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## Academic Quality Management as a Means for Improving Institutional Productivity: Strategic Factors in Teacher Training in Lampung, Indonesia

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## Academic Quality Management as a Means for Improving Institutional Productivity: Strategic Factors in Teacher Training in Lampung, Indonesia\*

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### Abstract

A number of strategic factors, including facilities management, administrative management, leadership behavior, and participation of lecturers in scholarly activities, may contribute to institutional productivity. In the context of teacher training, productivity issues relate directly to the capabilities as well as number of graduates and their ability to integrate rapidly into the workforce. This study carried out at five teacher training institutions in the Indonesian province of Lampung makes use of path analysis to determine how selected strategic factors influence institutional productivity as measured by student outcomes. Its findings suggest that the interaction of the strategic factors of interest has the potential to increase satisfaction with management as a component of institutional productivity and might lead to policy developments that enhance student experience and outcomes.

\* The data presented in this paper were collected as part of the first author's doctoral research.

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## Introduction

Teacher quality is a vital issue for teacher training institutions in Indonesia. The provision of quality teachers has historically been a central concern in the context of national education and has taken on increased significance since 2001 when a system of regional autonomy was implemented. At the present time, education at the school level is the responsibility of regional governments (defined as districts and municipalities), while the tertiary institutions that train teachers for schools are overseen at the national level, by either the Ministry of National Education (public and private institutions of a secular nature) or the Ministry of Religious Affairs (public or private institutions with a religious affiliation). The change under regional autonomy from a highly centralized educational system to a decentralized system at the school level has made for a disconnect in policy that has brought teacher training to the forefront as an aspect of productivity at the institutions where this training takes place. At the same time, teacher training has become a more attractive option for high school graduates, leading to increased demand for the programs that offer this type of qualification.

The basic teaching qualification in Indonesia can be earned through four years of undergraduate study. In the past, to address shortages of teachers especially in remote areas, shorter diploma level courses were accepted as a means to make more teachers available more quickly. At the present time, however, there is a major national program underway to upgrade the standard of teachers and ensure that all teachers at all levels have appropriate qualifications (Kementarian Pendidikan dan Kebudayaan, 2012). Advanced qualifications in teaching are also offered by many universities and teacher training institutes at the masters and doctoral levels. Masters level credentials are often sought by individuals interested in school management or specialist teaching. Doctoral qualifications are generally intended for people who will teach in colleges of education at the tertiary level. This need for teachers has led to the establishment of a large number of teacher training institutions, either within universities or as self-contained colleges. In the Indonesian province of Lampung, where this study took place, for example, there are five teacher training institutions.

These five teacher training institutions that operate in Lampung differ in status (public vs private, secular vs religious) as well as in location and make up of their student body. They

are Universitas Lampung, a public university that provides teacher training through its Faculty of Education and Teacher Training; Universitas Muhammadiyah Metro, a private Islamic university with a Faculty of Education and Teacher Training; STKIP Muhammadiyah Pringsela, a private Islamic college offering teacher training courses; STKIP PGRI Bandar Lampung a private teacher's college; and STKIP Muhammadiyah Kotabumi, a private Islamic college offering teacher training courses. While accredited and graduating certified teachers, these institutions differ significantly in student outcomes with some graduating individuals with high levels of academic achievement but long completion times, for example, while others graduate students more quickly but with lower GPAs. This phenomenon has been viewed as an aspect of productivity relating to management issues at the level of the institution.

### Productivity and Quality

Productivity in the context of tertiary education has to do with the ability to produce graduates who are capable of entering the workforce. While productivity can be viewed in terms of outcomes, which in the university context would relate to student mastery, acquisition of skills, and timely graduation with an appropriate qualification, the quality of such outcomes is also significant. For this reason, quality assurance has long been a concern for colleges and universities (Biggs and Tang, 2011). In fact, quality assurance has often focused on the ability of an institution to produce high achieving graduates in a timely manner.

Quality in the tertiary context, then, may be reduced to two dimensions, efficiency and effectiveness (Poole, 2005). Efficiency involves high quality service achieved with minimal input of resources. Effectiveness relates to the extent to which an institution can meet the needs of its users (in this case, students). In other words, the business of tertiary institutions is fostering learning and providing training to students. This business can be said to be efficient if these results are achieved on time and within the means of the organization, including its financial, human resources, spatial, temporal, and other capacities. It is effective if students master the content of offered courses (perhaps measured by performance on



external or professional examinations), are capable of obtaining relevant employment, and are viewed as competent employees by the larger community and employers.

