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The Relationship between Compensation and Selected Dimensions of Employee Engagement in a Mid-Sized Engineering Services Firm

Dr. Preetinder S Gill, Dr. John Dugger, III, and Mr. Frank Norton

ABSTRACT

Employers have focused increasing attention on monitoring employee engagement over the past decade. This research study explored the employee engagement dimensions of 1) alignment with the organization, 2) management effectiveness, and 3) salary and compensation based on the perceptions of employees at a medium-sized engineering services firm. Data were collected each year, for three years from employees using a 47-item electronic survey that addressed employee engagement. The results of the study established a quantifiable relationship and evidence of a path between these three dimensions of employee engagement.

A non-parametric structural equation modeling (SEM) technique was employed to analyze the impact of *compensation* on *alignment with the organization* and *opportunity for development and recognition*. It was found that these dimensions shared a strong relationship and provided preliminary evidence that *compensation* shares a causal relationship with *alignment with the organization* and *opportunity for development and recognition*. This finding is contrary to many prominent studies by Buckingham and Coffman (1999), Wagner and Harter (2006), and Harter, Schmidt, Asplund, Killham and Agrawal (2010), which underplay the role of compensation in employee engagement.

Future studies should test experimentally or quantitatively whether compensation has an impact on employee engagement and focus on determining what factors have the most and/or least influence on key employee engagement behaviors.

INTRODUCTION

High levels of employee engagement in domestic and global firms promote retention of talent, foster customer loyalty, and improve organizational performance and stakeholder value (Lockwood, 2007). Engaged employees are motivated to extend their efforts beyond their formalized job descriptions to help the organization become successful. This study attempts to develop a better understanding regarding how employees are engaged in addressing the mission of an organization.

Employers may reap rich returns from investments in their employee base. Maskell, Baggaley and Grasso (2011) reported that investment in people as one of the key practices associated with lean accounting. The authors also argued that successful lean organizations make employee training, involvement, and empowerment their utmost priorities. Xu and Thomas (2011) maintained that organizations aspire to have engaged employees and spend considerable resources to measure and improve employee engagement. Furthermore, Brás and Rodrigues (2007) stated that expenditures associated with employee development could be translated into quantifiable organizational assets. Van Rooy, Whitman, Hart and Caleo (2011) also argued that measuring employee engagement should not be foregone, even in an economic downturn. This research is important as it suggests that compensation may be a key motivational force to enhance financial performance of companies.

EMPLOYEE ENGAGEMENT

Researchers have employed a wide variety of constructs to describe employee engagement in an organization. For example, Sanchez-Burks (2005) used the socio-religious construct of Protestant Relational Ideology to describe organizational behavior in American firms. Markos and Sridevi (2010) discussed the complexity and diversity associated with adequately describing employee engagement. They argued in favor of understanding various dimensions associated with employee engagement. Meduna (2009) identified multiple themes associated with employees, which could be instrumental to organizational success. Avolio, Gardner, Walumbwa, Luthans and May (2004) acknowledged the existence of a variety of constructs associated with employees' attributes. Additionally, Macey and Schneider (2008) argued that "... (the) meaning of employee engagement is ambiguous among both academic researchers and among practitioners..." (p.3). They also emphasized the need to better understand the effects of employee engagement in terms of business outcomes. It can hence be argued that companies that use employee surveys should verify the dimensions of employee engagement they are measuring. This is important

because employer-driven actions aimed at improving employee engagement without employee buy-in could prove ineffective, if not completely futile.

An engaged employee is someone who is well compensated and has his/her interests aligned with the organization (Gill, 2012). Such an employee also seeks opportunities for development and recognition. Furthermore, an engaged employee believes in the effectiveness of management and expects open and clear communication with all levels of the organization. A consensus seems to be emerging regarding the dimensions/constructs associated with employee engagement. A synthesis of the information accrued in the literature along with a confirmatory factor analysis of the instrumentation used in this study revealed that dimensions associated with employee engagement could fall into one of the following five categories: 1) alignment with the organization, 2) management effectiveness, 3) salary and compensation, 4) communication, and 5) opportunity for development and recognition (Gill, 2012).

