

**Student's Engagement and Student Retention in Moi University,  
Kenya\***

**A Paper presented at the Business and Economics Society International conference at  
Athens Greece July 15-19, 2010**

Tom Mongare Ndege\*

Department of Educational Management,

Moi University,

P.O Box 3900,

Eldoret-Kenya

Tel: 0208020850

Email: [tomndege@yahoo.com](mailto:tomndege@yahoo.com)

Isaac Njuguna Kimengi,

Department of Educational Foundations,

Moi University,

P.O. Box 3900,

Eldoret

Email: [deaneducation@mu.ac.ke](mailto:deaneducation@mu.ac.ke)

\*The authors owe a great debt to Moi University for providing the funds that facilitated this study

## **Abstract**

This paper is concerned with how student's engagement influences retention of students in Moi University programs. This is critical because retention as a measure of internal efficiency has important impacts on costs and concomitant financing and access to education. Following Hanushek (2009) the paper uses a qualitative factor (students' engagement) to explain variations in school retention among academic schools in Moi University. Drawing data from 765 students randomly selected from six academic schools of Moi University, the paper estimates the role of five components of students' engagement. Questionnaires and document analysis are used as instruments for data collection. Ordinary Least Regression and Principal factor analysis are employed to estimate parameters and reduce instrumentation errors, respectively. The results show that active collaborative learning, student-faculty interaction and a supportive campus environment have significant impacts on student retention.

### **I. Introduction**

Several studies have focused on student engagement in recent years (Bridges et al, 2005; Larimore and McClellan, 2005; Pontius and Harper, 2006; McClenney, 2007; Kinzie et al, 2008; Chen et al, 2009; Kuh, 2009; Bradbury, 2010). These studies contend that engaging students effectively enhances their learning outcomes. Pontius and Harper (2006), for example, note that "student engagement data have been used to rethink institutional practices and priorities, benchmark educational effectiveness among peer institutions, broaden public perception of collegiate quality, and ultimately improve undergraduate education and learning" (P. 47). The over-arching argument in these studies is the need to enhance students' experiences in colleges and universities so as to promote learning, persistence and good practice. Chen et al (2009), for example, state that "The primary objective of collecting student engagement data is to discover areas where colleges and universities can improve the quality of the student experience" (P.36). The benefits of student engagement to the learning process cannot be overemphasized. Kuh (2009) declares that "The engagement premise is straightforward: the more students study a subject, the more they know about it, and the more students practice and get feedback from faculty and staff members on their writing and collaborative problem solving, the deeper they come to understand what they are learning and the more adept they become at managing complexity, tolerating ambiguity and working with people from different backgrounds or with different views" (P.5). The import is that student engagement is desirable for positive learning outcomes expected to have tremendous human capital benefits. Implied in this expectation is that society should invest resources in promoting student engagement as a critical instrument for enhancing economic growth especially in poor societies. Interestingly few economists have shown more than a casual interest in student engagement.

Another strand of literature has emphasized the need for students to remain enrolled in programs to completion (Larimore and McClellan, 2005; Patton et al, 2006; Jimerson et al, 2006; Davis and Fenelli, 2007; Reynolds, 2007; Baxton, 2008; Perrakis, 2008; Kinzie et al, 2008). The focal point of these studies is fairly similar to that consumes the efforts of students' engagement scholars. Their running thread is persistence among students to realize completion. Baxton (2008) for example attributed improvement in student's retention in universities to administrative and scholarship practices that centre on "actions to increase institutional rate of

students' persistence" (P. 101). Clearly such practices must endeavour to enhance students' experiences. There is, however, little research that attempts to link student's experiences with retention in universities. This is surprising given that student engagement has increasingly grown to become a major means of measuring program quality in many universities (Pontius and Herper, 2008). The role of quality on student retention at lower levels of learning is greatly elaborated in several recent studies (Hanushek and Rivkin, 2009; Hanushek et al, 2009; Hanushek, 2009). The transfer benefits of these studies to developing countries are extensively discussed in a recent essay (Hanushek, 2009). There is a far less assessment of qualitative determinants of retention at higher education. This paper focuses on the role of students' engagement on student retention on a university in Kenya.

