Thesis for the Degree of Masters of Arts

An Empirical Study of Factors Affecting Education Performance in Devolved Kenya

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위임된 케냐의 교육시스템에 대한 연구

Advisor: Professor Jong-Hwan Ko

By

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Abstract

Developing countries like Kenya are always seeking ways in which they can increase their economic and social performance. The education sector is one sector that ever seeks to ensure the achieved success these two areas of economic and social development. The basis of this paper is to identify and investigate the factors that affect the growth of the education sector in Kenya in terms of performance. Education has a key role in the economy of Kenya and they continue to influence the overall economic growth with its contribution to the development indices having improved from the year 1963. The change from 7-6-4[1] education system to the current 8-4-4education system has had a large impact on the population's social capital with even more changes to be expected with the modification of the education system by the current government. . The management of the education sector is therefore vital in employment creation,

[1] The 7-6-4 education system; 7 years of primary education, 6 years of secondary education and 4 years of tertiary education.
The 8-4-4 education system; 8 years of primary education, 4 years of secondary education and 4 years of tertiary education.

income generation and is a foundation for industrialization and the key to the growth and development of the nation of Kenya.

This study's objectives are to identify the issues faced by education stakeholders in their quest for growth, improvement, and development of the sector. Education in Kenya is viewed from the pre-primary education level to the tertiary and university levels of education. The factors that were studied include the high cost of education, cultural factors, the gender factors, attitude, regionalization and the influence that government has on the quality of education. The study was conducted in different parts of Kenya where there are major tertiary institutions namely; Nairobi, Kisumu, Mombasa, Nakuru and Moyale. The target population of the study was a sample of stakeholders from different parts of Kenya. This was deemed suitable because of the large and diverse number of students, teachers, and government officials. This paper used survey as a data collection method. The survey instrument was used to collect 195 valid responses from University students in the above named regions in Kenya. The results of this study hold strongly on devolution and gender and culture as the main factors affecting education performance. The government of Kenya should consider these two factors while making education policies.

Abbreviations

TSC: Teachers Service Commission

SEM: Structural Equation Modeling

AMOS: Analysis of a Moment Structure

KCPE: Kenya Certificate of Primary Education

AIC: Akaike Information Criterion

GFI: Goodness of Fit Index

AGFI: Goodness of Fit Index

RMSEA: Root Mean Square Error of Approximation

CFA: Confirmatory Factor Analysis

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Tables and figures

1.0 Introduction

The education system in Kenya, having been introduced by the colonialists in the early 20th century, can now be referred to as being of age with the merging of both the cultural and colonial systems. Kenya is currently among the top stakeholders in the growth of talents and expertise in different disciplines in Africa. The growth and success of the education sector in Kenya has been one of the government's major interests with the sector being a key motivation and foundation to most political parties seeking to be elected into office.

The education system was changed by the second government from the 7-6-4 education system that required a student to complete seven years of primary education, six years of secondary education and four years of tertiary education to the 8-4-4 system which currently require student to complete eight years of primary education, four years of secondary education and four years of tertiary education. There have been a number of developments into the need to have the former systems have dominance with other refutes arguing for the current system in equal measure.

Education in Kenya is made up of the pre-primary education, the primary education, the secondary education and the post-secondary education, which include tertiary training, college education and university education. This paper is developed with the intention of analyzing the education performance in Kenya having been identified as major role in the millennium developments goals according to Kelly (2013). Therefore in examining education as a sector in the economy it is important to identify the factors that are affecting the areas of development agendas in Kenya. According to the covenants of the Kenyan government that was voted in the year 2002, education seems to have taken a very big leap into the position of creating more in

terms of value attachment by the introduction of the free primary education for all. This paper will closely examine a number of factors affecting the education performance in Kenya. These are; the cost of education, gender in the urban and the rural set up of education and cultural setbacks that overwhelmingly affecting education performance in Kenya. The research model is therefore focused on assessing the extent to which these factors are affecting education performance in Kenya. Education being a key sector in Kenya has equally been used in by politicians during campaigns for policy making. This implies the sensitivity that education has in this economy according to (Duflo, Dupas & Kremer, 2014).This paper will assess the position that the government has in the Kenyan education system. This is leveled on the stakeholders' position in the education sector. These stakeholders are the teachers who serve under the government body of the Kenyan Teacher's Service Commission (TSC). The second stakeholder is the government, with its key role of financing education in Kenya. The third stakeholders are the students who are the main consumers of education. Lastly, the parents will also be represented in this case study. As much as studying and analyzing this group is difficult, parents play a very important role of financing the students' education. The general assumption here is that the parents represent the position that the Kenyan economy has in reference to the amount of money and resources that they are willing to spend on education.

1.1 The Research Outline

This paper will focus on a systematic presentation of the theory and the factors affecting education performance in Kenya. The introduction will examine the changes that education has undergone since independence. This will be done to ensure understanding of the current

education situation. Additionally, the research objectives and the research inferences have been provided in the introductory chapter of this paper.

The second chapter is the literature review and Theoretical Analysis. Here, the rationale is to analyze literature, source for theory and come up with a research question. This will give us the purpose of study. This chapter will also enable validation of research objectives of the study and the theory around the factors that affect education performance. This will give us an informed perspective that will lead us to the third chapter, which is the methodology.

The methodology section will then outline the use of where the actual research in this case quantitative research is carried out. The models used will be explained in detail.

The fourth chapter will tackle the findings and discussion of both the theoretical analysis and the empirical analysis. Lastly, the fifth chapter will give conclusion and suggest policy recommendations and limitations of the research. Suggestions for future studies will also be presented in this chapter.

1.2 The research model

This paper will use Structural Equation Modeling (SEM) with the Analysis of a Moment Structure (AMOS). This will enables us to specify, estimate, assess and present models to show hypothesized relationships among variables. The software lets you build models more accurately than with standard multivariate statistics techniques. In this paper, we will use both the graphical user interface and non-graphical, programmatic interface for easy presentation of results. Confirmatory Factor Analysis will be used in this paper to enable us validate the hypotheses.

The quantitative data will be collected through survey to enable us justify the stated objectives. The Structural Equation Model will therefore show us the clear relationships of the factors affecting education performance in Kenya.

The performance of education will be dependent on a number of factors which might be translated mathematically to marginal propensities (Bryman 2012). With the intentions of making a path analysis and subsequent confirmatory analysis, this research is interested with the analysis of the covariance of the factors affecting education performance in Kenya.

The research objectives are considered the general direction that the research will take. The following are the objectives that this paper has proposed to execute:

- ✓ To identify with the factors affecting education performance in Kenya and assess the impact that they have of productivity of education
- ✓ To propose policy recommendations to the government of Kenya to enable improvement of education performance

Looking at the represented research objectives the suggested analysis will be best carried out by the use of quantitative data collection. This will be further quantified through the Structural Equation Modelling (SEM) using the AMOS software to conduct a Confirmatory Factor analysis that will enable us to check the extent at which the variables affect education performance. Questionnaires will be randomly distributed during the survey to the regions mentioned in the introduction chapter in order to make the findings of this paper reliable.

1.3 Relevance of research

Identifying the interest that is vested on education in Kenya, the economy has improved compared to most countries in Africa. The competition between public government sponsored schools and self-sponsored institutions has led to improved academic performance. It will be good to observe the ethics that the education sector had managed to maintain in the earlier days compared to the present days. The 7-6-4 education system had a more practical curriculum that were accredited to the preparation of fully and well matured career professionals. Comparative to the present day situation where private education seems to be better placed compared to what the government can offer at the primary and secondary levels. This paper seeks to have factors eroding the values of education examined and presented for the education performance analysis in relation to students.

2.0 Theoretical Analysis and Literature review

2.1 Introductory comments

As stated in the introduction the variable of education performance is one of the most sought out as the government performance majorly relies on it. Identifying the political and social values in the economic environment, education performance is related to the economic performance. The expectation is that there will be an estimation of the relationship that is exhibited with performance in the education sector and the costs associated with education as suggested by (Sifuna 2007, p. 690). On the second divide is a presentation of the stakeholder's thoughts and point of views can be best assessed by use of quantitative data collected through questionnaires.

This second chapter is materially engulfed in assessing and discussing the theoretical presentation of the education sector in Kenya. The major suggestions being tabled along the factors affecting education in Kenya being the cost, the attitude, the gender factor, the cultural affiliation and the political mood and equally the government goodwill towards this sector (Appleton 1999; Abagi & Odipo 1997; Lucas & Mbiti 2012).

Significantly a number of these factors remain as invariant to the units of measurement that statistics will be fully interested and capable of doing. This is established with the suggestions that are attached to the concerns of culture and political affiliation towards the search for good and quality education. In fact, this paper is prepared in a time which is seen as prime to the discussion of education in Kenya. This is based on the ongoing secondary school selection all based on the performance of the over 900,000 students in the Kenya Certificate of Primary Education (KCPE) for the year 2016. On average the performance was stated as one that was average with only about 49% of the candidates making it through the halfway mark (Lucas & Mbiti 2012). Arguably there have been a number of suggestions that have been identified as patent to this performance based on the different and diverse conditions that the students had in their preparation to these examinations. Equally, the presentation for the government and the other stakeholders is that the pending release of the secondary examination results may be a reflection of the same only differenced with the suggestions of lower numbers compared to the candidates who sat for the Kenyan Certificate of Secondary Examination.

Having identified that there are some deviant performance trends with education in Kenya, this research therefore develops more pertinent analysis onto the situation that is exhibited and the measures that the stakeholders will be willing to take to change these situations.