The Importance of Employee Engagement

Existing studies have uncovered positive links between different facets of employee engagement and business outcomes. Mathew, Ogbonna, and Harris (2011) demonstrated that satisfaction and productivity at work and the quality of work lead to profitability and growth in software companies, while the quality of work contributes to organizational innovation. Brown and Lam (2008) reported that a significant positive relationship exists between employee job satisfaction and customer satisfaction. Snipes, Oswald, LaTour, and Armenakis (2005) supported the idea that employee job satisfaction is a relevant factor in service quality improvement. These studies, however, are not specific to engineering services firms.

Morse and Babcock (2010) reported a positive correlation between employees' perceptions of an organization's human resource policies and practices and the customer's perceptions of quality and service. Pfau and Kay (2002) found evidence that superior human capital practices or human resource development activities are a leading indicator of better financial performance and that better human capital practices provide higher returns to shareholders. Activities related to human resource development "...plays an important role in improving firms' financial performance" (Bassi & McMurrer, 2008, p. 864).

Gallup Inc. (2010) proposed that a high ratio between the number of engaged employees and the number of disengaged employees ensures superior financial performance. It was purported that world class organizations have an employee engagement ratio of 9.57. Wagner and Harter (2006) presented specific examples where management leveraged employee engagement to successfully meet busi-

ness challenges. Furthermore, Harter, Schmidt, Killham and Agrawal (2009), and Buckingham and Coffman (1999) demonstrated that employee engagement and business outcomes share a directly proportional relationship. However, these results were based on a meta-analysis of data from several organizations and associated business units rather than business units of a single engineering services firm over consecutive time periods.

Wang and Spitzer (2005) underscored that the field of human resource development has faced challenges in measuring the impact of both human capital and the investments associated with its development. Although the quality of the human capital is an important predictor of an organization's business results, organizations do not have systems to "...reflect this importance, meaning that organizations require a separate system for measuring and managing their human capital and its development" (Bassi & McMurrer, 2005, p.194). Shaw (2005) argued that effective initiatives associated with enhancing employee engagement should be driven by clear, specific, and measurable objectives guided by an organizational vision statement. Any strategy associated with improving employee engagement should begin with a thorough comprehension of employee engagement. Truss, Soane, Edwards, Wisdom and Burnett (2006), McGee and Rennie (2011), Gatenby, Rees, Soane and Truss (2008), Harter et al. (2009), Corporate Leadership Council (2004), and Cohen (2006) report relationships between employee attitudes, the way people are managed and business performance.

Many companies use surveys to assess employee sentiment and opinions. One such survey instrument has been used annually, since 1998, at a mid-sized Mid-Western engineering services firm. This survey instrument was created to measure employee engagement.

PROBLEM STATEMENT

The relationship between the engagement dimensions of 1) alignment with the organization, 2) management effectiveness, and 3) salary and compensation within service industries have not been adequately explored for the purposes of determining most effective engagement practices.

PURPOSE OF THIS STUDY

This research study explored alignment with the organization, management effectiveness, and salary and compensation based on the perceptions of employees at a multi-state Midwestern engineering services firm. The results of the study established a quantifiable relationship and evidence of a path between these three dimensions of employee engagement.

Many companies use surveys to assess employee sentiment and opinions. The survey instrument

used in this study was designed to measure employee engagement. Employee engagement was measured at the engineering services firm with a 47-question survey instrument. The survey instrument has been used at the engineering services firm for 12 years.

Research Questions

The following research questions were addressed by this study:

- 1) Is there any relationship between the three employee engagement constructs of alignment with the organization, management effectiveness, and salary and compensation based on the perceptions of the employees of the engineering services firm?
- 2) Is there a significant path relationship between these three constructs based on the perceptions of the employees of the engineering services firm?

Hypotheses

The hypotheses associated with this study were tested at a 0.05 significance level. The hypotheses tested were:

- 1) There is no significant relationship between the three employee engagement constructs of alignment with the organization, management effectiveness, and salary and compensation based on the perceptions of employees in a Midwestern medium-sized engineering firm.
- 2) There is no significant path relationship between the three employee engagement constructs of alignment with the organization, management effectiveness, and salary and compensation based on the perceptions of employees in a Midwestern medium-sized engineering firm.

