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Human Resources Planning in Administration Bureau Academic with a Workload Approach (Case Study at "X" University in West Java)

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The results of this study are obtained through the optimal number of employees in the Academic Administration Bureau based on workload with work sampling method, namely the number of employee requirements based on standard time values or standard time influenced by performance ratings and concession factors. In general, the number of employees in a processing activity will be directly proportional to the number of workloads that must be completed in a certain period. From the right amount of work, design is made so that the burden and job descriptions on employees is in accordance with their skills such as to encourage increased employee productivity and work units. The productivity percentage has a low value of 58%, with a standard time at most tasks of 6.82 minutes, above the standard average time of 4.42 minutes, meaning that the output is smaller because the raw time is high. Work productivity has the highest value of 409%, with a standard time below an average of 4.18 minutes, meaning that the output is greater because the standard time is low.

Key words: *HR Planning, Workload, Job Design, and Work Productivity.*

Preliminary

Human Resource (HR) planning is the process of determining human resource requirements depending on company characteristics and strategy orientation. The preparation of a human resource plan for an organization is intended to ensure that human resource needs can be met constantly, both in terms of quality and quantity (Alwi, 2012). HR in Higher Education is different from that of a company because the characteristics of these organisation differ. Higher Education has three main missions, namely; education, research and community service. The HR in Higher Education organisations included lecturers and education staff (employees). The task of the lecturer is to plan and carry out the learning process, assess the results of learning, provide guidance and training, and conduct research and community service. However, lecturers need support from education staff (employees) who are in charge of carrying out administration, management, development, supervision, and technical services to support the education process in the education unit. Education personnel, as defined according to Law Number 20 of 2003, concerning the National Education System, article 39 paragraph (1), are also tasked with carrying out administration, management, development, supervision, and technical services to support the educational process in the education unit.

University "X" has yet to carry out HR planning based on unit workload needs as required to determine the exact number of employees needed in each unit. Job design and employee competency requirements also require in order for employees to work optimally and be able to achieve individual productivity and organizational performance standards set. University "X" has not performed job analysis / job design that covers the main tasks, job functions, authority, responsibilities, key performance indicators, competency standards and training needs based on business process units that include systems, sub-systems, grooves, rules, people, outputs (outputs and outcomes), users and indicators of success.

HR planning is inseparable from workload analysis and job analysis, which relates to preparation of the number of employees needed based on the workloads associated with the main tasks, functions, authorities, responsibilities, indicators of success, competency requirements, and training. Workload analysis is the process of calculating the workload of a position/sub position as well as the number of people needed to fill the position/sub position (Purnomo, 2015). According to Simamora (2004) workload analysis involves identifying both the number of employees, and the qualifications of employees, needed to achieve organizational goals.

Based on the phenomenon and review of the empirical data above, this study was conducted by looking at the case studies in the University Academic Administration Unit "X" and taking

the title "**HUMAN RESOURCES PLANNING IN ACADEMIC ADMINISTRATION BUREAU WITH WORKLOAD APPROACH" (Case Study at "X" University)**.

Literature Review

Human Resource Management

According to Mangkuprawira (2011), HR management is the application of a HR approach where together there are two objectives to be achieved, namely, goals for companies and those of employees. These cannot be separated in a unified whole entity. Whereas according to Rivai (2014), HR management is one of the fields of general management which includes aspects of planning, organizing, implementing and controlling. These processes exist in the functions or fields of production, marketing, finance, and staffing.

Human Resource Planning

The essence of management is planning because all interrelated activities in an organization are based on a plan. With planning, it is possible for decision-makers to use resources optimally, efficiently and effectively. HR management planning is a process for analyzing the organization's HR requirements, determining salary increases, integrating HR policies and programs to achieve organizational and HR goals. HR planning is closely related to the organization's strategic plan (Henry Simamora, 2004).

