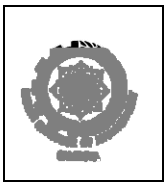

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Understanding Compensation Design & Practices in a Unit of a Manufacturing Firm: A Case Study

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UNDERSTANDING COMPENSATION DESIGN & PRACTICES IN A UNIT OF A MANUFACTURING FIRM: A CASE STUDY

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ABSTRACT

We explored the data on managerial compensation, performance ratings and human capital variables, namely education and work experience, from a manufacturing unit in India in order to explain the variation in compensation. The results we obtained provide support for the influence of human capital as well as performance variables on compensation. We also found that human capital variable, specifically education, seemed to impact compensation structure through market value in a way that could be dubbed elitist. There was also some reflection of tournament view in the form of increasing differential for higher designation.

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INTRODUCTION

In this study, we have attempted to explore the factors which might explain the

differentials. More productive employees also remain with the firm for longer period. This effect is called sorting effect (Groshen, 1988). The other effect is called incentive effect as

Pay for Performance-Agency theory and motivation literature. Employee performance can be incentivized by performance-linked variable pay and also by the differentials that exist between pay levels across a hierarchy. Pay for performance is a vast sub area within compensation management literature which has been extensively studied in the economics literature as well as in the behavioral science literature. Agency theory (Jensen & Meckling, 1976) in economics is an important theory which grapples with “moral hazard” issues like “agents work shirking” when “information asymmetries” exist between “principals” and “agents.” In order to prevent “moral hazard” issues, it suggests linking “organization interest” of “agent effort” with the “agent interest” of “money or pay.” There is evidence available in support of effect of incentives on better employee performance. Behavioral science explains same effect between monetary rewards and effort through theories of motivation like expectancy theory (Vroom, 1964) and equity theory (Adams, 1965). There is empirical support for these theories.

Tournament

payment for seniority within firm is different from human capital return one gets based on past experience at the time of joining new job.

The description provided above contains insights about the variables which could have an influence on compensation level. Some variables are influenced by the decisions senior managers may take such as choice of business strategy, egalitarian management philosophy, efficiency-wage concerns and so forth. These decisions influence compensation levels and intend to influence employee's behavior

discrimination or not in the salaries paid to the female executives of a large business organization. In this example, it was shown that in the absence of relevant variables like educational level and work experience, gender appeared to be a strong factor in salary fixation for an executive. But in the presence of these variables (educational level and work experience), gender effect disappeared. Non-existence of gender discrimination came out even more strongly when latest performance-appraisal rating of employees was added as another variable to explain the variation in executive salary. Rohit felt he could employ techniques like these to answer some vexing questions he used to face every year after annual appraisal. Memories of some difficult conversations flooded his mind when he had to struggle really hard while explaining the rationale behind yearly raises and bonuses people received. Someone or the other would always come, ask some uncomfortable questions, and leave shaking her/his head in disbelief. Maybe statistics could help answer their questions in

differentiate themselves in the job market. There were 156 participants in EPHRM from all over India. 90% of the sessions of EPHRM were conducted through videoconferencing.

Apart from business statistics, EPHRM modules included basic and advanced topics in HRM and organizational behavior. There were also some sessions on understanding financial statements, costing, and marketing concepts as applied to HRM.

High Tech Limited

High Tech Limited (HTL) was founded in 1983 with the technical collaboration of Japanese and Swiss organizations. Over the years, it has emerged as a well-known manufacturer of high-technology products. Currently, it is one of the largest manufacturers worldwide of such products. HTL accounts for about 20% of the world output of such products. Apart from being one of the largest, it is also the lowest-cost manufacturer of such products. Despite being the lowest-cost manufacturer, in fact the products of HTL are of very high quality. The company asserts that the spirit of zero-error drives employees. In fact HTL has received several awards and certifications from international agencies for its product quality.

HTL exports about 85% of its products. It is present in more than 100 countries worldwide. HTL is quite innovative; it has regularly forayed into new technologies and market segments, both nationally and internationally. Hence, HTL invests about 3% of its revenue in research and development, and it has a number of patents to its credit.