Delimitations/Limitations

The delimitations imposed on this research study include:

Delimitation: Data were collected from a medium size Mid-Western engineering services firm.

Delimitation: Data collected for the study included a period of three years from 2009, 2010, and, 2011.

Delimitation: In the year 2011, the survey was modified slightly. Keywords in two survey questions were replaced by synonyms and two questions were added and one survey question was dropped. The latter three questions were not included in this research study in order to ensure that the internal validity was not compromised.

Limitations of this research study include:

Limitation: The data associated with employee engagement was limited to the data collected by a preexisting survey instrument administered to all employees of the engineering services firm for a period of three years from 2009, 2010 and, 2011.

Limitation: The employee participation in the survey was voluntary. Hence, response rates vary by year.

Limitation: The potential sample sizes varied slightly by year.

Assumptions

It was assumed that no bias exists in the process of data collection and reporting on the behalf of the engineering services firm. The survey delivery and subsequent response collection methods were assumed to be effective, accurate, and duress- and bias-free. Employee responses to the employee survey were assumed to be honest, unambiguous, and bias-free.

METHODS

Study Population and Sampling

In accordance with U. S. Small Business Administration's Business Size Standards effective November 5, 2010, the engineering services firm used as the subject of this study can be classified as a medium sized business. For the purposes of this study, firms with 300 to 1000 employees were considered as mid-sized businesses. The population associated with this study included privately held mid-sized engineering services firms in the United States. The engineering services firm, the subject of this study, constituted a sample of this population. The numbers of responders were 242 in 2009, 255 in 2010 and 229 in 2011.

External Validity

The engineering services firm used for this study was very similar to other U.S. based privately held mid-sized engineering services firms in terms of: numbers of employees, number of executives, revenue, areas of expertise, and qualification of management. This comparison was based on the information available from Dun and Bradstreet, Inc.'s D&B The Million Dollar Database, Bloomberg L.P.'s Bloomberg Business Week and, Zoom Information, Inc.'s ZoomInfo.com. The similarity between this engineering services firm and other U.S. based privately held mid-sized engineering services firms provides solid evidence for the external validity of this study. This, in turn, supports the notion that the results of this study can be generalized to all U.S. based privately held mid-sized engineering services firms.

Internal Validity

Internal validity "...of a research study is the extent to which its design and the data it yields allow[s] the researcher to draw accurate conclusions about ... relationships within the data" (Leedy & Ormrod, 2010, p.97). A 47-question

survey was administered to the employees of the engineering services firm in the years 2009, 2010, and 2011. The method of delivery and data collection remained unchanged over the three year period. Additionally, the three year period chosen for this study was free of any re-organization/downsizing activities. During this period, the organizational composition of the engineering services firm remained intact. This ensured minimal subject mortality since employees working for specific business units remained the same. Furthermore, there were negligible numbers of employee transfers between business units of the engineering services firm during the three year period.

The data collection method ensured that individual computer terminals were used to complete the survey instrument. This mitigated possible instances of copying among respondents.

The employee base of the engineering services firm included people from diverse backgrounds with regards to experience, responsibility, and age. Since maintaining anonymity of the survey participants was paramount, there was no reliable way of guaranteeing that each element of the employee base would be represented. Hence, a non-probabilistic convenience sampling approach was used for this study (Leedy & Ormrod, 2010). Internal validity issues associated with convenience sampling were alleviated by a broad selection and widespread participation of employees. The survey instrument was administered to all employees of the engineering services firm. In order to ensure that the survey results represent the entire employee base at the engineering services firm, response rates were examined. Leedy and Ormrod (2010) and Babie (2008) maintained that response rates of over 70 percent are very good. Sheehan (2001) found that the response rate for electronically delivered surveys hovered around 40 percent. The response rates for the survey of each year of the three year period - 2009, 2010, and, 2011 are shown in Table 1. It can be concluded that the response rates were at a very high level for an electronically delivered survey. These data also indicated that this research study has minimal non-respondent bias.