Benefits of Human Resource Planning

Accurate HR planning will make the company more effective and efficient, meaning that the company runs well with regards to production personnel and the number of employees according to needs. Productive employees are those who are able to work according to the SOP with predetermined working hours. They are the people who work and produce more than the average employee. With high productivity, extra work hours (overtime) or additional employees are not needed to achieve company's goals. Good HR planning will lead to positive attitudes in employees. Clear career paths, continuous technical training and soft skills, and attractive compensation and incentive systems, make employees comfortable at work.

Job Analysis

According to Hasibuan (2013), job analysis is written information about what work must be performed in a company so that the company goal is achieved. Analysis of the work itself is conducted to identify the essential functions of a job through systematic procedures, namely

high-level specialization that is required by a job that must be fulfilled by workers who will carry it out.

Workload Analysis

According to Sunyoto (2012: 64), a workload that is too much can cause tension and stress in a person. This can be caused by the skill level demanded being too high, the work speed being be too high, and/or the work volume being too much. A person's workload should be determined in accordance with a company's work standard, based on the type of work. If most workers work in accordance with company standards, workload demands are not a problem. Conversely, if the workforce is below the standard, the workload is carried out excessively.

Research Methods

Research Design

Data analysis in this study was carried out with a descriptive quantitative approach, both through statistical formulas and computers. Data was recorded from a list of interviews, field data, job description documents, and other official documents that support. Data collection methods carried out were observation, interviews, questionnaires and document review.

Observation was carried out by using work sampling in one work unit that is directly related to service to students and lecturers, namely the Academic Administration Bureau. Observations are made until the data is declared sufficient. The focus of the observed in this work sampling was the average time needed to complete 1 type of work/activity and looking for work time allocations used by employees grouped into productive, unproductive and personal activities.

Types and Data Sources

Primary data

Primary data was obtained from direct observations in the field (observation) and in-depth interviews with stakeholders. Data collection on direct observation with the work sampling involved periodic observations of respondents carrying out their work activities over 7 hours, for six working days.

One unit of time was chosen as 10 minutes - 50 minutes in 1 working day (7 hours outside, 1 hour break). Consequently, a calculation indicating the unit length of at least 10 minutes is 7 x 60: 10 = 42 units of time, so the number of visits was no more than 42 times per day. In this study, 30 visits were made. The results of observations were recorded into a work sampling

form, then the results of observations were grouped into productive, unproductive and personal activities. Then the data were processed and presented in the form of tables. The results of grouping data were then made a percentage of the productive amount of time for the calculation of cycle time.

Determination of the level of accuracy for observations was required after the sampling was completed in order to determine whether the results of the observations carried out fell into the appropriate categories. This involved calculations of the price of S (not the price of N) in the same formula. For example, in an observation of a work sample of 4,000 visits, a condition was obtained where 2,600 observations were in working conditions, while as little as 1,400 times of observation under idle conditions. The percentage of work (p) is 2,600 / 4,000 X 100% which is equal to 65%. When calculated the level of accuracy will be obtained:

$$0,65S = 2\sqrt{\frac{0,65(1-0,65)}{4000}}$$

$$S = 0,0232$$

Observation Timing Using Random Numbers

In making observations on work samples, events observed during work activities must have equal opportunities to be observed. One working day was divided into units of time that are not too long. Based on one unit of time this observation was carried out.

The time of observation should not be more than 2/3 of the total working hours. For example, one unit of time is set to 10, 1 day is 8 hours of effective work so there are 6 observations in 1 hour. After that, 48 observations were obtained for 1 day. To calculate the number of observations calculated 2/3 X 48 hours = 32. So that 32 observations were obtained in 1 day.

The time of observation were not permitted at times that are known to be in a state of non-work such as breaks or holidays. In principle, the work sample must be done to observe the normal conditions of an ongoing process (Sutalaksana, 1979).