The paper contributes to the study of retention in higher education in three ways: (1) Earlier studies on retention on higher education have dealt with administrative factors that account for retention (Reynolds, 2007; Perrakis, 2008). There is a far less assessment of learning processes that occur within higher education institutions. That learning is the most critical aspect of higher education is no dispute (Larimore and McClellan, 2005; Jimerson et al, 2006; Davis and Fenelli, 2007; Braxton, 2008). The low learning level at higher education is worrisome especially in an era of scarce economic resources (Reynold, 2007). The case is more critical in poor societies where higher education is seen as the cathedral of economic development, the primary means by which vital human resources for development may be generated (Ndege and Mabururu, 2008). In Kenya, higher education has realized tremendous growth in recent years. Admittedly this quality has made higher education available to a wider cross-section of the population. Efficiency and qualitative implications of this change, however, remain unexplored. This paper focuses on students' engagement as it influences student retention rates in universities in Kenya. (2) A number of previous studies indicate that policy choices on how to deal with students' retention are largely ineffectual in enhancing retention in higher education (Patton, 2006; Mclaughlin, 2008). This set of studies emphasizes psychological factors such as personality and self-efficacy as the primary determinants of student retention. Mclaughlin et al (2008) were concern with improving retention among nursing students concluded that "psychological profiling may have an important role' (P.219) in the development of more effective intervention policies. Another set of studies provide findings that are in direct contradiction of these (Fike and Fike, 2008; Perrakis, 2008). These contend that institutional policies rather than psychological factors account for variations in students' persistence in higher education. Fike and Fike (2008), for instance, linked students' persistence in Community Colleges in the United States to "passing development courses, taking Internet courses, participating in Student Support Service Program, receiving financial aid, parental education, the number of hours for which student enrol in the first fall semester and the number of hours dropped in the first fall semester"(P.86). Thus, the matter of whether personal or institutional factors determine student retention remains unresolved. The present paper seeks to contribute to this debate using data from a developing country with enormous dynamics in students' enrolment in higher education in recent years. Moi University is an ideal setting for this purpose because nurturing talent in knowledge and research is the centrepiece of her development. It is interesting to consider whether this goal can be sustained amidst rising student numbers. This paper focuses on students' retention as influenced by student engagement in various schools of Moi University. (3) Student Engagement studies and retention studies have hitherto remained

distinct. Few studies have examined the two areas concurrently. The increasing application of students' engagement indicators as markers of institutional quality brings the assessment of the impact of students' engagement on learning outcome into sharp focus (Gordon et al, 2008). Research that covered that has this critical concern has largely concentrated on the higher education systems of developed countries. There is a far less assessment of student engagement as a predictor of learning outcomes in poor countries. The urgency of studying this linkage is heightened by the resource limitations in these countries that make efficient allocation a significant imperative. This paper focuses on university education in Kenya to assess the impact of students' engagement on student retention.

The rest of the paper is organized into five sections. Section II is on the theory and literature that anchors the paper. Section III focuses on the study setting. Section IV provides the methods. Section V reports and discusses the findings. A final section concludes the paper by summarizing its key arguments and suggesting the way forward.