ic questions pertained to employee experience, responsibilities, locations, and business unit affiliations. Employee engagement was measured in the terms of multiple choice questions. The questions on the survey can be categorized as: 1) classification questions and, 2) factual questions. The respondents provided their input along a continuum of strongly disagree to strongly agree. This rating scale for these multiple choice questions was a 5 point Likert scale. Bryman and Bell (2007) recommended that the Likert scale could be used effectively for qualifying responses to questions about attitudes. The words on the questions were kept simple, non-hypothetical, and unambiguous. Employee participation in the survey was voluntary. Demographics-related questions were mandatory. However, survey respondents were not mandated to complete every question pertaining to employee attitude.

Instrumentation Validity

The survey instrument included Gallup Inc.'s Q12 (Buckingham and Coffman, 1999) along with other questions. Buckingham and Coffman (1999) first recommended the use of the Q12 to measure employee engagement. Many researchers, including Avolio et al. (2004), Bassi and McMurrer (2005), Bassi and McMurrer (2008), Catteeuw (2007), Dickson, Ford and Upchurch (2006), Endres and Mancheno-Smoak (2008), Gardner and Schermerhorn (2004), Harter, Schmidt and Hayes (2002), Harter et al. (2010), McLagan (2003), Messner (2009), Milman (2003), and, Phillips (2004) have referenced these questions in their works related to employee engagement. Such widespread use across many different fields bears testimony to the construct validity of the Q12. Other questions or items were developed by a survey consultant based on the needs expressed by the engineering services firm.

Classical factor analysis

A classical factor analysis (CFA) of the data generated five factors with eigenvalues greater than 1. Together these factors accounted for over 83 percent of the variance. Variable loading from the classical CFA were subjectively interpreted to verify

TABLE 1. RESPONSE RATE OVER THREE YEAR PERIOD

Year	2009	2010	2011
Response Rate	70.3%	80.3%	78.1%

Instrumentation Design

The primary purpose of the survey instrument was to measure employee engagement with the aim of improving organizational performance. The survey contained questions pertaining to demographics along with employee engagement. The demograph-

that the factors identified by the factor analysis aligned with the constructs revealed by the literature review. The factors generated by the CFA were consistent with the five dimensions of the employee engagement discovered in the literature review. This, in turn, conferred well-reasoned construct validity to the survey instrument.

Instrumentation readability

The Flesch Reading Ease score for the survey instrument was 58.71. The Flesch-Kincaid Grade Level score for the survey instrument was 6.86. Calderón, Morales, Liu and Hays (2006) held that a Flesch Reading Ease Score of around 60 is only moderately difficult to read. Furthermore, Wilson (2003) reported that the average "... American reads at an eighth- or ninth-grade level" (p.877). Hence, it could be argued that the readability of the survey instrument is acceptable.

The survey instrument has been used at the engineering services firm since 1998. The questions selected for this research study have remained unchanged during this period. The feedback received from the engineering services firm data collectors confirmed that the survey instrument can be read easily and in an efficient manner.

Scale Reliability

All employee engagement-related data were collected with the same survey instrument. Hence, the data collection methodology was consistent over the three year period - 2009, 2010, and, 2011. Cronbach (1951) introduced an index of scale reliability. Nunnally (1978) recommended a Cronbach's alpha value of 0.8 or higher for basic research studies and 0.9 or higher for applied research studies. Also, Murphy and Davidshofer (1988) recommended a Cronbach's alpha value of 0.9 or higher. Cronbach's alpha values for the survey instrument associated with this research study are presented in Table 2. Since all values are over 0.90, the scale associated with the survey instrument was considered acceptable.

TABLE 2. CRONBACH'S ALPHAS OVER THE THREE YEAR STUDY PERIOD

Year	2009	2010	2011
Cronbach's alpha	0.96	0.97	0.96

Data Collection

SurveyMonkey® was used to administer the survey instrument. Once the survey was created on SurveyMonkey®, the link to the survey was emailed to the entire employee base of the engineering services firm. SurveyMonkey® was set up so that any personal identifying information about the computer used when completing the survey was not recorded. This ensured complete anonymity

for the survey respondents. The responses were downloaded from SurveyMonkey® in a spread sheet format. These data were then imported into Microsoft® Office Excel© format.