The identification of strategic factors that will allow for the achievement of organizational goals and institutional effectiveness is an essential part of quality assurance (Tseng and Mclean, 2008). Strategic factors are generally broad in nature and relate to the long-term effectiveness of the organization (Davis et al, 2003) and also allow for benchmarking in the context of overall performance and customer satisfaction (Talib et al, 2011). There are a number of quality assurance principles that relate to the selection of strategic factors that have been identified in the literature. They include: management commitment which serves to identify and communicate objectives and goals and also to motivate staff (Schmitz and Platts, 2004); a quality culture which translates into practices that are visible to customers and empowers staff to improve their own performance (Bitner, 1992; Curry and Kadasah, 2002); and continuous improvement which reduces variability in outcomes and allows for current experience to serve as a model for future improvement (Hyland et al, 2000). The choice of strategic factors for any given organization will depend upon its specific operating context, its business or service objectives, and the objectives of its leaderships and clientele.

There are a number of strategic factors that contribute to the productivity of an educational institution that will be considered here. These strategic factors were chosen based on the current operational context of teacher training institutions in Lampung, Indonesia, as well as on those reported in the literature. The first of these is facilities management. Facilities management includes primary structure, secondary structure, service systems, user-related factors, site factors, library services, and laboratory facilities and equipment available (Miller, 1980). Of these, facilities have been suggested to play a significant role in the academic process and may be closely related to academic outcomes (Henard, 2010). Administrative management is also an important strategic factor because it relates directly to user satisfaction. User satisfaction has been recognized as an element of productivity, with students as the primary measure (Sallis, 2007). Leadership behavior is a third factor that has been shown to contribute to productivity (Stewart, 2006). The quality of leadership is important to staff as well as to students in the context of higher education and, as such, has the potential to impact on quality through a number of pathways. The performance of

teaching staff is central to the operation of a college or university and tends to be the aspect of the institution's activities that is most visible to students. This usually focuses on classroom practices (Miller, 1980) but may also include behaviors related more to the individual lecturer's professional development, such as reflective self-evaluation and scholarship (Ramsden, 2006). Finally, satisfaction with the quality of management may be significant in the productivity of an education institution (Buttle, 2004). The dimensions of this factor may include reliability, assurance, tangibles, empathy, and responsiveness and have been shown to be appropriate measures for use in developing countries (Olievera and Ferreira, 2009).

The strategic objectives of teacher education in Indonesia include the provision of trained teachers to meet regional and national demand. However, it has been noted that, in Lampung where this study took place, differential outcomes are achieved by the teacher training institutions in operation. Because this remains an issue of importance in Indonesia in general as well as locally, the impact of selected strategic factors on institutional productivity is an issue of concern that is worthy of more detailed study. In addition, the issue of quality in Indonesian higher education institutions has not been thoroughly studied. Ardi et al (2012), for example, considered several quality dimensions and their impact on student satisfaction in one college of engineering at a single Indonesian university. Similarly, Sukmaedi et al (2012) addressed student perceptions of service quality at two universities located in the same city. The present study will contribute to an understanding of quality issues in Indonesian higher education by expanding on previous work to include a range of strategic factors and their impact on multiple dimensions of quality and productivity.

### Path Analysis of Strategic Factors

Path analysis allows for hypothesized connections between sets of variables to be tested and can evaluate causal hypotheses in which all relationships are testable by multiple regression analysis. The hypotheses for this study were:

- 1) Facilities management, administrative practices, leadership behaviors, and the performance of lecturers significantly affect satisfaction with management quality.



- 2) Facilities management, administrative practices, leadership behaviors, the performance of lecturers, and lecturer satisfaction with management quality significantly affect institutional productivity.

The variables for this study were chosen based on their discussion in the literature as contributing to productivity in the higher education context and because they relate to the strategic objectives of teacher training institutions in Indonesia. The variables of interest in this study are:

Z1=Facilities management

Z2=Administrative management

Z3=Leadership behaviors

Z4=Lecturers' academic performance

Z5=Satisfaction with management quality

Z6=Institutional productivity represented by graduation rate

This study was conducted in the five teacher training institutions in Lampung described above. Respondents included administrative staff, teaching staff, and final year students. A closed questionnaire was used to elicit information on the factors of interest and to obtain respondents' evaluation of the chosen dimensions assumed to contribute to productivity. The questionnaire was tested for reliability and validity before data collection began.