## **II. The Theory and Literature**

A number of recent studies have assessed the impact of student engagement on a variety of learning outcomes (Bridge et al, 2005; Pontius and Harper, 2006; McClenney, 2007; Fike and Fike, 2008). These studies have provided sound philosophical underpinnings for using student engagement as a proxy to quality of education provided at higher education institutions. Commenting on the role of student engagement in Community colleges in the United States, McClenney (2007) for example, contended that "The conviction underlying and prompting this work is that quality judgements should be based not on reputation and resources but on systematically collected data about the educational experiences that students encountered at their colleges"(P. 138). Other studies have suggested that student engagement is critical for promotion of measures of learning outcomes and enhancing participation of minorities (Larimore and McClellan, 2005; Kinzie et al, 2008). Thus, empirical works establish the qualitative value of student engagement that have the potential of profound impacts on the understanding of how higher education institutions create wealth in developing countries. There is also a corpus of literature that indicate student engagement benchmarks that can be used to measure student engagement levels in poor societies (Glanville and Wildhagen, 2007; Kinzie et al, 2008). Kinzie et al (2008), for example, argues that "student engagement represents two critical features: the extent to which students take part in educationally effective practices and the degree to which an institution organizes productive activities for student learning" (P. 23). Student engagement is thus, concern with good practices that promote learning. The need for effective learning is emphasized in developed countries (Bridge et al, 2005). The matter is more urgent in poor countries where resource scarcity is more significant. Several studies in the United States show that clusters of effective educational practices including academic challenge, active and collaborative learning, student faculty interaction, enriching educational experiences and supportive campus environment promote positive learning outcomes including higher levels of student retention (Bridge et al, 2005; Pontius and Harper, 2006; Kinzie et al , 2008). Studies in developing countries indicate that quality is critical in achieving high educational attainment (Hanushek, 2009; Hanushek and Rivkin, 2009). Hanushek (2009) for example, argues that "The complementarity of school quality and attainment means that actions that actually improve quality of schools will yield a bonus in meeting goals of attainment."(p. 294). Higher education in

developing countries is perhaps more in need of quality improvement than basic education. Higher education is expected to perform several functions including creating new knowledge, nurturing talent and enhancing adoption to global practices. Besides, dysfunctional higher education is bound to have far reaching consequences on the education system. Both basic and secondary school education directly and indirectly depend on higher education to produce human resources and content critical for their development. In Kenya, higher education is the cathedral for development (Ndege et al, forthcoming).

In this study, student engagement factors are incorporated into education production functions of schools in Moi University. Following Hanushek and Rivkin (2009) the study assumes equal returns to scale production functions permitting the use of Cobb-Douglas estimation of retention functions for first and third year students registered at Moi University. The structural functions for these relationships are thus, stated in following manner:

$$A_{iGsy} = \beta X_{iGsy} + \delta E_{iGsy} + \lambda P_{iGsy} + e_{iGsy} \text{-----} (1)$$

Model (1) permits estimation of student retention A of student i in year G, academic school s and in year y. P is a vector of school resources available to a specific student i in year G, academic school s and in a given year y. E is a vector of school engagement factors and X is a vector of the student characteristics including entry grades and school gender composition. The parameter  $\beta$ ,  $\delta$  and  $\lambda$  are regression coefficients that are assumed to have a normal distribution and are uncorrelated to e which is a disturbance index.

Several studies have investigated student retention in higher education in recent years (Larimore and McClellan, 2005; Shane et al, 2006; Braxton, 2008). Larimore and McClellan (2005) considered Native American student's retention in postsecondary education. In their review of literature on retention of Native American, Larimore and McClellan (2005) concluded that "Student's decisions concerning college persistence represents an outcome of a complex longitudinal process of interaction between an array of individual and institutional factors" (P. 22). Clearly while students come to school with a variety of pre-entry experiences, the extent to which they are engaged in academic and non-academic activities is central to their persistence and completion. The application of sensitive and reinforcing engagement practices to a variety of students is an important educational objective especially in poor countries where cost-effective educational provision is most critical. Changing demographics coupled with intensifying globalization enhance rather than undermine this need. This paper focuses on Kenya, a country that has achieved immense higher education expansion in recent years. Concomitant completion is crucial if this expansion has to yield benefits.

Education at all levels and particularly at the university level should provide critical skills, attitudes and behaviours that enhance human capital development. There is a variety of extant literature that underscores the role that policy may play in achieving this objective. These question the wisdom of policies that gloss over the need for quality education. Shane et al (2006), for example, argue against both social promotion and grade repetition as effective policies in the development of human capital. In their assessment of a variety of policy interventions in students' persistence, Shane et al (2006) conclude that "when students' needs are addressed, school success will increase" (P. 91). Understanding what students need is thus of

primary importance is designing appropriate students' development and educational programs. Such needs need to be informed by empiricism which is the most effective way of knowledge creation. In many developing countries reliable information about these needs is scanty. This paper is a humble effort to generate and analysis data on student engagement needs of university students in Moi University Kenya.