2.2 Factors affecting education in Kenya

Basing the content of this section on the works of Abagi& Odipo (1997), top on this list of factors affecting education performance in Kenya can be diverse based on the societal needs. Generally, the factors affecting education performance are many but the major ones will be tackled in this paper as follows:

1) the cost of education
2) the gender and cultural factor in education
3) government intervention on education
4) regionalization of education
5) Students' attitude

2.2.1 The cost of education

The cost of education has been identified as the major concern that is taken under the debate for quality of education in Kenya. Nonetheless, having research with a majority of the literature shared in this report, the methodology will steer away from measuring this factor. This is based on the conclusions that education indeed does influence the quality of education. Thus, the measurements will be more interested in the analyzing of the factors that influence this from the other four mentioned. This is developed best with the introduction of the 8-4-4 system of education and the changes that were introduced with this system in the year 2000. In essence there have been some spirited arguments that this was the turning point from which the cost of education became a factor to consider in education for Kenya. Arguably this should not be the

scenario because their want for education is basic and should have never been developed alongside the suggestions of having it privatized as the cost of education suggests (Nishimura & Yamano 2013, p. 270). Thus, in estimating the functional position that is taken by (Nishimura & Yamano,2013) the cost of education in Kenya is high based on the fact that the average annual payment for primary education stands at 80,000 Kenya Shillings. This at the current universal dollar rate is computed as $ 785 per annum. Looking at a population that is considered to still not have fully left the lower income bracket, the society is therefore divided in terms of those who can afford the cost of this basic primary education that is of quality.

The government set out an initiative to have this reduced by making the basic primary education free for all. Looking at the achievements bore by the previous government, the bold steps seem to have been fruitful. According to the development of the new state authority agendas, majority of the public primary schools have again been reduced to very poor and weak institutions of education. Judging by the large numbers that have been seen influencing the classes for basic primary education, the concerns of the welfare of these pupils at school are assumed to be very low. Equally, looking at the reasons for the high enrollments in the public primary schools it is true to looking at the GDP growth and the GDP per capita income rates in Kenya over the last few years. This will be in an attempt to establish the position that the economy has on an average position to the selection and the support of its own education system. The privatization of education has unanimously made the state to be in a lifelong confrontation with the patent and most basic ability on providing quality education for all according to Abagi & Odipo (1997). Thus, it will be true to note that education is and will for a long time continues to be the major factor in the creation of larger rifts between the social classes in this East African economy. Thus looking at the presented GDP trend in Kenyan it will be important to compare this to their

government budget which at the most recent position has been on different trend for quite some time. The presentation of these arguments suggest of the challenges that the states is having in the provision and the balancing of their objectives education being one of them. In fact taking the present government achievements in the education sector are wanting, one an election pledge to digitalize the provision of basic education in Kenya the same has not been realized with the fourth year running. This therefore brings to light on very important factors in the cost of education in Kenya. First, the state with its larger capital outlay, cannot fully implement this digitalization of education form their annual budgets as seen in the last three years (Duflo, Dupas & Kremer 2014, pp. 13-15). Second is that the cost of education can be very well suggested to be a cost that is always foregone based on other interest that the state might be having as basic such as food prices, infrastructure and the several capacity building committees and commissions that the state has provided with for better resources.

In summary the cost of education is seemingly one of the largest factors that affect education in Kenya. This is based on the proverbial terms and rumors that have been set in this country, such as “money can buy education in Kenya”. Literally this implies that those with better tiding economically will always have an upper hand in the Kenyan education system. This is mainly because the best of education facilities are expensive to the common citizen.

2.2.2 The gender and cultural factor in education

Gender has been one of the most sought after identity in trying to make the effects and the impacts of education to be fair and fully based on equity. This is to suggest that there had been and there still are a number of occasions and scenarios that are materially developed in the cultural factor of alienating the girl child form getting an education. According to Kelly (2013) the rate of enrollment for the girl child has been dropping form the early childhood education

programs, the primary education programs and subsequently to the secondly and the tertiary university programs.

According to Kelly (2013) the numerous education programs that are offered by the non-governmental organizations have been interested with the education of the girl child. It will be important to note the factors lie within the education sector and the cultural presentation that is in the Kenyan mindset. The table 2-1 summarizes the positions that the different cultures in Kenya have towards the Kenyan education of the girl child.

Table 1: Cultural factors in Kenyan education

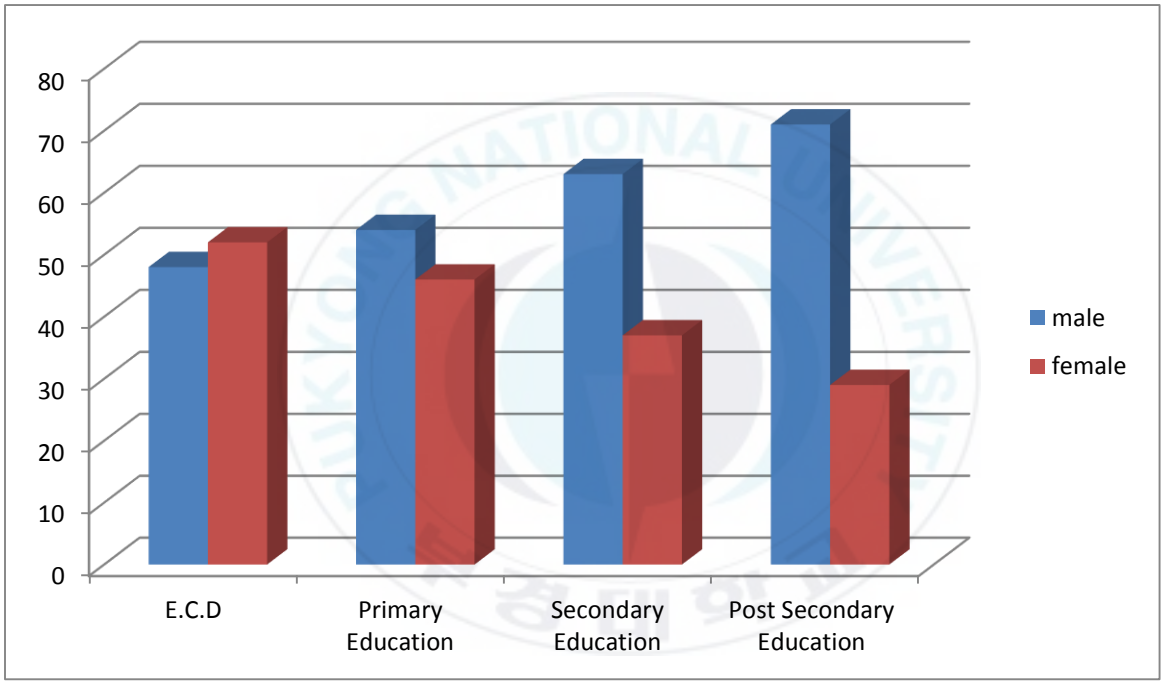
Factor	Cultural belief
Marriage	Part of rural Kenya especially communities living in the north eastern counties and those alienated to the border sections near Uganda have the lowest rates of girl child enrolment. This is established under the early childhood marriages that these girls are subjected to. Such early marriages affect the continuity of the education that these girls will be having.
Worth of education	The spoils of education are yet to be fully internalized and fully accepted by a majority of the rural communities in Kenya. This is established under the association of the worth that education has compared to the ultimate

	position that the genders have in the society. According to Kelly (2013) majority of the setting in rural Kenya takes less regard for the education of the Girl child. Based on the education that they have received. This is established under the marriage cultures that the girl child has been having. in essence, paying the bride price of an educated girl is seen to be very high compared to that of an uneducated girl
Male comparison	The male comparisons come out as the major factor to which the empowerment of the girl child has been sought after. Thus, the progressive governments from independence have taken the term affirmative action on the girl child and her education (Bock et al. 2012, p. 201). According to the fundamental position that is sought after by this, the material beneficiary is highlighted with the needs that the state have in making the male education indices to be fully and functionally comparative to those of the female students.

Source: Kathae (2015) 'The adoption of internationalization strategy at university of Nairobi programmes in Kenya',

Looking at the cultural factors affecting education and the gender considerations that education has in Kenya, the numbers speak for themselves. In fact, the enrolment that the male and the female counterparts have in the various levels of education can be best reflected by the bar graphs representation below in figure 1.

Figure 1: Percentage enrollment of male and female students from E.C.D to Post-Secondary Education



Source; Sifuna (2014), 'Girls' and Women's Education in Kenya Gender Perspectives and Trends.'.

Looking at the tabled presentation above the valuation is suggestive of an estimation of the percentage enrollment of the Kenyan students in school has been established as one that is majorly affected by the gender and the cultural factors. According to the source documented by the Institute for Gender Affairs Bock and scholars (2012, p. 199), the drop in the enrollment for the girl child has been fully attributed to the concerns of culture and poor mindsets on the education of the girl child in this case by majority of the rural population in Kenya.

Nevertheless, the urban set up cannot be devoid of this trend setting. The majority of the economic units have been materially seen to be opting for the education of the male child comparative to that of the girl child. Literally the provision of education can be said to have been selective to the gender with the girl child suffering from this. In fact this translates to the overall society position where the Kenyan systems is seen to be fighting for full inclusion of the genders at higher levels of governments and society ranks forgetting that these are the trickle effects of the lower ranks of education for the female gender. The associated affirmative action of an overall two thirds limit on majority for all states institutions based on gender can be seen as a factor that the states need to focus on from the root of education as it is seen with the constitution dispensation on gender representation.