It was hypothesized that facilities management, administrative practices, leadership behaviors, and the performance of lecturers significantly affect satisfaction with management quality

Considered individually, however, each of the four variables makes a different contribution. Partial contributions of the four variables are shown by beta coefficients ( $\beta$ ). Of the four variables, lecturers' academic performance proved the greatest direct influence on satisfaction with management quality ( $\beta = 0.403$ ), followed by administrative management ( $\beta = 0.263$ ) and facilities management ( $\beta = 0.237$ ), even though the effect of these last two variables was not significant. Leadership behaviors had the smallest direct influence on

satisfaction with management quality ( $\beta = 0.152$ ). This is perhaps to be expected as leadership behaviors would likely be more significant in their effect on staff and only indirectly impact on institutional performance as measured by student outcomes.

There were indirect effects of facilities management, administrative management, and leadership behaviors on satisfaction with management quality as visible in lecturers' academic performance. The existence of indirect effects show that facilities management, administrative management, and leadership behaviors do, in fact, affect satisfaction with management quality, albeit indirectly. This was shown by the finding that only lecturers' academic performance significantly influenced satisfaction with management quality, while facilities management, administrative management and leadership behaviors were not significant. Again, as lecturers represent the face of the institution most familiar to students, this is perhaps not unexpected, even though it is also the case that lecturers' performance is affected by management issues which might indirectly exert an effect on student outcomes by that route.

The variable that had the largest influence on lecturers' academic performance was facilities management ( $\beta = 0.470$ ), followed by administrative management ( $\beta = 0.360$ ), while leadership behaviors had the smallest influence on lecturers' academic performance ( $\beta = 0.087$ ). The contribution of facilities management and administrative management to lecturers' academic performance on satisfaction with management quality were very large. These contributions can be seen from the total influence of facilities management on satisfaction with the quality of management through lecturers' academic performance ( $\beta = 0.873$ ) and the total effect of facilities management on satisfaction with management quality through lecturers' academic performance ( $\beta = 0.771$ ). Thus, it can be concluded that facilities management, administrative management and leadership behaviors affect satisfaction with management quality when they contribute to lecturers' academic performance.

In short, of the variables studied, the greatest influence on satisfaction with management quality was lecturers' academic performance. Facilities management and administrative management strongly influenced lecturers' academic performance. This suggests that students may be more satisfied with management quality if facilities are improved and administrative

practices implemented that will support lecturers' academic performance. In any case, the findings support the hypothesis that facilities management, administrative management, leadership behaviors, and lecturers' academic performance jointly have a significant influence on satisfaction with management quality.

It was also hypothesized that facilities management, administrative practices, leadership behaviors, the performance of lecturers, and lecturer satisfaction with management significantly affect institutional productivity. The magnitude of this effect was 0.809, while the magnitude of influence from other variables outside the model was 0.191. The results suggest that the five variables of interest contribute significantly to student satisfaction with management quality.

The partial contribution of each of the five variables varied as indicated by the beta coefficient ( $\beta$ ) of each variable. Of the five variables, satisfaction with management quality had a significant influence and the greatest direct influence on institutional productivity ( $\beta = 0.487$ ). The other four variables did not significantly influence institutional productivity. Of the five variables, lecturers' academic performance made a quite large contribution ( $\beta = 0.224$ ) despite being insignificant, while leadership behaviors proved the smallest direct influence ( $\beta = 0.002$ ).

A significant and indirect effect of facilities management, administrative management, and lecturers' academic performance was found to occur on institutional productivity through satisfaction with management quality. Facilities management, administrative management, and leadership behaviors had a greater effect on institutional productivity through satisfaction with management quality than through lecturers' academic performance. However, the indirect effect of facilities management and administrative management on satisfaction with the quality of management was quite large. This suggests that facilities management and administrative management contribute to institutional productivity, not just in relation to the interests of lecturers in the teaching and learning process, but also in the context of student needs. In other words, facilities and services provided by administrative staff to lecturers as part of the academic process may affect student experience and should be sensitive to their



needs as consumers of education.

The magnitude of the indirect effect can also be seen from the results of calculation of total effect. The greatest total influence on institutional productivity was lecturers' academic performance through satisfaction with management quality ( $\beta = 0.599$ ), then through lecturers' academic performance and satisfaction with management quality. The total influence of facilities management was strongest ( $\beta = 0.404$ ), followed by administrative management ( $\beta = 0.363$ ), with leadership behaviors having the smallest influence ( $\beta = 0.222$ ).