Braxton (2008) examines a strand of literature that point to the need for scholarship centred on student retention education. The pivot of this education according to Braxton (2008) is the application of replicative and applicatory knowledge to inform institutional action in the promotion students' retention. Braxton (2008) sees four aspects as core to this approach: (1) the choice of who teaches gate keeper courses. These being the courses that a great number of students take, constitute an important aspect in the student's decision to persist or leave courses. Braxton (2008) notes that the teaching of these courses by adjuncts or post-doctoral faculties severely undermines student retention. In Kenya, a variety of courses are listed as core while others are elective. It is expected that core courses are the target of Braxton's admonition. This paper investigates how the teaching of core courses may have enhanced or undermined students' persistence in Moi University. (2) Promotion of multiple forms of success in classroom. Braxton enumerates eight domains of success that higher learning institutions should promote (a) academic attainment (b) acquisition of general education (c) development of academic competency (d) development of cognitive skills and intellectual disposition (e) occupational attainment (f) Preparation for adulthood and citizenship (g) Personal accomplishment and (h) Personal development. These domains constitute a substantive rather than an instrumental goal of education (P. 103). Braxton (2006) contends that academicians have a responsibility to promote these goals as six of them are attainable within the classroom (P. 103). Kenya pursues higher education as a means of enhancing the productivity of human resources (Kenya, Ministry of Education, 2005). Moi University holds as one of her central ideals the need to promote individual talent (Moi University, 2005). Incidentally, there is little empirical evidence that shows that multiple forms of success are promoted in classrooms in Moi University. This paper pursues the goal of determining the extent to which student engagement as a strategy may enhance student persistence and attainment in Moi University. (3) The use of active learning defined as instructional clarity, course assessment that emphasis higher-order thinking skills, encouraging student and faculty contact, communication of higher expectation and recognition of diverse talents. Braxton (2006) argues that there is a consistent indication that these good practices promote greater persistence in undergraduate education. (4) The development of incentives that would promote good practices. Braxton (2006) argues that classroom student retention practices would require some efforts from academics. This effort may be intrinsically motivated if academics' goals coincide with institutional goals. This is coincidence is, however, unlikely given that academics may be faced with contradictory incentive systems that govern promotion and recognition. In Kenya, teaching still takes a back banner in universities where research and publication are seen as *sine quo non* for promotion. The maxim is often "publish or perish", an upshot of Hexter (1969) very clever article that rendered a resounding defeat to the talk and chalk professoriate in universities. The maxim though very useful, however, belies a fundamental zero sum approach to scholarship that is often destructive to genuine desire to improve university quality. In recent years Kenya, has sought to enhance the quality of learning in undergraduate programs. Promotion of student's engagement is a critical aspect of these

efforts. This paper attempts to assess how students' engagement in Moi University impact on students' retention.

### **III. Study Setting**

Kenya long recognized quality higher education as a vehicle for development. According to Kenya, Ministry of Planning (2007) improvement of quality and relevance of higher education is an integral aspect of long-term higher education development in the country. The need for quality higher education is underpinned by a variety of factors including rising student population, changing management regimes, evolving labour market needs, increasing competition among universities, and globalization.

Government is intent on increasing access to higher education from 4.6 per cent of the relevant age group in 2007 to 20 per cent in 2030 (Kenya, Ministry of Planning, 2007). In recent years Kenya's higher education has expanded in leaps and bounds. The number of students has risen from forty thousand in 1999 to over one hundred thousand in 2008. The number of public universities has risen from 1 in 1984 to 7 currently.