Random numbers were obtained using an excel program or by using a table of random numbers. To determine the time of observation, it can be calculated in a way
Observation time 1 = initial hour - (random number to 1 X 10 minutes) = ..
The second observation time = the initial hour - (random number to 2 X 10 minutes) = ... etc.

And so on, in the same way, the time of observations were chosen randomly so that the results were statistically accountable. If 38 observations must be carried out every day, then

that much was also obtained from a random table. After the selection process was completed, the numbers of the time observation instructions were arranged in chronological order to provide a planned and easy schedule for the observers to conduct the research.

Determination of Data Uniformity

Working time measurements for each predetermined work element were carried out repeatedly to obtain valid data. To determine the number of observations that could be done the following equation was used (Wigjosoebroto, 1995):

$$N' = \frac{k^2(1-p)}{s^2(p)}$$

k = The index price which depends on level of trust taken •
S = Degree of Accuracy
N '= Amount of Theoretical Data
P = Percentage of occurrence of observed events

In addition to the adequacy of the data obtained using the above equation, it was equally important that the data obtained during the observation were uniform before the data could be used for standard timing.

Data uniformity tests was performed by visual means and/or applying map controls. The visual method is simply, easily and quickly performed. It can be done just by looking at the collected data and identifying data that is too extreme. These data can subsequently be removed from analysis. In the use of control maps, it must first determine the upper limit (BKA) and lower limit (BKB) of existing data. Data whose value is outside the BKA and BKB areas should not be used in the calculation of standard time.

If the average data was within the limits of the BKA and BKB, then the data are uniform.

$$BKA = \overline{p} + C\sqrt{\frac{\overline{p}(1-\overline{p})}{\overline{n}}}$$

$$BKB = \overline{p} - C\sqrt{\frac{\overline{p}(1-\overline{p})}{\overline{n}}}$$

$$\overline{p} = \frac{\sum p_i}{k} \qquad \overline{n} = \frac{\sum n_i}{k}$$

- C = 95% confidence level = 2
- BKA = upper-class limit
- BKB = lower class limit
- = average percentage of productivity
- = percentage of productivity of day i
- k = number of days of observation
- = average observation data

If it turns out that all Pi prices are within these limits, then all data could be used to calculate the number of observations needed. If there was a price / Pi value out of bounds, then the observation of the day concerned was "discarded".

If all Pi prices were within these limits, all data could be used to calculate the number of observations needed. If there was a price / Pi value out of bounds, then the observation of the day concerned was "discarded".

In addition to using the above equation, this data uniformity test was performed with the help of the SPSS program. To calculate the standard time with the stop hour method, the steps that were performed were:

1. Determine operator performance rating (discussed in the work sampling section)
2. Determine normal time
3. Determine allowances (discussed in the work sampling section)

After the three things above have been determined, to calculate the standard time the formula can be used as follows:

$$W_b = CTxPfx\left(\frac{100\%}{100\% - a\%}\right)$$

Wb = Standard time (standard time)
CT = cycle time
Pf = performance rating
a = allowance factor

Draft Method of Job Load Analysis and Calculation of Amount of Employee needs

In describing and interpreting data that has been processed, data analysis was performed, from which general conclusions from the research were obtained. The calculation results based on the formula of work measurement using the workload analysis approach, are presented in table form so as to provide convenience in interpreting data for users.

The steps taken in analyzing the data are data reduction, data presentation, drawing conclusions and verification. Data reduction means summarizing, retrieving important data, cleaning up data that is not suitable/biased and looking for patterns. Reducing data is performed by grouping data according to certain aspects or criteria of computer-aided.

Results and Discussion

Working Measurement Data

Retrieval of work measurement data was done by using the work sampling method, as a work measurement activity used to estimate the proportion of productive time activities and the proportion of time lost (idle / delay) during the work cycle or unproductive activities that occur (ratio delay study).

