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TESTING A BUSINESS MODEL INCLUDING NONFINANCIAL MEASURES IN THE HOMEBUILDING INDUSTRY

CLARA XIAOLING CHEN
University of Illinois at Urbana
Champaign, Department of Accountancy

MELISSA MARTIN
Arizona State University

KENNETH A. MERCHANT
University of Southern California
Leventhal School of Accounting

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Clara Xiaoling Chen[a] [*]

Melissa Martin[b]

Kenneth A. Merchant[c]

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a- University of Illinois at Urbana-Champaign, Department of Accountancy
   389 Wohlers Hall
   1206 South Sixth Street
   Champaign, IL 61820

b- Arizona State University
   Business Administration Building 223E
   PO Box 873606
   Tempe, AZ 85287-3606

c- University of Southern California, Leventhal School of Accounting
   3660 Trousdale Parkway
   University of Southern California
   Los Angeles, CA 90089-0441

* Corresponding author. Please address questions and comments to cxchen@illinois.edu.

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Abstract

We test a business model that includes customer satisfaction, employee satisfaction, and financial performance from a company in the homebuilding industry for the period 2001-2004. While prior research often uses a single customer satisfaction measure, our research site uses two sets of customer satisfaction measures, which allows us examine the effect of measurement alternatives on the forward-looking properties of customer satisfaction measures. We find that: 1) customer satisfaction measures provided by a boutique customer research firm that specializes in the homebuilding industry are leading indicators of future performance, as measured by higher referrals, revenues, and profits, and lower warranty costs, but the customer satisfaction measure provided by a national multi-industry customer research firm is not; and 2) overall employee satisfaction is not a significant leading indicator of either customer satisfaction or financial performance, but employee satisfaction in the sales department is positively associated with customer satisfaction. Our findings suggest that the validity of a business model depends not only on the soundness of the conceptual model per se, but also on how the variables in the business model are measured.

Testing a Business Model Including Nonfinancial Measures in the Homebuilding Industry

I. Introduction

A growing body of research has documented significant positive associations between some nonfinancial performance measures, such as quality and customer satisfaction, and future financial performance (e.g. Amir and Lev 1996; Banker et al. 2000; Ittner and Larcker 1998a; Nagar and Rajan 2001). Many of these nonfinancial measures are thought to be leading indicators of forthcoming performance; i.e., "performance drivers." Incorporating these performance drivers into firms' performance measurement systems can help managers look beyond short-term financial performance to focus at least some attention on longer-term aspects of their businesses (e.g. Banker et al. 2000; Hemmer 1996; Ittner and Larcker 1998a, 1998b, 2001, 2003; Kaplan and Norton 1992, 1996). Customer satisfaction, in particular, has attracted significant attention from both researchers and practitioners. For example, senior executives from 148 financial services firms ranked customer relations as the most important driver of firm's long-term organizational success (Ittner and Larcker 2001). In comparison, short-term financial performance ranked only the fifth most important.

However, as Ittner and Larcker (2001) point out, studies on non-financial performance measures tend to examine only one of many potential non-financial measures and ignore interactions with other potential non-financial measures (e.g. Banker et al. 2000; Behn and Riley 1999; Davis and Albright 2004; Hoque and James 2000; Huselid 1995; Iaffaldano and Muchinsky 1985; Ittner and Larcker 1998). They caution that these limitations can result in misleading inferences if the non-financial measures are

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highly correlated or if the non-financial measures are complements or substitutes. Along the same line, advocates of a "business model" or "strategy mapping" approach to performance measurement propose formulating performance measurement systems around a diverse set of financial and non-financial performance measures that are linked to firm-specific strategies (Magretta 2002). Kaplan and Norton (1996) argue that a balanced scorecard should not just be a collection of financial and nonfinancial measures in various categories, but rather an integrated set of measures developed from a business model that articulates the cause-and-effect relationships between the selected performance measures and outcomes.

Nonetheless, survey evidence shows that only a small minority of companies consistently build and test the strength and validity of their hypothesized business models (Ittner and Larcker 2003). If the hypothesized links in the models are incorrect, these models can actually cause major problems. For example, Rucci et al. (1998) shows how Sears' managers' poor understanding of their business model doomed that firm to failure in the early 1990s. Only a few academic studies (Campbell et al. 2006; Nagar and Rajan 2005; Malina and Selto 2004) have attempted to test business models empirically, and the results have been mixed.

Another limitation of the prior literature on nonfinancial performance measures is that we know very little about how measurement alternatives affect the strength of the relations between non-financial measures and future financial performance (Ittner and Larcker 1998b). It is important to study the impact of different measurement alternatives on nonfinancial performance measures' forward-looking properties because nonfinancial performance measures included in incentive contracts perform both a decision-

influencing role and a decision-facilitating role (Datar et al. 2001; Feltham and Xie 1994; Sedatole 2003; Sprinkle 2003). Poorly constructed nonfinancial measures provide distorted pictures of the performances of both business entities and their managers and lower the quality of manager decision-making. Despite the large number of studies on the relation between customer satisfaction and future financial performance, there is little evidence on the effect of measurement alternatives on customer satisfaction measures' forward-looking properties.

Our research site, a medium-sized, privately owned homebuilder hereafter referred to as "IJK Homes" or just "IJK," provided us with the data needed to make research contributions in two important areas. First, we were able to test IJK's business model using longitudinal data. IJK operates with an explicit business model positing that employee satisfaction leads to customer satisfaction, which leads to financial performance. Each of these measures is included in the company's formal performance incentive plans. This study examines the validity of IJK's business model and provides evidence on the following two research questions regarding this model: (1) Is employee satisfaction a leading indicator of customer satisfaction? (2) Are customer satisfaction and/or employee satisfaction measures leading indicators of future financial performance?

In addition, this research site provided us with the ability to test whether alternative specifications of customer satisfaction have equal predictive ability. IJK measures customer satisfaction using the services and methods of two different consulting firms: a national multi-industry consumer sentiment survey firm and a boutique customer satisfaction survey research firm that specializes in the homebuilding

industry. The availability of two different customer satisfaction measures for the same company enables us to examine the effects of measurement alternatives on the predictive ability of customer satisfaction measures.

We found three primary empirical results. First, some specifications of customer satisfaction are leading indicators of future performance. They are associated with higher forthcoming referrals, revenues, and profits and/or lower warranty costs. But, consistent with prior research (Anderson and Mittal 2000; Ittner and Larcker 1998a), we document diminishing returns to the improvements in customer satisfaction.

Second, *overall* employee satisfaction is not a significant leading indicator of either financial performance or customer satisfaction. However, when examined at a disaggregated level, the satisfaction of employees who have the greatest amount of interactions with customers (e.g., sales) is found to be positively associated with customer satisfaction.

Third, we find that not all measures of customer satisfaction are created equal. When we "run a horserace" between the two different consulting firms' customer satisfaction measures, we find that the method employed by the boutique consulting firm has far greater predictive ability than that of the national, generalist firm. Our findings suggest that the validity of a business model depends not only on the soundness of the conceptual model per se, but also on how the variables in the business model are measured—both content and timing of measurement.

The remainder of the paper is organized as follows: Section II introduces the research site. Section III reviews the literature and develops the hypotheses. Section IV describes the data and measures. Section IV presents the results and Section V concludes.

II.   Research Site

This study's research site, IJK, is one of the largest privately held homebuilders in the U.S. IJK concentrates its homebuilding efforts in the Western U.S., where it operates through nine divisions. Being a well-established company with more than 100 years' experience, IJK consistently earns top industry rankings in architectural design, construction excellence, customer care, and overall homebuyer satisfaction. IJK finished 2004 with revenues of well over $1 billion from over 2,000 residential closings. Compared to the large public homebuilders that leverage economies of scale and emphasize short-term financial results, IJK places greater emphasis on quality and customer service. IJK managers also place great emphasis on employee satisfaction, claiming that the employees are "the most immediate customers." They believe that high employee satisfaction will help transmit the team's passion on to the customers. **Figure 1** illustrates IJK's business model.

One thing that makes IJK an interesting research site is the fact that the company measures its customers' satisfaction levels using two independent companies — a national multi-industry consumer sentiment survey firm (hereafter "NF") and a boutique survey consulting firm (hereafter "BF") that specializes in the homebuilding industry. BF is also hired to assess IJK's employee satisfaction levels.

Consistent with its corporate culture and organizational strategy, IJK devotes large amounts of money and effort to the measurement and management of both customer and employee satisfaction. The firm includes both measures in their management incentive plans and includes customer satisfaction in their employee

incentive plans. Specifically, division managers' bonuses are mainly based on the division's target achievement of net income, but the bonus pools are adjusted by customer satisfaction and employee satisfaction ratings. The adjustments are based on BF's feedback category titled "Key Measures", which encompasses the following three questions: "Overall, I am satisfied with the quality of my home", "The builder met its commitments to me", and "I would recommend this builder to a friend or family member." For a score of 90%, no adjustment is made to the bonus. For scores over 90%, the bonuses are adjusted upward by two percent for every percent above 90%. Below 90%, a deduction equal to the difference between 90% and the actual score is made up to a maximum deduction of 10%. Similar adjustments are made for employee satisfaction ratings.

Employee satisfaction adjustments are based on BF's feedback category titled "Key Measures", which encompasses the following three questions: "If a friend was looking for a job, I would refer them to my division", "My division management team displays its commitment to our principles and values", and "In the last 30 days, I have received recognition or praise for doing good work.". Employees' bonus pools, which also are based on the division's target achievement of net income, are adjusted by customer satisfaction ratings only. **Appendix A** provides examples of incentive calculations for a typical middle manager and a lower-level employee.

III.   Literature Review and Hypothesis Development

Performance Effects of Customer Satisfaction

Prior studies have documented mostly positive associations between customer satisfaction and future financial performance (Behn and Riley 1999; Ittner and Larcker 1998a; Banker et al. 2000; Bernhardt et al. 2000; Smith and Wright 2004; Dikoli et al. 2005). For instance, Bernhardt et al. (2000) found a positive and significant relationship between customer satisfaction and one-year-ahead profitability at a fast-food restaurant chain. Similarly, Banker et al. (2000) found a positive relationship between customer satisfaction and six-month-ahead financial performance in the hospitality industry. They also found that incentive bonus contracts that incorporate customer satisfaction measures positively affect future financial performance. Ittner and Larcker (1998a) found positive relationships between customer satisfaction and future financial performance at the customer level (in a telecommunications firm), the business division level (in the banking industry), and the firm level (using the American Customer Satisfaction Index). They also showed that market value of public companies is positively associated with customer satisfaction for the transportation, utilities and communication sectors.