Undergraduate education takes a lion's share of the extra places created at Kenya's universities. Increasing students' numbers at this level of education has partly arisen out of increasing privatization of university costs (Court, 1999). The momentum of rising student population in Kenya's universities is clearly gathering storm rather than receding. The earliest indicators of this are large classes, higher teacher student ratios and higher teaching loads. The combined effect of these is alienation of students in the learning process. Arresting this situation is critical if higher education has to continue to play her rightful role in national development. Students' engagement is one strategy by which this may be realized.

The centre piece of Kenya's higher education management is the Commission of Higher Education (CHE). This is an oversight organization established by the CHE Act of 1985. This body is mandated to determine the quality of higher education provided in higher education institutions. Increasing students' enrolment in universities is one aspect that has drawn the concern of CHE. Quality assurance is one strategy by which universities endeavour to implement their strategic plans. This endeavours to promote good practices in the teaching, research and community development processes of universities. Students' engagement is a collection of practices that have the potential for improving learning outcomes.

Universities have a duty to ensure that they produce human resources that fit into the labour market. This is partly because of the need to justify the use of social resources (Psacharopoulos and Woodhall, 1985). Higher education is the pivot for development of human capital. Accumulation of a stream of benefits from resources invested by society is vital to provide higher education a critical edge over other forms of social investment. But higher education is also important for social, cultural and political reasons. Higher education provides legitimacy and substance to the social organization of any society. It ensures the transmission of a variety of values such as cooperation, creativity, honesty, fairness and leadership that are essential for the achievement of social economic development. Technological, economic and political changes impose significant pressures on universities to change their approaches to teaching if they have to remain relevant in a world that is fast changing. Research has shown that effective learning can no longer be guaranteed under traditional chalk and talk technologies that treat students as passive recipient of knowledge (Cook-Sother *et al*, 2007). Incorporating practical aspects to learning is one way by which society may enhance the relevance of knowledge. In Kenya, universities have attempted to make field work a critical component of many undergraduate degree programs. However, this may be inadequate in ensuring that students are engaged in the learning process or realizing appropriate learning outcomes.

Moi University was established as a technology oriented university in 1984. Moi University started with a student population of 83 and one undergraduate degree program. By 2008, Moi University had as student population of 17,086 and over 58 academic programs. Regular and continuous monitoring of quality indicators in Moi University is critical to ensure that quality is maintained. This is particularly important given the changing composition of students admitted into university programs. Application of good practices such as student engagement is expected to cultivate the achievement of high levels of educational outcomes. This is underscored by research that shows that students' engagement has higher benefits for students who are traditionally disadvantaged (Gordon *et al*, 2008).

#### **IV. The Method**

This paper applied a survey design because it enhances rapid data collection from a large heterogeneous population consisting of university students dispersed in over 59 programs of Moi University. To reduce selection error the study employs multi-stage sampling that permits randomization of students' academic schools. Secondary data drawn from the Chief Academic Officers office is used to randomly select six out of seventeen schools of Moi University. This was considered adequate for determination of quantitative parameters as it was more than 30 per cent of the population of schools at Moi University. Seven hundred and forty six third year students randomly drawn from these schools were selected for the study. Third year students were preferred because these had acquired adequate exposure to the school programs and were therefore in a position to evaluate the extent to which the school had engaged them in activities that enhance persistence. Documents on the cohort progression from first year to third year were used to determine school retention rates. Data was analyzed using principal factor analysis with Kaiser Normalization as an exploratory technique to determine the key factors that influence students' persistence. This was followed by ordinary least square regression that permitted assessment of the data with regard to the causative relationships.

#### **V. Results**

Comparative assessment of rates of students' persistence is important as it permits an understanding of the variability student persistence across programs. Other studies have accounted for variability in student persistence to a variety of factors (Reymond, 2007; Perrakis, 2008; Schnurr *et al*, 2009). The choice of six schools of Moi University permitted estimation of students' retention rates for six different data streams. For ethical reasons this study uses pseudo names to represent this schools. Following Hasselback and Reinstain (1995) and Ndege *et al* (Forthcoming), this study used alphabetical letters to identify schools in Moi University. The paper reports on levels of retention over the period 2006/ 2007, 2007/2008 and 2008/2009 academic years. An academic year in Moi University is a period normally from September in a previous year to July of the subsequent year. The analysis in this study dealt with the flow of students of the 2006/2007 first class in six different schools of Moi University. The results are reported in Table 1.



