the employee, c,[14] and bonus w, the employee then chooses a level of effort that maximizes her payoff, yielding the following

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[13]In principle, δ could vary across the two options but to simplify the algebra we assume these are the same.

[14]We pick a linear cost for analytical convenience. We repeated the analysis for a convex cost and our results remain unchanged. We thank an anonymous reviewer for suggesting this analysis.

first-order-condition (FOC),

$$LHS \equiv \frac{c}{w} = \alpha \frac{dF_{\tilde{\varepsilon}}(\phi(\alpha, e))}{de} \equiv RHS. \tag{4}$$

This FOC implies that the optimal amount of effort exerted by the employee is such that it equates the marginal cost of effort (normalized by the amount of the bonus) to the marginal benefit, i.e., the marginal effect of the effort in satisfying the consumer. In order to provide a little more intuition, and demonstrate the empirical implications we present below an analytical example that relies on some parametric assumptions.

2.1 An Analytical Example

For the purposes of analyzing the model's implications and providing some further intuition we make the following additional assumptions. Let $\phi(\alpha, e) = \alpha \cdot e$. Further, as is conventional in the empirical discrete choice literature, we assume that ε_0 and ε_1 assume follow the Type I Extreme Value Distribution, which implies that $\tilde{\varepsilon}$ follows a logistic distribution with CDF, $F_{\tilde{\varepsilon}} = \frac{\exp(\tilde{\varepsilon})}{1+\exp(\tilde{\varepsilon})}$. With these assumptions in place, it can be seen that the FOC given by Equation (4) can be represented as,

$$LHS \equiv \frac{c}{w} = \frac{\alpha \exp(\alpha e)}{(1 + \exp(\alpha e))^2} \equiv RHS , \tag{5}$$

or alternatively,

$$LHS \equiv \frac{c}{w} = \alpha F_{\tilde{\varepsilon}}(\alpha e)[1 - F_{\tilde{\varepsilon}}(\alpha e)] \equiv RHS. \tag{6}$$

The RHS of Equation (6) is the familiar expression for the marginal effect of an argument for a logit index function. In our particular case, it is the marginal effect of effort that makes a customer satisfied given the utility function defined in Equation (2), and with the assumption that $\phi(\alpha, e) = \alpha \cdot e$. Thus, the FOC equates the marginal cost to the employee of exerting effort to the marginal benefit of that effort.

Next, with the optimality condition in place, we demonstrate using a set of parameters that engagement need not be associated with higher effort, and consequently, customer satisfaction. Figure 1 plots the RHS for the optimality condition on the vertical axis, and effort level (ranging from 0 to 10) on the horizontal axis. There are two dotted lines

Figure 1: Illustration of First-Order-Condition
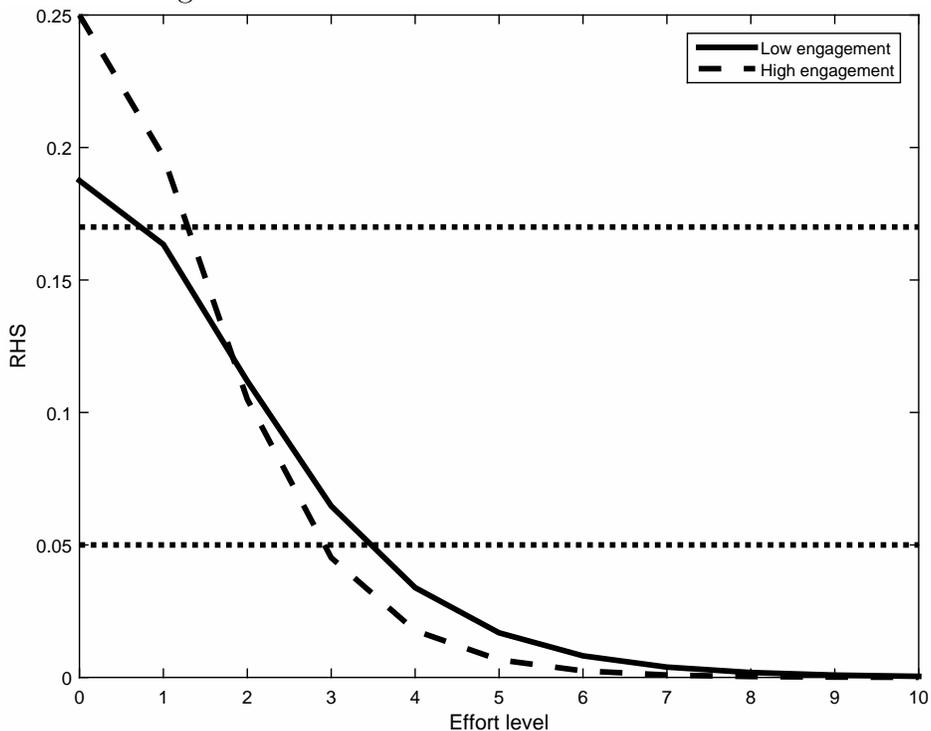
representing two levels of the marginal cost of effort (normalized by the level of the bonus) (c/w) that we consider; in both cases, $w = 2$, but in the higher line, we set $c = 0.35$, while in the lower line, we set $c = 0.1$. Finally, we set "high" level of engagement as $\alpha = 1$ and "low" level of engagement as $\alpha = 0.75$. An equilibrium level of effort e is the point at which the curved line intersects the flat marginal cost line.