The above evidence is consistent with finding from the marketing literature. Marketing studies have shown that higher customer satisfaction increases customer retention (Fornell 1992), reduces price elasticities and lowers marketing costs (Anderson et al. 1994; Zeithaml 2000), and increases repurchase and referral intentions (Anderson and Sullivan 1993; Cronin and Taylor 1992), all of which should improve financial performance.

Prior studies, however, have also demonstrated variations in the relation between customer satisfaction and financial performance. For example, Anderson et al. (1997) found that the positive effects of customer satisfaction are more prominent in manufacturing firms than in service firms. Banker and Mashruwala (2007) found a positive relationship between customer satisfaction and forthcoming financial performance in a retail environment only in high competition locations. Ittner and Larcker (1998a) found customer satisfaction to be positively associated with market values in the manufacturing and financial service industries, but negatively associated with market values in the retail industry.

We built our theoretical model and expectations both from our review of the prior literature and through discussions we had with managers of IJK regarding the company's business model. We predict that customer satisfaction contributes to future financial performance in the homebuilding industry mainly through two mechanisms: by increasing customer referrals and by reducing warranty costs. Homebuyers who are more satisfied with the quality of their homes and their home-buying experiences are more likely to recommend the same homebuilder to their family and friends. This increase in referrals will then translate into an increase in revenues for the firm. And because more satisfied customers are less likely to complain about marginal issues, higher customer satisfaction is likely to reduce warranty claims and thus warranty costs (Anderson et al. 1994; Anderson et al. 1997; Fornell 1992). Lower warranty costs will translate into higher profits.

H1: In the homebuilding industry, higher customer satisfaction is significantly associated with:

    a . more customer referrals;

b. lower future warranty costs;
c. higher future financial performance.

Are all indicators of customer satisfaction equally effective in predicting future performance? This issue has not been well studied, presumably due to the unavailability of data: most companies only use a single set of customer satisfaction measures. Our research site, however, provided a unique opportunity to study this question because IJK Homes collects customer satisfaction measures from two consulting companies that employ distinct research methods—a national consumer sentiment firm (NF) and a boutique customer satisfaction firm (BF).

NF is a national surveyor that collects customer satisfaction data across a wide range of industries. In the homebuilding industry, NF collects homebuyer data from public records and administers the survey questionnaire in the second quarter of each calendar year to those who have purchased homes in the prior calendar year. This method means that surveys are completed by people at widely varying times in their home-buying life cycle. Some may complete the survey within a few months of the closing of their purchase, while others may complete the survey a year or more after closing. The survey instrument used by NF is identical across all firms in the homebuilding industry.

Unlike NF, BF tailors the content of its homebuyer satisfaction survey instrument to the needs of IJK Homes. BF measures homebuyer satisfaction at three different, fixed time intervals: at move-in (30 days after closing), mid-year (5 months after closing), and year-end (11 months after closing). Each survey measures overall satisfaction and also focuses on a unique aspect of customer satisfaction deemed to be particularly important at that point in time. The 30-day survey focuses on homebuyer satisfaction with the

purchasing and building process. The 5-month survey focuses on satisfaction with the customer service provided since closing. The 11-month survey focuses on satisfaction with the quality of the home.

Thus, the above-mentioned two customer satisfaction measurement alternatives differ in two major ways. First, they differ in content. NF's customer satisfaction survey instrument is generic; BF's instrument is tailored to the IJK Homes setting. And second, they differ in timing. NF measures customer satisfaction annually. BF measures customer satisfaction at three different points in time in order to capture different aspects of customer satisfaction in a more timely manner.

We expect BF to have greater predictive ability than NF because of the above two differences. First, we expect that the more specific content in the BF instruments will have greater predictive value than does the generic NF instrument. IJK Homes has set out to carve a niche in its industry by providing a certain type of home, in a certain type of neighborhood, by a certain type of process. Marketing theory suggests that the difference between a customer's expectation of a product or service and the actual outcome determines the level of customer satisfaction (Anderson et al. 1994; Anderson and Mittal 2000; Cronin and Taylor 1992). Thus, customer satisfaction for IJK should not just measure how good IJK is compared to any other homebuilder, but instead should measure how well IJK has met the expectations it has created in the target homebuyer's mind (e.g., Joan and Cote 2000; Sedatole 2003). Since BF works with the management team of IJK Homes directly to create a set of three surveys which are built around the specific expectations of management regarding each major step in the homebuying experience, while the NF survey is composed of questions attempting to address all

aspects of the homebuying experience (sales, loan processing, construction, quality, etc.) in a single survey and from an aggregated standpoint of all builders across all segments (condominium, starter, luxury, etc.) across the country, we expect the BF measure to be a more precise measure of customer satisfaction, and hence, a better predictor of future financial performance.

Second, we believe that the timing of the measurement of the components of customer satisfaction matters. This issue has largely been ignored in prior literature. Most prior research has used the American Customer Satisfaction Index (ACSI) to measure customer satisfaction. ACSI computes each firm's customer satisfaction score by using telephone survey data obtained from a sample of consumers who purchased or used the company's product within the past six months (Ittner and Larcker 1998a). This aggregate measure may work well for retailers and nondurable manufacturing firms, since customers may formulate a relatively stable impression of their consumption experience once they complete the transactions or consume the products in these industries. However, the satisfaction levels of purchasers of durable goods may vary over time. In particular, customers who are happy right after moving into the new home may not have the same overall satisfaction level six months or one year later after they have become familiar with their house, the quality of construction, and the neighborhoods. The quality of the satisfaction measures might also vary over time. A long time lag between customers' consumption experience and the assessment of their satisfaction levels may result in distorted satisfaction measures due to memory lapses. For instance, a year after closing on a home, the homebuyer may confuse the poor service of the mortgage company with the service of their builder. Also, as compared with firms in some other

industries, those in the homebuilding industry require customer satisfaction measures that capture different aspects of and fluctuations in homebuyer satisfaction at the appropriate time (i.e., after buyers have had sufficient experiences with the buying process and the product itself). Measures that aggregate these fluctuations, such as the NF measure, may lose predictive power both due to the introduction of noise created by averaging satisfaction with different aspects of the homebuying process and due to the differing time lags between the homebuyers' experience and the assessment of their sentiment. As mentioned above, BF measures homebuyer satisfaction at three different time intervals (each a set period of time from the home purchase transaction) and each survey attempts to measure particular dimensions of homebuyer satisfaction in a timely manner at the appropriate time.

Based on the above arguments, we posit the following hypothesis:

H2: The BF customer satisfaction measure is more strongly associated with future performance than the NF customer satisfaction measure.

Performance Effects of Employee Satisfaction

Previous research provides mixed evidence on the relationship between employee satisfaction and future financial performance with little or no discussion of the possible reasons, which might include omitted correlated variables or mediating or moderating factors (e.g. Huselid 1995; Iaffaldano and Muchinsky 1985; Petty et al. 1984; Ren 2001). Some studies show a significantly positive association between job satisfaction and individual performance (e.g. Petty et al. 1984). Others, however, show little or no relationship (e.g. Iaffaldano and Muchinsky 1985). For example, Huselid (1995) showed a positive relationship between employee satisfaction and firm performance in an

economy-wide survey. He showed that this relationship is both direct, acting on both short-term and long-term indicators of firm performance, and indirect, acting through employee turnover and productivity. Ren (2001), however, found mixed evidence on the employee satisfaction-performance relationship in his study of the commercial banking industry. Banker and Mashruwala (2007) found a link between employee satisfaction and forthcoming financial performance only in the presence of high competition. Despite mixed evidence in academic literature, we posit the following hypothesis based on IJK's hypothesized business model:

H3: There is a positive association between employee satisfaction and forthcoming financial performance in the homebuilding industry.

H3 relates to the direct relationship between employee satisfaction and firm performance. Both previous research and IJK's hypothesized business model, however, suggest that this relationship may be mediated by customer satisfaction. The theory behind the relation between employee satisfaction and customer satisfaction lies in the concept of "emotional contagion," which refers to the idea that the receiver (the customer) catches the emotion being experienced by the sender (the service provider), and as a result, the emotion of the receiver converges with that of the sender (Chartrand and Bargh 1999; Gump and Kulik 1997; Howard and Gengler 2001). In general, previous studies provided support for a positive relation between employee satisfaction and customer satisfaction (Brandt 2000; Brown & Mitchell 1993; Homburg and Stock 2004; Johnson et al. 1994; Schmitt and Allscheid 1995). Dissatisfaction and emotional tension of salespeople will be felt by the customer (Singh, Goolsby, and Rhoades 1994) and affect the customer's satisfaction via the process of emotional contagion. This, in turn,

will create cognitive tension for the customer, thus reducing customer satisfaction (Russo, Meloy, and Medvec 1998). Drawing on both prior literature and the IJK business model, we posit the following hypothesis:

H4: There is a positive association between employee satisfaction and customer satisfaction in the homebuilding industry.

However, we argue that all employee satisfaction measures are not created equal. Previous literature suggests that high frequency of customer interaction should strengthen the "employee satisfaction - customer satisfaction" link (e.g., Homburg and Stock 2004). This is consistent with the "emotional contagion" concept that underlies the positive association between employee satisfaction and customer satisfaction. If an employee has little or no interaction with customers, "emotional contagion" should be minimal. In the current study, we are able to break down the employee satisfaction data by departments and examine the differential impact of employee satisfaction measures for customer satisfaction. Three of these departments stand out as having significantly more interaction with customers than the others: Sales, Customer Service, and Construction.[1] The remaining departments are support departments that have less customer interaction, e.g. Accounting, Legal, Administration. We posit the following hypothesis:

H5: The employee-customer satisfaction relationship will be stronger in those departments that have greater customer interaction.

IV.   Data and Measures

We collected four sets of proprietary data: financial data provided by IJK Homes, customer satisfaction data collected by NF, and customer and employee satisfaction data

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[1] Construction refers to the employees which are the middle-men between the actual construction workers and home-buyers.

collected by BF. IJK's provided us with financial data from the first quarter of 2002 through the fourth quarter of 2004.[2] These data included monthly financial performance data for over 200 projects across seven divisions of IJK.[3] This dataset includes the following variables: total assets (TA), revenue (REV), gross margin (GM), warranty costs (WC), and profit from operations (PROF).