Observations were carried out randomly during the work cycle for several periods of work time. For example, this activity is often applied to estimate the amount of time needed or

must be allocated to provide an allowance for personal needs, eliminate fatigue and unavoidable obstacles.
Observations were recorded to be evaluated later. A random number was obtained from a random number table to determine the time when an observation would take place.

Working sample data collection is carried out for 6 working days, with 16 employees in 4 Subdivisions. Each day data were taken from different employees but for the same work unit. Observations were recorded using an instrument in the form of a check sheet (see appendix), covering productive activities or activities (main activities in accordance with the job description and procedures) and non-productive activities (activities outside the main employment, work allowance, and unemployment).

Based on the theory of determining the time of observation of work samples, a recording was taken on visits 30 times each day. The data process was carried out in accordance with the time based on the random number method, which was used in units of length for 10-50 minutes.

Based on the results of the work sample, the table of observational data was obtained as in the table below. From the data, from 120 random records, it was found that non-productive activities (including allowances) in the Subdivisions in the Academic Administration Bureau Unit were on average 26.33%.

Data Adequacy Test

After the work sample results were obtained, the next work measurement step was to test the adequacy of the data to find out whether the data observations have represented the entire population. If the data were not representative enough, it will be known how many more data must be taken.

Based on the results of the work sample, the average percentage of productive activities observed was 73.67%.

If N ≤ ≤ N then the data were considered sufficient, but if N '> N data were not enough (less) and data needed to be added. Based on the formula presented, results from the observational data were calculated as follows:

Data Adequacy Test Results

Staff	Data collected (N)	N'	% Productive	Information
Employee Sub. Registration	120	152	72,50%	N '> N data is not enough
Employee Sub. Lectures & Exams	120	146	73,33%	N '> N data is not enough
Employee Sub. General Laboratory	120	171	70,00%	N '> N data is not enough
Employee Sub. LDE Academic	120	133	75,00%	N '> N data is not enough
Employee Sub. Adm Service. Academic	120	116	77,50%	N '> N data is not enough

As can be seen from the simple calculation above, the results of the data adequacy test are N '> N, which means that the data are not enough. Therefore, it was necessary to add the remaining 60 observations to the data. For the additional data retrieval, observations for 2 working days (60 observations) were added.

After the addition of data retrieval, the table of observational data obtained is as shown in the table below. From this table, it can be seen that from 180 observational data (120 preliminary observation data plus 60 additional observational data), the average percentage of productive activities was observed so that when the data adequacy test was carried out as shown in the table.

Results of Addition of Samples of Employee Registration Subdivision

Observation day n	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Total
Name	DRO	DR	KM	IN	DRO	DR	
Total Productive Activities observed	21	20	23	23	22	20	129
Total Non-Earning Activities Observed	9	10	7	7	8	10	51
Total	30	30	30	30	30	30	180

Observations per day							
% Productive Activities	70.00%	66.67%	76.67%	76.67%	73.33%	66.67%	71.67%
% Non-productive Activities	30.00%	33.33%	23.33%	23.33%	26.67%	33.33%	28.33%

Results of Addition of Work Samples in the Lecture & Examination Sub-Section

Observation day n	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Total
Name	BD	AK	DS	TM	BD	AK	
Total Productive Activities observed	23	22	21	20	22	20	128
Total Non-Earning Activities Observed	7	8	9	10	8	10	52
Total Observations per day	30	30	30	30	30	30	180
% Productive Activities	76,67%	73,33%	70,00%	66,67%	73,33%	66,67%	71,11%
% Non-productive Activities	23.33%	26.67%	30.00%	33.33%	26.67%	33.33%	28.89%

Results of Addition of Work Samples in the General Laboratory Sub Division

Observation day n	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Total
Name	RD	RD	OK	OK	RD	OK	
Total Productive Activities observed	22	21	21	20	21	20	125
Total Non-Earning Activities Observed	8	9	9	10	9	10	55
Total Observations per day	30	30	30	30	30	30	180
% Productive Activities	73,33%	70,00%	70,00%	66,67%	70,00%	66,67%	69,44%