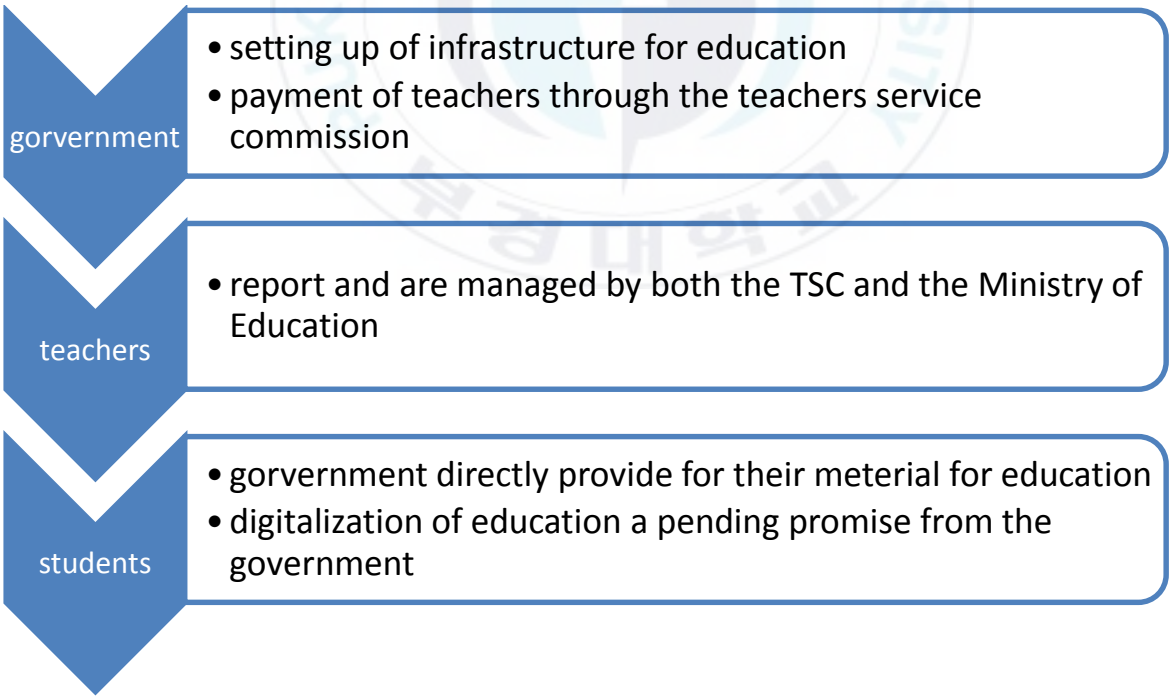
2.2.3 Government intervention on education

The governments have been the central figure in the education sector in Kenya form the independent periods. Looking at the numerous efforts that the Kenyan population have benefited form in terms of the government enrollment in education it can be noted that the four successive government that have been investing with the provision of education mostly in the primary and the secondary levels in Kenya. Looking at figure 2-1the enrollment over the last ten years, there has been tremendous increment in the number of students enrolled with these two institution levels of education. In assessing the progress and the failures that the government has had in their endeavors with the establishment of education within the Kenyan population it will be important to see the challenges and the progress that the states has had with the provision of education.

Successively drawing from the year 1997, the then government was headed by the retired President Daniel Moi, the state entered into ongoing negotiation that are at the moment the

headache that the current teachers body and the state have. According to the registered agreements as sought and recorded by the Kenya National Union of Teachers(KNUT), there have been challenges in implementing the over 100% pay rise that the government had promised at that time. Looking at the position that is suggested with the Gross Domestic Product (GDP) levels that the country had this year, the implementation might have been possible. This is based on the overall value that the state attributes currently to the implementation of the teachers' salary agreements. In fact, one of the dailies was quoted to have been providing an estimated amount of about 19 billion Kenyan shillings per annum in the implementation of the increased pay packages that the teachers are demanding. In essence the role of the state is seen in almost every corner of the education sector in Kenya as shown below.

Figure 2: Government roles in education



Source: Orodho, 2014 - 'Policies On Free Primary And Secondary Education In East Africa: Are Kenya And Tanzania On Course To Attain Education For All (Efa) Goals By 2015

Looking at the presentation that is developed in this case it will be true to note that the need to have the state either fully account for the education sector in Kenya or equally have in place mechanisms in place for the establishment of the privatization of the system would be fully appreciated by majority of the stakeholders. It is important to note that the fears this paper have in mind the positions that the government is overwhelmed with its role in the education sector.

In summary the position that the government has in handling both the implementation and the development of the education sector in Kenya. This is brought about with the suggestions of the states having more than it handles on its plate with the administration for education in Kenya. Nevertheless, looking at the consideration of how effective the state has handled the administrative on and the management of education in Kenya a lot is left desired of a better education system in Kenya. First is the position that politics has on the formation of majority of the education stakeholders in Kenya. Politics has found it's was even into the new systems which differentiated itself from the previous one with having the cabinet secretaries as non-politicians. The current trend sees political appointed to these same positions therefore the only difference that is seen as one that remain of the active participation of the ministries in politics. However, as Benhabib, Meng & Nishimura (2012) suggests this cannot be considered as a position that implies safety of letting and limiting politics into the major sectors such as education in Kenya. Thus, the states would be in a position to fully make the concerns of education be considered as a social merit rather than the position that majority of the current Sub-Saharan consideration of sectors that still need full government wield and control according to the suggestions of (Sifuna 2007, p. 690).

2.3.4 Regionalization of education

Regionalization was a position that was taken by the state in the early formed government. According to the positions taken by history there have been numerous suggestions on the position that regionalization would be having in the effect of decentralizing and distribution of resources (Benhabib, Meng & Nishimura 2012, p. 402). With the formation and the promulgation of the new constitution in the year 2010 the country shifted from having the former 8 provinces (Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift Valley and Western) restructured into 47 counties. This meant that there was the need to again restructure the education sector in Kenya which is one of the challenges that the states is still facing with its implementations. Looking at the figure provided below, the exact placement and introduction or rather upgrading of more schools especially in the secondary category into the now country or national schools was one thing that was and still makes regionalization issues according to the inequalities documented by (Kathae 2015).

Table 2: Regionalization changes

Previous set up with seven provinces	**National schools at secondary level = 18**	**Provincial schools = 54**	**Subsequently followed by district and private schools**
Present set up with the 47 counties	At least one national school per county	At least two country schools per county bringing the number to 94	Provision for the district and the private schools remain unchanged

Source: Orodho, 2014, 'Policies On Free Primary And Secondary Education In East Africa: Are Kenya And Tanzania On Course To Attain Education For All (Efa) Goals By 2015

Looking at the reveled descriptive data as developed by the figure above, the suggestion is that there will be the need to have the country has a better structured facilitation of the institutionalization of the prospect regionalization of education. This is based on the following positions:

1. The institutionalization of the numerous schools into either national levels or county level schools will be imperative to the use of more resources which the sates is nether willing or able to allocates at the current budget placements keeping in mind the position that is shared with the allocation of more than 45% of revenues allocation of the central government to the county government.
2. The unclear allocation and aligning of the roles that the central government and those that the country government have with respect to the implementation of education policy and the mainstream administration of education. In fact, there have been numerous strikes called to national and at the country levels with the allocation of administrative responsibility and the management of education.
3. Therefore looking at factor of regionalization the demerits sought of present themselves as stronger than the merits. This is developed by the assumptions that the states and the county government have in the implementation of the new structure for education. Developing more on the practicality of the new education structure, there have been concerns on this system being too expensive for the parent and student to afford.

The estimation of regionalization of education can only be seen to be a factor that has comes to the Kenyan education sector with the current decade running from the year 2010. This is established with the estimation of equity and the equality that have been sought after by the positions of the regionalization for equal development. This is to imply that with the

development of the society there were calls and fears to the assumptions of very few regions seemly having a bias in their development avenues. Such regions as Nairobi province, the Central province, the Nyanza province and the former Western provinces were seen to have been beneficiaries in this order for the development of education according to (Duflo, Dupas & Kremer 2014, p. 15). This is to imply that the regionalization and the establishments of both the national and the county level institutions form the primary to the tertiary and the higher education institutions must have been motivated by the previous positions that were held by the 7 provinces of Kenya. Under this former system the effects of regionalization was more on the ethnic positioning that communities had geographically settled on therefore having less impact on economies of development and integration for community and education technicality development. thus with the need to bring the development of education into a much more fact and relevant structure the regionalization mainly based on a number of considered factors including the previous ethnic balances, distribution of natural resources and the distribution of infrastructural development equally considered based on the forming and founding principles of the new Kenyan constitution for 2010. It is notably important to record that regionalization, cost, attitude, government interventional and culture are important positions on the new constitutions that the Kenyan nation runs on currently. It is from these virtues that the factors affecting education have been pulled and analyzed from.

2.3.5 Students' Attitude

Attitude is acquired as a result of personal experiences. Environment mold our attitude hence create certain beliefs and perceptions. Students' attitude can affect their education performance positively or negatively. Attitude influences our social thoughts and enables us to organize and evaluate stimuli into negative or positive, useful or not useful, pleasant or unpleasant, favorable or unfavorable. This would have a strong effect on the students' behavior towards education. The education performance and achievement can be determined by the level of engagement and the amount of effort put by the students and this solely depends on the attitude. Attitude can be shaped through experiences, learning and knowledge and skills acquisition. The extent to which a student is committed towards achieving a task might show a student's attitude. Hence, positive attitude should be nurtured and developed in ways such as encouraging students to learn and bring out their best potentials.

Several researchers view attitude as a key factor to consider when trying to understand and explain variability in student education performance (Dika, 2002). This is due to the fact that it is a psychological orientation developed as a result of one's experiences which influences a person's view of situations, objects people and how to respond to them either positively or negatively or favorably or unfavorably (Mensah et al, 2013).

