Management Accounting
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Lec 38
Labour Variances- 2

Welcome students, so we are calculating the labour variances and in the previous class we discussed some formulas for calculation of the labour variances and we tried to solve one problem which was a very simple problem. Very straight and simple problem and in that problem with regard to labour variances we calculated two variances, that is the labour cost variance and the labour rate of the pay variance which is say similar in case of the material variances.

In the material also, we calculate the material cost variance. And in case of the material we do not call it material rate of pay variance, but the material price variance. After this, these two variances in the labour, labour cost variance and labour rate of pay variance. Now, we will go for the third variance that is the labour efficiency variance. We will calculate the learn about the calculation of the labour efficiency variance.

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And, in case of labour efficiency variance, one point which has to be born in mind here is that see we have been given some information about the, say, idle time. So it means 100 hours out of

the total hours. But, the total number of hours we have worked out is the 8750. That is we have worked out total number of hours here that is the 8750. And out of these 8750 hours, we have wasted some 100 hours, so it means, now we have two ways to calculate the variances.

First way is that you do not means count for the wastage of the time, abnormal wastage of the time. And you simple make a comparison between the, say the standard time and the actual time and calculate the labour efficiency variance. But actually you see that if you do not take into consideration this time wasted of 100 hour which is because of the abnormal reasons; it is not because of the normal reasons, it is because of the abnormal reasons.

So, if you do not take this into account the efficiency of labour will come in the question that they worked for 8750 hours, but the output is not according to that period of time. So, it means the labour is inefficient. But when there is no power in the plant, what the reason given to us here is, the reason given to us here is that is the there is a stoppage of the work due to the power failure that is the idle time of 100 hours because of the failure of the power in the plant. So, if there is a power failure, so how one can help it out?

So, better it is, while calculating the third variance that is the labour efficiency variance, we should subtract this time from the actual time we are going to take into account here. So, what is the formula for calculating the labour efficiency variance? That is the standard rate multiply standard time standard time minus actual time, standard time minus actual time. So, now what is the standard rate here, if we talk about the standard rate given here?

We have got the two rates, per hour rates are available with us, we calculated in the previous class. Standard rate is given to us that is 2 rupees and 25 paisa and actual rate we worked out was per hour rate we worked out was 2 rupees and 50 paisa, right. So, standard rate is 2 rupees 25 paisa, so we will take here it as that is rupees 2.25 multiply standard time is, what is the standard time? Standard time here given to us was, it is given in the problem itself and the standard time is 8000 hours. So, we will put here as the 8000 hours and when you talk about the actual time.

Actual time here we have worked out is 8,750 hours but out of that 100 hours have been wasted so you subtract that and you take it as, you call it as 8,650. If you calculate variance this way, this will work out as something like say rupees 2.25 into this amount will be how much? 650,

right? So, if you work out this variance, this works out as rupees 1462. If you multiply this, the means the 2.25 with the 650, this will work out as 1462.5 and this will come up as adverse.

This variance is adverse because your actual time is more by 650 hours as against the standard time of the 8000 hours so it means that 650 hours of extra time the labour have used that is not because of any abnormal reasons but because of normal reasons. So your labour efficiency variance comes up as negative variance, adverse variance that by the amount of 1462.50. So, now we will have to calculate because now we have subtracted this actual time means from the actual time we have subtracted the idle time of the 100 hours.

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So, what we have to do here is now we will have to calculate the third variance, and the third variance is, if you talk about the third variance the third variance comes up as LITV (Labour Idle Time Variance) because that should be calculated separately just to find out that how much was the abnormal ideal time which is not because of the shortage or because of the any sort of the inefficiency of the labour.

And for that we have to find out is, the purpose of formula is, formula was ideal time 100 hours multiply the this rate is standard rate that is 2.25, so how much it works out as225 and this variance is always adverse ideal time variance is always negative variance is always adverse variance because labour has been unproductive because of abnormal reasons here in this time, so

we will call it, whenever you calculate this variance this will be considered as a negative variance of the say adverse variance and now we have got all the three variances.

Means one is the labour cost variance and labour cost is a function of the labour rate and the labour efficiency and the labour idle time so by factoring these 3 components that is the labour rate, labour efficiency and the labour idle time we will have to find out that whether both the sides are equal or not. So, how can we apply the check here you can say that it is the labour cost variance has to be equal to what that is the labour rate of pay variance plus labour efficiency variance and now we have calculated the third variance also so that has to be the labour LITV (Labour Ideal Time Variance).

