SECONDARY DATA ANALYSIS OF PARTIAL PRODUCTIVITY INDEX TO DETERMINE QUALITY OF SCHOOL

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Abstrak

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Bukanlah hal yang mudah untuk memilih SMA (SMA) .suatu mahasiswa baru Program recieving terus sebelum tahun ajaran baru pada bulan Juli membuat orang tua siswa yang baru saja lulus dari SMP bingung. Secara umum, alasan untuk memilih sekolah favorit didasarkan pada opini publik yang salah. Memilih SMA (SMA) seharusnya bergantung pada kualitas Instructional kerja. Salah satu Indikator kualitas kerja pembelajaran adalah tingkat produktivitas. Penelitian ini bertujuan untuk mengungkapkan indeks produktivitas parsial Sekolah Menengah Atas (SMA) yang berlokasi di Kota Jember dan urutan mereka dalam sepuluh kategori. Penelitian ini milik deskriptif penelitian yang menekankan pada dua hal. Penekanan pertama adalah pada skor akhir ujian nasional (NEM) yang diperoleh oleh siswa SMP yang lulus pada tahun akademik 2011/2012 sebagai masukan sedangkan yang kedua adalah skor akhir ujian nasional yang diperoleh oleh Sekolah tinggi Senior (SMA) siswa yang lulus tahun 2013 sebagai output. Analisis ini dimaksudkan untuk mengetahui indeks hasil perbandingan betwen input dan output skor. Hasil penelitian menunjukkan bahwa 10 dari 15 Sekolah Menengah Atas yang terletak di Kota Jember memiliki tingkat produktivitas sekitar 68,33% hingga 98,46%.

Abstract

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Is not an easy thing to select Senior High School (SMA).The new students recieving programme hold before new academic year in July make the parents of students who have just graduated from Junior High School confused. Generally, the reason to select favourite school is based on a wrong public opinion. Selecting Senior High School (SMA) is supposed to rely on the quality of Instructional work. One of Indicators of the instructional work quality is a productivity level. This research aims to reveal partial productivity index of Senior High Schools (SMA) located in Jember City and sequence them in top ten category. This research belongs to descriptive research which emphasizes on two things. The first emphasis is on the final score of national examination (NEM) obtained by Junior high School Students who graduated in academic year of 2011/2012 as the input while the second is the final score of national examination obtained by Senior high School (SMA) students who graduated in 2013 as the output. The analysis is meant to find out the comparation result index betwen input and output score. The research result shows that 10 of 15 Senior High Schools located in Jember City have productivity level around 68,33% up to 98,46%.

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INTRODUCTION

A lot of consequences emerge since optimising Nine-Year Compulsory Learning which consist of six years in Elementary School and three years in Senior High School was launched in 1994. One of the consequences is the number of Junior High School (in Indonesia called SMP) graduated students increase sharply in the next three until five years. In many cities in our nation there is a gap between the number of Junior High School graduated students who want to continue their study to Senior High School and the capicity of Senior High School (in Indonesia called SMA).

Such thing can occur although monetary crisis continued with political and economic crisis struck Indonesia in mid of 1997. That multi dimension crisis has not affected neither the participation pattern from Junior High School to Senior High nor from Junior High School to High Vocational School (in Indonesia called SMK) yet because the govenrnment get a loan from World Bank and Asin Development Bank and through National Budget Income launched *Social safety net*) *in education field* (JPS-BP) (Dedi Supriadi, 2000).

This policy of course is not only meant to help the schools which lack of insufficient operational fund but also it is meant to help the poor students who are almost dropped out. Eventually, such help can not contraint the sharp rise of students graduated from Junior High School.

Because of this sharp rise and limited capacity owned by Senior High School (SMA), equality and educational opportunity can not be applied perfectly. Eventually, Each Senior High School applies selection system in order to guarantee those equality and opportunity. However, the sytem which has been used for years is not test but the rating of the final score of national examination (in Indoenesia called NEM) as stated in score list. Here, the final score of final examination is still considered as an indicator of study achievement in national scope.