**Table 1: Students Retention Rates in Different Schools of Moi University 2006-2009**

School Of Study	Retention 06/07	Retention 07/08	Retention 08/09	Mean	Standard Deviation
A	0.89	0.93	0.94	0.92	0.08
B	0.73	0.98	0.96	0.89	0.20
C	0.88	0.97	0.84	0.90	0.11
D	0.74	0.93	0.88	0.85	0.14
E	0.97	0.96	0.94	0.96	0.02
F	0.93	0.86	0.91	0.90	0.05

The results in Table 1 show that there is a wide variation in annual retention as well as average retention among students in various schools. These differences in levels of student retention among students have been accounted for by use of a variety of factors in recent literature (Reynold, 2007; Perrakis, 2008; Schurr, et al, 2009). Wide variation in retention and the stability of retention in various academic schools in Moi University underscore the need for investigating the underlying factors. In Table 1, it is clear that there was across school and across academic variations in retentions. Good practices that enhance retention of students may also vary across these two dimensions. However, schools at Moi University keep limited data on school practices over time. Longitudinal investigation on how retention of students may be determined is thus severely compounded by unavailability of data.

This paper attempts to build a basis for future assessment of the role played by students' engagement on their retention in academic programs. Limited replicable data suggest the need for exploratory assessment of how this retention is determined. Principal Component Analysis (PCA) with a Varimax and Kaiser Normalization was used to select the most important factors that influence students' retention in the tradition of Rivera (2004). The instrument that was used for this study consisted of 71 items that targeted five components of student engagement namely Active Correlative Learning (ACL), Level of Academic Challenge (LAC), Student Faculty Interaction (SFI), Enriching Educational Experience (EEE) and Supportive Campus Environment (SCE). The Principal Component Analysis with a varimax and Kaiser Normalization extracted 20 items that were linked to student retention. These explain 59.4 per cent of the variations in student retention. Table reports on these results.

**Table 2 Principal Factor Analysis of Student Engagement Determinants of Student Retention**

	Components			
	Principal Factor 1	Principal Factor 2	Principal Factor 3	Communality
1. Challenging Academic Activities	0.96			0.52
2. Exposure to Practical Experiences			0.91	0.58
3. Adequate Time with Tutors		0.88		0.62
4. Made Class Presentations	0.87			0.50
5. Included Two or more Perspectives in class discussions	0.93			0.54
6. Worked with other students outside the class to complete assignments		0.88		0.67
6. Participated in community base projects			0.67	0.48
7. Used electronic medium to discuss or complete assignments			0.78	0.51
8. Discussed grades with lecturers		0.79		0.56
9. Had a constructive discussion with students of different ethnicity		0.88		0.51
10. Discussed ideas from reading or classes with other students outside class		0.93		0.55
11. Memorizing ideas and methods from your course work	0.84			0.54
12. Applying theories or concepts to practical problems or new situations	0.93			0.71
13. Analyzing the basic elements of an idea, experience or theory	0.73			0.52
14. Number of books read on your own	0.92			0.48
15. Learned something that changed your perspective.	0.86			0.50
15. Used e-mail to communicate with your lecturers			0.88	0.60
16. Use SMS to communicate with lecturers			0.94	0.55
17. Practicum, Internship, field experience length			0.88	0.50
18. Relationship with lecturer or tutors		0.96		0.60
% Explained Variance	18.0	22.0	14.0	0.54
Coefficient Alpha	0.71	0.62	0.81	

Table 2 shows that a set of three student engagement domains determine student retention in academic schools of Moi University. These are active learning (P1), interaction with tutors (P2) and supportive campus environment (P3). Variations in these experiences explain 54 per cent of the differences in the efficiency in schools in Moi University. Schools that emphasize active learning improve their retention by 18 per cent compared to those that do not. Similarly enhanced interaction between students and tutors has a premium of an extra 22 per cent on retention of students in programs. A supportive campus environment boosts retention by an extra 14 per cent. These results suggest that there a strong correlation between these factors and retention of students in programs. They do not, however, show causation.