So, what is the labour cost variance here if you see the labour cost variance was what minus 3875, and what is the labour rate of pay variance we have already calculated this is minus 2187.5, right? Now it is again negative so it will be minus 1462.5 and minus, another one is 225. If you sum up these three so this will become as minus 3875 is equal to minus 3875. So you can know within the exam, for example, if you are talking from the academic point of view within the exam you can come to know that whatever the solution you have found out, you have done the problem you have solved it is correct because both the sides are equal.

Cost is a function of price and the efficiency, so we have seen here that if you take into consideration the price, efficiency and the idle time, if you try to convert that into the total cost, so labour cost variance was 3875 negative and we have found out that this labour cost negative variance has been because of 3 important factors, because of the three important factors, because cost is a function of price and time, right. In the material, the cost is the function of the price and the quantity, right! Here, the quantity is the time not the units of the quantity.

We, have again labour rate, labour efficiency and labour idle time, right? Sum of these three makes the labour cost because the firm has paid for at the rate of the labour rate. Firm has paid per hour rate and the total time that is 8750 hours and out of that 100 hours are the idle time hours. So, the total payment has been made for those 100 hours also. So, finally while calculating the labour efficiency variance.

For example, if you have not subtracted 100 hours then this, this labour efficiency variance would have been more negative. Means negative by the higher amount, higher figures. So, what

it would mean, it would mean is that labour is more inefficient as compared to what we have found out here, this amount has come is 1462.5 and you would have added to this 225 into this. So, this variance would have gone up very high and this reflection would have been on the efficiency of the labour so which we segregated.

So this negative adverse labour efficiency variance has gone down by the same amount and now we have found out that labour cost variance being negative has been the function of all the three things. We wasted 100 hours that is why our cost increased; the actual cost was more than the standard cost. Second thing, our standard rate was 225 per hour, right? That is 2.25 rupees per hour and our actual rate paid was again more by 25 paisa that is 2.50 hours, so you paid the higher rate.

What was the standard rate and what was actual rate paid, there was a difference in that case and when you talk about the say the efficiency part, labour efficiency variance. How many hours were anticipated, 8000 hours and how much actually hours we have means used the labour for – for which the labour was working, engaged, productive, that was 86 this 50, right? So, it means we have paid normally more by 650 hours. We have paid more by 100 hours of the abnormal time.

So, actual extra time we have paid for is which is more than the budgeted time or the standard time is 750 hours, so, it means because of all these 3 factors, labour rate, labour efficiency, and labour idle time, the overall cost has gone up and that is why your labour cost variance has become negative by amount of 3875. Now, we have found out the reasons for this. Now we have to analyse it. We have to find out the, means go little more in detail that why labour price we had to pay more.

Why the labour price actually price was more than the standard time, were we not able to visualize in the beginning that the actual labour rate will be higher than the standard. Second thing is, when we estimated that within 8000 hours, the targeted amount of the production can be had but actually when we went for the production, we paid, or we spent more 750 hours. So, why, we were not able to find out in the beginning that the time actually will require, not 8750 but at least 8650, so why there was a gap between the standard and the actual time.

And that gap is not small gap, gap is by 650 hours because had the power been there in the plant all the times, in that case the total gap would have been 8650, so 8000 minus 8650, that is more by 650 hours but still it is a big gap. So, it means there is some problem at some level. Either the standard setting committee is not aware about the labour rates in the market or how fastly the labour rates are changing or there could be a problem that they are not able to find out or to calculate that for performing a certain amount of the work, how much time is actually is expected to be taken by the labour.

So, these are the factors to be found out to be plugged. So that next time your standard performance is equal to the actual performance or vice versa, your actual performance is equal to the standard performance. There is no idle time, or the wastage of any time and every time we are able to use the labour for the maximum possible time and most of the time of the labour is the productive time not the unproductive time, right? So, this way we have to analyse these labour variances and we have to try to find out if in any case the variance are negative.