The second dataset consists of customer satisfaction data collected by NF. In the homebuilding industry, NF administers its customer satisfaction survey questionnaires in the second quarter of every year to all new homebuyers of qualifying builders in the prior calendar year. For a firm to be included in the NF survey, it must have a minimum of 150 closed homes appearing in the market's public records in the prior calendar year. We obtain the NF customer satisfaction data for IJK for over 200 projects across seven divisions of IJK for the period between 2001 and 2004. **Appendix B** describes the major categories and sample items in the NF survey instrument.

The third dataset is customer satisfaction data collected by BF. These data consist of three surveys for each individual homebuyer, which are administered to the homebuyer at 30-days, 5-months, and 11-months post close. BF has worked with IJK to ensure that the questions asked are tailored to the expectations that IJK has sought to create in the minds of their target homebuyers. We obtained monthly BF move-in customer satisfaction data from 2002/11 to 2004/10, monthly BF mid-year customer satisfaction data from 2002/09 to 2004/04, and monthly BF year-end customer satisfaction data from 2003/01 to 2003/12, for over 200 projects across seven divisions of

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[2] The sample years are homogeneous in general economic conditions.
[3] For IJK, a project is considered to be the entire neighborhood plan. As such, over 200 neighborhoods were included in the analysis, each containing 250 to 300 homes.

IJK. **Appendix C** presents the major categories and sample items in the BF customer satisfaction survey instruments.

We obtained employee satisfaction data for IJK for the period 2002-2004. The employee satisfaction survey questionnaire is administered annually to approximately 790 employees of the firm. The employees are classified into the following functional areas: Sales, Marketing, construction, Land Acquisition/Development, Finance/Accounting, Administration, and Executive. **Appendix D** describes the employee satisfaction survey instrument.

Finally, we obtained referral data from customers' self reports of referral intention (REFINT) and actual referral numbers (REFN) from the customer satisfaction surveys. Both the 30-day and 11-month BF surveys contain data on both the referral intention and actual referrals. The NF survey also provides data on both actual referrals and referral intention. The 5-month BF survey does not contain referral data.

V. Results

Multi-Dimensionality Analyses

In their test of the Sears model, Rucci et al. (1998) noticed that asking a single question regarding the level of customer satisfaction provided more information than asking multiple questions. Similarly, most marketing and accounting studies use a single index to measure customer satisfaction (Anderson 1994; Anderson et al. 1994; Bernhardt et al. 2000; Ittner and Larcker 1998a; Nagar and Rajan 2005), implying that customer satisfaction is a unidimensional construct. However, some researchers (e.g. Mels et al. 1997) argue that customer satisfaction is a multi-dimensional construct. We think the

issue as to whether customer satisfaction is a unidimensional or multi-dimensional construct is an empirical question, the answer to which is likely to depend on the research setting.

Before we tested the business model, we first ran principal component factor analyses with oblimin rotation on the four customer satisfaction measures (the BF move-in satisfaction, mid-year satisfaction, and year-end satisfaction measures as well as the NF satisfaction measure) and the employee satisfaction measure.[4] The factor analyses results are more consistent with both customer and employee satisfaction being multi-dimensional constructs in our research setting. The results in Table 1 demonstrate two factors from the BF move-in (30-day) satisfaction measure, one factor from the BF mid-year (5-month) satisfaction measure, and two factors from the BF year-end (11-month) satisfaction measure. In sum, we extracted five distinguishable dimensions from the BF customer satisfaction measure and labeled them as follows:

(1) Satisfaction with sales, construction, and customer service (SCSC) (30-day) survey;

(2) Satisfaction with loan and closing process (LCP) (30-day survey);

(3) Satisfaction with customer service (OS) (5-month survey);

(4) Satisfaction with home quality (HQ) (11-month survey);

(5) Satisfaction with customer service (CS) (11-month survey).

We extract one factor from the NF satisfaction measure[5].

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[4] The Varimax rotation method, which assumes orthogonality between the factors, yields similar results.
[5] Results are not tabulated.

Similarly, results shown in Table 2 revealed five factors of employee satisfaction, which we label as follows: job prospects, personal growth, teamwork, homebuyer focus, and communication between company and employees.

Table 3 provides descriptive statistics for these different dimensions of customer satisfaction measures as well as for financial and referral data. The satisfaction measures were elicited with 6-point scales, where 1 indicates extremely low satisfaction and 6 indicates extremely high satisfaction.

Customer Satisfaction Analyses

H1a predicts a positive relationship between customer satisfaction measures and referrals. To test this hypothesis, we ran OLS regressions of referral intention and actual number of referrals on different dimensions of customer satisfaction measures. These regressions were run at the survey questionnaire respondent level. Table 4 summarizes the results. We found significantly positive coefficients on both dimensions of the BF move-in satisfaction measure (SCSC and LCP). We also found significantly positive coefficients on both dimensions of the BF year-end satisfaction (CS and HQ).[6] In addition, we found a positive association between the NF satisfaction measure and referral intention and actual referrals. These results are consistent with H4.

H1b predicts a negative relationship between customer satisfaction measures and warranty costs. We regressed six-month-ahead and one-year-ahead warranty costs on the different dimensions of customer satisfaction to test this hypothesis. These regressions were run at the project level. Table 5 summarizes the results. In the regression with a six-month lag, we found significant results for every dimension of the BF measure of customer satisfaction except for the 30-day satisfaction with the loan and closing process.

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[6] No result is shown for the BF mid-year satisfaction due to missing data.

In the regression with a one-year lag, we found a significant negative relationship between customer satisfaction and warranty costs only for one dimension of customer satisfaction: the BF measure of homebuyers' year-end satisfaction with home quality. It seems that the impact of customer satisfaction on warranty costs is most pronounced within a relatively short period of time. Our analysis revealed no significant relation between the NF measure and future warranty costs.

Finally, H1c predicts positive associations between customer satisfaction and future financial performance in the homebuilding industry. To test these hypotheses, we ran regressions of one-year-ahead revenue and profit on the various dimensions of customer satisfaction measures at the project level. As shown in Table 6, we found that not all measures of customer satisfaction are created equal. We found that the BF move-in satisfaction with sales, construction, and customer service and the BF mid-year satisfaction measure are positively associated with one-year-ahead revenue and profit. The NF satisfaction measures as well as the other dimensions of BF do not have a significant impact on one-year-ahead revenues and profit.

Managers at our research site believe that delighting customers to the greatest extent possible—"creating evangelical buyers" in their terminology—is the best way to ensure strong financial performance in the future. However, academic research suggests that there are sometimes diminishing returns to the improvements in customer satisfaction (e.g., Anderson and Mittal 2000; Ittner and Larcker 1998a). Anderson and Mittal (2000), for instance, documented that there exists a point in the satisfaction-profit chain where the cost of increasing the level of customer satisfaction begins to outweigh its benefits. We checked whether diminishing returns exist in this industry. Indeed they

do. Figure 2a plots the BF move-in customer satisfaction against the associated one-year-ahead profit and shows that the point of diminishing returns starts at about the 95% level (or 5.8 on a 6-point customer satisfaction scale). Figure 2b shows that the point of diminishing returns starts at around the 90% mark for the BF mid-year satisfaction measure and Figure 2c shows that the point of diminishing returns starts at around the 80% level for the BF year-end satisfaction measure.

We also tested the nonlinearity in the relationship between customer satisfaction and financial performance using the General Linear Method (GLM). We formed portfolios based on the customer satisfaction scores separately for different dimensions of the BF customer satisfaction measure.[7] We then calculated the mean one-year-ahead revenues and profits for each of the deciles and compare the means across the deciles using GLM. The least squares estimates of these means and their significance are presented in Table 7. The results for different dimensions of customer satisfaction measures show the same general pattern of nonlinearity and the pattern is stronger for profit than for revenues. As customer satisfaction levels increase from Decile 1 to Decile 10 we see increases in both revenue and profit through the lower and mid deciles on average. However, after the point of diminishing returns, which occurs at different deciles depending on the measure, we see significant decreases in the financial performance measures. For example, in the year-end analysis, profit increases on average through the first eight deciles, but there is a significant drop in profit in the ninth decile where customer satisfaction scores become near perfect.

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[7] This non-linearity analysis could not be completed for the NFNF data due to small sample size.

In sum, these results strongly suggest diminishing returns to the improvements in customer satisfaction. These results also suggest that the point of diminishing returns varies depending on the facets of customer satisfaction measured.

Hypothesis 2 argues that because the BF satisfaction measures are more timely and more reflective of the specific expectations that IJK creates in the minds of its target customers, they will be more strongly associated with future performance than the NF satisfaction measure. Results in Tables 4 through 6 are largely consistent with these hypotheses. Several dimensions of the BF measures of customer satisfaction are found to be leading indicators of referrals, warranty costs, revenues and profit, whereas the NF satisfaction measure is only found to be a leading indicator of referrals. However, since the BF survey and the NF survey differ in both content and timing, our study cannot determine which one drives the superior predictive power of the BF survey. We conjecture that both factors play a role in it.

Employee Satisfaction Analyses

H3 predicts positive associations between employee satisfaction and forthcoming financial performance. To test this hypothesis, we regressed one-year-ahead revenue/profit on the five dimensions of employee satisfaction. Since we did not know the exact time lag between employee satisfaction and future financial performance, and the effect of employee satisfaction may manifest itself within the same year, we also tested the relationship between employee satisfaction and contemporaneous revenue/profit. Results in Table 8 show that only the first factor of employee satisfaction, job satisfaction, comes out significant in the contemporary revenue regression. Therefore, H3 is not supported.

H4 posits a positive association between employee satisfaction and customer satisfaction. To test this hypothesis, we run both contemporaneous and lagged regressions of different dimensions of customer satisfaction on the various dimensions of employee satisfaction. Results in Table 9 show that in the contemporaneous regression, there is a significant relationship between employee satisfaction with communication and the BF move-in satisfaction. When we regressed one-year-ahead customer satisfaction on employee satisfaction, we found significantly positive relationship between employee satisfaction with job satisfaction, homebuyer focus, and communication with the BF move-in satisfaction. Therefore, H4 is only partially supported.