HTL has three divisions that deal with three different product lines. It has three manufacturing units located in the suburbs of a major city of India. It has over 8,000 employees. HTL has an explicit focus on training. It provides regular training on technical as well as managerial aspects to its workforce. It also has a reward and recognition program throughout the organization. Apart from promotion, employees also move horizontally to gain diverse experiences. Fast track career options are available to chosen employees. People on fast track careers are taken through development centers to identify areas for improvement, and senior employees mentor them. HTL also emphasizes on work life balance.

Overview of Appraisal & Compensation Practices in the Unit

The performance appraisal for the managerial workforce of this unit happens in June every year. There are two main questions related to variable pay before the decision makers.

The first question is about the amount of variable pay based on the appraisal ratings for the previous year. The next main question is about the entitlement of variable pay for the next

eligible manager receives a certain percentage of the amount he/she is entitled to receive as variable pay. And secondly, this percentage of entitlement amount progressively increases as the combined metric of individual and organizational performance increases.

Having determined the amount an eligible manager is going to receive, the second question decision mav(e)7.6(crrs tack)-2.9(p)-55ef

Rohit thought that he could use statistical tools to explain the reward decisions taken

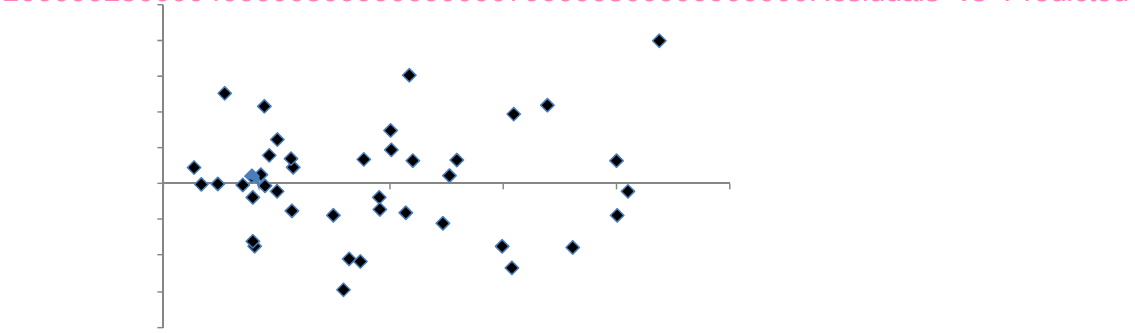
Thirdly, a well-fitted regression model shou0 g .0

Table 1, represent two binary dummy variables created to model the effect of three categories of managers in the data. Similarly, ‘NEdu-cat1’ and ‘NEdu-cat2’ represent two binary dummy variables to capture the effect of the three categories of educational qualification.

Coming to what we could explain, it seemed that the following things mattered in the total salary of a person. Firstly, the total work experience positively impacted salary (each year of experience added about Rs. 11,000 to the total salary). Average of the past three years’ performance ratings before the year 2010-2011 also mattered a great deal. Each higher rating increased the total salary by about Rs. 45,000. Similarly, designations mattered a great deal. As opposed to a manager, being a deputy manager brought down the salary by about Rs. 1.28 lakh, and being an Assistant manager reduced the salary by about Rs. 2.29 lakh. Being an engineer or an MBA led to an increase of Rs. 40,000 in total salary. Rating of 2011 also mattered; each higher rating added about Rs. 8,000 to the total salary). Though this impact

In order to explore the data further, we also looked at the cases which seemed to be outliers. As Figure 1 given below indicates, there are some managers for whom even the best model left large amounts unexplained. To explore the possible reasons behind such deviations, we calculated the percentage error in prediction (i.e., prediction error divided by actual, expressed in percentage terms), and chose about 20% as the upper limit for acceptable deviation. Based on this criterion, we found 12 cases to be outliers. The relevant data for these outliers are given in Table 2 below.

Figure 1: Predicted Compensation (as per the model) vs. Residual



power of the model improved considerably; we could explain approximately 90% of the variation, as Table 3 shows.