Why these negative variances are coming up and how we can control these variances so that ultimate purpose of controlling the total cost of production, because in the total cost of production of any product, I told you many times that 50 to 60 percent cost is because of material and then the 15 to 20, 25 percent of the cost is because of labour and these are the two very important components in the total cost.

So, if you want to control the cost of the production, you first focus on the material then after this, once you are fully means exploited all the possible avenues for controlling the material cost, then you focus upon the next larger component of the cost, that is the labour component and labour cost should also be within control and after that we should go for the third component that is the other overheads, right? That is the, means the third component of the cost that is the other overheads.

So, these 3 important things are there to be taken into consideration. Material variance, we have already known and labour variances are now we are doing and now after this we will be learning, not in detail, but in a summarized form of overhead variances, right? So, this problem, first problem was very simple problem, and in this simple problem we could find out that if you are given the standard information in terms of time that is the labour rate and the labour time and if

you are given the actual information with regard to the labour time and the labour rate then how to calculate the variances?

But here, the limitation of this problem was that we were not given about the details of the different type of workers and actually in the firms, in the plants, what happens, we use the three categories of the workers. I told you in the previous class also, we use skilled workers, we use semi-skilled workers, and we use unskilled workers. And the rate of payment to these three categories of the workers, blue collar employees are different.

So, we have to change sometime this composition, means depending upon the availability or the non-availability of the labour. When you change the composition, cost changes; when you change the composition, the total output changes and it makes a big difference, sea difference, larger difference. So, now the next problem which I will be discussing with you with regard to labour variances, I will give you three problems, here a problem sheet and in that problem sheet you will find 3 problems.

One we already did, second I will do. Again, we will calculate only 3 variances – labour cost, labour rate of pay, labour efficiency variance. But the labour is divided into 3 broad components that is skilled labour, semi-skilled labour and unskilled labour, right? After knowing about calculating the different labour variances for the different categories of the workers, then we will move to the third problem.

In that we will address the problem of idle time, we will address the problem of the different workers means as per their skills and then we will address the problem of finding out all the 5 or 6 variances that is the labour cost variance, labour rate of pay variance, labour efficiency variance, labour idle time variance, labour mix variance or the gang composition variance and the labour yield variance. So, that will be the third problem. So, let us now understand that if you are given the different type of the workers – skilled, semi-skilled and unskilled, how to calculate the variances, right?

So, now if you look at this problem number 2, we are given this information here and this information is something like the information regarding the composition and the weekly wage rates of the labour force engaged on a job scheduled to be completed in 30 weeks are as follows, in the 30 weeks are as follows: You are given the category of workers – skilled, semi-skilled and unskilled.

You are given the number of workers put on the job means that is the standard that was expected to be put on the job that is the 75, 45 and 60 and we are given the standard rate also, weekly wage rate, it is not per hour, it is not per day, it is a weekly wage rate that how much wage rate we have to pay per week per worker this is 60, 40 and 30. Then we are given the similar actual information – how many numbers of workers are put on the job – 70 skilled, 30 semi-skilled and 80 unskilled and the price we pay to them was 70, 50 and 20 right?

The work was completed in 32 weeks, the work was completed in 32 weeks and now on the basis of this information, we have to calculate the labour variances so you are given the 3 set of the workers – skilled, semi-skilled and unskilled. We are given the standard time – 30 weeks of all the 3 categories of workers they have put together and we are given the actual time also 32 weeks and now, we are given the standard and actual information, so on the basis of this we will have to calculate the labour variances.

In this case, now we will calculating some variances and largely if you want to be comfortable you can calculate only 3 variances comfortably, that is the labour cot variance, labour rate of pay variance and the labour efficiency variance and labour mix and the other variances we will touch in the third problem, right? Now, we will do this problem we will discuss this problem and for this problem we will have to now prepare this information but we will have to solve this. So first variance we will be calculating is the labour cost variance.

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Now, for calculating the labour cost variance what is the formula: standard cost of labour standard cost of labour minus actual cost of actual cost of labour, right? This is the formula. Standard cost of labour minus the actual cost of the labour. So, now we have to calculate first of all this standard cost, we have to calculate the standard cost of labour standard cost of labour and for calculating the standard cost of the labour, right? We have to means find it out, so we are going to find it out for the 3 categories of the workers: first category of workers are skilled, right?