For this particular example, we see that when the marginal cost of effort (normalized by the level of the bonus) is high, optimal effort is indeed higher when engagement is high. However, when the marginal cost of effort is sufficiently low, optimal effort is higher when engagement is low. We interpret this result as follows. When it is relatively costly to exert effort, then employees are not willing to put in additional effort to overcompensate for low engagement (e.g., managers who do not listen to their suggestions). However, when it is not costly to exert effort, employees may actually put in additional effort to overcompensate for low engagement. In summary, this simple example highlights that depending on how costly effort is relative to its marginal benefit, the relationship between engagement and customer satisfaction can potentially be either positive or negative, even if additional effort creates

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more value from the customer's perspective (i.e., $\phi(\alpha, e) > 0$). Alternatively stated, the analytical example shows that unlike what intuition might suggest, employee effort, employee engagement and customer satisfaction are not always positively correlated (e.g., Ni, Shen, and Zhu, 2015). In fact, depending on cost of effort relative to its payoffs to the employee, the link between employee engagement and customer satisfaction can be ambiguous even if higher effort creates value to the customer and may lead to higher customer satisfaction. Therefore, it is indeed an empirical question whether the link between employee engagement and customer satisfaction is positive.[15]
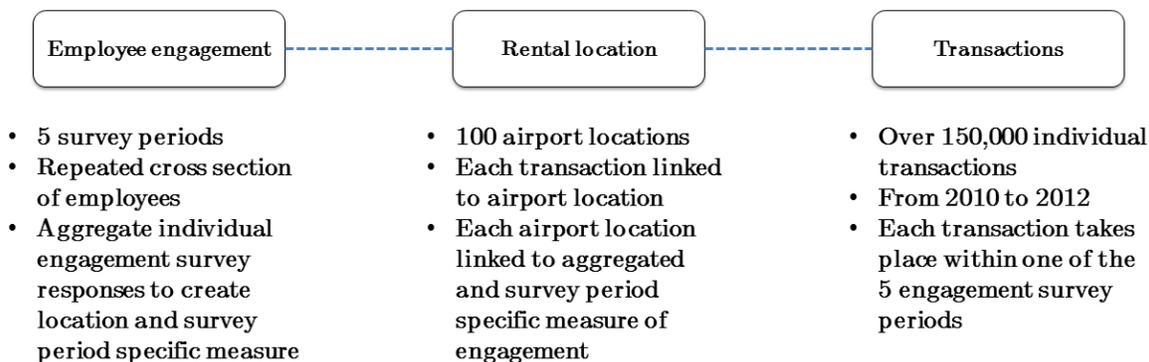
3 Data

Our analysis makes use of over 150,000 car rental transactions made by about 100,000 individual users. We focus on transactions made at 100 airport locations (in either Canada or United States), as only these can be matched to location-time specific employee surveys.[16] We see transactions taking place is virtually every U.S. state, and most Canadian provinces. Transactions are fairly evenly distributed across the days of the week, with a slightly greater percentage occurring on Monday. For a quick summary of the type of information we used to construct our data, we refer the reader to Figure 2 before we describe it in detail below.

In our sample, the average number of transactions that each location handles is close to 3,000, and ranges from as few as 44 to as many as 6974. Each transaction contain details about the trip and user characteristics. Our main variable of interest is the Net Promoter Score (NPS), which is a standard industry metric for measuring customer satisfaction (see e.g., Reichheld 2003). In the data available to us, the raw NPS score is coded to take on one of three possible values, -100, 0, or 100, to represent "detractors," "neutrals" and "promoters" in measuring customer satisfaction with the brand. For our analysis, we construct a binary outcome variable that indicates whether or not the NPS score is at its highest (i.e., at

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[15]Future research may examine, how a firm should optimally make decisions about the level of employee engagement it wants to create given the optimal decisions of employees regarding the amount of effort they are willing to exert. Our partial equilibrium examination abstracts from this richer equilibrium analysis given our specific and limited objective to motivate our empirical analysis.

[16]Locations that are not in airports tend to be smaller, and as these locations have fewer employees, the surveys from these locations cannot be released to us due to privacy concerns. For similar confidentiality reasons, we do not have individual employee level engagement or other data.

Figure 2: Information Used to Construct Data

Employee engagement	Rental location	Transactions
• 5 survey periods • Repeated cross section of employees • Aggregate individual engagement survey responses to create location and survey period specific measure	• 100 airport locations • Each transaction linked to airport location • Each airport location linked to aggregated and survey period specific measure of engagement	• Over 150,000 individual transactions • From 2010 to 2012 • Each transaction takes place within one of the 5 engagement survey periods

"promoter") level.

As mentioned earlier, each transaction can be linked to a number of user-trip characteristics. Table 1 shows that about 11 percent are booked over the phone, 45 percent are booked over the internet, 50 percent are for business purposes, 1 percent for tour purposes, and 19 percent over the weekend. Over 80 percent of the customer satisfaction responses are obtained via an online survey. Note also that over 95 percent of customers have an American billing address, and 1 percent belong to the government. The average age of the customers is around 53. Finally, the average car rental duration is 4 days.

Customers can be divided into different loyalty tier groups, which are coded from 1 to 6.[17] Users who are not affiliated to a tier are coded as 0. Higher loyalty tier levels are considered to be more prestigious. Furthermore, the tier level assigned to users is largely a function of the number of rental transactions, number of rental days, a monthly or annual fee, or some combination of all three.