Determination of causation is important because of two reasons (1) qualitative on student engagement depend on the establishment of a clear input-output link between student engagement and learning outcomes (Kuh and Umbach, 2004 Kuh, 2009). In this paper students' retention is used an outcome factor that depends on students' engagement. (2) Comparative assessment of student engagement factors and resource inputs is important for the resolution of the issue of which is the most significant in enhancing quality. In this paper a logistic regression model was employed to assess the impact of student engagement as indicated by the three components on standard education production function in the tradition of Hanushek (2009). In resource poor countries, the dilemma over whether or not to use put more resources into education is perhaps more confounding than it is in developed countries. Improving classroom experiences is thus, an important lever increasing higher education access. Table 3 compares the role of student engagement on one hard and traditional resource inputs in a conventional educational production model.

**Table 3: Student Retention as a Function of SE and Resource input Factors**

Variable	Parameter (Standard Error)
Constant	3.48* (0.03)
P1: Active Learning (Low =1 to High=5)	0.68** (0.03)
P2: Student- Faculty Interaction (Low=1 to High=5)	0.33** (0.01)
P3: Supportive Campus Environment (Low=1 to High =5)	0.48** (0.02)
Number of staff in school	0.28** (0.03)
Average class sizes	-0.84** (0.04)
R <sup>2</sup> (McFadden)	0.59

% Correctly Predicted	88
Maximum Likelihood Chance	72

\*, \*\*= significant at 5%, 1%, respectively.

From Table 3 it is clear that student engagement factors persist in their significance in spite of control for resource inputs. In resource poor countries faculty size is one of the most important indicators of the amount of resources that is devoted to any specific programs. Programs that have a higher faculty size are thus expected to consume more resources than those that have a lower size. In Moi University, faculty size often correlates with students' population and the perceived significance of a program. Exploratory assessment shows that transformation of students and faculty numbers lowers the correlation between these two factors from 0.32 to 0.18. In this paper the logarithm of these factors is used. This strengthens the estimation power of the model but does not diminish the significance of student engagement factors.

### Conclusion

In this paper the role of student engagement on the retention of students in Moi University, Kenya is assessed. Enhanced retention is increasingly important at higher education especially in resource poor countries. In Kenya rising enrolment at the university level has imposed significant pressure on social resources available for human capital development. The use of improved student engagement practices provides an important and cost-effective alternative for improving access and efficiency outcomes of higher education. This paper provides replicable data that shows that student engagement factors account for a significant part of student retention in the higher education systems of poor countries.

### References

- Banta, T.W., Pike, G. R., and Hansen, M. J., "The Use of Engagement Data in Accreditation, Planning and Assessment", *New Directions in Institutional Research*, No. 141, 2009, PP. 21-34;
- Brandbury, L. U., "Educative Mentoring: Promoting Reform-Based Science Teaching through Mentoring Relationships", *Science Teacher Education*, Published online: [www.interscience.wiley.com](http://www.interscience.wiley.com);
- Braxton, J. M., "Towards A Scholarship of Practice Centered Education on College Student Retention", *New Directions for Teaching and Learning*, No. 115, PP. 101-112;
- Eagan Jr, M.K. and Jaeger, A.J., "Closing the Gate: Part-time Faculty Instruction in Gate Keeper Courses and First-Year Persistence", *New Directions in Teaching and Learning*, No. 115, 2008, PP. 39-53;
- Gratch-Lindauer, B., "College Student Engagement Surveys: Implications for Information Literacy", *New Directions for Teaching and Learning*, No. 114, summer, 2008, PP. 101-114;
- Hanushek, E. A and Rivkin, S. G., "Harming the Best: How Schools Affect the Black-White Achievement Gap", *Journal of Policy Analysis and Management*, Vol. 28, No. 3, 2009, PP. 366-393;
- Jimmerson, S., Anderson, G.E., and Whipple, A.D., "Winning the battle and losing the war: Examining the relation between grade retention and dropping out of High School", *Psychology for Schools*, Vol. 39, No. 4, 2002, PP. 441-457;
- Kenya, Ministry of Education, Sessional Paper No. 1, of 2005, Government Printer, 2005
- Kenya, Ministry of Planning, Vision 2030, (Government Printer, Nairobi), 2007;