% Non-productive Activities	26,67%	30,00%	30,00%	33,33%	30,00%	33,33%	30,56%

Results of Addition of Work Samples in LDE Academic Sub-Section

Observation day n	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Total
Name	DS	IS	WN	DN	DS	IS	
Total Productive Activities observed	23	22	20	23	22	20	130
Total Non-Earning Activities Observed	7	8	10	7	8	10	50
Total Observations per day	30	30	30	30	30	30	180
% Productive Activities	76,67%	73,33%	66,67%	76,67%	73,33%	66,67%	72,22%
% Non-productive Activities	23,33%	26,67%	33,33%	23,33%	26,67%	33,33%	27,78%

Results of Addition of Samples of Work Service Sub Division Adm. Ac.

Observation day n	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Total
Name	ER	ER	RH	RH	ER	RH	
Total Productive Activities observed	24	24	23	22	25	24	142
Total Non-Earning Activities Observed	6	6	7	8	5	6	38
Total Observations per day	30	30	30	30	30	30	180
% Productive Activities	80.00%	80.00%	76.67%	73.33%	83.33%	80.00%	78.89%
% Non-productive Activities	20.00%	20.00%	23.33%	26.67%	16.67%	20.00%	21.11%

Based on the calculation of the addition observational data with the formula above, the results are as in the table below:

Data Adequacy Test Results (Addition of Observation Data)

Staff	Data collected (N)	N'	% Productive	Information
Employee Sub. Registration	180	158	71,67%	N '≤ N data is considered sufficient
Employee Sub. Lectures & Exams	180	163	71,11%	N '≤ N data is considered sufficient
Employee Sub. General Laboratory	180	176	69,44%	N '≤ N data is considered sufficient
Employee Sub. LDE Academic	180	154	72,22%	N '≤ N data is considered sufficient
Employee Sub. Adm Service. Academic	180	107	78,89%	N '≤ N data is considered sufficient

Based on calculations with the addition of data, it can be seen that N: 180> N ': 158, 163, 176, 154 and 107 so that it can be assumed that the working sample of observation data was considered sufficient.

Data Uniformity Test

The results of the calculation are known as follows:

1. Employees of the Registration Sub-Division with the calculation of BKA and BKB are:

$\bar{p}$ = 71,67%

$$BKA = 71{,}67\% + 2\sqrt{\frac{71{,}67\% \times (1-71{,}67\%)}{30}} = 88\%$$

$$BKB = 71{,}67\% - 2\sqrt{\frac{71{,}67\% \times (1-71{,}67\%)}{30}} = 55{,}21\%$$

Based on the data uniformity test above, it was known that the upper control limit (BKA) was 88% and the lower control limit was 55.21% (BKB), while the average percentage of employee productivity in the Registration Sub Division was 71.67% and was within the BKA limit and BKB, meaning that all data were uniform and can be used to calculate the number of observations needed to calculate standard time.

2. Employees of the Lecture & Examination Sub-Section with the calculation of BKA and BKB were:

$\overline{p}$ = 71.11%

$$BKA = 71{,}11\% + 2\sqrt{\frac{71{,}11\% \times (1-71{,}11\%)}{30}} = 87{,}7\%$$

$$BKB = 71{,}11\% - 2\sqrt{\frac{71{,}11\% \times (1-71{,}11\%)}{30}} = 54{,}6\%$$

Based on the data uniformity test above, it was known that the upper control limit (BKA) was 87.7% and the lower control limit was 54.6% (BKB), while the average percentage of employee productivity in the Lecture & Examination Sub-Section was 71.11% and was within the BKA and BKB limits, meaning that all data were uniform and can be used to calculate the number of observations needed to calculate standard time.