As we are able to identify the location and time of each transaction, we can then match this information to aggregated employee survey results at the location-time level. It should be noted that we only have access to aggregate employee survey results and not individual employee level survey or other demographic information due to privacy concerns expressed by the firm. In total, there were over 33,000 surveys completed by the car rental company's

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[17]The codes have the following correspondence: Regular Gold (1), Five Star Gold (2), President's Circle (3), Number 1 Club (4), Platinum Select (5), and VIP Platinum (6).

Table 1: Summary Statistics

Variable	Mean	Std. Dev.
Sales outcomes		
Raw Net Promoter Score	50.02	74.57
Net Promoter Score (NPS)	0.65	0.48
Repeat purchase	0.14	0.34
User-trip characteristics		
Survey completed online	0.8045	0.3966
Reserved class	5.25	4.33
Customer tier	1.70	1.01
Phone reserve	0.11	0.31
Internet reserve	0.4521	0.4977
Business	0.44	0.50
Tour	0.0064	0.0799
Government segment	0.0146	0.1199
Weekend	0.19	0.39
American billing address	0.9519	0.214
Age	52.7263	11.5646
Duration	3.71	4.11
Location-level engagement		
Employee engagement	3.87	0.41
Location-level characteristics		
Employee turnover rate	0.0912	0.0978
Average tenure of customer-facing employees	5.086	1.576
Average tenure of non-customer-facing employees	5.731	1.954
Number of customer-facing employees	25.515	21.438
Number of non-customer-facing employees	18.085	18.089
Number of customer-facing managers	6.239	4.46
Number of non-customer-facing managers	1.797	2.16
Average tenure of customer-facing managers	5.612	2.193
Average tenure of non-customer-facing managers	7.328	2.831
Average tenure of customer-facing non-managers	4.775	1.999
Average tenure of non-customer-facing non-managers	5.48	2.145

employees from 2010 to 2012. Over the course of two years, 5 surveys were conducted by the car rental company, namely up to October 2010 (36,876 surveys), between October 2010 and May 2011 (127,544 surveys), between May 2011 and November 2011 (90,581 surveys), between November 2011 and April 2012 (111,477 surveys), and between April 2012 and October 2012 (600 surveys). The employee engagement survey is comprised of ten questions. For each question, the employee responses could range from 1 (completely disagree) to 5 (completely agree). In consultation with the firm we identified the question "[o]ur customers will benefit from the changes the company is making" as being the key measure for customer-centric employee engagement.[18] We then aggregate this measure across customer-facing employees to the location and survey period level.

In addition to the user-trip characteristics which we include in the baseline specifications, we also make use of location specific characteristics such as the employee turnover rate, average tenure of customer-facing employees, average tenure of non-customer-facing employees, number of customer-facing managers, and number of non-customer-facing employees, average tenure of customer-facing managers, average tenure of non-customer-facing managers, average tenure of customer-facing non-managers, and average tenure of non-customer-facing non-managers. These additional variables may also have an impact on employee engagement as posited by the literature on the effects of demographic variation within employees at firms (see e.g., Williams and O'Reilly, 1998).

Another measure we use is the location-time specific employee turnover rate. In order to construct the employee turnover rate, we make use of the fact that we observe employee IDs in the transactions data. With these IDs, we can track the employees throughout our sample, and see how many unique IDs there are at each location at a given time period. These counts then help us calculate the flow and stock of (customer-facing) employees over time. Using a similar approach as Kahn and McEntarfer (2014), we then calculate the

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[18]We thank the Associate Editor for this helpful suggestion. Other survey questions include "[m]anagement is focused on the long-term success of the company," "I know how my job contributes to the success of our business strategies," "I am able to work more efficiently today than I could a year ago," "My manager acts on my suggestions," "[i]n the last six months, my supervisor and I discussed my job performance," "I have opportunities to receive training which helps me develop my skills," "[t]he Company is doing a good job supporting employees through change," "[o]ur strategies will make us more successful over the long term" and "I would recommend this Company to a friend as a good place to work."

turnover rate.[19] Their measure is ideal, as the "size" of a location is normalized, thereby making cross-location comparisons of turnover valid. More specifically, we construct a loss rate of employees in a given survey period s, and at location m, as follows:

$$Turnover_{ms} = \frac{L_{ms} - N_{ms}}{E_{ms}}, \tag{7}$$

where L_{ms} is the number of employees that have left the firm in survey period s, N_{ms} is the number of new hires in survey period s, and E_{ms} is the total employment during the survey period s.

Table 1 provides additional statistics about the composition of different employee types across locations. On average, the turnover rate is about 9%, there are about 26 customer-facing employees at a given location, and about 18 non-customer-facing employees. Customer-facing employees and non-customer-facing employees have similar tenures, both of which have about 5 years worth of work experience. Also, there are on average more customer-facing managers (about 6) than non-customer-facing managers (about 2) at each location.

3.1 Matching Employee Engagement with Customer Satisfaction in Individual Transactions

We primarily focus on car rental transactions that begin and end at the same location. Therefore, each transaction (t) has a location identifier which we can match with the employee rental location index m. However, matching based on the time dimension requires a few additional steps.

Recall as described earlier employee engagement surveys were conducted up to October 1, 2010, between October 1, 2010 and May 1, 2011, between May 1, 2011 and November 1, 2011, between November 1, 2011 and April 1, 2012, and between April 1, 2012 and October 1, 2012. In the transactions data, we can identify the exact date of check-in. With this information, we use the following rules to match the transaction period to employee engagement survey period:

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[19]We differ from them in that our focus is turnover, while they are interested in employee growth. Note that in both cases, the exact same underlying variables are used, where the difference lies in how these variables enter the ratios.