Attitude therefore has three interrelated qualities or components This include the emotional components that shows how we feel, a cognitive component that holds our thoughts and beliefs and behavioral components that's brought about by our actions and experiences (Maio & Haddock, 2010).

All in all, attitude can be fixed in various ways but first it has to be identified as a factor affecting education performance. The purpose of this research is to show to what extent attitude affects education performance.

2.3 Literature findings

The literature findings are based on the capacity evaluation that the ministry of education performs. Thus with the supporting evidence from the literature discussions, these are the findings that can be used in the capacity building that these institutions require. The following tables takes suggestions more on the theoretical findings for factors affecting education in Kenya as it is presently documented;

Table 3: Literature/ theoretical findings

Findings	Comments
Cost of education is high in Kenya	The cost factor has made the states attempts to provide free primary education for all and free tuition for secondary education. Nevertheless, the free element of this education programs seems eroded when compared to the cost and the quality. The cost of education still is higher with the secondary education whereas the quality of public primary education is very wanting. Under the established positions of the value attached to

	the cost and quality of education. The cost of education is seen under the following levels as put by the respondents. Additionally, early childhood education – average of $ 150 per annum Primary school is technically free for public primary schools with an average parents paying $ 10 per term catering for amenities not provided by the state, the figure drop to almost zero with the rural primary schools. Secondary school have no fixed money separation when considering the public and private schools examined on average the cost of education for boarding schools is at $ 700 per annum. Universities and colleges - these fully presents the merit of government intervention better. On average a four year degree course costs about $ 1,200 for privately sponsored whereas those sponsored by the government part with only $ 30 per annum
Gender and cultural affiliation	The state has scored high here with the affirmative action's programs. These are all

	aimed at the presentation of fairer position to accessing education for the girl child in Kenya.
Government intervention	States machinery in education seems imparted based on the lack of political will, the effect and the strength that the privatization of education has, similar to the disparity in economic policy for resource allocation on matters of education. Thus, the states needs to move to the position under which they will be in a position
Regionalization of education	The position of regionalization has been taken into consideration from the positions that are into developing more for equity and equality on education infrastructure. This is therefore to imply that there is need to have more in the implementation on regionalizing education for the growth. The presentation of the regionalization of the education sector has been fully assessed as the position from which the establishment of the development of education has it will be true

	to note that the success of education development and the infrastructural facilitation of education can be made valued by the efforts of regionalization. Thus, regionalization is more or less the only available position from which education in Kenyan can be improved and made more equitable and much more valid to the population.

Source: by the author

3.0 Methodology

This research will utilize the factor analytical model of the Structural Equation Modelling which will enable us test the hypothesis. The hypotheses stated in this research are:

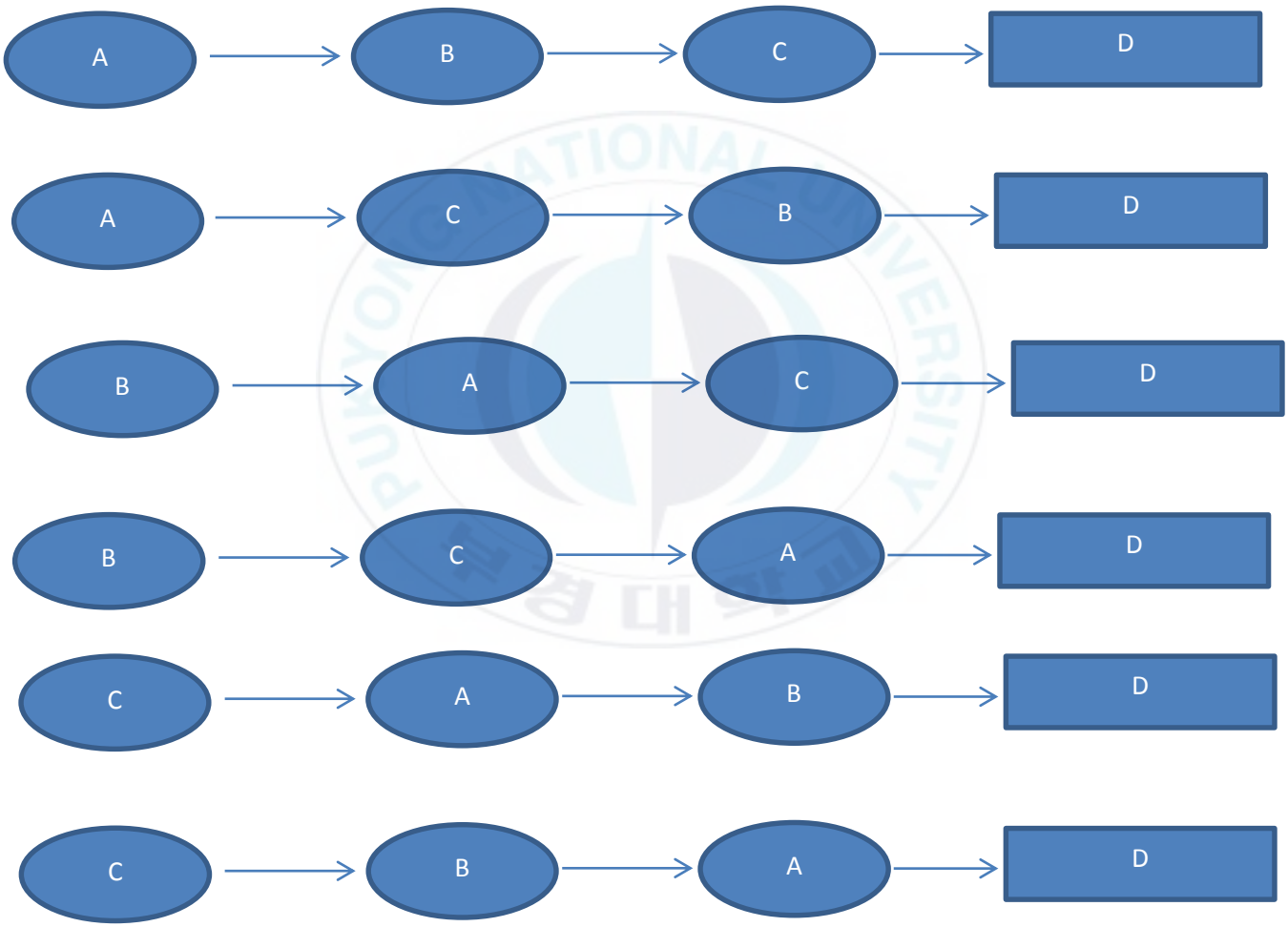
- $H0_1$ - attitude affects the education performance in Kenya
- $H0_2$ - gender and culture affect education performance in Kenya
- $H0_3$ – Regionalization affect the education performance in Kenya

The Confirmatory Factor Analysis (CFA) will enable us confirm the above hypotheses based on the theory and the empirical research. This will be evaluated statistically to determine the adequacy of the goodness-of fit. In a nutshell, we can derive the extent to which observed variables are generated by the latent variables and the strength of regression paths from factors to

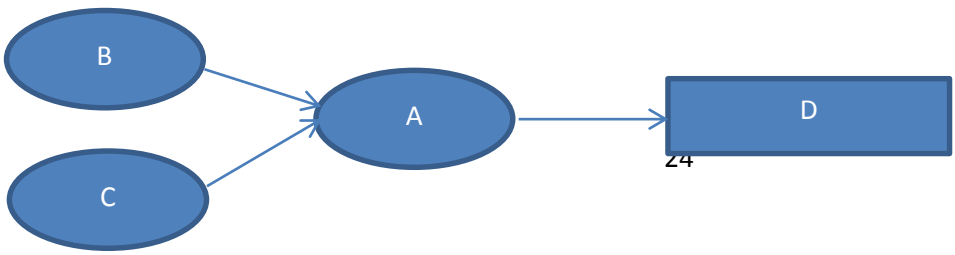
observed variables. CFA model focuses on the link between factors and their measured variables by use of SEM.

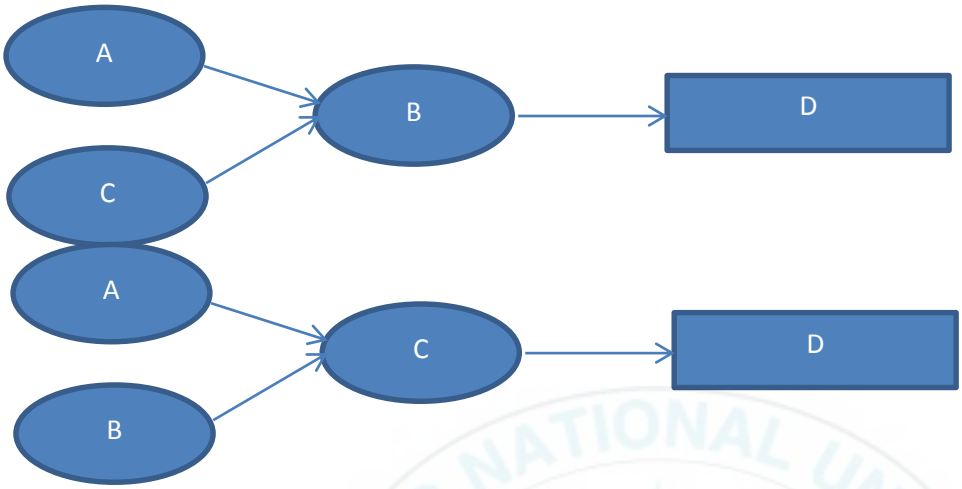
In order to get the best path model we will have to run all causality paths which according to our model is 19 as shown below:

Models 1-6

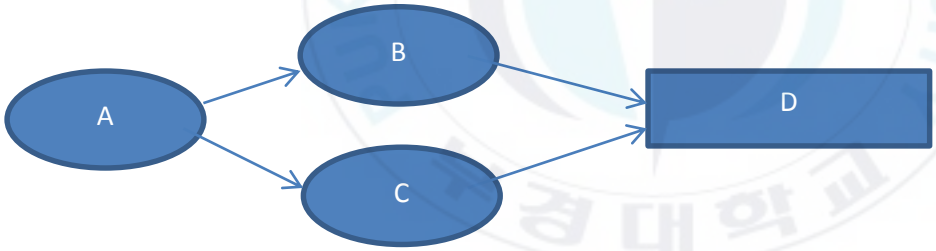


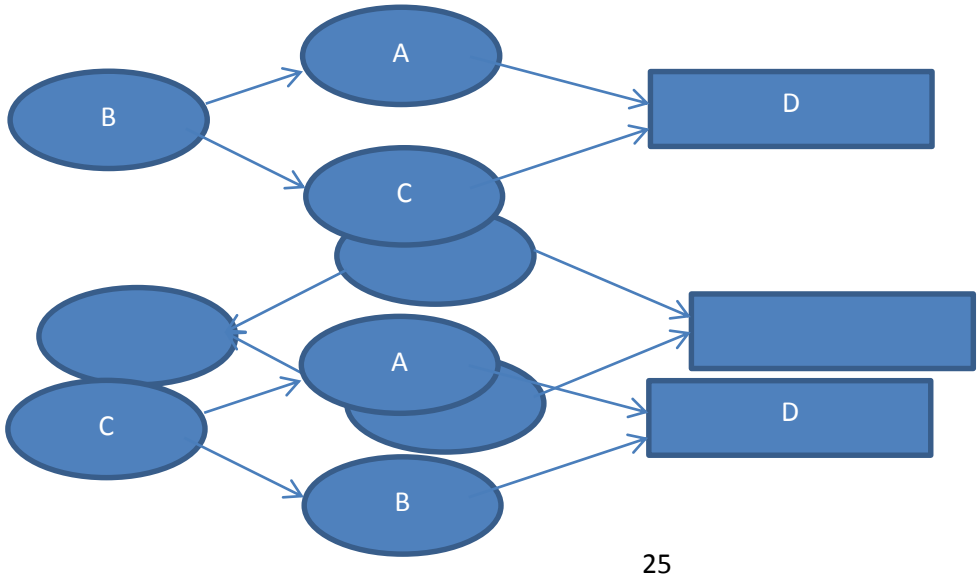
Models 7-9



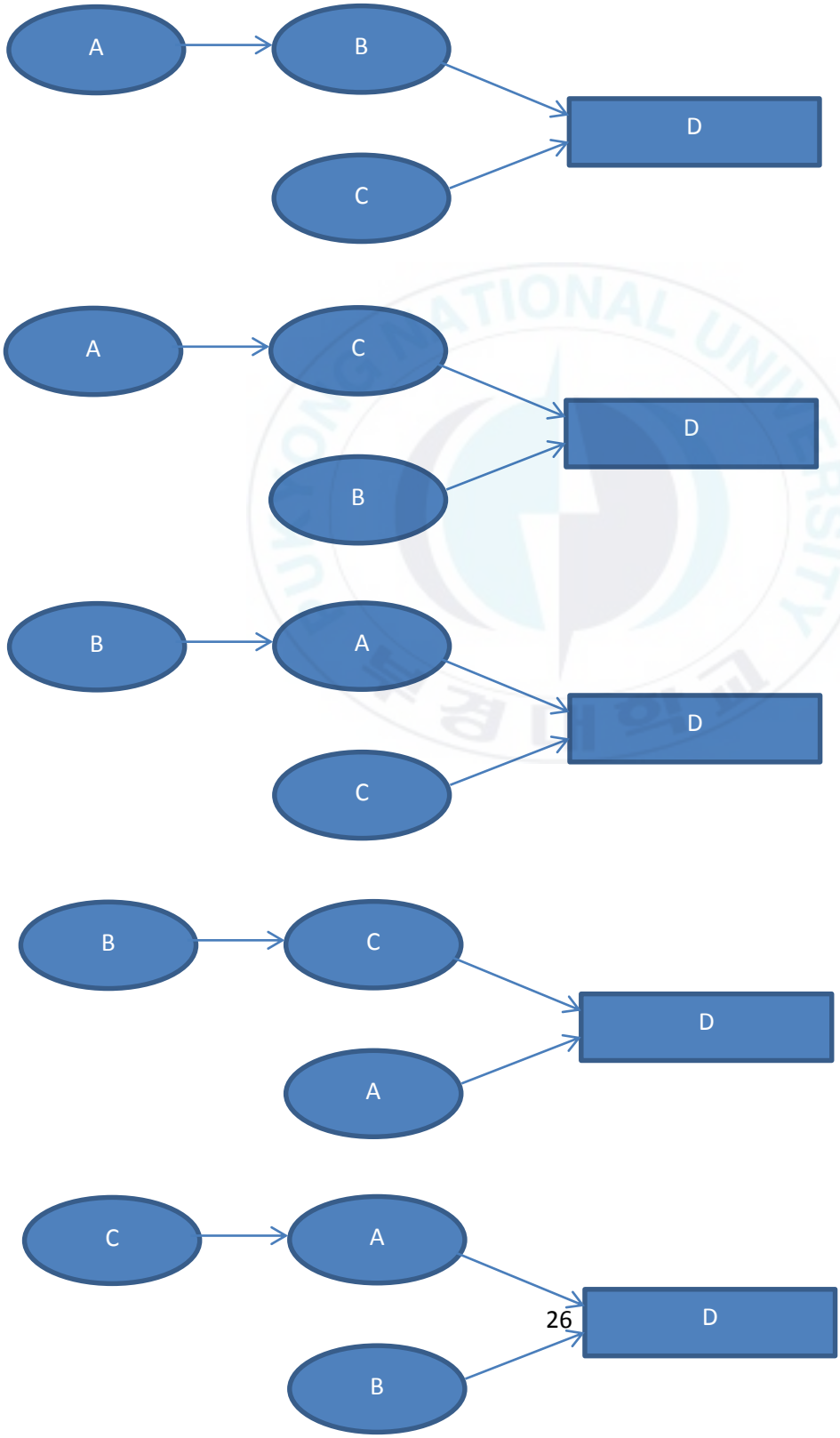


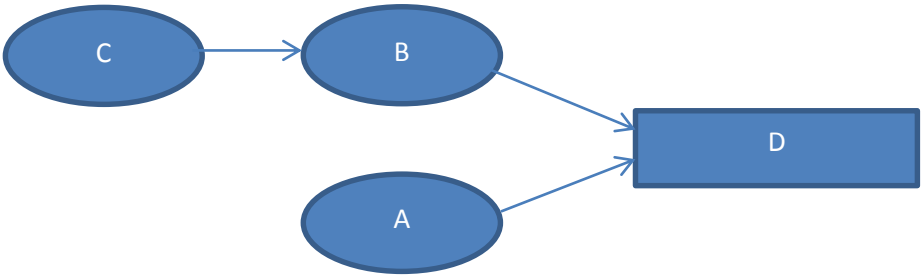
Models 10- 12



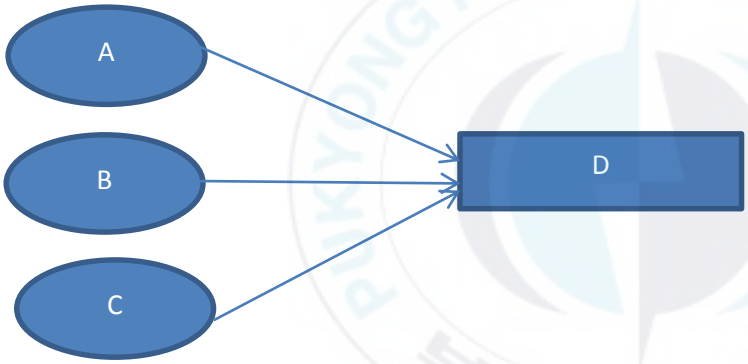


Models 13-18





Model 19



Source: by the author

In the 19 models, the oval shapes are latent variables while the rectangle represents observed variable. The arrows are very important here as they represent the weights and causality. The first type represent 6 models, the second type represents 3 models, the third type represent 3 models, the fourth type represent 6 models, and lastly, the fifth type represents one model. Parameter constraints are created and all the invisible paths in each of the models are equated to zero.

In this paper, these 19 models will be run successfully in order to choose the best model according to the Akaike Information Criterion(AIC), Goodness-of-Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA)

This paper will also make use of primary and secondary methods of research. The primary research on the factors affecting education performance in Kenya will be done through questionnaires. This will enable us to understand the main reasons underlying the stagnation or the development for education performance in Kenya.

The use of secondary data is based on the background information regarding the education performance in Kenya. This will be done through the literature review analysis and the theoretical analysis.

3.1 Research design

The analysis and use of quantitative method of data collection is what the research design will employ. Arriving at this decision of what method should be use, the focus is to unify the conclusive data collection and analytical technique to the managements of the research objectives and the research questions for the thesis. The factors affecting education is the primary focus of the research design, the objectives and the research questions. Therefore, the main interest according to Creswell (2003) of research design using the combined methods is the depth of coverage that the methodology will have in substantiating the research interest. This is because the quantitative is sufficient to answer our research questions. Additionally, this is the best practice that is shared by majority of research in social science as per (Bryman 2012).