3. Employees of the General Laboratory Sub-Section with the calculation of BKA and BKB were:

$\overline{p}$ = 69,44%

$$BKA = 69{,}44\% + 2\sqrt{\frac{69{,}44\% \times (1-69{,}44\%)}{30}} = 86{,}3\%$$

$$BKB = 69{,}44\% - 2\sqrt{\frac{69{,}44\% \times (1-69{,}4\%)}{30}} = 52{,}6\%$$

Based on the uniformity of the data above, it was known that the upper control limit (BKA) was 86.3% and the lower control limit was 52.6% (BKB), while the average percentage of employee productivity in the General Laboratory Sub-Section was 69.44% and was within the BKA and BKB limits, meaning that all data were uniform and can be used to calculate the number of observations needed to calculate standard time.

4. Employees Sub Bag. LDE Academic with the calculation of BKA and BKB were:

$\overline{p}$ = 72,22%

$$BKA = 72{,}22 + 2\sqrt{\frac{72{,}22\% \times (1-72{,}22\%)}{30}} = 88{,}58\%$$

$$BKB = 72{,}22\ \% - 2\sqrt{\frac{72{,}22\ \% \times (1-72{,}22\ \%)}{30}} = 55{,}86\%$$

Based on the data uniformity test above, it was known that the upper control limit (BKA) was 88.58% and the lower control limit was 55.86% (BKB), while the average percentage of employee productivity in the LDE Academic Sub-Section was 72.22% and was within the BKA and BKB limits, meaning that all data were uniform and can be used to calculate the number of observations needed to calculate standard time.

5. Employees Sub Bag. Adm Service. Academic Reg. B with the calculation of BKA and BKB were:

$\overline{p}$ = 78,89%

$$BKA = 78,89 + 2\sqrt{\frac{78,89\% \times (1-78,89\%)}{30}} = 93,79\%\%$$

$$BKA = 78,89\ \% - 2\sqrt{\frac{78,89\ \% \times (1-78,89\ \%)}{30}} = 63,99\%$$

Based on the data uniformity test above, it was known that the upper control limit (BKA) was 93.79% and the lower control limit was 63.99% (BKB), while the average percentage of employee productivity was the Adm Service Sub Division. Academic was 78.89% and was within the BKA and BKB limits, meaning that all data were uniform and can be used to calculate the number of observations needed to calculate standard time.

Based on the results of calculations from each Sub-Section, it can be seen in the recapitulation of the data uniformity test results that the entire observation data was within the control limit as in the table below:

Data Uniformity Test Results Recap

Staff	Average Employee Productivity Percentage	BKA	BKB	Information
Employee Sub. Registration	71,67%	88,0%	55,2%	Data is within the control limit
Employee Sub. Lectures & Exams	71,11%	87,7%	54,6%	Data is within the control limit
Employee Sub. General Laboratory	69,44%	86.3%	52,6%	Data is within the control limit
Employee Sub. LDE Academic	72,22%	88,58%	55,86%	Data is within the control limit
Employee Sub. Adm Service. Academic	78,89%	93,79%	63,99%	Data is within the control limit

Testing the Level of Accuracy of Observation Data

Testing the level of accuracy of the data was intended to find out how much the level of accuracy (degree of accuracy) of the overall work measurement data above. Based on the data taken the average productive percentage of the staff in the Academic Administration Bureau was 72.67%, the calculation results are obtained as follows:

$$0,7267S = \sqrt{\frac{0,7267(1-0,7267)}{180}}$$

$$S = \frac{0,033217}{0,7267} = 0,04571$$

Because the price of S = 4.57% means that it is smaller than 10%, the number of random observations made 180 times was sufficient to meet the accuracy requirements set
Raw Time Data Processing.