Table 2: Number of Observations in Merged Data Across Different Survey Periods

Survey group	Frequency	Percent	Cumulative
October 2010	47,894	29.27	29.27
May 2011	41,971	25.65	54.91
November 2011	33,087	20.22	75.13
April 2012	40,526	24.76	99.89
October 2012	172	0.11	100.00

1. If date of check-in is after October 1, 2010 but before May 1, 2011, then transaction t lies in survey period $s =$ October 2010.

2. If date of check-in is after May 1, 2011 but before November 1, 2011, then transaction t lies in survey period $s =$ May 2011.

3. If date of check-in is after November 1, 2011 but before April 1, 2012, then transaction t lies in survey period $s =$ November 2011.

4. If date of check-in is after April 1, 2012 but before October 1, 2012, then transaction t lies in survey period $s =$ April 2012.

5. If date of check-in is after October 1, 2012, then transaction t lies in survey period $s =$ October 2012.

Using these rules, we can then merge each transaction with the location-period specific employee engagement measures. It is worth noting that this data construction procedure implies that the measure of employee engagement is elicited before the occurrence of the customer transaction and any customer satisfaction outcomes to which it is related. An important reason for following this data construction procedure is a concern for reverse causality. In Table 2, we present the distribution of merged transaction observations across different employee survey time periods. We see that the observations are fairly well distributed from October 2010 to April 2012. There are relatively few observations pertaining to the October 2012 survey period, but that is due to the cut-off time of the company's data collection efforts.

Finally, we note that, this data construction procedure controls for reverse causality in survey period s in contemporaneous customer satisfaction (NPS_{ms}) and employee engagement measures (EE_{ms}). However, in our empirical analysis as described below in Section 4, we still account for any potential endogeneity between customer satisfaction and employee engagement.

4 Regression Analysis

4.1 Basic Specification

When studying the link between location-level employee engagement and customer satisfaction, two identification issues arise. First, we need to control for any location specific unobservable factors that might affect both engagement and customer satisfaction.[20] Second, employee engagement itself may be endogenous. Hence, we need to obtain instruments that shift engagement but have no direct impact on customer satisfaction. Thus, in this section we analyze the relationship between location-level customer-centric employee engagement and customer satisfaction via instrumental variables regression with location-level fixed effects as a way to address these identification issues.

We define EE_{ms} as our measure of customer-centric employee engagement. Our regressions use NPS_{ms} as the main dependent variable at location m and survey period s, which is dummy variable defined to be 1 when the Net Promoter Score is at its highest level.[21] We control for user-trip specific variables, such as the original class reserved, customer tier level, customer's age, reserved over the phone, reserved over the internet, for business purposes, for tour purposes, or occurs during a weekend, as well as the rental duration that are represented by X_{ms}. Further, let ε_{ms} be the regression error such that $\text{cov}(EE_{ms}, \varepsilon_{ms}) \neq 0$. With this notation in place, we consider the following regression:

$$NPS_{ms} = X_{ms}\beta + \gamma \cdot EE_{ms} + \varepsilon_{ms} \tag{8}$$

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[20]Examples of such location specific factors could be check-in system technology, office milieu, design or decor etc., e.g., Ahearne, Jones, Rapp, and Mathieu (2008) show how information technology may affect sales productivity.

[21]Although, our main dependent variable NPS_{ms} is discrete we don't adopt a non-linear specification, e.g., probit, as we want to use an IV framework to control for endogeneity. Hence, our regressions have the interpretation of linear probability models.

4.2 First Stage Regression

In order to control for the endogeneity of employee engagement (EE_{ms}) in Equation (8) we adopt a 2SLS procedure. Our 2SLS framework uses instruments ($\tilde{Z}_{ms}$) for employee engagement, which include location-time specific variables such as past employee turnover rate,[22] average tenure of customer-facing employees, average tenure of non-customer-facing employees, number of customer-facing managers, and number of non-customer-facing employees, average tenure of customer-facing managers, average tenure of non-customer-facing managers, average tenure of customer-facing non-managers, and average tenure of non-customer-facing non-managers. Based on the literature on the effects of demographic variation within employees at firms (see e.g., Williams and O'Reilly, 1998) these variables may affect employee engagement and therefore we use these as instruments. Thus, we have first-stage regressions with the following specification:

$$EE_{ms} = Z_{ms}\theta + \omega_m + \xi_{ms} \tag{9}$$

As before, EE_{ms} represents the customer-centric employee engagement. The instruments are contained in Z_{ms}, which include elements of X_{ms}, as well as location-time specific variables $\tilde{Z}_{ms}$ that are not in X_{ms}. Location dummies are also included to this specification, as indicated by ω_m, and ξ_{ms} is an i.i.d. error term.