Table 3: Model for Total Annual Compensation(With Outliers as Separate Categories)

	Coefficients	Standard Error	t Stat	P-value
Intercept	346049.86	57552.30	6.01	0.00
Rating2011	17556.68	7985.02	2.20	0.03
AveragePastRating	44087.77	10989.89	4.01	0.00
TotalExp	12496.07	1719.59	7.27	0.00
DesignAM	217116.89	19673.26	11.04	0.00
DesignDM	110806.39	19174.10	5.78	0.00
NEducat1	63998.97	13286.18	4.82	0.00
NEducat2	40128.43	47225.04	0.85	0.40
NegError	-119709.49	17197.70	-6.96	0.00
PosError	150395.09	24065.01	6.25	0.00
R Square	0.91			
Adjusted R Square	0.89			

After accounting for the outliers, i.e., unusually overpaid and underpaid cases, in the above model, the influence of latest performance rating in the year 2011 on compensation becomes statistically significant. This provides some support to the company's intended policy of paying for performance.

The second strand of exploration was to see if we could learn from these excessively overpaid and underpaid cases. With this objective, we looked at them closely and found the following:

1. There were eight managers whose actual total compensation was, on an average, Rs. 1.1 lakh below the level estimated by the model described above. And there were four managers whose actual total compensation, on an average, was about Rs. 1.5 lakh more than the amount the model could predict. The details are available in Table 2.
2. Looking at the manager with the highest shortfall of –35.7% led us to suspect that the so-called inferior qualification (diploma as opposed to degree) coupled with more experience could be responsible for lower than expected compensation. To illustrate, this particular manager (mentioned in serial number 1 of Table 2) had a diploma and

years of experience before joining HTL (serial number 2 in Table 2). This person was a manager (the highest designation in our data set), and yet had a shortfall of 26.2% in compensation. Incidentally only one manager was there in the list of eight people who were receiving excessively lower compensation. Our initial notion about qualification and longer work experience playing a role received further support when we found that another person with manager as designation (serial number 10 in Table 2) had a similar profile in terms of work experience, but was drawing a salary almost twice as much as the person at serial number 2 with so-called inferior qualification of M.Sc. Here we are assuming that BE is considered to be a superior qualification than M.Sc. as students in India usually have to pass a tough entrance test to get a BE or B.Tech. degree, but that is usually not the case for M.Sc. When we looked at another case (serial number 7 in Table 2) of a deputy manager, we found that this person too had a diploma and more than 20 years of experience. And the shortfall in his/her compensation was 19.9%, despite this person being a key resource in 2008 and getting excellent rating in the first two years. Contrary to our emerging notion, however, we also found the case of a diploma holder who was getting overpaid as per our model (his/her data are available in serial number 9 of Table 2). We felt that despite having diploma and "very good" as performance rating in two of the preceding four years, this person was possibly overpaid due to his/her relative newness. The total experience of this person (10.8 years) was roughly half of the total experience of the other two cases (serial numbers 1 and 7, who had 22.2 years and 20.8 years of total experience respectively) mentioned earlier. We do realize that there might be other variables at play here, or that the data in Table 2 could lead to some other possible reasons explaining the excessive overpayment or underpayment. However, we also found an echo of our idea about qualification being an important variable in the human capital theory as the impact of qualification is likely to be pronounced in high-technology organizations. Hence we went ahead and tested the idea of qualification being a source of distortion in compensation.

In order to do that, we ran a regression for predicting the total compensation for all diploma holders following essentially the same model (described earlier in Table 1). What we found that except designation and past performance, no other variable had the potential to explain the salary variation for diploma holders. Past experience mattered, but only faintly. After discarding the redundant variables, we came to a

model which is shown in Table 4. One can see that when compared to the best model for non-diploma holders (given in Table 5), each higher rating in the latest performance assessment of 2010-2011 yielded about Rs. 40,000 more for non-diploma holders, and the coefficient was significant. But that is not happening for diploma holders.