H5 predicts that the relationship between employee satisfaction and customer satisfaction will be stronger in those departments that have more interactions with customers. Correlational analysis between customer satisfaction and employee satisfaction broken down by departments, summarized in Table 10, provides preliminary evidence regarding this hypothesis. Most of the correlations are insignificant. However, we did find a positive correlation between satisfaction of sales employees and the BF move-in customer satisfaction measure (r=0.511). The results provide modest support for H5. Sales department employees have a greater impact on customer satisfaction presumably because they interact more frequently with the customer.

V. Conclusions

In this study, we tested the business model of a company in the homebuilding industry using its monthly customer satisfaction, employee satisfaction, and financial data for over 200 projects for the period 2001-2004. While most prior research has treated

customer satisfaction and employee satisfaction as unidimensional constructs by using a single customer satisfaction or employee satisfaction index, we found that both customer and employee satisfaction are multi-dimensional constructs. Each is comprised of several distinguishable dimensions with differential impact on other variables in the business model. We also have three main empirical findings: 1) overall employee satisfaction is not a significant leading indicator of either customer satisfaction or financial performance, but employee satisfaction in the sales department is positively associated with customer satisfaction; 2) customer satisfaction measures is a leading indicators of future performance, as measured by higher referrals, revenues, and profits, and lower warranty costs; and 3) the customer satisfaction measures provided by the boutique consulting firm have far greater predictive ability than those provided by the national firm.

This study makes a number of contributions to the performance measurement literature, and particularly the growing literature that is exploring links between non-financial and financial measures of performance. First, it shows that neither customer satisfaction nor employee satisfaction is a unidimensional construct. The notion of customer satisfaction, in particular, is made up of some quite different judgments made at different points in the homebuyer's life cycle. And not all employee satisfaction measures are created equal. For example, out of five different employee satisfaction measures, only employee satisfaction with job prospects is significantly related to future financial performance, and analyses showed that only the satisfaction levels of the sales department employees are found to be positively associated with customer satisfaction.

Second, it shows that how and when customer satisfaction is measured influences its predictive ability. While prior research often uses a single customer satisfaction measure, our research site uses two quite different sets of customer satisfaction measures, which allowed us to "run a horserace" between the two measures and examine the effect of measurement alternatives on the forward-looking properties of customer satisfaction. The results suggest that a customer satisfaction measure that is built around more specific expectations of customers outperforms more generic customer satisfaction data. More importantly, our study calls attention to the importance of the time aspect of customer satisfaction measurement. The NF customer satisfaction data measures customer satisfaction once every year and the survey date corresponds to different times in the life cycle of the homebuyer. The BF survey, however, collects data at three different time points, each of which corresponding to a set time in the homebuyer's life-cycle (30-days, 5-months, and 11-months post close). We find that the BF customer satisfaction measure has greater predictive power than the NF customer satisfaction measure. One limitation of our study is that we cannot disentangle the two possible drivers (i.e., more accurate expectations and more precise timing of survey) of the superior forward-looking properties of the BF customer satisfaction measure. We conjecture, however, that both factors contribute to the greater predictive power of BF.

Last but not least, a major contribution of this study is that we tested a firm-specific business model, which has often been called for but seldom practiced in prior literature. We tested each link in IJK's business model and found strong evidence consistent with some links (e.g., the link between customer satisfaction and referral, the link between customer satisfaction and warranty costs) but not others (e.g., the link

between employee satisfaction and customer satisfaction). In fact, perhaps the most important insight that comes from our study is that the validity of the business model depends not only on the theoretical soundness of the business model, but also on how the variables in the business model are measured.

This study challenges us to reassess some prior research on non-financial performance measures. For example, most prior research has used the ACSI index to measure customer satisfaction. How useful is this commonly used measure? Evidence presented in this study challenges the ideas of measuring customer satisfaction with a single "key measure" as well as the idea of measuring customer satisfaction with a generic survey across diverse industries. We have shown that constructs such as customer satisfaction and employee satisfaction are much more complex than have been put forth in prior literature and possibly in practice as well. It is not until we fully understand their complexity that proper measurement and understanding of their consequences can be achieved.

References

Abernethy, M. A., M. Horne, A. M. Lillis, M. A. Malina, and F. H. Selto. 2005. A multi-method approach to building causal performance maps from expert knowledge. *Management Accounting Research* 16: 135-155.

Amir, E., and B. Lev. 1996. Value-relevance of nonfinancial information: The wireless communications industry. *Journal of Accounting and Economics* 22(1-3): 3-30.

Anderson, E.W. 1994. Cross category variation in customer satisfaction and retention. *Marketing Letters* 15: 19-30.

Anderson, E. W., C. Fornell, and D. R. Lehmann. 1994. Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of Marketing* 58(3): 53-66.

Anderson, E. W., C. Fornell, and R. T. Rust. 1997. Customer satisfaction, productivity, and profitability: Differences between goods and services, *Marketing Science* (2): 129-45.

Anderson, E. and V. Mittal. 2000. Strengthening the satisfaction-profit chain. *Journal of Service Research* 3(2): 107-120.

Anderson, E. W., and M. W. Sullivan. 1993. The antecedents and consequences of customer satisfaction for firms. *Management Science* 40(3): 405-417.

Banker, R.D. and R. Mashruwala. 2007. The moderating role of competition in the relationship between nonfinancial measures and future financial performance. *Contemporary Accounting Research* 24(3): 763-793.

Banker, R.D., G. Potter, and D. Srinivasan. 2000. An empirical investigation of an incentive plan that includes nonfinancial performance measures. *The Accounting Review* 75(1): 65-92.

Behn, B. K., and R. A. Riley. 1999. Using nonfinancial information to predict financial performance: The case of the U.S. airline industry. *Journal of Accounting, Auditing and Finance* 14(1): 29-56.

Bernhardt, K. L., N. Donshu, and P. A. Kennett. 2000. A longitudinal analysis of satisfaction and profitability. *Journal of Business Research* 47: 161-171.

Brandt, R. 2000. Linking measures of customer satisfaction, value, and loyalty to market and financial performance: basic methods and key considerations. White Paper Series. Cincinnati, OH: Burke, Inc.

Brown, K. and T. Mitchell. 1993. Organizational obstacles: links with financial performance, customer satisfaction, and job satisfaction in a service environment. *Human Relations* 46(6): 725-57.

Campbell, D., S. Datar, S. L. Kulp, and V. G. Narayanan. 2006. The strategic content of non-financial performance measures. Working paper. Harvard Business School.

Chartrand, T.L. and J.A. Bargh. 1999. The chameleon effect: the perception-behavior link and Social Interaction. *Journal of Personality and Social Psychology* 76: 893-910.

Cronin, J. J., and S. A. Taylor. 1992. Measuring service quality: A reexamination and extension. *Journal of Marketing* 56: 55-68.

Datar, S., S. C. Kulp, and R. A. Lambert. 2001. Balancing performance measures. *Journal of Accounting Research* 39(1): 75-92.

Davis, S. and T. Albright, 2004. An investigation of the effect of balanced scorecard implementation on financial performance. *Management Accounting Research* 15: 135-53.

Dikolli, S. S., W. R. Kinney, Jr., and K. L. Sedatole. 2005. Measuring trading partner relationship value: Inferences from customer switching data. Working paper. The University of Texas.

Feltham, G., and J. Xie. 1994. Performance measures congruity and diversity in multi-task principal/agent relations. *The Accounting Review* 69(3): 429-453.

Fornell, C. 1992. A national customer satisfaction barometer: The Swedish experience. *Journal of Marketing* 56(1): 6-21.

Gump, B.B. and J.A. Kulik. 1997. Stress, affiliation, and emotional contagion. *Journal of Personality and Social Psychology* 72(February): 305-319.

Hemmer, T. 1996. On the design and choice of "modern" management accounting measures. *Journal of Management Accounting Research* 8: 87-116.

Homburg, C. and R.M. Stock. 2004. The link between salespeople's job satisfaction and customer satisfaction in a business to business context: a dyadic analysis. *Journal of the Academy of Marketing Science* 32(2): 144-158.

Hoque, Z. and W. James. 2000. Linking the balanced scorecard measures to size and market factors: impact on organizational performance. *Journal of Management Accounting Research* 12: 1-17.

Howard, D.J. and C. Gengler. 2001. Emotional contagion effects on product attitudes. *Journal of Consumer Research* 28(September): 189-201.

Huselid, M. 1995. Impact of human resource management on turnover, productivity, and corporate financial performance. *Academy of Management Journal* 38(3): 635-72.

Iaffaldano M. and P. Muchinsky. 1985. Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin* 97: 251-271.

Ittner, C. D., and D. F. Larcker. 1998a. Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. *Journal of Accounting Research* 36(Supplement): 1-35.

----------1998b. Innovations in performance measurement: Trends and research implications. *Journal of Management Accounting Research* 10: 205-238.

----------2001. Assessing empirical research in managerial accounting: a value-based management perspective. *Journal of Accounting and Economics* 32: 349-410.

----------2003. Coming up short on nonfinancial performance measurement. *Harvard Business Review* 81(11): 88-95.

Joan, L. and J. Cote. 2000. Defining Customer Satisfaction. *Academy of Marketing Science Review* 1: 1-24.

Johnson, R., R. Ryan, and M. Schmitt. 1994. Employee attitudes and branch performance at ford motor credit. In N. Rochford (Chair). *Linking Employee Survey Data to Organizational Outcome Measures.* Practitioner Forum conducted at the Annual Conference for the Society for Industrial and Organizational Psychology, Nashville, TN.

Kaplan, R.S. and D. P. Norton. 1992. The balanced scorecard – measures that drive performance. *Harvard Business Review* 1992(Jan/Feb): 71-79.

----------1996. *The Balanced Scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.

Magretta, J. 2002. Why business models matter. Harvard Business Review 80(5): 3-8.

Malina, M., and F. Selto. 2004. Causality in performance measurement models. Working paper. Naval Post Graduate School.

Mels, G., C. Boshoff, and D. Nel. 1997. The dimensions of service quality: The European perspective revisited. *Service Industries Journal* 17(1): 173-89.

Nagar, V., and M. V. Rajan. 2001. The revenue implications of financial and operational measures of product quality. *The Accounting Review* 76(4): 495-513.

----------2005. Measuring customer relationships: The case of the retail banking industry. *Management Science* 51(6): 904-919.