4.3 Relationship to Simple Microfoundations Model

This basic regression specification in Equation (8) may be motivated by the analytical framework presented in Section 2 as follows, which also provides two important insights for the empirical analysis. Customer satisfaction depends on the difference between *ex post* utility U_1 and *ex ante* utility U_0 (as defined earlier). We measure whether a customer was satisfied at a transaction using the variable NPS_{ms}. In particular, this can be related to the analytical model by noting that we can write customer satisfaction as a function of U_1 and U_0, conditional on level of engagement α and optimal effort e^*. Therefore, $NPS = g(U_1, U_0 | \phi(\alpha, e^* = h(\alpha)))$, where $g(\cdot)$ is the function that transforms whether a

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[22]We thank the Associate Editor and an anonymous reviewer for suggesting this instrument.

customer was satisfied at a transaction to the corresponding NPS score.[23] This can in turn be re-written as $NPS = \tilde{g}(U_1, U_0 | \phi(\alpha, h(\alpha)))$. Although, the value added created for the customer $\phi(\alpha, e^* = h(\alpha))$ or optimal effort $e^* = h(\alpha)$ are difficult to measure directly, an implication of our analytical framework is that the value added can be approximated as a function of the level of employee engagement α which is available in our data.[24] It is this insight regarding the relationship between customer satisfaction, employee effort and employee engagement, and the information available in our data regarding employee engagement levels that motivates the regression specification adopted by us in Equation (8).

The analytical framework also aids in the interpretation of the parameter γ in the regression Equation (8). It should be noted that γ is the average location level net causal estimate of employee engagement on customer satisfaction controlling for confounds due to reverse causality and location specific unobservables. However, as the analytical framework shows the NPS score is a function of $\phi(\alpha, e^* = h(\alpha))$. Thus, the net effects estimated via the parameter γ could in principle be decomposed in to two effects of employee engagement on customer satisfaction, i.e., a direct and an indirect effect.[25] To elaborate, the effect of employee engagement on customer satisfaction could be composed of a direct effect (α) that engagement makes employees better at assessing and satisfying customer needs, and an indirect effect ($e^* = h(\alpha)$) that employee engagement affects the effort expended by employees, which in turn improves customer satisfaction.

However, estimating γ, the net effect of employee engagement on customer satisfaction is of interest in itself for two reasons. First, as our analytical framework shows the relationship between employee engagement and customer satisfaction can be ambiguous, even if higher effort creates value to the customer and may lead to higher customer satisfaction. Therefore, it is an empirical question whether employee engagement and customer satisfaction are positively linked. Second, managers may be interested in know the net effect of raising employee engagement on customer satisfaction, even in the absence of knowing the estimates of its direct and indirect components. Thus, we estimate the net average location level effect γ

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[23]Note that our measure of NPS is discrete. See Section 3 for details.

[24]In principle we could use any flexible function form of our measure of employee engagement but since we want to use an IV framework to control for the endogeneity of employee engagement we use a linear specification.

[25]We thank the associate editor for making this salient to us.
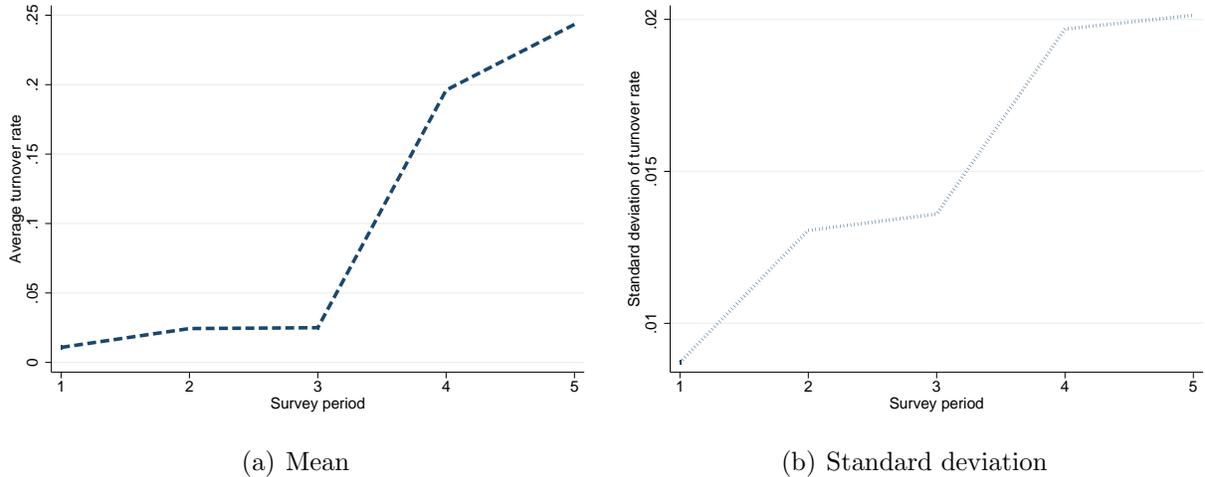
(a) Mean

(b) Standard deviation

Figure 3: Turnover Rates Across Locations

and not these two components given the focus of our research and the nature of our data. It may be of interest in future research to estimate the effects of its two separate components. Although, this may require dealing with the often intractable problem of employee effort being unobserved to the researcher.

4.4 Baseline Results

Table 3 provides the main findings from our first-stage regressions that make use of the location specific instruments. Among the instruments, the turnover rate seems to be the key driving force behind customer-centric employee engagement. The negative impact turnover has on employee engagement is intuitive, as high engagement is likely hard to maintain if many employees leave (and arrive). As the employee turnover rate appears to be the most effective instrument for employee engagement, we provide additional descriptive analysis to highlight the variation we see in this measure. In particular, the constructed turnover rates exhibit inter-temporal variation, as illustrated in Figure 3.