3.2 Types of research done for the project

The use of the sampling techniques will infer that more is depended upon the use of secondary analysis. The referral to use sampling in this case is because the data collection will be time consuming (Duflo, Dupas & Kremer, 2014). This is because of the interlataion and the coreletaions that have already been asserted in the litereture review for the factors affecting education. Additionally, this will present an opportunity for the primary research to have an opinion in supporting or disputing the results shared in the literature findings. In this case, create a situation that is able to make suggestions into the findings of the research and the sampling process. Thus the position that the secondary research presents a validated position from which the use of the collected data from the interviews and questionnaires will be better analyzed. Looking separately at the primary data, it will be important to notice the characteristics of the primary data which in this case are the data filled on the questionnaires and the interviews responses. Having developed the questions of interest for the research, the assumption is the data collected will have satisfied the characteristics that are concern by the research objectives. This is to suggest that the data collected will not be assimilated to favor any particular outcome or finding. The expectation is that the statistical results that will be the product of the data collection will be the exact reflection of the sampled population for the interest of education in Kenya.

In fact, the results will enable the collection of different views from those shared in the literature and subsequently supported by the position of the data collected by the secondary and the literature sources.

3.3 The reliability of the data collected

Reliability is defined as the position from which the data collected is assessed for validity. The primary objective of reliability tests is to have the analysis provide the simple structure that can be understood by the audience for the research. In this case, economists, education stakeholders, the government and any other party interested in investing on education in Kenya are assumed to be the direct audience for this thesis. Therefore the characteristics for the analysis will be defined as follows;

- The variables are expected to have strong loadings
- Each of the variables assessed need to have a strong loading only attached to factors identified in this thesis
- The variables are supposed to have large communalities

With the characteristics that have been shared, the interest that the research will have is setting the variance of the variables. In case the variables are regressed, and subsequently applied to sample data the predictability of the residual should be at zero. This will imply that the construction for the validity of the data, from either one of the measuring instruments can only be correlated experimentally and undetermined according to Bock et al. (2012, pg. 287). The results of this study will be related to the results obtained from other studies measuring related constructs (the position described by the secondary research results and the literature review findings).

In presenting a defense to the research design the merits include;

- ✓ The ability to sequentially implement the methodology easily and progressively
- ✓ Progressive explanation of the methodology and results
- ✓ The design caters for the possibility of getting unexpected results according to Creswell (2003).

Highlighting form a fair position the limitations of this design will include:

- ✓ It requires a long time to complete.
- ✓ It requires feasibility of resources to collect and analyze both types of data.
- ✓ Quantitative results may show no significant differences

Nevertheless, the approach of the collected data might invoke questions on the privacy of the data collected. Thus the research will implore on privacy based on the following validations;

- ✓ The sole protection of the participants identify based on their interest of protecting work interest or cultural interest. This will be ensured by the discrete coding of the questionnaires to maintain confidentiality
- ✓ The data analysis is performed under statistical analysis techniques. Thus the results will be interpreted based on the variables established and their significance statistically.

Therefore the conduct of the research will be to test current practice against the historical records (reference materials). I will conduct a survey aimed to gather primary source data from the various stakeholders. The survey will collect quantitative data on based on the variables affecting education performance based on this research.

3.4 Data analysis

The data analysis is developed with the interest to decode and interpret the collected information from the third chapter. The sample size of the survey had a target of 300. This implies that 300 questionnaires were distributed out with the expectation of them being filled out by the respondents to be sampled. The questionnaires that were received back were 195 based on the time and the geographic technicalities of the data collection process. The 195 respondents are in this case assumed to be large enough to avoid bias and unrealistic assumptions within the urban and the rural population in Kenya.

Out of the 195 respondents, 106 were female while 89 were males.

The questions asked in the questionnaire are related to the attitude assessment towards education, gender and culture perceptions within education, the population in relation to cost of education as well as the perceptions and feedbacks about education performance in Kenya. The inquiries that will be relating to the future expectation of education performance will be the loadings that the data collection will be interested in. Additionally, the results that the questionnaire has are interpreted with respect to the positions that this research shares with the identified variables.

The three sets of data used are; the male data, the female data and a combination of the two sets of data (male and female data). These three sets of data were run in the Analysis of Moment Structures (AMOS) software using the Structural Equation Modelling to find the best model fit.

From the three categories, the analysis seeks to assess the Akaike Information Criterion (AIC), the Goodness of Fit Index (GFI) and the Root Mean Square Error of Approximation (RMSEA) for the three data structures in order to come up with the best model fit for each of the data sets.

4.0 Findings and Discussions (Data Analysis)

This chapter is a very important section of this paper as it presents the statistical results and findings from the observed data. Thus, the presentation tabled here provides a high-level outcome of the results of the research, mainly from the data collected through survey. What has been included here is the summary results which indicate what the sampled population of 106 female and 89 male respondents think about the factors affecting the education performance in Kenya. It will be important to note that the structure of the interview is developed in a manner which identifies with the identified factors of cost of education, the attitude towards education, the cultural and gender factor, the government roles in education and the regionalization of education. Thus, there is no room created by the data to implore more suggestions from the interviews of the 195 actively received respondents.

Out of the 195 selected responses, the following results were structured:

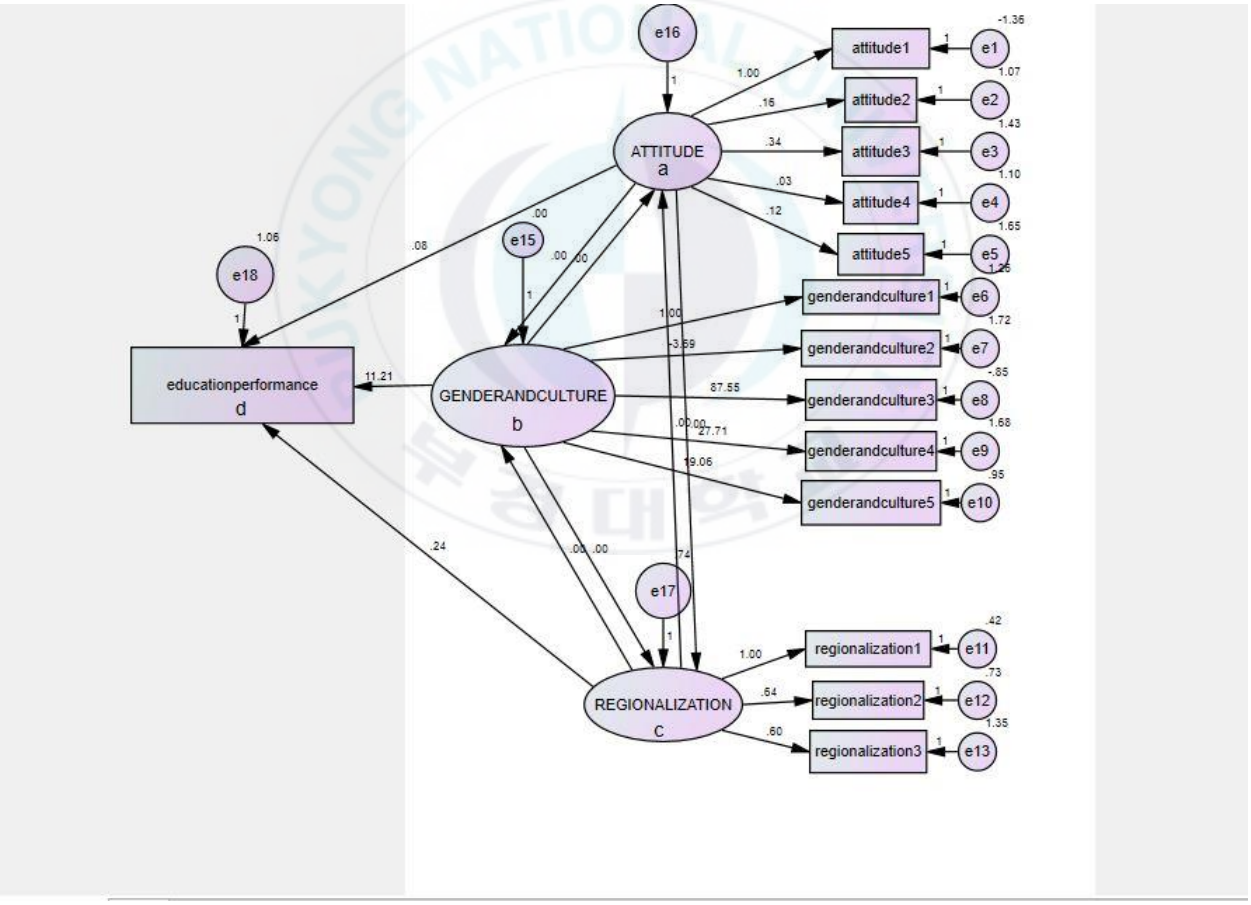
4.1 Gender level Analysis

Data was analyzed for the genders, the males and females in order to test whether there is a difference in ideologies about the factors that affect education performance. This is due to the fact that students, especially female students and some male students think that there is no equality in gender when it comes to education. They feel that one gender is favored and one is weaker due to cultural beliefs and practices as well as societal preferences.

4.2 Path Model: Female Analysis and Data Interpretation

In a quest to find out what really affects female education, a path analysis was carried out using the Structural Equation Modelling (SEM) with Analysis of Moment Structure (AMOS). This was done to evaluate causal models have the ability to represent data. This tests how the independent variables (attitude, gender and culture and regionalization) affect the dependent variable which is education performance. The diagram below shows the initial path model.