- Kinzie, J., Gonyea, R., Shoup, R., and Kuh, G. D., "Promoting Persistence and Success of Under-represented Students: Lessons for Teaching and Learning", *New Directions for Teaching and Learning*, No. 115, 2008, PP. 21-39;
- Kuh, G.D., "The National Survey of Student Engagement: Conceptual and Empirical Foundations", *New Directions in Institutional Research*, No. 141, spring, 2009, PP. 5-20;
- Kuh, G.D. and Umbach, P.D., "College and Character: Insights from National Survey of Student Engagement", *New Directions for Institutional Research*, No. 122, summer, 2004, PP. 37-54;
- Laird, T.F.N., Chen, D and Kuh, G.D., "Classroom Practices at Institutions with Higher-than-Expected Persistence Rates: What Student Engagement Data Tell us", *New Directions in Teaching and Learning*, No. 115, Fall, 2008, PP. 85-99;
- Laird, T.F.N, Smallwood, R., Niskode-Dosett, A.S. and Garver, A.K., "Effective Involving Faculty in the assessment of Student Engagement", *New Directions in Institutional Research*, No. 141, 2009, PP. 71-81;
- Larimore, J.A (Comanche) and McClellan, G.S., "Native American Student Retention in U.S. Postsecondary Education", *New Directions for Student Service*, No. 109, Spring 2005, PP.17-32;
- McLaughlin, K., Moutray, M and Muldon, O.T., "The Role of Personality and Self-efficacy in the selection and retention of successful nursing students: a longitudinal study", *Journal of Advanced Nursing*, Vol. 6, No. 2, 2007, PP. 211-221;
- Ndege T. M and Maburu, M.N., "The Role of University Education in the Development of Science and Religion in Kenya" in Adam K. Arap Chepkwony and Michael Ntabo Maburu (Eds) *Dialogue in Religion and Science: An African Perspective*, (Eldoret: Moi University Press), 2009
- Patton, L.D., Morelon, C, Whitehead, D.M. and Hossler, D. "Campus Based Retention Initiatives: Does the Emperor have Clothes", *New Directions for Institutional Research*, No. 130, Summer, 2006, PP. 9-24;
- Perrakis, A., "Factors Promoting Academic Success Among African American and White Male Community College Students", *New Directions for Community Colleges*, No. 142, Summer, 2008, PP. 15-23;
- Reynold, G. L., "The Impact of Facilities on Recruitment and Retention of Students", *New Directions for Institutional Research*, No. 135, Fall, 2007, PP. 63-80;
- Rivera, C.A. "Identification of Key Factors Student-Athletes Perceived to the College Student-Athlete Retention Process", a Doctoral Thesis Presented to the School of Graduate Studies, Ohio State University;
- Schnurr, B.L., Kundert, D.K. and Nickerson, A. B., "Grade Retention and Decision-Making Practices and Involvement of School Psychologists Working in Public Schools", *Psychology in Schools*, Vol. 46, No. 5, 2009, PP. 410-419;
- Shane, R.J., Pletcher, S.M.W., Gragdon, K., Schnurr, B.L., Nickerson, A.B., and Kundert, D.K., "Beyond Grade Retention and Social Promotion: Promoting the Social and Academic Competences of Students", *Psychology in Schools*, Vol. 43, No. 1, 2006, PP. 85-97;