Furthermore, it has been recognized that loss of trained employees has been associated with decreased productivity (Ton and Huckman, 2008). One possible explanation could be that experience improves employees' ability to handle customer dissatisfaction (Lapré and Tsikriktsis, 2006). Moreover, employee turnover may exacerbate inefficiencies if customer satisfaction, loyalty and value are generated through salesperson-owned loyalty (Palmatier,

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Table 3: First-stage Regressions for IV Estimation

	Employee engagement
Turnover rate in previous period $s-1$	-6.530**
	(2.376)
Average tenure of customer-facing employees	0.260
	(0.278)
Average tenure of non-customer-facing employees	-0.0136
	(0.145)
Number of customer-facing employees	-0.00161
	(0.00450)
Number of non-customer-facing employees	-0.00403
	(0.00348)
Number of customer-facing managers	0.00473
	(0.0100)
Number of non-customer-facing managers	-0.000503
	(0.0407)
Average tenure of customer-facing managers	-0.134
	(0.108)
Average tenure of non-customer-facing managers	-0.0121
	(0.0347)
Average tenure of customer-facing non-managers	-0.296
	(0.206)
Average tenure of non-customer-facing non-managers	-0.0252
	(0.0938)
Constant	2.087**
	(0.663)
Location dummy	Yes
Observations	94770
R^2	0.12

Clustered standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Scheer, and Steenkamp, 2007). Our current study does not explore these two issues of substantial importance in the link between sales productivity and employee engagement. Future research that sheds more light on these issues would be worthwhile from both an academic as well as a managerial perspective.

In addition to the turnover rate, we include a large number of instruments (e.g., number of employees, number of managers, tenure, etc.), so that we can capture as much observed variation at the location-time level as possible. Moreover, these instruments are measured at a granular level (i.e., customer-facing, non-customer-facing), such that we have an extensive set of instruments for employee engagement. At a conceptual level, we believe that the variables we have chosen as instruments are appropriate, as past studies have shown that employee numbers have an impact on sales productivity (e.g., Horsky and Nelson, 1996; Mani, Kesavan, Swaminathan, 2011).[26]

Table 4 presents the main results from our (second-stage) regression analysis of customer satisfaction and customer-centric employee engagement. Each specification contains progressively more controls to account for user and location-specific heterogeneity.

We first discuss the role of user specific variables in customer satisfaction, and then describe the main findings. Our results show that customers who book via the phone or internet, as opposed to booking at the car rental location counter, tend to be more satisfied. Among the different types of customers, we also see that those traveling for business purposes also appear to be more satisfied. Finally, older customers are often more satisfied.

Our main findings provide evidence of the link between customer-centric employee engagement and sales productivity. Across all of the specifications with varying levels of control, high customer-centric employee engagement has a positive and statistically significant effect on NPS; that is, going from low employee engagement to high employee engagement will increase the likelihood of a customer being highly satisfied by 2.5 percentage points. Note also that the coefficient for engagement is reassuringly quite robust, both in terms of quantitative value and statistical significance across the different specifications.

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[26]Our first-stage regression includes location dummies so we do not report the F-statistic as it is very large. Nevertheless, this statistic is well above 10, and has a p-value of nearly zero. Note also that the regression has a R^2 of 0.12. That said, weak instruments are unlikely to be an issue (Bound, Jaeger, and Baker, 1995).

Table 4: IV Regressions of NPS on Employee Engagement

	(1) NPS	(2) NPS	(3) NPS	(4) NPS
Employee engagement	0.0239**	0.0242***	0.0239**	0.0247***
	(0.00742)	(0.00736)	(0.00738)	(0.00731)
Survey completed online	-0.0444*	-0.0271	-0.0279	-0.0271
	(0.0173)	(0.0185)	(0.0184)	(0.0184)
Phone reserve	0.0622***	0.0569***	0.0493***	0.0444***
	(0.00502)	(0.00497)	(0.00552)	(0.00553)
Internet reserve	0.0500***	0.0444***	0.0415***	0.0380***
	(0.00307)	(0.00333)	(0.00330)	(0.00329)
Business	0.00770	0.00302	-0.000492	0.0130**
	(0.00474)	(0.00412)	(0.00412)	(0.00408)
Tour	-0.0242	-0.0215	-0.0166	-0.0149
	(0.0193)	(0.0189)	(0.0189)	(0.0189)
Government segment	-0.0201	-0.0153	-0.0107	-0.00930
	(0.0165)	(0.0157)	(0.0159)	(0.0157)
Weekend	0.0106*	0.00923*	0.00910*	0.00418
	(0.00435)	(0.00412)	(0.00410)	(0.00513)
American billing address	-0.00277	-0.00432	-0.00522	-0.00525
	(0.0146)	(0.0147)	(0.0147)	(0.0148)
Age	0.00389***	0.00369***	0.00359***	0.00357***
	(0.000160)	(0.000164)	(0.000158)	(0.000158)
Constant	0.370***	0.456***	0.488***	0.496***
	(0.0390)	(0.0577)	(0.0675)	(0.0691)
Hour check-in dummy	No	Yes	Yes	Yes
Rental duration dummy	No	Yes	Yes	Yes
Car class dummy	No	Yes	Yes	Yes
Customer tier dummy	No	No	Yes	Yes
Time dummy	No	No	No	Yes
Observations	94770	94770	94770	94770
R^2	0.0167	0.0225	0.0244	0.0270

Clustered standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: IV Regressions of NPS on Employee Engagement: Robustness Checks Using Different Specifications and Sub-Samples of Data