DATA ANALYSIS

Data analysis involved applying descriptive and inferential techniques to the data collected with the survey instrument. The descriptive analysis involved quantifying central tendency, dispersion, and the shape of the distribution associated with the data. Inferential analysis involved applying the structural equation modeling techniques to the data collected in order to explore the relationship between the three dimensions of employee engagement that was the focus of this research effort.

DESCRIPTIVE ANALYSIS

Descriptive analyses of the data collected by survey instrument was performed. The results of the descriptive analyses are presented in Tables 3-5. The mean values of the survey questions ranged from 2.93 to 4.15. The median values of the survey question ranged from 3 to 4. The Pearson product moment correlation coefficients ranged from 0.17 to 0.86. The median value for the Pearson product moment correlation coefficients was 0.36. Only two pairs of survey questions shared a Pearson product moment correlation coefficient greater than 0.85. 1) O3 (I have a regular at least monthly one-on-one meeting with my manager) and A6 (I have a regular, at least monthly, one-on-one meeting with my supervisor) shared such a high Pearson product moment correlation.

Either the standardized skewness values or standardized kurtosis values or both the values for all survey questions were outside this range of -2 to +2. This finding shows that the data has a significant departure from normality. Furthermore, Stephens (2004) and Tutz (2011) asserted that survey data typically exhibit a multinomial distribution. Hence, a statistical technique not dependent on the assumption of normality was used to confirm the results.

TABLE 3. DESCRIPTIVE ANALYSIS OF ALIGNMENT WITH THE ORGANIZATION - RELATED SURVEY QUESTIONS

	A1	A2	A3	A4	A5	A6	A7	A8
	<i>The mission of the company is updated using employee input</i>	<i>Upper management is providing a clear company vision for the future</i>	<i>Upper management attempts to effectively communicate the plan to all employees</i>	<i>I understand my team's goals</i>	<i>I can tell my supervisor what I think without retribution</i>	<i>I have a regular at least monthly one on one meeting with my supervisor</i>	<i>I know what the firm is doing to achieve long term goals</i>	<i>I feel that my supervisor values my input regarding project budget and scope preparation</i>
Count	726	726	726	726	726	726	726	726
Mean	3.22	3.57	3.63	3.77	3.88	2.98	3.32	3.75
Median	3	4	4	4	4	3	4	4
Std. Deviation	0.86	0.90	0.91	0.87	0.90	1.22	0.95	0.94
Range	4	4	4	4	4	4	4	4
Std. Skewness	-4.06	-9.63	-10.37	-11.58	-11.07	0.18	-4.68	-6.70
Std. Kurtosis	1.20	3.16	3.98	7.41	6.46	-6.25	-2.74	1.27

TABLE 4. DESCRIPTIVE ANALYSIS OF COMPENSATION - RELATED SURVEY QUESTIONS

	C1	C2	C3	C4	C5	C6
	<i>There exists flexibility for personal tie family needs</i>	<i>I am paid fairly</i>	<i>I feel secure from layoffs</i>	<i>My total compensation is competitive</i>	<i>The Engineering Services Firm's compensation program encourages me to work efficiently effectively</i>	<i>My benefits are competitive</i>
Count	726	726	726	726	726	726
Mean	4.15	3.50	3.09	3.48	3.31	3.65
Median	4	4	3	4	4	4
Std. Deviation	0.82	1.02	1.13	0.95	1.03	0.86
Range	4	4	4	4	4	4
Std. Skewness	-14.95	-9.15	-3.15	-9.51	-6.77	-12.06
Std. Kurtosis	14.59	0.35	-5.11	1.36	-1.60	7.83