Calculations to determine the standard amount of time employees in the Academic Administration Bureau unit based on work measurement data does not establish documented official standards relating to the standard time of work processes from the process of registration, scheduling, lectures, examinations, management of academic values to the issuance of transcripts and diplomas. During this time the Sub-Section units in the Academic Administration Bureau only use the assumption that the amount of standard time for each process is weekly or daily in 1 activity.

Based on the normal time and allowance factors, the standard time for activities in the Sub-division unit in the table below was obtained:

Calculation of Standard Time

Staff	Normal Time in minutes	1 + *l*	Standard Time
Employee Sub. Registration	2,59	1.375	3.56
Employee Sub. Lectures & Exams	3,04	1.375	4.18
Employee Sub. General Laboratory	4,96	1.375	6.82
Employee Sub. LDE Academic	2,16	1.375	2.97
Employee Sub. Adm Service. Academic	3.77	1.375	5.18

From the results of the above calculations it can be seen that the standard time/standard required:
1. Employees Sub Bag. Registration for 650 data/service/ document processes within 6 working days, requires standard time/standard per 3.56 minutes document sheet per data/document, which is done by 3 people.

2. Employees Sub Bag. Lectures & Exams to carry out 550 data/document processes within 6 working days, requiring standard / standard time is 4.18 minutes per data/document by 2 people.

3. Employees Sub Bag. General Laboratories for 332 data/lab processes per week, requires standard time/standard 6.82 minutes per data, done by 2 people. It can be seen that with less productive minutes because the productive percentage was smaller than other employees (less than 70%), the need for minutes is greater for 1 unit of output, meaning that the output produced is smaller.

4. Employees Sub Bag. LDE Academic to do 780 processes of data/documents within 6 working days, requires standard time / standard 2.14 minutes per data/document that is done by 4 people.

5. Employees Sub Bag. Adm Service. Academic to do 495 process data/documents within 6 working days, requires standard time / standard 3.68 minutes per data/document that is done by 2 people.

Analysis of Number of Optimal Employees.
The final stage of this research was an analysis of the optimal determination of the number of employees in the Academic Administration Bureau unit, such as the detailed calculation results in the table below:

Calculation of the Number of Optimal Employee Needs
Based on Workload Analysis

Employee	**Effective Working Time (90% efficiency standard)**	**Number of Employee Needs To be Based on WLA**			**Number of Existing Employees**	**Δ**
		Total Workload per year	Working Productivity Percentage	Number of employees		
Employee Sub. Registration	99187	261624	246%	2.64 → 3	3	0
Employee Sub. Lectures & Exams	99187	405247	409%	4.09 → 4	2	+2
Employee Sub. General Laboratory	99187	57097	58%	0.60 → 1	2	0
Employee Sub. LDE Academic	99187	136352	137%	1.37 → 1	4	-3
Employee Sub. Adm Service. Academic Reg. B	99187	386671	390%	3.90 → 4	1	+3

Based on the above calculation, as in the recapitulation of the number of optimal employees needed with the workload analysis approach, based on the comparison of workload needed for work time available for a year as follows:

1. In the Sub-Section Registration with available working time in a period of 1 year was 99187 minutes, while the time required was 261624 minutes to complete the workload, then it was known the number of employees needed, namely 3 people, and the number of existing employees is 3 people so there is no need for additional employees.

2. In the Sub-Section Lectures & Exams, with work time available in a period of 1 year, namely 99187 minutes, while the time needed was 405247 minutes to complete the workload, then it is known the number of employees needed, namely 4 people, and the number of existing employees is 2 people, so additional 2 employees.

3. In the Sub-Bag. General Laboratory, with work time available in a period of 1 year, which is 99187 minutes, and the time required was 57097 minutes to complete the workload, then the number of employees needed is 1 person, and the number of existing employees is 2 people, so there is no need to add employee.

4. In the Sub-Section LDE Academic, with work time available in 1 year, namely 99187 minutes, while the time needed was 136352 minutes to complete the workload, it is known that the number of employees needed is 1 person, and the number of existing employees is 4 people, so there is a need to reduce 3 employees.