Considering the schedule of Senior High School (SMA) new students acceptance programme are held at the same, so a lot of student candicates are confused in selecting Senior High School (SMA). The fact occured is then some senior high school obtain the big animo while the rest obtain the small one. Generally, according to public opinion senior high schools with big animo are the considered as favourite schools or qualified and the reverse. Consequently, when the number of accepted students are announced, many students who have final score below passing grade can not be accepted. Finally these students continue their study to the school which is psychologically they do not want to.

The new students recieving programme by rating national final score (in Indonesia called NEM) is basically good since it shows that education practicioners acknowledge the real achievement of new students candidate as raw input. The weakness is that it creates impression that colution and nepotism often happen there. *Kompas* daily edition 15 June 2010 for example reported that the 1.200 students' final score of national examination (NEM) had been marked up by adding 5.2 point. Such incident occured in 27 Elementary Schools located in Tegal Selatan, Tegal District, Central Java. That dishonest practice is done because they hope to be recieved in favourite Junior High Schools.

There are two reasons why the impression of collusion occur. The first is so far the parents do not get accurate information in order to assses the quality of learning process in school. The next reason is in selecting new school the parents often relies on public opinion in which only certain schools are considered as good and qualified schools. These obviously are unhealthy phenomena in national education practice. Ideally, the society select the new school by relying on accurate information.

The accurate information here can be in the form of certain indicator, for example instructional work. Such instructional work has to be announced by school to society broadly before recieving new student programme begins or before at least one academic year. Such announcement is very useful in order to educate society and education experts to do something honestly and at the same time it enables to schools to compete healthily and fairly in getting new student candidates.

Related to the school quality, generally in Indonesia and specially in Jember City, so far there is no Senior High School (SMA) which announces its learning work. It occurs because the school officer do not know yet which instructional work should be announced to the society. Instructional work is one of education quality indicators that should be computed every year. This argumentation strengthens the visibility of this research. This research calculates many indicators of instructional work including partial productivity index in which this index is considered as one of easy ways to find out intructional work.

METHOD

Design used in this research is descriptive research design realised in the form of secondary data analysis method. This design is very suitable as it involves simple research subject and the data are easily gathered. The research population is all Senior High School (in Indonesia called SMA) either state (in Indonesia called Negeri) or private (in Indonesia called Swasta) schools located in Jember City, East Java. The data in this research are quantitative data in the form of numbers. The data source is the Head Section of PRP (Provision Programme Plan) National Education Department, Jember District office. The technique used to analyse the data is descriptive statistic data analysis in the form of central tendency and table presentation.

RESULT AND DISCUSSION

Before Local Governance Act has been implemented effectively in January 1st 2001, Jember City remains in its status as administrative city lead by City Major. Considering its status, talking about SMA developmen in Jember City means talking SMA in Jember District as a whole.

And in time, the number of state SMA classrooms has changed. In academic year of 2010/2012 there were only 155 classrooms but in academic year of 2012/2013 the number of classrroms become 222. However, the number of classrooms in private Senior High School or SMA decrease sharply from 398 to 149. The SMA capicity of either state or private has changed as well. In academic year of 2010/2011 the capacity of private SMA was 6.786 while in academic year of 2012/2013, the capacity increased becoming 9.675 students. Meanwhile, at the some academic year the capacity of private school decreased sharply from 16.078 to 5.615 only.

"The shutting down" of private schools is not just due to the expansion of state SMA. If we analyze deeper, the development of state SMA does not correspond proportionally with the development of the number of students. By analysing graduation flows from Junior Jigh School (SMP) to SMA, it can be found out that inproportional deveopment occured because many Junior High School graduated students did not continue their study any more. Since academic year of 2010/ 2011, student graduated from SMP who did not continue their study increased sharply from 12,08 % becoming more than 20%.

Except that, many private SMAs in Jember shut down because of unprofessional management. It can be viewed that they do not have fixed teachers except they rely on government aid and state SMA teachers and unfixed teachers salaried by foundation. The comparation is 131 unfixed teacher of 706 private SMA teachers whereas in private

SMA there are more than 514 unfixed teachers.

In autonomous region framework , certainly this condion is not good considering that local government has a significant role to manage education. Unfortunately, This research does not intend to investigate that readinesss ethier in infrastructure side or suprastructure side. The scope and contributions of this research are to eliminate the wrong public opinion in the next coming years so that the society are not mislead in selecting school for their children and at the same time and to reduce the number of students who do not want to continue their study because they get the wrong information about the school that they want .