	(1) High volume location	(2) Low volume location	(3) No repeat customers	(4) Region dummies
Employee engagement	0.0138*	0.0375***	0.0238**	0.0159*
	(0.00865)	(0.0110)	(0.00779)	(0.00784)
Controls	Yes	Yes	Yes	Yes
Hour check-in dummy	Yes	Yes	Yes	Yes
Rental duration dummy	Yes	Yes	Yes	Yes
Car class dummy	Yes	Yes	Yes	Yes
Customer tier dummy	Yes	Yes	Yes	Yes
Time dummy	Yes	Yes	Yes	Yes
Observations	54905	39865	72956	94770
R^2	0.0315	0.0245	0.0233	0.0257

Clustered standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4.5 Robustness Checks

In this section we check robustness of our results in a variety of ways. The first set of robustness checks are presented in Table 5. The volume of transactions that a location handles may affect the employees' ability to satisfy customers' needs. Busy employees that receive a large number of customers may have to handle many requests at the same time. Therefore, despite high engagement levels *ex ante*, they may still be unable to maintain high customer satisfaction. For this robustness check, the relevant sub-samples in this case would be the sub-sample based on transactions at locations that handle many transactions (i.e., above median volume levels), and the sub-sample based on transactions at locations that handle few transactions (i.e., below median volume levels). Columns 1 and 2 show the positive relationship between engagement and sales productivity persists across sub-samples. Although, we do find that low volume locations display a stronger relationship between employee engagement and high customer satisfaction as expected.

Next, we investigate whether or not the presence of repeat customers may be biasing the results. Customers who repeatedly purchase from a particular location may have a specific preference for that location or its staff. Therefore, these customers may be inherently easier to satisfy and likely to promote the brand. Column 3 shows that when the repeat customers are not included, our basic results still hold.

One may also be concerned about region specificities that could drive both location-

Table 6: IV Regressions of NPS on Employee Engagement: Sensitivity Analysis Using Different Measures of Engagement

	(1) Discrete	(2) Continuous	(3) 3-level	(4) 4-level	(5) 5-level	(6) 10-level
Employee engagement	0.0190*	0.0247***	0.0155***	0.00916*	0.00735*	0.00383**
	(0.00903)	(0.00731)	(0.00467)	(0.00390)	(0.00294)	(0.00136)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Hour check-in dummy	Yes	Yes	Yes	Yes	Yes	Yes
Rental duration dummy	Yes	Yes	Yes	Yes	Yes	Yes
Car class dummy	Yes	Yes	Yes	Yes	Yes	Yes
Customer tier dummy	Yes	Yes	Yes	Yes	Yes	Yes
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94770	94770	94770	94770	94770	94770
R^2	0.0269	0.0270	0.0270	0.0269	0.0269	0.0269

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

level engagement and high customer satisfaction. There may be region-specific culture and attitudes that make customers more willing to pay for higher car classes, and employees more satisfied with their jobs. The sample can be divided into 7 regions, so we consider a robustness check which includes dummies for these regions. In this specification, our finding remains that customer-centric engagement among employees has the strongest link with high customer satisfaction.

Our final set of robustness checks investigate the sensitivity of the customer-centric employee engagement measure. To conduct these checks, we consider alternative specifications using different definitions of employee engagement based on the level of discretization. The results from these robustness tests are found in Table 6. Recall that in our baseline results, we define employee engagement using a continuous measure calculated based on aggregated raw survey responses (Column 2). For the alternative specifications, we consider also measures of employee engagement based on median (Column 1), tertile (Column 3), quartile (Column 4), quintile (Column 5), and decile (Column 6) splits. Regardless of how we discretize employee engagements, our qualitative results hold, i.e., customer-centric employee engagement has a positive relationship with NPS.

4.6 Evidence of the Retail Value Chain

Under the retail value chain framework, employee engagement leads to higher customer satisfaction, which then leads to better long-run sales outcomes. To complete our analysis of the link, we need to provide evidence that higher customer satisfaction does indeed lead to better sales outcomes in the future, such as increased customer loyalty (i.e., retention). It is worthwhile looking at such a link as retention is observed after the surveys. Thus, our next set of regressions aim to determine whether or not satisfied customers are more likely to purchase again from the car rental company. We consider two different specifications. First, we consider a fixed effects regression that uses repeat purchase as the dependent variable. Our main dependent variable, repeat purchase, is defined to be a dummy variable, which is equal to one if customer with a transaction at survey period s makes another transaction at survey period $s + 1$ or any subsequent survey period at any location. Note this definition precludes any reverse effect of a repeat purchase on the NPS score for the individual at survey period s. Hence, an OLS with fixed effects should account for any location-specific unobserved heterogeneity. However, in a second specification we adopt an IV approach to account for any potential endogeneity of NPS. Since, we know that location level employee engagement affects customer satisfaction, we make use of the same instruments as used earlier for employee engagement as only through their effect on customer satisfaction at location m and survey period s should these have an effect on the likelihood of a repeat purchase at survey period $s + 1$ or later, at any location m'.

Table 7 shows us the main results from these regressions. The main finding is as follows. NPS has a positive relationship with repeat purchase propensity. That is, satisfied customers are more likely to continue with the car rental company. This result provides suggestive evidence that links customer satisfaction and loyalty, and thus, is consistent with intuition derived from retail value chain framework. In summary, our research provides suggestive evidence in favor of connections posited by the retail value chain framework; that is, employee engagement, customer satisfaction, and loyalty are all intertwined.