Petty, M., G. McGee, and J. Cavender, 1984. "A meta-analysis of the relationships between individual job satisfaction and individual performance", *Academy of Management Review*, 9, 712-721.

Ren, Y. 2001. Employee satisfaction and firm performance: an analysis of commercial bank branches. Dissertation. University of Minnesota.

Rucci, A. J., S. P. Kirn, and R. T. Quinn. 1998. The employee-customer-profit chain at Sears. *Harvard Business Review* 76(1): 82-97.

Russo, J. E., M.G. Meloy and V. H. Medvec. 1998. Predecisional distortion of product information. *Journal of Marketing Research* 35(November): 438-452.

Sedatole, K. L. 2003. The effect of measurement alternatives on a nonfinancial quality measure's forward-looking properties. *The Accounting Review* 78(2): 555-580.

Schmitt, M. and S. Allschied, 1995. Employee attitudes and customer satisfaction: making theoretical and empirical connections. *Personnel Psychology* 48: 521-36.

Singh, J., J. R., Goolsby, and G. K. Rhoades. 1994. Behavioral and psychological consequences of boundary spanning burnout for customer service representatives. *Journal of Marketing Research* 31(November): 558-569.

Smith, R. E., and W. F. Wright. 2004. Determinants of customer loyalty and financial performance. *Journal of Management Accounting Research* 16: 183-205.

Sprinkle, G., 2003. Perspectives on experimental research in managerial accounting. *Accounting, Organizations, and Society* 28(2-3): 287-318.

Zeithaml, V.A. 2000. Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science* 28(1): 67-85.

Figure 1
Illustration of the IJK Business Model
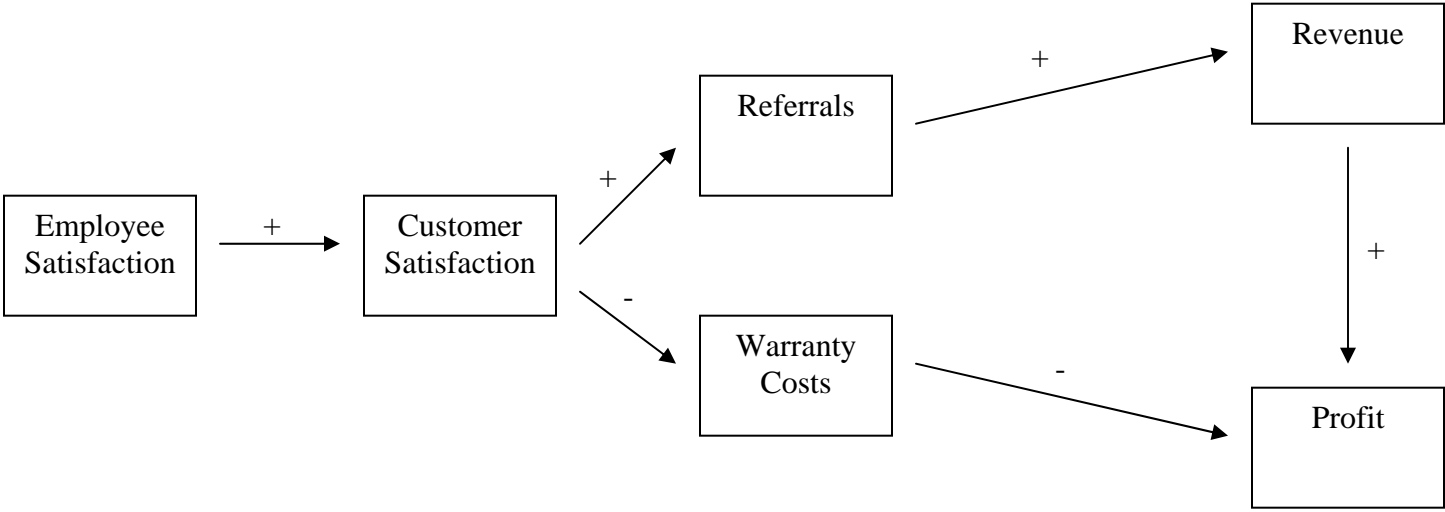
Figure 2
Relationship between BF Customer Satisfaction Measures and One-Year Ahead Profit

Figure 2a: BF Move-In Customer Satisfaction

Relationship between Satisfaction
and One-Year-Ahead Profit

Move-In Survey
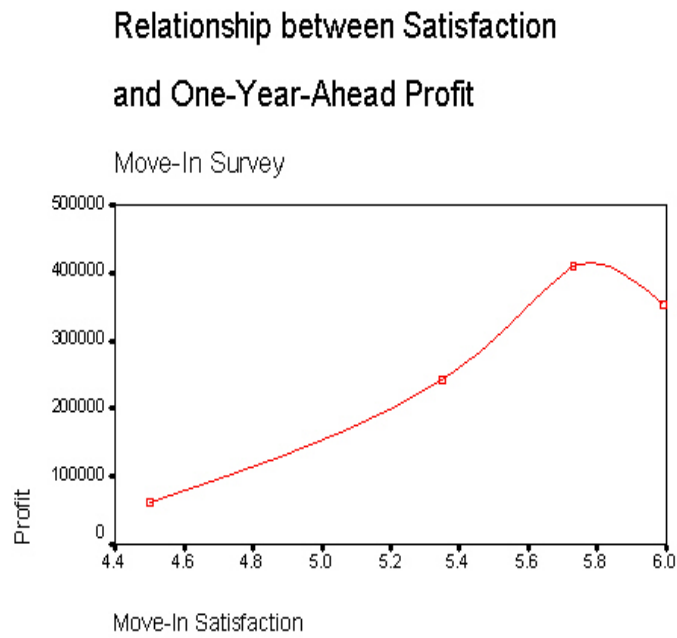
Figure 2b: BF Mid-Year Customer Satisfaction

Relationship between Satisfaction
and One-Year-Ahead Profit

Mid-Year Survey

33
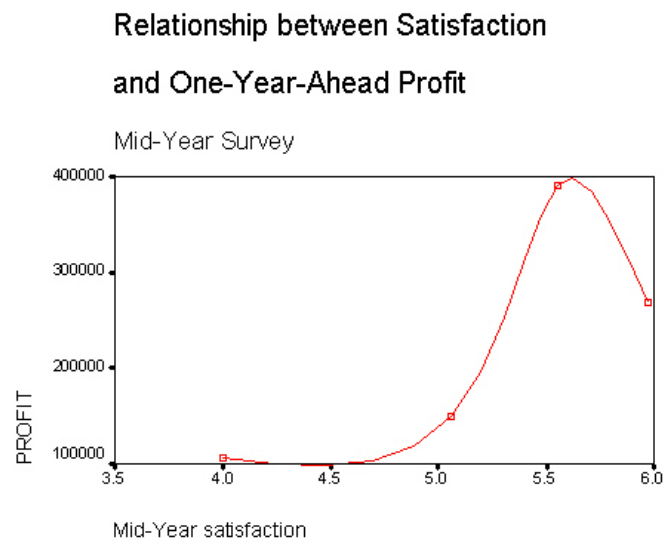
Figure 2 (Cont.)

Figure 2b: BF Year-End Customer Satisfaction

Relationship between Satisfaction

and One-Year-Ahead Profit

Year-End Survey

Year-End satisfaction
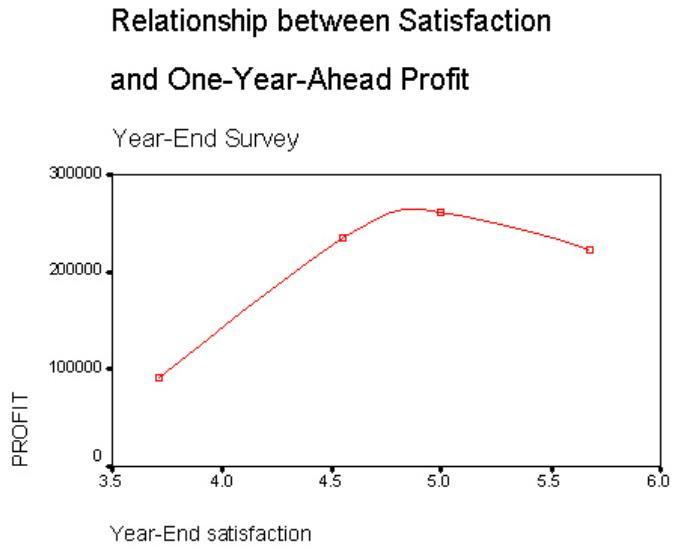
Table 1
Customer Satisfaction Factor Analysis *

Panel A: BF 30-Day Survey

	Factors	
Survey instrument items	1	2
1	**0.876**	0.029
2	**0.536**	0.224
3	**0.564**	0.406
4	-0.011	**0.707**
5	**0.874**	-0.112
6	**0.885**	-0.028
7	**0.712**	0.086
8	**0.918**	-0.188
9	-0.010	**0.601**
10	0.049	**0.751**
11	**0.784**	0.004
12	**0.682**	0.330
Eigenvalue	6.32	1.19
Cumulative %		
of Total Variance Explained	52.63	62.61
Factor Labels	*SCSC*	*LCP*

Panel B: BF 5-Month Survey

	Factors
Survey instrument items	1
1	**0.830**
2	**0.830**
3	**0.852**
4	**0.820**
5	**0.867**
6	**0.855**
7	**0.871**
8	**0.778**
9	**0.823**
10	**0.887**
11	**0.827**
12	**0.869**
13	**0.815**
14	**0.780**
15	**0.854**
16	**0.878**
17	**0.768**
Eigenvalue	11.89
Cumulative %	
of Total Variance Explained	69.93
Factor Labels	*OS*

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Panel C: BF 11-Month Survey

Survey instrument items	Factors	
	1	2
1	0.290	**0.738**
2	0.232	**0.758**
3	**0.755**	0.130
4	**0.807**	0.137
5	**0.877**	-0.071
6	**0.940**	-0.126
7	**0.918**	-0.038
8	**0.942**	-0.152
9	**0.912**	0.003
10	**0.938**	-0.001
11	**0.932**	-0.049
12	**0.959**	-0.129
13	**0.774**	0.140
14	**0.824**	0.183
15	**0.673**	0.278
16	**0.829**	0.136
17	**0.642**	0.298
18	**0.824**	0.139
19	**0.792**	0.182
20	**0.757**	0.160
21	**0.734**	0.224
22	**0.771**	0.136
23	**0.779**	0.130
24	**0.843**	0.053
25	**0.883**	-0.214
26	**0.905**	-0.084
27	**0.898**	-0.105
Eigenvalue	19.79	1.04
Cumulative % of Total Variance Explained	52.63	62.61
Factor Labels	*HQ*	*CS*

Notes:
*Panels A through C present results from principal component factor analysis with oblimin rotation.
Please refer to Appendix B and Appendix C for descriptions of customer satisfaction surveys.