Ideal SMP (NEM) and Obtained SMP NEM

Final Score of National Examination (in Indonesia called NEM) used as input in calculating Partial Productivity Index of SMA in academic year of 1999/2000 is NEM of students who graduated from SMP in 1997/1998. Based on SMP curriculum 1994, the subjects examined in national examination cover: (1) Pancasila Education (Pendidikan Pancasila), (2) Indonesian Language (Bahasa Indonesia), (3) Mathematics, (4) Exact Science (IPA), (5) Social Science (IPS), (6) English (Bahasa Inggris) (chek Dpedikbud 1993). The measurement scale used is 1-10 scale. The ideal score that can be obtained by student graduated from SMP is 60. However, in fact, there is almost no graduated student who gets that score.

Generally, they get score below 60. In academic year of 2012/2013 from the score of SMP graduated students who apply to SMA, it is found out that the score are varied. The lowest NEM was 20,82 and the highest was 53,71. In that academic year SMP graduated student with lowest NEM was listed in SMA Nuris, Antirogo while the highest is listed in SMA Negeri 1, Sumbersari.

Data on SMP NEM used as input are very essential since they are used as a standard to calculate Input NEM Coeficient Index (KINM) as formulated in IPP. KINM is a comparation between achieved NEM and ideal NEM. For example, for those who obtain NEM as much as 20, 82, the KINM is 20,82: 60 = 0,347, rounded to be 0,35. In addition for those who get NEM as much as 53,71, the KINM is 53,71 : 60 = 0,895, rounded to be 0,90. The same way is also used to calculate Output NEM Coeficient Index as a devider in calculating IPP.

The SMA Rankings Based on NEM Input In Academic Year of 2012/2013

Jember City is the third biggest place in East Java which has a predicate as "student city" or the destination city for education. This predicate is of course has "hypnotised" a lot of parents to send their children in order to study there starting from Junior High School (SMP) until Universities. In the sense of selecting Senior High School (SMA), the parents are often trapped on public opinion whether the school is favourite or unfavourite, qualified or unqualified, populer or unpopuler, heard or unheard, etc.

All opinions stated above are logical with the all consequences they have. However, it is not fair to let these opinions happen and happen again without any effort to correct them. One of the efforts is describing the quality of each SMA viewed from many different aspects. For example, the aspects cover the percentage students who passed national exam, the NEM score, and the number of graduated students who have been accepted in state universities.

The judgement on those opinions can be misleading if we can not deal with it carefully. It is due to a SMA is a system which has input subsystem, process, output and also human and financial resource. The most dominant thing that have to be emphasized is subsystem process, that is instructional work and personal councelling carrried out by education officers in

respective SMA. The process starts from and learning process and other educational service including   school guiding and counceling service.

It is obvious that the quality of SMA will undergo reduction process if it is viewed only from the NEM average recieved by a school. On the contrary, it is too naive to determine the school quality by relying NEM average produced. If these two poins of view are used to determine the school quality, the school with higher ranking will attract more people to study there. This point of view is very misleading since logically better input will result better output and at the reverse.

In order to able to describe the school quality as objective as possible, we need to measure how far the efforts carried out by SMA officer to change the available input to become output that they expect. Therefore, we need to compare input and output. In this research, the result obtained after comparing is called IPP. IPP is ideal measure and objective standard which can be used by parents as the consideration point to select the school for their children.

In the first step, we will list the SMA rank classified   from the lowest input in academic year of 2012/2013. We take ten highest rank school from 15 fifteen SMA operated in Jember. Later, these 10 schools will be ranked again on the basis of another indicator namely NEM Average obtained or output and its IPP. In the next three years they can be in the same or different ranking. SMA Islam Al Hidayah, Mangli and SMA Wiyata Mandal, Mangli are excluded in this research since the NEM input of those two schools are not availabe. Consequently, their IPP can not be calculated as well.