TABLE 5. DESCRIPTIVE ANALYSIS OF OPPORTUNITY FOR DEVELOPMENT AND RECOGNITION - RELATED SURVEY QUESTIONS

	O1	O2	O3	O4	O5	O6	O7	O8
	<i>Overall, I like The Engineering Services Firm appraisal system</i>	<i>My supervisor has supported my development plan</i>	<i>I have a regular at least monthly one on one meeting with my manager</i>	<i>I am happy with my job</i>	<i>I have opportunities for advancement at The Engineering Services Firm</i>	<i>Concerns expressed during previous employee surveys are being addressed</i>	<i>I intend to remain an [The Engineering Services Firm] employee for the next two years</i>	<i>During the past 12 months, The Engineering Services Firm has made positive progress</i>
Count	726	726	726	726	726	726	726	726
Mean	3.13	3.51	2.93	3.79	3.27	3.19	3.95	3.57
Median	3	4	3	4	3	3	4	4
Std. Deviation	0.91	0.86	1.17	0.89	1.06	0.83	0.83	0.89
Range	4	4	4	4	4	4	4	4
Std. Skewness	-4.15	-4.57	0.67	-9.35	-3.76	-2.73	-9.63	-7.45
Std. Kurtosis	-0.64	2.59	-5.62	4.42	-3.02	2.91	7.60	3.25

INFERENCE ANALYSIS - STRUCTURAL EQUATION MODELING

Structural equation modeling – SEM is a statistical method which can be employed to test causal relationships between constructs built upon measurable variables (Anderson & Gerbing, 1982). The SEM method was employed to analyze the effect

that compensation has on alignment with the organization along with opportunity for development and recognition. The observed variables are called manifest or measured (MV) variables and unobserved variables are called underlying or latent (LV) variables. The variables can be arranged graphically in a SEM path model. LVs are hypothetical

constructs that cannot be directly measured. In an SEM path model LVs are typically represented by multiple MVs that serve as indicators of the underlying constructs. The MVs can be independent (exogenous) in nature whereas LVs can be either independent (exogenous) or dependent (endogenous) in nature (Shah & Goldstein, 2006). The SEM path model is an *a priori* hypothesis about a pattern of linear relationships among a set of observed and unobserved variables (Henseler, Ringle & Sinkovics, 2009).

A variance based partial least square PLS-SEM technique was used in this study. PLS-SEM path models include two types of linear equations: 1) the inner model and 2) the outer model. The inner model specifies the relationships between LVs, whereas the outer model specifies the relationships between a LV and its MVs. Furthermore, the PLS-SEM technique can be used for any type of distribution regardless of the sample size (Green & Ryan, 1990 and Johansson & Yip, 1994). The individual path coefficients of the SEM-PLS structural path model can be interpreted in terms of standardized coefficients (β) of ordinary least squares regressions. Parameter estimates are obtained based on the ability to minimize the residual variances of dependent variables (Henseler et al., 2009). Confidence intervals can be drawn on the β coefficients by calculating the Student's t statistic using a re-sampling non-parametric algorithm called bootstrapping (Henseler et al., 2009).