Table 7: Effect of NPS on Repeat Purchasing Behavior

	(1) OLS	(2) IV
NPS	0.0198***	0.215*
	(0.00165)	(0.0910)
Survey completed online	-0.0564***	-0.0482***
	(0.00204)	(0.00368)
Phone reserve	-0.00822**	-0.0152**
	(0.00283)	(0.00537)
Internet reserve	0.0101***	-0.00323
	(0.00188)	(0.00417)
Business	0.0157***	0.00906***
	(0.00197)	(0.00271)
Tour	-0.0185	-0.00800
	(0.00980)	(0.0128)
Government segment	-0.0119	-0.00851
	(0.00656)	(0.00848)
Weekend	-0.00523	-0.00209
	(0.00297)	(0.00375)
American billing address	0.00269	0.00167
	(0.00770)	(0.00919)
Age	0.0000947	-0.000847*
	(0.0000705)	(0.000336)
Constant	0.288***	-0.0503
	(0.0336)	(0.0679)
Hour check-in dummy	Yes	Yes
Rental duration dummy	Yes	Yes
Car class dummy	Yes	Yes
Customer tier dummy	Yes	Yes
Time dummy	Yes	Yes
Observations	163606	94770
R^2	0.1653	0.0904

Clustered standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: IV Regressions of NPS on Employee Engagement: Across Different Customer Segments

	(1) Casual	(2) Business	(3) Weekday	(4) Weekend
Employee engagement	0.0220**	0.0257**	0.0212**	0.0387***
	(0.00798)	(0.00951)	(0.00729)	(0.0105)
Controls	Yes	Yes	Yes	Yes
Hour check-in dummy	Yes	Yes	Yes	Yes
Rental duration dummy	Yes	Yes	Yes	Yes
Car class dummy	Yes	Yes	Yes	Yes
Customer tier dummy	Yes	Yes	Yes	Yes
Time dummy	Yes	Yes	Yes	Yes
Observations	53213	41557	76905	17865
R^2	0.0281	0.0284	0.0272	0.0353

Clustered standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4.7 Employee Engagement and Customer Satisfaction Across Different Segments

In this section, we explore whether or not location-level employee engagement and customer satisfaction are linked differently across various types of customers. One form of asymmetry may be generated by heterogeneity in car rental purpose, such as whether the car is rented for business purposes and whether the car is rented on the weekend. Uncovering this asymmetry is important since the firm may wish to concentrate its employee engagement efforts towards only the most receptive customers. Such concentration may be especially important if a car rental location experiences high volume that make it infeasible to be highly engaged towards all customers.

We report our results for the regressions exploring heterogeneity across segments in Table 8. Our first observation is that between casual and business users, the link between engagement and customer satisfaction is larger and more positive for business users. Second, we see that employee engagement is more strongly linked to customer satisfaction for rentals that take place over the weekend. Taken together, these results suggest that (1) employees should focus their efforts on trying to satisfy business users, (2) among casual users, those that might be most receptive to being satisfied are the ones traveling on weekends, and (3) customer-centric employee engagement is likely to be most effective in satisfying business

users traveling on weekends.

5 Conclusions

In summary, our paper's main contributions are the following. Our analytical model demonstrates that there need not necessarily be a positive relationship between employee engagement and high customer satisfaction, thus, the posited link is an empirical question. Further, we confirm that location-level employee engagement is indeed positively associated with customer satisfaction in the context of the car rental service industry. In particular, we use a more granular measure of customer-centric employee engagement and link that too customer satisfaction. Moreover, our findings suggest that location-level employee engagement may yield greater success towards customers traveling for business purposes, and on the weekend. Our findings have implications for managers for not just customer targeting but also firm resource allocation decisions regarding employee motivation, and improving implementation of employee engagement programs. We also contribute to the methodology of studying the impact of employee engagement on sales outcomes, as we provide suggestions for instruments (e.g., employee turnover) that could be also adopted in other studies. The use of instruments is a contribution in itself and complements the past work that has largely focused on correlations based on survey data.[27]

The empirical link between employee turnover and engagement we rely on for our instrumental variables regression framework suggests an important managerial implication. That is, encouraging employees to stay with the company will not only have an impact on their engagement, but because of the link between engagement and customer satisfaction, turnover will indirectly have an impact on the end product as well. While it is common to account for the explicit costs of employee turnover (i.e., cost of finding and training new workers), our research suggests that turnover may lead to indirect costs that materialize via the retail value chain (i.e., the link between employee engagement, customer satisfaction, and

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[27]For example, as as eloquently stated by Maxham, Netemeyer, and Lichtenstein (p.164, 2008), "...as with almost all studies based on survey data, the ability to infer causality is severely compromised. Thus, support for the value chain framework system of relationships we examined is purely correlational. Still, the sheer number of covariates/control variables we used in testing our models...hopefully lends credence to the robustness of our results."

customer loyalty). Another implication of our work is that employee engagement programs may benefit from being focussed on building customer-centric engagement. However, further investigation of this, and the effects of other more refined measures of employee engagement on customer outcomes would be worthwhile.

Finally, our discussion earlier in Section 4.3 showed that employee engagement can have a direct effect on customer satisfaction, as well as an indirect effect through motivating the employee to expend extra effort. While our analytical framework shows that these effects can move in qualitatively different directions depending on the cost of effort, our empirical estimates are capturing a composition of these direct and indirect effects. While disentangling these effects is beyond the scope of our paper, future work could try to leverage data on employee-specific contractual agreements (i.e., wage, hours worked, bonuses) between employees and employers as a way to better understand the mechanism behind engagement and sales performance. In sum, we believe our work not only extends the current retail value chain literature on the relationship between employee engagement and customer satisfaction, but also provides grist for the mill in moving the literature further forward.

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