For the skilled workers if you find out go back and how many hours are there 30 weeks, not hours 30 weeks are given. How many skilled workers are put on the job means that was the standard 75 and what is the rate we are paying is that is 60 rupees per week, right? So now we will have to convert that into the standard cost for the skilled labour and that will be how much that is 75 multiply 60 multiply 30, this works out into how much this will be a total amount standard cost will be something like rupees 135000.

135000 and this cost we have calculated, this cost we have worked out that is the 135000, so this is the product of this amount given to us so this is 135000 this works out as that is the 75 multiply 60 multiply 30. This is the cost of the skilled labour, we have paid or we are expected to pay, we are supposed to pay because this is the standard. Now we go for the semi-skilled SS semi-skilled cost is standard cost for the semi-skilled labour is how much?

We are given here weeks will remain 30, workers are 45 and the rate is 40, right? So how much it is going to be, is going to be something like say this 45 then is the rate is how much 40 and weeks are again going to be 30. So, how much this cost is going to be this cost is going to be 54000. This is the cost of the semi-skilled labour and then is the unskilled labour. The cost of unskilled labour is going to be how much 60 into 30 into the weeks are again how much 30 yes so this cost works out as 54000s, right?

This cost works out as 54000, So you can say total standard cost is going to be how much this cost is going to be rupees 243,000 is going to be the standard cost. This is the standard cost 243000 is going to be the standard cost or the cost of the standards decided depending upon the different type of workers, we have put on the job or we were expected to put on the job 75

skilled, 45 semi-skilled and 60 unskilled workers their rates were 60, 40 and 30, and standard time decided was 30 weeks, right?

Similarly, now we have to calculate the second component and the second component is the actual cost of the labour. Actual cost of labour again we have to calculate like skilled, first of all skilled then we have to calculate the semi-skilled and then we have to calculate the unskilled, right? So we will have to calculate now same way, now you look at how much actual time we have spent against the standard of 30 weeks time?

We have actually put the labour or we have used the labour to complete the given job for 32 weeks. We have used the labour to put the labour on the job for 32 weeks. So this is the first difference against the standard of 30 actual time is 32 weeks. So we have spent or we have used the labour for 2 more weeks so you can expect labour cost variance will be certainly you can call it as negative or adverse because first indicator shows our actual time is more than the standard time.

And if you look at the workers here against the standard of 75 we have used 70 skilled workers, against the standard of 45 semi-skilled workers we have used 30 semi-skilled workers and against the say 60 unskilled workers standard. We have used more unskilled workers that is 80. So, it can change because we thought we will be having 75 skilled 45 semi-skilled and 60 unskilled but actually depending upon the labour in the market we could get 5 workers less as far as the skilled workers are concerned.

We could get 15 semi-skilled less workers and to compensate for that we had to increase the number of the unskilled from the 60 to 80. So, now looking at this we have to calculate the actual labour cost and if you look at the rate also against the standard rate per week for the skilled labour; we have paid 70 rupees means 10 rupees extra per week for the skilled labour. Semi-skilled we have again paid the higher rate and for the unskilled we have paid the lesser rate by 10 rupees.

So adjusting all these factors now we will be calculating what! That is the actual cost of the labour and for calculating the actual cost of the labour, skilled one is how much 70 multiply 70 multiply 32 so this will come out as how much 156800, right? In the second case it would be how much 30 multiply 50 multiply 32 last one will be the same this will come out as 48200. And

third one is how much 80 multiply 20 multiply 32 and this will come up as 51200 so the actual cost of the labour is how much 256,000.

We are got now the standard cost of labour and the actual cost of the labour and for this you will have to now easily find out both the costs are available with us, so what is LCV. Labour Cost Variance is how much this is the 200 rupees, 243 is the standard cost, how much is the actual rupees 256,000. This is the actual cost so standard is 243, actual is 256 so finally if you calculate the labour cost variance this works out as how much 13000 rupees, 13000 adverse, rupees 13000 adverse.

It means in nutshell you can say the labour cost we have actually paid is more by a sum of 13000 rupees. In such a small amount of the work where it was expected to be completed in 30 weeks, we completed in 32 weeks. We decide some composition of the skilled, semi-skilled and unskilled workers but actually we involved different number of the workers in all 3 categories. And when you talk about the rate also, in the two categories we paid actually we paid higher rate as against the standard.