Table 4: Model for the Total Compensation of 21 Diploma-Holder Managers

	Coefficients	Standard Error	t Stat	P-value
Intercept	480598.28	142181.57	3.38	0.00
Average Past Rating	65434.25	24097.15	2.72	0.02
Design AM	258779.47	50593.74	5.11	0.00
Design DM	163918.92	46357.59	3.54	0.00
Total Exp R	5406.62	4287.74	1.26	0.23

assured component of salary raise. There is some research evidence that influential managers may bargain for compensation structure which is more risk proof especially when their performance outcomes are more uncertain. When we look at the immediate past rating, however, the picture gets reversed. The immediate past rating has a significant bearing on compensation for the highly qualified people, but it does not matter for people with diploma holders. Possibly, the higher job mobility options for highly qualified people make the decision makers consider their immediate performance more, and due to lesser mobility options, the bargaining power for diploma holders basis their immediate performance is lower. This we suspect could be due to the resource dependence variations for diploma and non-diploma holders. The latter might be considered by organization as relatively more indispensable. This will become clearer when we analyze the influence of key resource variable on variable salary.

As the total salary had a large share of fixed compensation, we thought that considering variable salary as the dependent variable in our analysis might yield more discernible patterns. Hence we explored the data set with planned variable salary as the dependent variable. Table 6 shown below describes the best model we could find.

Table 6: Model for Planned Variable Compensation for All 62 Managers

	Coefficients	Standard Error	t Stat	P-value
Intercept	30196.71	18270.48	1.65	0.10
KR	7231.77	4199.30	1.72	0.09
Rating2011	3508.54	2508.41	1.40	0.17
AveragePastRating	7473.52	3567.58	2.09	0.04
MBILExp	363.95	725.63	0.50	0.62
TotalExp	1639.94	582.52	2.82	0.01
DesigAM	-44017.35	6553.25	-6.72	0.00
DesigDM	-29279.33	6352.04	-4.61	0.00
NEducat1	5011.07	4202.73	1.19	0.24
NEducat2	-12760.01	15019.13	-0.85	0.40
RSquare	0.72			
AdjustedRSquare	0.68			

When we examined the variable pay as the dependent variable, we found that the 2011 rating did not matter. This was surprising (as mentioned previously as well), considering that the variable pay should have been driven quite strongly by individual rating in the past year. Even though the variable pay calculation scheme followed by HTL put strong emphasis on company performance as well as individual performance while calculating the variable payment, the insignificant impact of 2011 rating probably conveys

Table 9: Model for the Variable Pay of 41 Managers with Higher Qualifications

	Coefficients	Standard Error	t Stat	P-value
Intercept	41425.60	16766.98	2.47	0.02
KR	11721.30	4699.77	2.49	0.02
Rating 2011	6686.12	2855.91	2.34	0.03
Total Exp	2113.05	757.75	2.79	0.01
Design AM	48129.19	7709.02	6.24	0.00
Design DM	32255.27	7445.55	4.33	0.00
R Square	0.75			
Adjusted R Square	0.71			

It emerged that being a key resource does not impact the variable pay planned for diploma holders, but it impacts the variable pay for others. This again validates our inference

I have gone through these findings carefully. The analysis findings do give us clue and input in looking at our compensation data. These actually are pretty fresh and different perspectives, which probably we never looked at them this way.

As we discussed the observation that the planned variable pay mentioned in data does not seem to conform to their stated scheme of determining planned variable compensation, here is what he stated:

> "…over a period of time, 10% of the basic 50,000 formulae may not hold water as every year the person will get some increase in the variable pay and that quantum of increase would be dependent on the performance. (Hence) even if two persons started with the same variable pay two years back, now two years later, they would have different planned variable pay if their performance ratings have been different."

Overall, the results we obtained conforms to theoretical ideas partially, and also points out some counterintuitive results. We suspect that the actual reality of compensation might be fully explained only if we go beyond the variables at our disposal. We have data on most of these 62 people for next year. We also have data of some other units of HTL. The variables available in these two datasets are likely to allow us to build on our conclusions here, and to test the same conclusions or gain some new insights. At the same time, we need to know the data better. For example, the market value of a BE/B.Tech or an MBA from some colleges is much better as compared to the same degrees obtained from many other colleges. Getting in these details might help us refine our understanding. We plan to do this in our future work.

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