Table 1. The Rankings of SMA in Jember Listed Based on the Lowest SMP NEM Input accepted in Academic Year of 2012/2013

RANKING	NAME OF SMA	LOWEST NEM	AVERAGE
1st	SMAN 1	45,72	48,58
2nd	SMAN 2	36,79	43,99
3rd	SMAK Santo Paulus	35,69	39,00
4th	SMAN 3	33,34	39,91
5th	SMAN 5	32,41	38,93
6th	SMAN 4	30,90	41,03
7th	SMA Islam Jember	30,00	30,00
8th	SMAK Satya Cendika	29,71	35,00
9th	SMA Kartika	27,89	36,27
10th	SMA Kristen Adi Wiyata	27,08	33,44

In Table 1, it is illustrated that almost all state SMA force the students who want to apply there to have high input of NEM. Meanwhile all private SMA, except SMA Katolik Santo Paulus remains to recieve the students wth low NEM. The problem is Can input be the same or even higher than output?

As comparation data, we will rank SMA based on the highest individual NEM output of Exact Science group and Social Science group.

Table 2. The Rankings of SMA Listed Based on the Highest Individual NEM Output of Exact Science Group

RANKING	NAME OF *SMA*	HIGHEST *NEM*
1st	SMA N 5	58,10
2nd	SMA K Santo Paulus	57,18
3rd	SMAN 1	55,65
4th	SMAN 3	51,44
5th	SMAN 4	51,03
6th	SMA Kristen Adi Wiyata	48,02
7th	SMA Kartika	46,34
8th	SMA K Satya Cendika	45,50
9th	SMA Muhammadiyah III	41,37
10th	SMA N 2	39,10

Table 3. The Rankings of SMA Listed Based on the Highest Individual NEM Output of Social Science Group

RANKING	NAME OF SMA	HIGHEST NEM
1st	SMAN 5	58,10
2nd	SMA K Santo Paulus	57,29
3rd	SMAN 1	54,32
4th	SMAN 4	50,19
5th	SMA Muhammadiyah III	45,92
6th	SMAN 3	44,85
7th	SMA Kristen Adi Wiyata	43,75
8th	SMAN 2	43,54
9th	SMA Kartika	39,90
10th	SMA K Satya Cendika	38,50

From the two tables above namely Table 2 and Table 3, it can be inferred that there are some shifts of rank some SMA except first, second, and third ranking are SMA Negeri 5, SMA Katolik Santo Paulus and SMA Negeri 1 – viewed from its major group. Exact Group of SMAN 3 is in fourth ranking but it Social Gruop drops to sixth ranking. The position was replaced by Exact Science Group of SMAN 4 which was in fifth ranking. Exact Science Group of SMAN 2 is in the lowest position but its Social Group was higher than its Exact Group , that was the eighth ranking. The lowest position in Social Science group was SMA Katolik Satya Cendekia but its Exact Science Group is in eighth ranking. It is obvious from the NEM achieved individually either Exact Science Group and Social Science Group of state SMAs were within big ten position or ranking. Meanwhile the same five private schools were within big ten position or rankings.

This of course is not surprising since that nine SMAs which were in the big ten position or rankings as listed in Table 2 and Table 3 recieved high input NEM as shown in Table 3. However, there was an interesting fact shown in Table 3. The fact was SMA Muhammadiyah Either its Exact and Social Science Group was within 10 individual highest NEM. This was an interesting fact since that school has low input NEM, namely 26,25 so that the school was not within big ten position or ranking as shown in Table 3.

In order to be able obtain a more comphrehensive description od input NEM and output NEM, we rank SMA based on on output NEM of academic year of 2012/2013

Table 4. The Ranking of SMA Listed Based on Output NEM in Academic Year of 2012/2013

RANKING	NAME OF SMA	OUTPUT NEM AVERAGE
1st	SMAN 1	45,36
2nd	SMA K Santo Pulus	44,54
3rd	SMAN 2	41,50
4th	SMA Muhammadiyah III	39,55
5th	SMAN 4	37,08
6th	SMAN 5	33,58
7th	SMA K Satya Cendika	33,04
8th	SMAN 3	32,48
9th	SMA Kristen Adi Wiyata	29,01
10th	SMA Kartika	28,46

The school ranking based either on its individual input NEM or its group output NEM mean will mean nothing if we do not analyze them further. Logically, such ranking does not reflect the quality of school concerned.

As explained before that it is not fair to asses the school quality from the NEM obtained. One of the objective ways to asses it is by calculating Partial Productivity Index of each SMA. This index reflects the instructional work which is carried out for three years from the new student acceptance recieving programme until graduation day.