Only in the third category we could save some money where we paid actually the lesser rate of as against the standard. But as a net result because of increasing the number of weeks, because of changing the labour composition and because of paying the high rate in the first two categories of the workers your total labour cost variance has become negative. Or your labour cost has increased by a whopping sum of 13000 rupees. It is not a small amount, it is a big amount 13000 rupees is a big amount.

It is a big cost and we will have to be careful. We will have to find out why the labour was not available as we anticipated, we standardised, we targeted then why the skilled number of the workers was not available in the required amount why 5 people were less available? We did not contact those people on time or we could not find out how much are actually available? How much are required so that is a one reason, where we wasted two more weeks, 30 was standard.

Why we spent two more weeks that is 32 weeks? That is another cause of concern and when while paying the rates per week to the skilled and semi-skilled, we anticipated something less, we paid more. So, in that case if you talk about we have paid the rate also higher in the first two categories. So, these are the three important indicators which ask us, which force us, which

require us to go for a detailed analysis and reset the standards so that next time there is a either no gap between the standard cost and actual cost or if it is a gap it is a minimum, negligible gap. It is an insignificant gap because otherwise standard costing will lose its importance.

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Now, after calculating the labour cost variance we will go for the next thing and we will calculate now the labour rate of the pay variance. Labour rate of the pay variance, in case of the labour rate of pay variance what is the formula? Here we will talk about as the actual time so now the time will come out and what is inside? This labour rate of pay variance because in the material what we take outside the bracket actual quantity. Here, we are talking about the time so it is the actual time, actual time multiply the standard rate minus actual rate, standard rate minus actual rate.

So, we have now to calculate this, I told you earlier also for memorising these formulas, you have to put inside the bracket that which you have to find, rate you want to find out the variance between the labour rate you want to find out so put the rate inside the bracket and multiply it by the time. When you want to find out the efficiency time will go inside the bracket and the rate will come out that rate will be the, say standard rate. So, standard rate will be outside and the standard time and the actual time will be inside.

So, if you want to find out labour rate of pay variance you have to start with this actual time into standard rate minus the actual rate and that way you will be able to calculate the labour rate of the pay variances. So, if you can calculate the labour rate of the pay variance we calculate it for the skilled and if you calculate for the skilled what is the time, what we have to take for the time is we have to calculate the time only.

For calculating the time you have to take into consideration here it is actual time is how many hours are given to us here, we are given the hours are like 32 weeks is the time and here it is the 70 is the number of workers so 70 multiply 32, this will come out as something like this, this time will be 2240 hours, right! Or weeks! This is the total time in weeks and what is the standard rate, standard rate is 60 and what is actual rate paid is 70. So, what is this variance?

This variance is going to be rupees 22000. If you solve this, this will work out as 22400 and this variance is adverse, right? Similarly, you will calculate it for the semi-skilled. So, if you calculate it for semi-skilled, what is the time coming out to be 960 multiply 40 minus 50. This will come out as how much? This will come out as 9600 and again it is adverse. Right, if you calculate now for the unskilled.

If you calculate for the unskilled so this will come out as how much? This will be something like 2560 multiply 30 minus 20. So, it is the, how much it comes out as, this comes out as 25600. So, the total variance we have calculated. They all are, this is favourable. This is favourable so we have calculated these say labour rate of pay variances and in this case this has come out as 22400 as adverse, in the semi-skilled this has come up as, if you take semi-skilled, this is the variance, semi-skilled is 9600 adverse because actual is more than the standard rate.

And in case of the unskilled, the actual rate paid is less by 10 rupees as against the standard and number of weeks is also quite large, so this variance has become favourable. So, finally you have sum it up for calculating the LRPB and LRPB is going to be how much in this case? LRPB is going to be, in this case if you calculate the total sum of these 3 will work as how much. It will finally be 6400 adverse, 6400 adverse because 2400 plus 9600, this will be the total adverse minus favourable 25600.

So, the net result is the adverse. So, one reason we have to found out, we have found out is why the labour cost variance is negative because your rate is higher. We have paid the higher rate for

skilled and semi-skilled and the net variance for this labour rate is 6400 adverse or negative. Other variance is labour efficiency variance and there then the telling with the labour cost, labour efficiency and the labour rate of pay I will discuss in the next class. Thank you very much!