In order to improve institutional productivity of teacher training institutions then, there is a need to improve facilities and the performance of administrative staff in ways that will support lecturers' academic performance. This, in turn, must be tailored to the needs of students in order to increase activity and autonomous learning among them. This confirms the hypothesis that the joint variables of facilities management, administrative management, leadership behaviors, lecturers' academic performance and satisfaction with quality management significantly influence institutional productivity as measured by student completions.

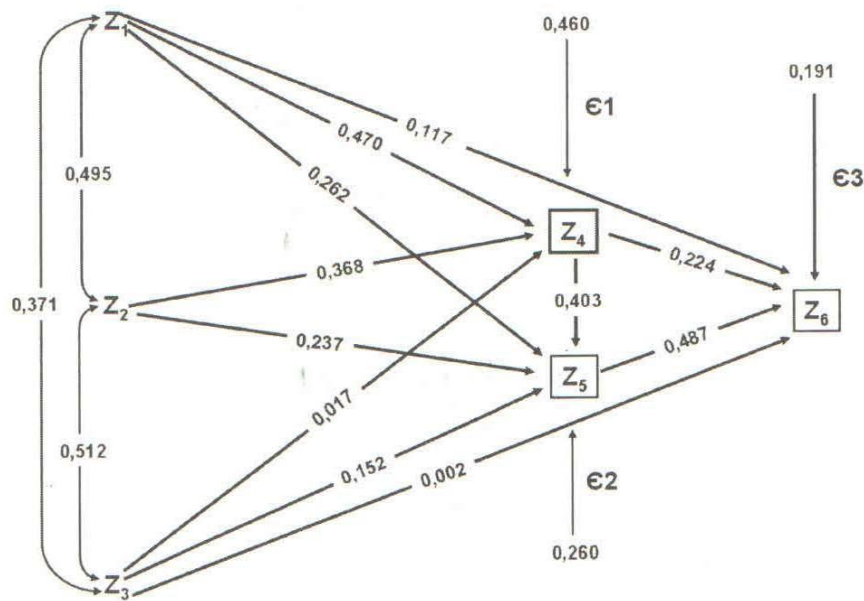
The direct, indirect and total effects described above are contained in Table 1.

<Table 1> Effect Size Calculations

Influence of variables	Causal Effect				Total
	Directly	Through $Z_4$	Through $Z_5$	Through $Z_4$ and $Z_5$	
$Z_1 \rightarrow Z_4$	0,470	—	—	—	0,470
$Z_2 \rightarrow Z_4$	0,368	—	—	—	0,368
$Z_3 \rightarrow Z_4$	0,017	—	—	—	0,017
$Z_1 \rightarrow Z_5$	0,262	—	—	—	0,262
$Z_2 \rightarrow Z_5$	0,237	—	—	—	0,237
$Z_3 \rightarrow Z_5$	0,152	—	—	—	0,152
$Z_1 \rightarrow Z_6$	0,117	—	—	—	0,117
$Z_2 \rightarrow Z_6$	0,180	—	—	—	0,180
$Z_3 \rightarrow Z_6$	0,002	—	—	—	0,002

$Z_1 \rightarrow Z_5$	0,470	0,189	—	—	0,659
$Z_4 \rightarrow Z_6$	0,403	—	0,196	—	0,599
$Z_1 \rightarrow Z_6$	—	0,105	0,128	0,092	0,325
$Z_2 \rightarrow Z_6$	—	0,082	0,115	0,072	0,269
$Z_3 \rightarrow Z_6$	—	0,003	0,073	0,003	0,079

These results can be visualized in terms of their pathways as shown in Figure 1 below.



[Figure 1] Pathway Model Showing the Relationships of Variables

Based on the above model and calculations, the structural equation model describing the influence on lecturers' academic performance ( $Z_4$ ), satisfaction with management quality ( $Z_5$ ) and institutional productivity ( $Z_6$ ) is as follows:

Structure I: Effects on lecturers' academic performance

$$Z_4 = \hat{\rho} Z_4 Z_1 + Z_4 Z_2 + Z_4 Z_3 + \epsilon_1$$

$$Z_4 = 0,470 + 0,368 + 0,017 + \epsilon_1$$

Structure II: Effects on satisfaction with management quality

$$Z_2 = \hat{\rho} Z_5 Z_1 + Z_5 Z_2 + Z_5 Z_3 + Z_5 Z_4 + \epsilon_2$$

$$Z_2 = 0,262 + 0,237 + 0,152 + 0,403 + \epsilon_2$$

Structure III: Effects on institutional productivity

$$Z_3 = \hat{\rho} Z_6 Z_1 + Z_6 Z_2 + Z_6 Z_3 + Z_6 Z_4 + Z_6 Z_5 + \epsilon_3$$

$$Z_3 = 0,117 + 0,180 + 0,002 + 0,224 + 0,487 + \epsilon_3$$

## Discussion

The five independent variables (facilities management, administrative management, leadership behaviors, lecturers' academic performance, and satisfaction with management quality) were found to contribute to institutional productivity of teacher training institutions in Lampung. However, the contribution of each variable varied.