One thing that must be available before we calculate IPP is the students input NEM recieved by the school three years before. We can analyze the data one by one but in order to be simpler, we can use the average of NEM input recieved by the school.

The next step is calculating all NEM output recieved by the school in next three years. We can calculate them according to the programs; Exact Science, Social Science, and Language program. However, since the unit of analysis is agregat, all NEM of three programs above are added and then divided so that we can get output NEM.

As defined before, IPP is the comparison between Output NEM Coefficient Index and Input NEM Coefficient Index. Ideally, the result of IPP can be more that 1 (one). However, in fact there is no school which get more than 1(one) IPP. As a normative standard, IPP can be used in order to find out instructional work of the school by means of multiplying it with 100 percent. The precentage of calculation result shows real work of SMA and it becomes indicator whether the school is qualified or not.

Based on comparison shown in Table 2, 3, and 4, we can get simple understanding of the real quality of education institution. It is not weird thing that SMA which recieves first ranking input will produce first ranking output since teaching clever student is easier than teaching unclever student. From this fact we can infer that the school facilities and teacher quality do not contribute much on graduated students' ability. Except, the optimum learning process and personal counseling occur.

That means that educator consumer especially parents can be mislead if they view the SMA quality from the its output without considering its input and process. Based on individual output result stated in Table 3,4,5,, and 6, it is obvious that SMAs which are in big ten position from the beginning will tend to remain in those positions until the end. The intersting thing that surprises us is that SMA

Muhammadiyah III is in big ten position list in every calculation. This is surprising since SMA Muhammadiyah do not get good input from beginning. From this fact, we can draw a conclusion that SMA Muhammadiyah III has productive and good instructional work. It is proven when that school can produce good output so that they can place big ten position. Even after IPP has been calculated, this fact remains unarguable. Even state SMAs (in Indonesia called SMA Negeri or SMA N) which was ranked based on individual indicator listed in the best three ranking shifts their position. In fact, the best three are viewed from their instructional work. Sequently ranked, they are SMA Katolik Santo Paulus, SMA Muhammadiyah III and SMA Katolik Satya Cendekia. Thus, we can say that those three SMAs were the best SMA in Jember. Surely, besides the three SMA stated before, we find out SMA Negeri 2 and SMA Negeri 1 get fourth and fifth ranking respectively. Those five SMAs has productivity level above 80 %, it is considered very high.

Meanwhile SMAs which have productivity level more than 70 % but below 80 percent are SMA Negeri 4, SMA Negeri 5, and SMA Kristen Adi Wiyata. Their productivity and instructional work were considered good. This productivity did not mean a lot since they recieved high input. It means that instructional work carried by education practicioners of those three SMAs has not been optimum yet.

Except for SMA Kartika which recieved not very good input, a serious question need to be addressed to SMA Negeri 3 cncerning why their productivity did not differ much from SMA Kartika considering they recieved good input from the beginning. Even so, These two SMAs are productive enough compared to other five SMAs outside the best ten ranking.

CONCLUSIONS

From the result of data analysis we can draw some conclusions. There are as follows. Fistly, based on their Partial Productivity Index in academic year of 1999/2000, we can find out that ten SMAs which get ten big ranking (ordered sequently) are: SMA Katolik Santo Paulus; SMA Muhammadiyah III; SMA Katolik Satya Cendika; SMA Negeri 2; SMA Negeri 1; SMA Negeri 4; SMA Negeri 5; SMA Kristen Adi Wiyata; SMA Negeri 3 and SMA Kartika . Secondly, the rankings based on the NEM input recieved in academic year of 1997/1998 are SMA Negeri 1; SMA Negeri 2; SMA Katolik Santo Paulus; SMA Negeri 3; SMA Negeri 5; SMA Negeri 4; SMA Islam Jember; SMA Katolik Satya Cendika; SMA Kartika dan SMA Kristen Adi Wiyata. Thirdly, based on the NEM output produced in academic year of 1999/2000, the ranking are : SMA Negeri 1; SMA Katolik Santo Paulus; SMA Negeri 2; SMA Muhammadiyah III; SMA Negeri 4; SMA Negeri 5; SMA Katolik Satya Cendika; SMA Negeri 3; SMA Kristen Adi Wiyata; and SMA Kartika.

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