Figure 3: Female Path Diagram



Source: by the author

After testing the above model and evaluating its fit, further analysis was conducted to check which model index fit best. This was achieved after successfully running the nineteen models to check which model fit best. To achieve this, the fit of the models was evaluated with a focus on the fit indexes such as the Akaike Information Criterion (AIC), the Goodness of Fit Index (GFI) , the Adjusted Goodness of Fit Index and the Root Mean Square Error of Approximation (RMSEA).

Table 4: Akaike Information Criterion (AIC)

Model	AIC	BCC	BIC	CAIC
Default model	549.709	571.204		
Model Number 2	546.272	567.767		
Model Number 3	553.758	575.253		
Model Number 4	569.839	591.334		
Model Number 5	544.366	565.861		
Model Number 6	559.095	580.590		
Model Number 7	567.895	589.390		
Model Number 8	557.221	578.716		
Model Number 9	566.582	588.077		
Model Number 10	541.038	562.910		
Model Number 11	551.007	572.879		
Model Number 12	550.356	572.228		
Model Number 13	563.605	585.100		
Model Number 14	558.173	579.668		
Model Number 15	574.000	595.495		
model number 16	582.271	603.766		

Model	AIC	BCC	BIC	CAIC
Model Number 17	566.102	587.597		
Model Number 18	571.134	592.629		
Model Number 19	579.974	601.470		
Saturated model	420.000	499.192		
Independence model	800.154	810.713		

Source: by the author

AIC is a model index used to measure the quality of every model. It enables us to check which model fits best according to the data provided in the model through the survey process. When using the AIC to check this, the model with the lowest number is picked as the best model. Going by the female data, model 10 was the lowest at 541.038 compared to the rest of the models.

Table 5: Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI)

Model	RMR	GFI	AGFI	PGFI
Default model	.206	.759	.669	.553
Model Number 2	.216	.765	.677	.557
Model Number 3	.219	.760	.670	.553
Model Number 4	.226	.754	.662	.549
Model Number 5	.210	.767	.680	.559
Model Number 6	.215	.763	.674	.556
Model Number 7	.233	.758	.667	.552
Model Number 8	.221	.768	.682	.560
Model Number 9	.239	.753	.661	.548

Model	RMR	GFI	AGFI	PGFI
Model Number 10	.212	.767	.679	.556
Model Number 11	.210	.764	.674	.553
Model Number 12	.214	.766	.676	.554
Model Number 13	.236	.763	.675	.556
Model Number 14	.256	.757	.666	.551
Model Number 15	.240	.760	.671	.554
model number 16	.244	.752	.659	.548
Model Number 17	.255	.759	.669	.553
Model Number 18	.243	.763	.674	.556
Model Number 19	.262	.751	.658	.547
Saturated model	.000	1.000		
Independence model	.327	.611	.551	.530

Source: by the author

The Goodness of Fit Index of model 10 is .767 which is the second highest figure in the column and Adjusted Goodness of Fit Index (AGFI) also has a relatively high figure which is .679 as compared to the others in the column. The GFI and AGFI should be greater than .90 Byrne (2001). In this case it is .8 and .7 respectively hence the need to check the Root Mean Square Error of Approximation (RMSEA)

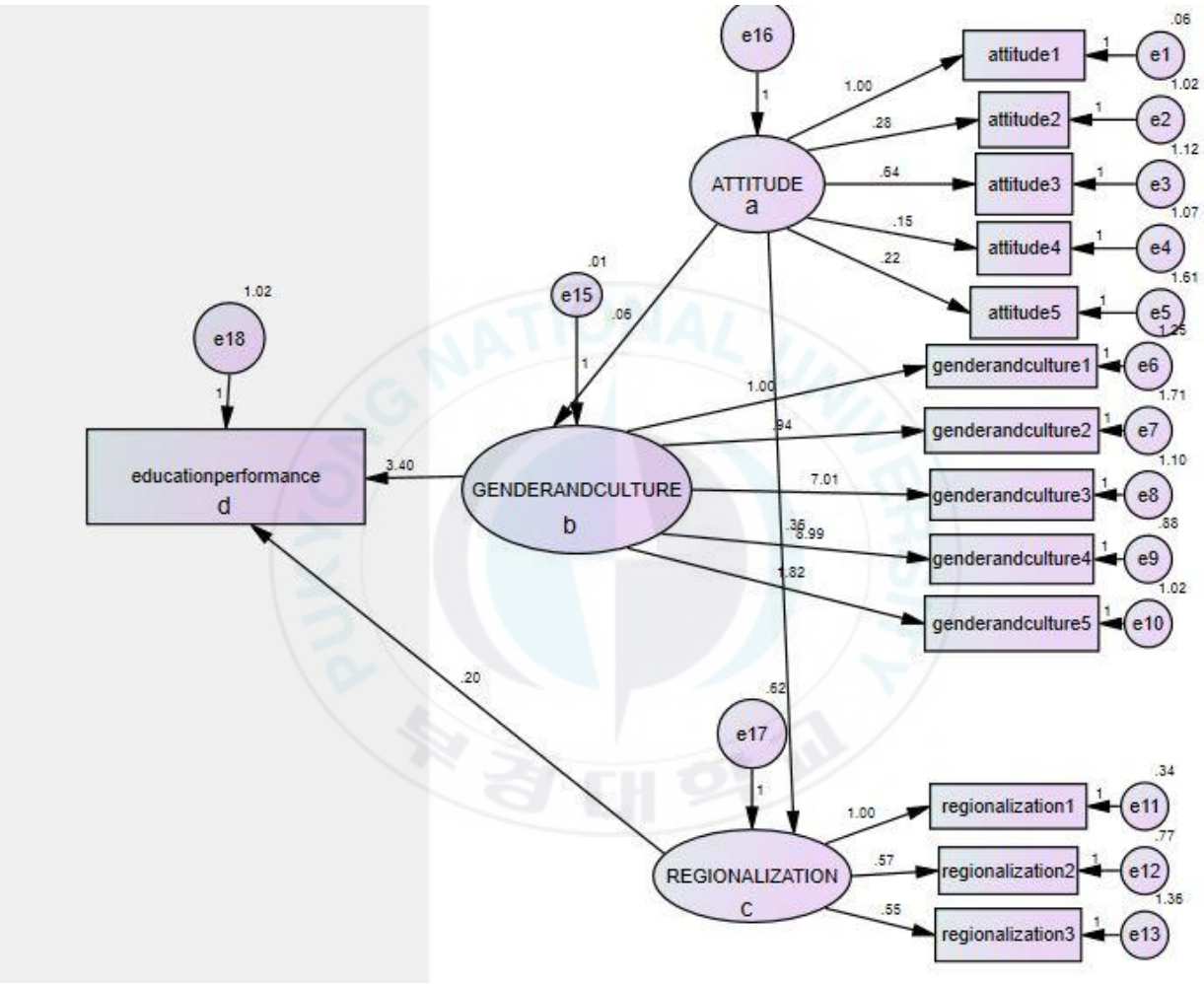
Table6: Root Mean Square Error of Approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.098	.088	.109	.000
Model Number 2	.098	.087	.109	.000
Model Number 3	.099	.088	.110	.000
Model Number 4	.102	.091	.113	.000
Model Number 5	.097	.087	.108	.000
Model Number 6	.100	.089	.111	.000
Model Number 7	.101	.091	.112	.000
Model Number 8	.100	.089	.111	.000
Model Number 9	.101	.091	.112	.000
Model Number 10	.097	.086	.108	.000
Model Number 11	.099	.088	.110	.000
Model Number 12	.099	.088	.110	.000
Model Number 13	.101	.090	.112	.000
Model Number 14	.100	.089	.111	.000
Model Number 15	.102	.092	.113	.000
model number 16	.104	.093	.115	.000
Model Number 17	.101	.090	.112	.000
Model Number 18	.102	.091	.113	.000
Model Number 19	.103	.093	.114	.000
Independence model	.127	.118	.137	.000

Source: by the author

The Root Mean Square Error of Approximation (RMSEA) should be less than or equal to .10 according to Byrne (2001). The table shows that model number 10 is .097 which when rounded off comes to .10 which shows the model is reliable.

Figure 4: Final Female Path Diagram



Source: by the author

Subject to the validation of the test results, we will need to evaluate the relevance of the data collected by choosing the best model. The best model is model 10 which is shown in the figure above.

The female final path diagram shows that attitude does not affect education performance direct but attitude affect gender which in return affects the education performance of the female students in Kenya. Female students also feel that the location of the learning institution directly affect education performance. This has always been a back and forth debate in the education sector of many developing countries. This is due to the fact that urban areas have better facilities, a better learning environment and exposure to many other things that are not available in the rural areas.

The diagram also shows that attitude affects regionalization and regionalization then affects education performance. This shows that attitude affects education performance indirectly through gender and regionalization. Hence attitude is a contributing factor to the education performance of the female students.

Gender directly affects education performance. This was expected especially from female students' data because the female students always feel alienated. According to the research conducted through the help of the questionnaires it was evident that female students feel that they are not equal to male students in terms education performance because of the many issues surrounding them such as early pregnancy, lack of sanitary towels during their monthly periods, adolescence that causes growth and more changes in the body compared to their male counterparts, preference by the parents to educate the male hence they give more educational priority to male students e.g. the female students are expected to perform house chores while their male counterparts sit around and study.