SCSC   = The Sales, Customer Service, and Construction Factor as determined in factor
        analysis of the BF 30-Day Move-In Survey
LCP = The Loan and Closing Process Factor as determined in factor analysis of the BF 30-Day Move-In Survey
OS = The Overall Satisfaction Factor as determined in factor analysis of the BF Mid-Year Survey
CS = The Customer Satisfaction Factor as determined in factor analysis of the BF Year-End Survey
HQ = The Home Quality Factor as determined in factor analysis of the BF Year-End Survey
REV = Revenue, as measured by sales unit per year
PROF = Profit, as measured by sales unit per year
WARR = Warranty Costs, as measured by sales unit per year
REFN = Number of recommendations made by an individual homebuyer as indicated on customer satisfaction
        surveys
REFINT = The homebuyer's level of intent to recommend IJK as indicated on customer satisfaction surveys

Table 2
Employee Satisfaction Factor Analysis

This table presents results of principal component factor analysis with oblimin rotation of the BF employee satisfaction survey.

Survey instrument items	Factors				
	1	2	3	4	5
1	-0.114	0.096	-0.007	-0.035	**0.857**
2	0.025	0.137	-0.041	**0.817**	0.055
3	0.040	0.092	-0.074	**0.873**	-0.026
4	**0.766**	-0.036	-0.036	0.142	-0.056
5	**0.822**	-0.256	0.017	0.128	-0.043
6	**0.725**	-0.120	-0.054	0.209	0.076
7	**0.570**	0.121	0.120	0.007	0.008
8	-0.188	**0.897**	-0.025	0.102	0.130
9	0.321	0.189	0.045	0.007	0.384
10	0.057	**0.717**	0.035	0.159	0.028
11	0.447	0.459	-0.063	-0.011	0.018
12	**0.682**	0.048	0.188	-0.086	-0.012
13	-0.066	0.386	0.429	0.217	-0.295
14	**0.672**	0.102	-0.062	-0.118	0.073
15	**0.695**	0.176	0.034	-0.097	-0.045
16	0.594	0.408	-0.107	-0.188	-0.027
17	**0.701**	0.265	-0.071	-0.132	-0.134
18	**0.626**	-0.136	-0.006	0.245	0.010
19	0.046	-0.065	**0.831**	-0.025	0.035
20	0.001	0.024	**0.879**	-0.139	0.084
21	**0.441**	-0.152	0.289	0.074	0.068
22	0.095	-0.012	0.110	0.097	**0.618**
Eigenvalue	8.45	1.53	1.25	1.07	0.90
Cumulative % of Total Variance Explained	38.40	45.34	51.02	55.89	60.45
Factor Labels	*JP*	*PG*	*TW*	*HF*	*COMM*

Notes:

Please refer to Appendix D for descriptions of employee satisfaction surveys.
JP = Employee satisfaction with job prospects
PG = Employee satisfaction with personal growth
TW = Employee satisfaction with teamwork
HF = Employee satisfaction with homebuyer focus
COMM = Employee satisfaction with the communication between company and employees

Table 3
Descriptive Statistics

Panel A: BF 30-Day Move-In Survey

	N	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
SCSC	335	5.395	0.671	5.224	5.770	5.975
LCP	335	5.029	0.741	4.636	5.400	5.727
REV	232	$1,194,993	$2,549,224	$0	$0	$1,326,009
PROF	177	$261,098	$649,834	-$1,727	$0	$202,269
WARR	232	$8,938	$17,354	$970	$3,848	$8,800
REFN	1257	5.313	10.356	1.000	3.000	5.000
REFINT	1485	5.537	0.966	5.000	6.000	6.000

Panel B: BF 5-Month Mid-Year Survey

	N	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
OS	273	5.159	0.824	4.830	5.330	5.825
REV	232	$1,194,993	$2,549,225	$0	$0	$1,326,009
PROF	232	$230,257	$604,972	-$1,790	$0	$163,716
WARR	232	$8,938	$17,355	$970	$3,848	$8,801

Panel C: BF 11-Month Year-End Survey

	N	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
CS	208	4.733	0.776	4.8182	5.5455	6
HQ	207	5.078	0.951	4.0665	4.6622	5.4243
REV	208	$1,036,918	$2,412,316	$0	$0	$870,909
PROF	208	$202,823	$600,461	-$2,311	$0	$95,213
WARR	208	$10,005	$18,534	$1,398	$4,861	$10,726
REFN	809	5.431	10.057	0.500	3.000	6.000
REFINT	877	5.218	1.119	5.000	6.000	6.000

Panel D: NF Survey

	N	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
NF	109	111.92	29.7	100.44	111.24	129.61
REV	86	$13,195,696	$26,855,389	$0	$1,329,394	$14,730,584
PROF	86	$1,410,342	$3,464,814	-$22,012	$146,995	$2,657,209
WARR	86	$162,235	$347,098	$18,524	$70,451	$148,046
REFN	108	4.971	4.299	2.341	4	6.007
REFINT	109	3.03	0.914	2.596	3.075	3.531

Panel E: Employee Satisfaction Survey *

	N	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
JP	26	4.399	0.208	4.274	4.371	4.494
PG	26	4.109	0.272	3.969	4.151	4.282
TW	26	4.465	0.150	4.365	4.427	4.515
HF	26	4.482	0.258	4.275	4.487	4.710
COMM	26	4.488	0.223	4.298	4.528	4.637

Notes:

Please refer to Appendix B through Appendix D for descriptions of customer satisfaction and employee satisfaction surveys.

SCSC = The Sales, Customer Service, and Construction Factor as determined in factor analysis of the BF 30-Day Move-In Survey

LCP = The Loan and Closing Process Factor as determined in factor analysis of the BF 30-Day Move-In Survey

OS = The Overall Satisfaction Factor as determined in factor analysis of the BF Mid-Year Survey

CS = The Customer Satisfaction Factor as determined in factor analysis of the BF Year-End Survey

HQ = The Home Quality Factor as determined in factor analysis of the BF Year-End Survey

REV = Revenue, as measured by sales unit per year

PROF = Profit, as measured by sales unit per year

WARR = Warranty Costs, as measured by sales unit per year

REFN = Number of recommendations made by an individual homebuyer as indicated on customer satisfaction surveys

REFINT = The homebuyer's level of intent to recommend IJK as indicated on customer satisfaction surveys

JP = Employee satisfaction with job prospects as determined in factor analysis of employee satisfaction survey

PG = Employee satisfaction with personal growth as determined in factor analysis of employee satisfaction survey

TW = Employee satisfaction with teamwork as determined in factor analysis of employee satisfaction survey

HF = Employee satisfaction with homebuyer focus as determined in factor analysis of employee satisfaction survey

COMM = Employee satisfaction with the communication between company and employees as determined in factor analysis of employee satisfaction survey

* Employee satisfaction data are aggregated by division for data analysis.

Table 4
Regressions of Number of Referrals and Referral Intention on Customer Satisfaction

	REFF						REFINT					
	Coefficients (p-value)						Coefficients (p-value)					
Intercept	1.276	-11.291	-3.635	-4.698	-1.811	-13.01	4.167	-0.661	1.811	1.611	0.668	-0.658
	0.822	-4.017***	-1.894*	-2.364**	-1.23	-1.101	33.443***	-3.797***	10.793***	8.975***	2.668***	-0.503
LCP	0.075					-1.115	0.279					-0.149
	2.649***					-0.73	11.198***					-0.88
SCSC		0.165				1.736		0.681				0.288
		5.939***				0.754		35.783***				1.133
CS			0.167			0.518			0.574			0.667
			4.809***			0.289			20.685***			3.363***
HQ				0.179		2.541				0.568		-0.321
				5.177***		1.354				20.403***		1.546
NF					0.42						0.686	
					4.765***						9.749***	
F-Statistic	7.015***	35.271***	23.122***	26.806***	22.706***	1.826	125.402***	1280.371***	427.857***	416.297***	95.045***	13.161***
Adjusted R^2	0.005	0.027	0.027	0.031	0.169	0.055	0.077	0.463	0.329	0.322	0.465	0.295
N	1255	1256	804	808	107	130	1483	1484	870	875	108	130

Note: Refer to Table 3 for variable definition.
*** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

Table 5
Regressions of Warranty Costs on Customer Satisfaction

WARR$_{t+6mos}$ is the unit's warranty costs of the period 6 months after the measurement of the customer satisfaction variable. WARR$_{t+1}$ is the unit's warranty costs in the period following the measurement of the customer satisfaction variable by one year. *** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

	WARR$_{t+6mos.}$						WARR$_{t+1}$						
Intercept	25181.72	15322.87	43692.48	32675.13	29223.33	25847.96	11508.52	-191.89	21270.53	27151.84	27327.62	215131.83	10086.86
	2.904---	2.600***	5.403***	4.778***	4.381***	3.012***	0.732	-0.18	2.663***	3.522***	3.662***	0.647	0.491
SCSC	-3410.99					-3296.31	-400.36						1615.18
	-2.143**					-1.98**	-0.138						0.405
LCP		-1704.86				1247.04		2245.63					2925.98
		-1.48				1.183		1.072					1.16
OS			-6756.32			-1136.41			-2374.3				-1048.35
			-4.412***			-0.805			-1.56				-0.311
HQ				-5138.34		570.02				-3625.44			-2552.89
				-3.603***		0.464				-2.255**			-0.868
CS					-4068.39	1235.72					-3380.32		-1484.4
					-3.169***	-1.063					-2.354**		-0.533
NF												-1567.23	
												0.15	
F-Statistic	4.592**	2.191	19.469***	12.981***	10.042***	2.095*	0.019	1.149	2.433	5.085**	5.540**	0.022	1.197
Adjusted R^2	0.012	0.004	0.064	0.055	0.042	0.085	0.00	0.007	0.01	0.024	0.026	0.02	0.05
N	290	290	272	207	206	118	176	176	231	207	206	51	118