5. In the Sub-Section Adm Service. Academic Reg. B, with the available time in 1 year, namely 99187 minutes, while the time needed to complete the workload was 386671 minutes, it is known that the number of employees needed is 4 people, and the number of existing employees is 2 people, so there needs to be 2 additional staff.

6. The lowest percentage of productivity is Sub Bag. General Laboratory was 58%, with the lowest volume of workload, because the standard time was at most 6.82 minutes, above the average standard time of 4.42 minutes, meaning that the output produced is smaller because the raw time is high.

7. The highest percentage of work productivity was in the Lecture & Examination Sub-Section, which was 409% with a standard time below an average of 4.18 minutes, meaning that the output produced was greater because the raw time is low/small.

8. Based on table 4.28, it can be seen that the amount of employee needs other than because the standard time value / standard time which is influenced by performance rating and concession factors, is also influenced by the value of "P" which is the volume of workload targeted to employees. In general, it is known that the number of employees in a processing activity will be directly proportional to the number of workloads that must be completed in a certain period.

Conclusions and Recommendations

Conclusion

In Chapter I, it was stated that the purpose of this study was to analyze the conditions of employee workload and employee work measurement in the Academic Administration Bureau, whether the actual workload conditions were optimal, then carry out a workable design plan in accordance with the workload and employee competency requirements according to burden and work.

So, from the results of data processing and discussion in Chapter 4, it can be concluded that
1. Based on observations of work measurements for 6 working days:
a. It is known that the use of work time with the allowance factor, the average productive time of employees in the Academic Administration Bureau as a whole is considered to be optimal at an average of 72.76%.

b. In the calculation of standard time, it can be concluded that with standard time / standard time above 6 minutes per activity cycle, it will produce output unit <400 data/document, meaning that the output produced is smaller, this affects employee productivity.

c. Based on the calculation of the needs of the number of employees, it is known that the Sub-Section employees who need to be reduced are Sub Bag of Lectures and Exams and Sub-Bag. LDE Academic (assuming the standard time / standard time is the same for all work processes in each Sub Bag), while the need for additions in Sub Bag. Adm Service. Academic Reg. B. Whereas the employee who needs to be added to the workload is in Sub Bag. General Laboratory because work productivity is only 58%.

2. By looking at the condition of the workload of the unit and calculating the needs of the number of employees, a work design plan is reviewed and made to obtain information about the jobs that will be carried out by employees and competencies that must be owned, which can later assist in personnel management.

Suggestion

In this study, it is inseparable from a variety of shortcomings and weaknesses due to limitations both in terms of researchers and conditions of limited time in making data observations and others. The amount of data retrieval was felt to be too minimal (only 4 days, plus 2 days of observation), even though the data adequacy test was considered sufficient, but it was felt not to represent the actual overall workload. Because of previous research referenced, the object of this research was more in manufacturing because the stages of process activities in one production activity are clear for one employee, but in the scope of work for educational services, each employee is allowed to carry out more than one activity. Based on this, there needs to be an improvement so that the determination of optimal employee needs is in accordance with the real workload.

Some suggestions that can be added from this research for institution development and the development of future research include:

1. In preparing and carrying out workload analysis and job analysis, there is a need for budget availability and the establishment of ad hoc teams and experts (consultants) who are experienced in carrying out the analysis above, as well as the active role of stakeholders as a counterpart in providing data and information necessary, so that activities are more effective and results are accurate.

2. To implement results of this research, it will take commitment from all unit leaders and staff within the University of "X" in order to foster a commitment to employees, work motivation and self-development motivation, and to anticipate reactions to work culture change programs designed to become more orderly and move towards good university governance.

3. Workload analysis and job analysis activities should be in line with the strategic plan so that employee capacity and job design are able to support the achievement of the vision and mission effectively and efficiently.

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