RESULTS OF HYPOTHESIS TESTING

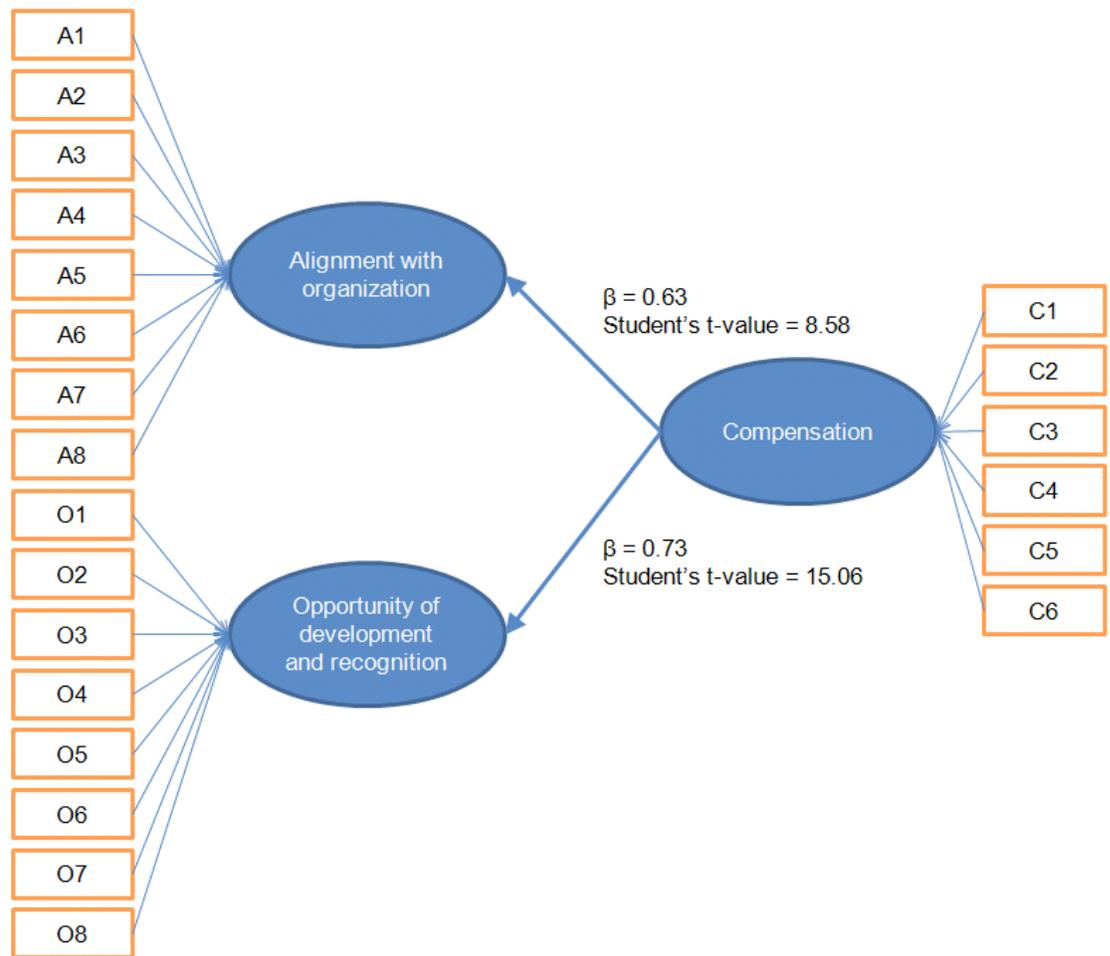
The PLS-SEM path model for this study had two paths: 1) Compensation → Alignment with the organization and 2) Compensation → Opportunity for development and recognition. The constituent survey questions for the dimensions of employee engagement studied are also shown in Figure 1. The PLS-SEM path model is shown in Figure 1. The results of the PLS-SEM analysis are shown in Table 6. All the β values are positive on the PLS-SEM path model. This finding addresses the research question - *Is there any relationship between the three employee engagement constructs of alignment with the organization, management effectiveness and salary and compensation based on the perceptions of the employees of the engineering services firm?* These findings provide preliminary evidence that *compensation* has a positively proportional causal effect on both *alignment with organization and opportunity for development and recognition*. Based on this finding hypothesis 1 was rejected.

For data samples with approximately 700 degrees of freedom, statistical significance is demonstrated for a two sided 95 percent confidence interval if the Student's t values are equal to or greater than 1.96. A 99 percent confidence interval statistical significance is demonstrated by Student's t values equal to or greater than 2.62. The degrees of freedom associated with the threshold values were calculated from the number of data points. For both paths on the PLS-SEM path model the Student's t statistic

TABLE 6. RESULTS OF PLS-SEM ANALYSIS

PLS-SEMPath	β	Student's t-value	Bootstrapping Samples	Student's t-value threshold 95% confidence interval (2 tailed)	Student's t-value threshold 99% confidence interval (2 tailed)	Statistically Significant
Compensation → Alignment with the organization	0.63	9.13	1000	1.96	2.62	Yes
Compensation → Opportunity for development and recognition	0.73	15.06				Yes
Compensation → Alignment with the organization	0.63	8.98	500			Yes
Compensation → Opportunity for development and recognition	0.73	13.83				Yes
Compensation → Alignment with the organization	0.63	8.58	300			Yes
Compensation → Opportunity for development and recognition	0.73	15.06				Yes
Compensation → Alignment with the organization	0.63	9.85	100			Yes
Compensation → Opportunity for development and recognition	0.73	15.73				Yes