Table 6
Regressions of Revenue/Profit on Customer Satisfaction

REV_{t+1} is the unit's revenue of the period following the measurement of the customer satisfaction variable. $PROF_{t+1}$ is the unit's profit from operations in the period following the measurement of the customer satisfaction variable. *** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

	REV_{t+1} Coefficients (p-value)							$PROF_{t+1}$ Coefficients (p-value)						
Intercept	-4,923,467	-139,300	-1,475,688	-1,367,345	-782,128	3,287,422	-5,691,221	-1,025,762	81,379	-310,171	-245,138	-255,816	247,970	-1,529,290
	-2.314**	-0.095	-1.266	-1.365	-0.802	0.181	-1.43	-2.038*	-0.235	-1.117	-0.977	-1.504	0.105	-1.523
SCSC	1173200.2						86497.1	239026.73						223149.76
	2.982***						1.12	2.569**						1.145
LCP		305375.46					-451349.44		68277.15					-73829.56
		1.051					-0.923		0.999					-0.598
OS			514176.42				636084.15			104046.6				124778.09
			2.314**				0.973			1.967**				0.756
HQ				508352.38			194107.1				94715.95			-75132.81
				2.434**			0.34				1.811*			-0.522
CS					356317.92		73154.03					89778.01		128159.96
					1.898*		0.136					1.921*		0.942
NF						95044.86							8476.81	
						0.382							0.378	
F-Statistic	8.893***	1.104	5.356**	5.926**	3.603*	0.146	1.182	6.599**	0.998	3.869**	3.279*	3.692*	0.143	1.032
Adjusted R^2	0.048	0.006	0.023	0.028	0.017	0.017	0.05	0.036	0.006	0.017	0.016	0.018	0.017	0.044
N	176	176	231	207	206	51	118	176	176	231	207	206	51	118

Table 7
Non-Linearity Analysis

Least Squares Means from the General Linear Model (GLM). Estimates of the associations between portfolios formed on the basis of customer satisfaction levels and one-year ahead revenue and operating income.

Panel A: The BF Move-In Customer Satisfaction Analysis

Decile	Mean Move-In Customer Satisfaction	Dependent Variable	
		Mean Revenue	Mean Operating Income
1	4.39	2,183,579	419,177
2	5.10	1,393,147	230,417
3	5.29	1,351,775	368,175
4	5.41	2,641,200	504,904
5	5.56	3,328,552 [3]	372,117
6	5.69	2,554,633	465,695
7	5.83	4,596,867 [1-3,6]	1,171,136 [1-6]
8	5.90	2,771,509	628,830 [7]
9	5.94	8,815,986 [1-8]	2,680,580 [1-8]
10	6.00	2,078,556 [7,9]	341,418 [7,9]
R^2		0.122	0.194
F-Statistic		2.202**	3.089***

Panel B: The BF Mid-Year Customer Satisfaction Analysis

Decile	Mean Mid-Year Customer Satisfaction	Dependent Variable	
		Mean Revenue	Mean Operating Income
1	3.44	2,100,075	416,954
2	4.57	1,402,988	187,895
3	4.89	1,950,619	431,987
4	5.14	2,441,795	533,604
5	5.30	3,567,443	397,312
6	5.40	4,012,135 [2]	993,199 [1-3,5]
7	5.55	4,484,112 [1-3]	1,206,369 [1-5]
8	5.73	2,841,974	542,845 [7]
9	5.88	1,331,602 [6,7]	129,929 [6,7]
10	6.00	2,888,132 [2,9]	648,291 [7,9]
R^2		0.008	0.04
F-Statistic		1.082	1.437

Panel C: The BF Year-End Customer Satisfaction Analysis

| | | Dependent Variable | |
Decile	Mean Year-End Customer Satisfaction	Mean Revenue	Mean Operating Income
1	3.37	2,183,579	419,177
2	4.45	1,254,825	199,227
3	4.83	1,551,144	411,524
4	4.99	2,681,482	515,980
5	5.13	3,385,721	162,227
6	5.43	2,835,835	586,899
7	5.59	4,231,841 [2-3]	1,051,501 [1-5]
8	5.76	4,494,124 [1-4]	1,210,130 [1-6]
9	6.00	1,877,590 [7,8]	299,223 [7,8]
R^2		0.044	0.082
F-Statistic		1.471	1.910*

*** - Denotes results significant at the 1% level.
** - Denotes results significant at the 5% level.
* - Denotes results significant at the 10% level.

[a]Superscripted numbers next to the least squares means indicate the mean is significantly different (p<0.15, two-tail) from the mean for the indicated decile (e.g. a superscripted 1 next to the mean for decile 3 means the mean revenue for decile 3 is significantly different from the mean of decile 1).
[b]The year-end analysis only has nine deciles due to the large number of customer satisfaction scores which are perfect 6.0's. In order to keep the deciles similar in size, only nine deciles could be formed.

Table 8
Regressions of Revenue and Profit on Employee Satisfaction

REV_t is the unit's revenue of the period contemporaneous with the measurement of the customer satisfaction variable. REV_{t+1} is the unit's revenue of the period following the measurement of the customer satisfaction variable. $PROF_t$ is the unit's profit from operations in the period contemporaneous with the measurement of the customer satisfaction variable. $PROF_{t+1}$ is the unit's profit from operations in the period following the measurement of the customer satisfaction variable. JP is the Job Prospects factor as determined with factor analysis of the employee satisfaction data. PG is the Personal Growth factor as determined with factor analysis of the employee satisfaction data. TW is the TeamWork factor as determined with factor analysis of the employee satisfaction data. HF is the Homebuyer Focus factor as determined with factor analysis of the employee satisfaction data. COMM is the Communication factor as determined with factor analysis of the employee satisfaction data. *** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

	REV_t	REV_{t+1}	$PROF_t$	$PROF_{t+1}$
Intercept	-44033113	373771823	2904113.3	-96437150
	-0.0967	0.465	0.038	-0.563
JP	-0.841	-1.143	-0.073	-0.62
	-2.866**	-1.544	-0.211	-0.538
PG	-0.084	0.238	-0.155	-0.073
	-0.329	0.686	-0.512	-0.136
TW	0.481	0.367	-0.179	0.587
	1.447	0.491	-0.454	0.504
HF	0.071	0.329	0.204	0.453
	0.246	0.797	0.594	0.705
COMM	0.2	-0.765	0.294	-0.196
	.698	-1.877	0.867	-0.309
F-Statistic	2.093	1.426	0.921	0.121
Adjusted R^2	0.267	0.191	0.027	0.954
N	15	9	15	9

Table 9
Regressions of Customer Satisfaction on Employee Satisfaction

MIA_t is the measure of average customer satisfaction from the Move-In survey. MDA_t is the measure of average customer satisfaction from the Mid-Year survey. YEA_t is the measure of average customer satisfaction from the Year-End survey. $MIA_{t=1}$ is the measure of average customer satisfaction from the Move-In survey the year following the employee satisfaction measures. $MDA_{t=1}$ is the measure of average customer satisfaction from the Mid-Year survey the year following the employee satisfaction measures. $YEA_{t=1}$ is the measure of average customer satisfaction from the Year-End survey the year following the employee satisfaction measures. JP is the Job Prospects factor as determined with factor analysis of the employee satisfaction data. PG is the Personal Growth factor as determined with factor analysis of the employee satisfaction data. TW is the TeamWork factor as determined with factor analysis of the employee satisfaction data. HF is the Homebuyer Focus factor as determined with factor analysis of the employee satisfaction data. COMM is the Communication factor as determined with factor analysis of the employee satisfaction data. *** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

	MIA_t	MDA_t	YEA_t	MIA_{t+1}	MDA_{t+1}	YEA_{t+1}
Intercept	2.290	1.771	-6.112	6.148	-1.782	6.960
	0.568	0.317	-0.941	2.713**	-0.290	4.314
JP	0.301	0.066	0.190	1.278	0.064	1.323
	0.758	0.177	0.367	2.400**	0.090	0.111
PG	0.107	-0.007	-0.004	-0.278	0.069	0.002
	0.277	-0.020	-0.011	-0.095	0.177	0.013
TW	-0.010	0.005	0.263	-0.465	0.379	-0.510
	-0.025	0.015	0.633	-0.934	0.572	-2.558
HF	-0.242	0.510	0.461	-0.829	0.134	0.042
	-0.517	1.280	1.080	-2.183*	0.266	0.420
COMM	0.276	-0.220	-0.085	0.774	0.141	-0.517
	0.801	-0.686	-0.252	2.107*	0.288	-3.543
F-Statistic	0.503	0.697	1.606	2.031	0.532	66.961*
Adjusted R^2	0.184	0.092	0.202	0.3	0.242	0.982
N	16	18	12	12	12	6

Table 10
Pearson Correlations of Employee Satisfaction by Department and Customer Satisfaction

AD/ADL are the measures of employee satisfaction for the Administration department contemporaneously and lagged respectively. The following measures are done in the same manner with the following department respectively CSTR/CSTRL-Construction, CS/CSL-Customer Service, EXEC/EXECL-Executives, ACCT/ACCTL-Finance/Accounting, LAND/LANDL-Land, PROD/PRODL-Production, PUR/PURL-Purchases, SM/SML-Sales & Marketing. MIA_t is the measure of average customer satisfaction from the Move-In survey. MDA_t is the measure of average customer satisfaction from the Mid-Year survey. YEA_t is the measure of average customer satisfaction from the Year-End survey.
*** denotes significance at the 0.01 level (2-tailed). ** denotes significance at the 0.05 level (2-tailed). * denotes significance at the 0.10 level (2-tailed).