Facilities management and administrative management significantly influenced lecturers' academic performance. These findings indicate that lecturers' academic performance is not an independent factor that stands alone in meeting the needs of students. Instead, it is related to facilities management and administrative management, aspects of the inside workings of an institution that may not always be seen as affecting productivity as measured by student outcomes. Similar findings were reported by Buckley et al (2005) and Schneider (2002) among others, who noted the dominant influence that facilities may have on the learning process. Similarly, Graham (2009) discussed the contribution of general administrative services to student outcomes, also through an indirect route via lecturers' academic performance.

The findings of this study are significant for teacher training institutions in Indonesia which are generally funded at the department level while students' programs are implemented by groups of lecturers without any direct access to resources, except through their department. Because programs do not have their own resources and the implementing



staff do not have administrative or financial authority there are often mismatches between program needs and availability of resources. Based on the considerable influence such gaps may have on student outcomes through the pathways outlined above, future policy that strengthens the programs that represent the face of the institution to their primary users, the students, might go a long way toward remedying some of the well-known weaknesses in Indonesian teacher training institutions.

In the case of leadership behaviors, the findings of this study do not indicate a direct effect on either institutional productivity or satisfaction with management quality. The influence of leadership behaviors on lecturers' academic performance is not large compared to the effects of facilities management and administrative management. This suggests that academic programs are somewhat removed from the activities of the administrative leadership and are more strongly affected by the activities of lecturers and administrative staff and the nature of available facilities. In other words, while leadership behaviors no doubt significantly affect the experience of academic and administrative staff, they are likely more strongly associated with functions that do not directly affect the aspects of the teaching and learning process that are visible to students and relate directly to student outcomes.

The strategic factor that had the largest effect on satisfaction with management quality was lecturers' academic performance. This finding is consistent with results of previous studies (see, for example, John, 2002). The implications of this finding are significant in that it suggests that the activities of lecturers are the main form of service experienced by students and the main contributor to their satisfaction with their learning experience. For many students, lecturers are, in fact, their only point of regular contact with the institution and "are", in this sense, the institution in their mind. For this reason, a quality assurance process for academic activities would be an important addition to the procedures of teacher training institutions in Lampung that would allow the teaching and learning process to be monitored and improved. It is also important for lecturers to have the academic freedom to innovate continuously and adjust their teaching strategies based on student need. A strong commitment from teacher training institutions would be needed to implement such policy but would likely contribute to enhanced outcomes.

Satisfaction with management quality was found to have the greatest effect on institutional productivity. Included in this are all the services in all domains provided by teacher training institutions in carrying out their role in training teachers for the Indonesian community. This finding is similar to that reported by Buttle (2004) who noted the strong relationship between satisfaction and institutional loyalty. From a policy perspective, this might suggest that teacher training institutions in Lampung require a stronger administrative focus on creating an appropriate environment for teaching and learning with a focus on reliable service, assurance, reality, empathy and responsiveness (Oliviera and Ferreira, 2009).

## Conclusion

The results of this study indicate that there are concrete measures that can be taken by teacher training institutions in Lampung, Indonesia, to improve productivity by addressing some of the factors that have been shown to interrelate to produce a significant impact on student experience and, by extension, student outcomes. These efforts should focus on an approach that places students in the position of consumers of education services provided by college and university teacher training programs to meet their specific needs in the context of market demands. The following recommendations for policy initiatives are intended to address the current situation: processes for recruiting new students who have the potential and desire to succeed as trained teachers must be established and implemented; academic quality must be improved through measures aimed to enhance human resources, especially of lecturers and administrators; and the quality of learning must be made a focus to encourage students to develop the characteristics they will need in the professional context in which they will work as teachers. Additionally, in light of the importance of the student-lecturer relationship, attention must be paid to properly resourcing the programs within which teaching and learning takes place to ensure that every student has a satisfactory learning experience and is able to complete his or her course of study in a timely and successful manner. This will have the dual effect of improving student satisfaction with the teacher training institutions by fulfilling their individual needs in teaching and learning and also of providing well-trained graduate teachers who are ready and capable of meeting the needs of schools around Lampung and across Indonesia.

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