FIGURE 1. PLS-SEM PATH MODEL FOR 300 BOOTSTRAPPING SAMPLES



was found to be greater than the threshold values for both 95 percent and 99 percent confidence intervals. This finding addresses the research question - *Is there a significant path relationship between these three constructs based on the perceptions of the employees of the engineering services firm?* In other words, both paths on the path model were statistically significant. Based on this finding, hypothesis 2 was rejected.

CONCLUSIONS AND IMPLICATIONS

The survey instrument used in this study had high construct validity, high scale reliability and a high response rate. The readability level associated with this instrument is also at an acceptable level. Additionally this instrument was used over a three-year period with consistent ratings. Furthermore, the employee engagement dimensions addressed by the survey instrument are consistent with the existing literature.

There was a high level of agreement between the mean and median values of almost all survey questions. An analysis of the survey responses indicated that the median value of the Pearson's

correlation coefficients between survey responses was 0.36. Although these were significant, the level of the relationship is relatively low which suggests that the items were not highly correlated. Using the agreement scale of 1= Strongly Disagree and 5 = Strongly Agree, the highest mean score (4.15) was observed for C1 - *There exists flexibility for personal time and family needs*. However, the mean values of other survey questions were around 3.5. This seemed to indicate that there is room for improvement within the organization in terms of the three dimensions studied: compensation, alignment with the organization, and opportunity for development and recognition. The standardized kurtosis and skewness values indicated that the responses for each item were not normally distributed.

Conclusions based on hypotheses

Lacking normally distributed data, a non-parametric SEM technique was employed to test the hypotheses and analyze the impact of *compensation on alignment with the organization and opportunity for development and recognition*. All the β values are

positive on the PLS-SEM path model. It was found that these three dimensions shared a strong relationship; therefore the first hypothesis was rejected. Additionally, the path coefficients were positive in nature which indicated that the relationship between the dimensions is directly proportional. The SEM analysis also provided preliminary evidence that *compensation* shares a causal relationship with *alignment with the organization and opportunity for development and recognition*. This finding is contrary to many prominent studies by Buckingham & Coffman (1999), Wagner & Harter (2006), and Harter et al. (2010) which suggest that the role of compensation is relatively small in employee engagement. The analysis showed a 99 percent confidence interval statistical significance as demonstrated by Student's *t* values equal to or greater than 2.62. Therefore hypothesis two was rejected.

Implications for the firm

In the case of this firm, it seems that compensation is very important to the employees. In fact, the results of the SEM analysis demonstrated that the level of compensation had an impact on other important dimensions vis-à-vis *alignment with the organization and opportunity for development and recognition*. In other words, this study provides evidence that improving the levels of compensation in the firm could improve the overall level of employee engagement.

The firm could set targets to achieve certain scores over selected periods in the future. Ideas could be

generated by a companywide idea collection survey or by utilizing a more qualitative approach with focus groups and when the most promising ideas are implemented; the scores could be transparently tracked.

Implications for future research

Future studies should test experimentally or quantitatively whether compensation has an impact on employee engagement. This would not only help generalize and validate the findings of this study but would provide an important piece of information for decision makers. These future studies could also focus on determining what factors have the most and/or least influence on all five of the dimensions of employee engagement.

The lowest scores were observed for survey question A6 - I have a regular at least monthly one-on-one meeting with my supervisor and survey question O3 - I have a regular at least monthly one-on-one meeting with my manager. Additionally, these questions shared a relatively high Pearson correlation coefficient. Furthermore, these questions seem to convey the same message. Hence, it would be prudent to communize these questions in future surveys. Future research should investigate the relationship between supervisor behavior and employee engagement based on the low ratings for these items.

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