	AD	CSTR	CS	EXEC	ACCT	LAND	PROD	PUR	SM	ADL	CSTRL	CSL	EXECL	ACCTL	LANDL	SML	MDA	MIA	YEA
AD	1.000	0.170	-0.348	0.183	0.082	-0.032	-0.435	-0.073	0.006	-0.190	-0.025	0.033	0.291	-0.003	-0.036	-0.199	0.112	-0.079	-0.114
CSTR		1.000	0.268	-0.151	0.061	0.287	0.296	0.040	-0.084	0.196	0.035	0.147	-0.377	0.478*	0.695**	-0.045	0.186	-0.077	-0.126
CS			1.000	-0.305	-0.182	0.354	0.289	0.157	-0.187	0.339	0.135	0.071	-0.099	-0.160	0.306	0.030	-0.146	0.117	-0.169
EXEC				1.000	-0.157	-0.328	.	0.468	0.126	0.193	-0.007	0.159	0.040	0.085	0.761*	-0.033	0.247	-0.194	0.313
ACCT					1.000	0.189	-0.419	0.293	0.201	-0.159	0.457	0.169	0.057	-0.305	-0.122	-0.513*	-0.158	0.206	0.269
LAND						1.000	-0.100	0.256	-0.381*	-0.154	-0.465	0.715	-0.130	-0.093	0.055	-0.038	-0.390	-0.090	-0.591**
PROD							1.000	-0.323	-0.118	0.918***	0.325	-0.290	-0.484	-0.360	0.473	-0.331	-0.298	-0.177	.
PUR								1.000	-0.047	0.224	0.111	0.123	-0.118	-0.186	0.035	-0.416	0.331	-0.137	0.243
SM									1.000	0.245	0.047	-0.449	0.087	0.230	-0.210	0.197	0.021	**0.511****	0.111
ADL										1.000	0.498*	-0.467*	0.182	0.028	0.190	-0.237	0.082	0.206	-0.481
CSTRL											1.000	-0.114	-0.173	-0.022	0.255	-0.402	0.320	0.464	**0.721***
CSL												1.000	-0.330	-0.189	0.289	-0.160	0.123	-0.308	-0.210
EXECL													1.000	-0.163	-0.344	0.481	-0.137	-0.414	-0.156
ACCTL														1.000	0.305	0.254	0.388	**0.566***	0.575
LANDL															1.000	0.092	-0.106	0.250	**0.958****
SML																1.000	0.183	0.016	0.569
MDA																	1.000	-0.112	0.513*
MIA																		1.000	0.304
YEA																			1.000

Appendix A
Examples of Incentive Calculation

Panel A. Incentive Calculation Example for Managers

The following is an example of an employee earning $60,000/year, with an incentive target of 25% of base salary without proration for the factors previous identified. Incentives will be calculated based upon the employees' base salary as of December 31, 2004.

Annual Salary	Incentive Target	Division Performance	Customer Satisfaction Rating	Employee Satisfaction Rating	Final Incentive
$120,000	25%	105% of plan	95%	90%	
$120,000 x 25% $30,000		$30,000 x 5% $1,500	$31,500 x 10% $3,150	$34,650 x 4% $1,386	$36,036 (30.0% of base salary)

Panel B. Incentive Calculation Example for Employees

The following is an example of an employee earning $30,000/year, with an incentive target of 10% of base salary without proration for the factors previous identified. Incentives will be calculated based upon the employees' base salary as of December 31, 2004.

Annual Salary	Incentive Target	Division Performance	Customer Satisfaction Rating	Final Incentive
$60,000	10%	105% of plan	95%	
$60,000 x 10% $6,000		$6,000 x 5% $300	$6,300 x 10% $630	$6930 (11.6% of base salary)

Appendix B
Descriptions of NF Survey Instrument *

The NF survey instrument includes 78 questions in total in the following categories. Most of the questions are elicited using a 1 to 10 scale where 1 is Unacceptable and 10 is Outstanding. Categories L, M, and N are elicited using a 1 to 6 scale where 1 is Strongly Disagree and 6 is Strongly Agree.

Categories:

A. Overall Satisfaction with experience
   a. Price of home.
   b. Reputation of builder
B. Builder's sales staff
   a. Professional appearance and dress.
   b. Honesty and integrity
C. Design Center
   a. Variety of Upgrades (floor/carpet)
   b. Convenience of location
D. Home readiness
   a. Condition of home at walk-through
   b. Accuracy of home completion
E. Customer service representative
   a. Knowledge of construction
   b. Clarity explaining warranty
F. Price/Value
   a. Value for price
   b. Value for upgrades
G. Physical design elements
   a. Floor plan design
   b. Main Entry
H. Workmanship/Quality
   a. Quality of garage door
   b. Quality of Interior Paint
I. Location
   a. Home/community location
J. Recreational Facilities
   a. Recreational facilities
K. Overall Satisfaction with builder
L. Likelihood to buy next home from builder
M. Likelihood to recommend builder
N. Number of recommendations made for builder

* Under a confidentiality agreement, we are not allowed to disclose specific questions.

Appendix C
Descriptions of the BF Survey Instrument *

I. BF Move-In Survey

The BF move-in survey instrument is administered to a homebuyer 30 days post close. The instrument includes 138 questions in total in the following categories. Most of the questions are elicited using a 1 to 6 scale where 1 is Strongly Disagree and 6 is Strongly Agree.

Categories:
- A. Overall Satisfaction
    - a. My home is all that I expected it to be.
    - b. I would recommend my builder to a friend or family member.
- B. Satisfaction with sales representative
    - a. Was honest and trustworthy.
    - b. Looked out for my interest as well as my builder's interest.
- C. Satisfaction with my construction options and upgrades
    - a. Provided enough selection from which to choose.
    - b. Flexible in scheduling my option and upgrade selection appointments.
- D. Satisfaction with my design center representative
    - a. Was knowledgeable about the choices available.
    - b. Helped me reach design solutions that fit my home and my family's lifestyle.
- E. Satisfaction with my construction representative
    - a. Treated me in a courteous and respectful manner.
    - b. Provided clear answers about how my home was built.
- F. Satisfaction with the readiness of my home on the move-in date
    - a. My promised purchase-to-move-in time frame was acceptable.
    - b. My home was delivered clean inside.
- G. Satisfaction with my builder's subcontractors
    - a. Performed quality work on my home.
    - b. Conducted themselves professionally and respected my property.
- H. Satisfaction with my orientation/walk-through representative
    - a. Conducted an informative and organized orientation.
    - b. Proactive in identifying necessary repairs during my walk-through.
- I. Satisfaction with my lender representative
    - a. Clearly explained the financing options and the loan process.
    - b. Final loan documents were complete and accurate.
- J. Satisfaction with my closing/title/escrow representative
    - a. Closing office hours/location were convenient to me.
    - b. Clearly explained closing documents to me
- K. Satisfaction with my initial customer care/service representative
    - a. Knowledgeable about my home and features.
    - b. Service personnel arrived on time or called if delayed.
- L. Quality of installation and workmanship
    - a. Countertops
    - b. Plumbing
    - c. Concrete

II. BF Mid-Year Survey

The BF Mid-Year survey instrument is administered to a homebuyer 5 months post close. The instrument includes 20 questions in the following categories. Most of the questions are elicited using a 1 to 6 scale where 1 is Strongly Disagree and 6 is Strongly Agree.

Categories:
- A. Overall Satisfaction
    - a. My home is all that I expected it to be.
    - b. I would recommend my builder to a friend or family member.
- B. Satisfaction with customer service
    - a. Was flexible in scheduling my service appointments.
    - b. Adequately addressed my warranty service needs.

III. BF Year-End Survey

The BF Year-End survey instrument is administered to a homebuyer 11 months post close. The instrument includes 207 questions in the following categories. Most of the questions are elicited using a 1 to 6 scale where 1 is Strongly Disagree and 6 is Strongly Agree.

Categories:
- A. Overall Satisfaction with home quality
    - a. My builder met its commitment to me.
    - b. I feel as valued by my builder now as I did when I moved in.
- B. Satisfaction with my customer care/service personnel
    - a. Treated me in a courteous and respectful manner.
    - b. Adequately addressed my service needs.
- C. Satisfaction with home features
    - a. Windows – e.g. Adequate placement/ventilation
    - b. Plumbing – e.g. Uniform water pressure
    - c. Cabinets – e.g. Quality of materials used
    - d. Countertops – e.g. Kitchen (materials, workmanship, grout, maintenance)
    - e. Storage – e.g. Closets (bedroom, linen, coat, etc.)
    - f. Heating & A/C – e.g. Placement of vents
    - g. Doors – e.g. Quality of front door
    - h. Flooring – e.g. Carpet
    - i. Electrical – e.g. Electrical outlets
    - j. Interior lighting and switches - e.g. Placement and number of light switches
    - k. Grading & Landscaping – e.g. Builder installed walkways/driveways
    - l. Framing – e.g. Framing (general appearance and alignment)
    - m. Roofing – e.g. Construction quality, performance, and appearance
    - n. Insulation – e.g. Thermal insulation (walls and ceiling)
    - o. Soundproofing – e.g. Lack of sound transmission between walls and floors
    - p. Exterior walls – e.g. Stucco, siding, stone
    - q. Exterior paint – e.g. Coverage, uniform color, and trim
    - r. Interior paint – e.g. Coverage, durability, uniform color, ease of cleaning
    - s. Drywall – e.g. Wall/ceiling finish, cracks, joints, nail bubbling
    - t. Concrete – e.g. Driveways. Slab, garage floors, walkways
    - u. Fireplace – e.g. Operation
    - v. Pool, Hot tub – e.g. Operation, Appearance

  w. Staircase – e.g. Banisters, spindles
  x. Appliances – e.g. Oven, range, etc.
 D. Satisfaction with the neighborhood
  a. Adequate guest parking.
  b. Attractive appearance and entrances.

* Under a confidentiality agreement, we are not allowed to disclose specific questions.

Appendix D
Descriptions of Employee Satisfaction Survey Instrument *

The employee satisfaction survey instrument includes 22 questions in the following categories. Most of the questions are elicited using a 1 to 6 scale where 1 is Strongly Disagree and 6 is Strongly Agree.

Categories:
  A. Personal Satisfaction
    a. In the last 30 days I have received recognition or praise for doing good work.
    b. At work, my opinions seem to count.
  B. Personal Growth
    a. In the last six months, my manager has met with me to review my progress.
    b. IJK has provided me with sufficient training opportunities for learning and growing.
  C. Homebuyer Focus
    a. We provide the best new home experience.
    b. The results of our division's "Homebuyer Satisfaction Survey" have been utilized.
  D. Teamwork
    a. Other departments work well with my department as a team.
    b. I understand how my job performance impacts the success of other departments.
  E. Overall Perception
    a. I understand the overall vision of my division.
    b. I am confident I have a future with IJK.

* Under a confidentiality agreement, we are not allowed to disclose specific questions.