Figure 5: Statistical Significance of model 10

Estimates (females - Model Number 10)

Scalar Estimates (females - Model Number 10)

Maximum Likelihood Estimates

Regression Weights: (females - Model Number 10)

			Estimate	S.E.	C.R.	P	Label
attitude1	<---	ATTITUDE	1.000				
attitude2	<---	ATTITUDE	.286	.085	3.358	***	par_5
attitude3	<---	ATTITUDE	.646	.106	6.088	***	par_6
attitude4	<---	ATTITUDE	.149	.083	1.789	.074	par_7
attitude5	<---	ATTITUDE	.229	.103	2.223	.026	par_8
genderandculture1	<---	GENDERANDCULTURE	1.000				
genderandculture2	<---	GENDERANDCULTURE	.912	1.284	.710	.478	par_9
genderandculture3	<---	GENDERANDCULTURE	6.435	3.776	1.704	.088	par_10
genderandculture4	<---	GENDERANDCULTURE	8.217	4.749	1.730	.084	par_11
genderandculture5	<---	GENDERANDCULTURE	1.679	1.317	1.275	.202	par_12
regionalization1	<---	REGIONALIZATION	1.000				
regionalization2	<---	REGIONALIZATION	.566	.155	3.651	***	par_13
regionalization3	<---	REGIONALIZATION	.554	.177	3.126	.002	par_14
educationperformance	<---	ATTITUDE	.000				
educationperformance	<---	GENDERANDCULTURE	3.220	1.842	1.748	.080	bd
educationperformance	<---	REGIONALIZATION	.198	.072	2.759	.006	cd
GENDERANDCULTURE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	GENDERANDCULTURE	.000				
ATTITUDE	<---	GENDERANDCULTURE	.000				
GENDERANDCULTURE	<---	ATTITUDE	.069	.039	1.770	.077	ab
ATTITUDE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	ATTITUDE	.373	.060	6.219	***	ac

Estimates (females - Model Number 10)

Scalar Estimates (females - Model Number 10)

Maximum Likelihood Estimates

Regression Weights: (females - Model Number 10)

			Estimate	S.E.	C.R.	P	Label
attitude1	<---	ATTITUDE	1.000				
attitude2	<---	ATTITUDE	.286	.085	3.358	***	par_5
attitude3	<---	ATTITUDE	.646	.106	6.088	***	par_6
attitude4	<---	ATTITUDE	.149	.083	1.789	.074	par_7
attitude5	<---	ATTITUDE	.229	.103	2.223	.026	par_8
genderandculture1	<---	GENDERANDCULTURE	1.000				
genderandculture2	<---	GENDERANDCULTURE	.912	1.284	.710	.478	par_9
genderandculture3	<---	GENDERANDCULTURE	6.435	3.776	1.704	.088	par_10
genderandculture4	<---	GENDERANDCULTURE	8.217	4.749	1.730	.084	par_11
genderandculture5	<---	GENDERANDCULTURE	1.679	1.317	1.275	.202	par_12
regionalization1	<---	REGIONALIZATION	1.000				
regionalization2	<---	REGIONALIZATION	.566	.155	3.651	***	par_13
regionalization3	<---	REGIONALIZATION	.554	.177	3.126	.002	par_14
educationperformance	<---	ATTITUDE	.000				
educationperformance	<---	GENDERANDCULTURE	3.220	1.842	1.748	.080	bd
educationperformance	<---	REGIONALIZATION	.198	.072	2.759	.006	cd
GENDERANDCULTURE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	GENDERANDCULTURE	.000				
ATTITUDE	<---	GENDERANDCULTURE	.000				
GENDERANDCULTURE	<---	ATTITUDE	.069	.039	1.770	.077	ab
ATTITUDE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	ATTITUDE	.373	.060	6.219	***	ac

Source: by the author

Parameters 5 and 6 on attitude are highly significant at 1% while parameters 7 and 8 are significant at 10% and 5% respectively. Gender and culture parameters 9 and 12 are insignificant while parameters 10 and 11 are significant at 10%. Parameter s 13 and 14 are highly significant at 1%.

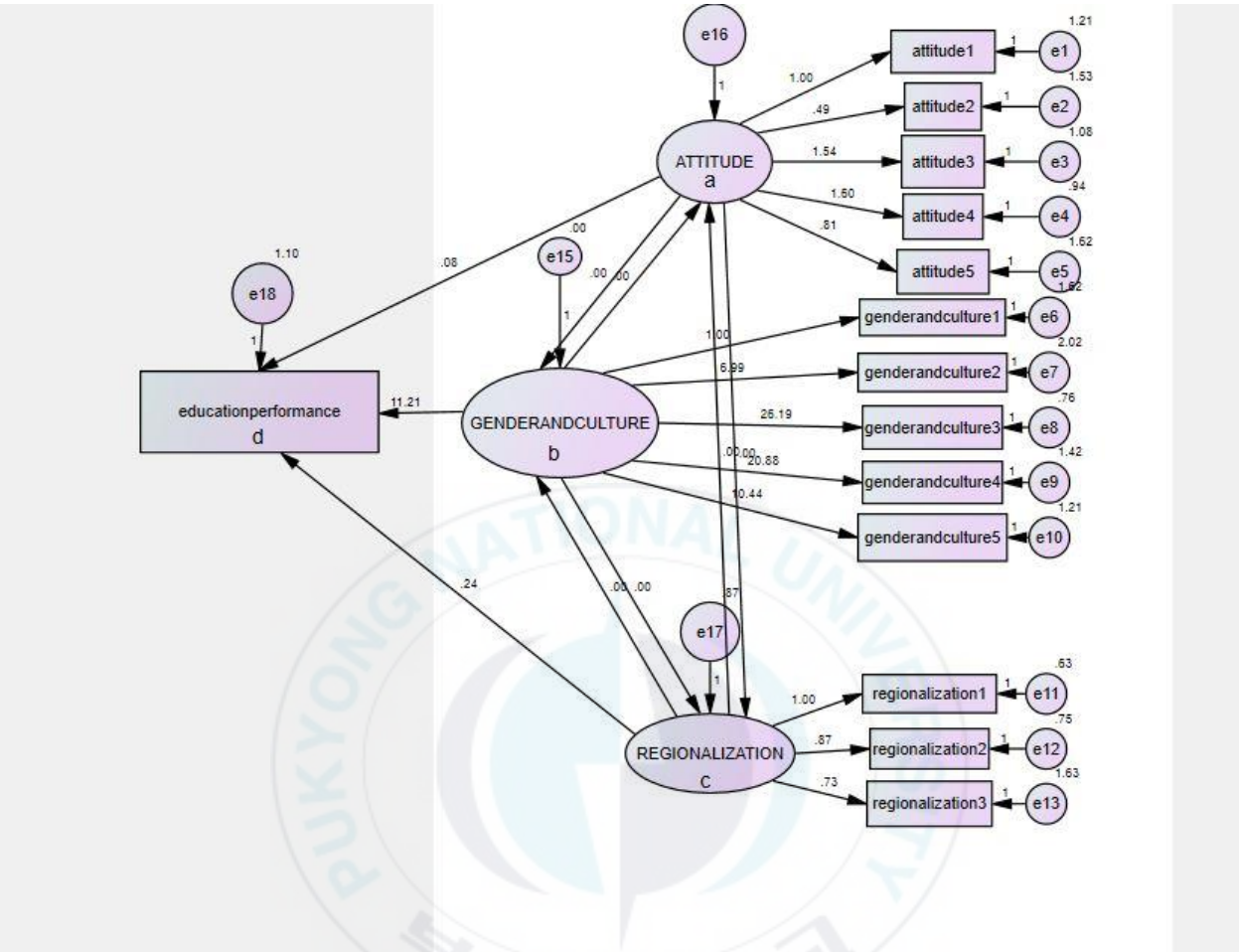
Touching on model 10 on figure 4, the effect of gender and culture on education performance is significant at 10% while regionalization affect education performance at a significant level of 1%.

The effect of attitude on regionalization is highly significant at 1% so we cannot ignore the fact that attitude eventually affect education performance even though it doesn't have direct effects. Attitude on gender and culture is also significant at 10%.

4.3 Path Model: Male Analysis and Data Interpretation

Data was also collected from male respondents and analyzed the same way as the female data to show the difference

Figure 6: Male Path Diagram



Source: by the author

Table 7: Akaike Information Criterion (AIC)

Model	AIC	BCC	BIC	CAIC
Default model	226.871	239.371	301.191	331.191

Model	AIC	BCC	BIC	CAIC
Model Number 2	228.504	241.004	302.824	332.824
Model Number 3	231.058	243.558	305.378	335.378
Model Number 4	236.005	248.505	310.325	340.325
Model Number 5	226.993	239.493	301.314	331.314
Model Number 6	230.041	242.541	304.361	334.361
Model Number 7	239.226	251.726	313.546	343.546
Model Number 8	229.912	242.412	304.232	334.232
Model Number 9	240.509	253.009	314.829	344.829
Model Number 10	228.850	241.767	305.647	336.647
Model Number 11	230.869	243.786	307.667	338.667
Model Number 12	230.095	243.011	306.892	337.892
Model Number 13	236.395	248.895	310.715	340.715
Model Number 14	237.413	249.913	311.733	341.733
Model Number 15	241.571	254.071	315.891	345.891
model number 16	240.441	252.941	314.761	344.761
Model Number 17	237.591	250.091	311.911	341.911
Model Number 18	232.315	244.815	306.635	336.635
Model Number 19	240.112	252.612	314.432	344.432
Saturated model	210.000	253.750	470.120	575.120
Independence model	323.156	328.989	357.839	371.839

Source: by the author

According to the table above, model 5 was the lowest at 226.993 compared to the rest of the models.

Table 8: Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI)

Model	RMR	GFI	AGFI	PGFI
Default model	.214	.779	.691	.557
Model Number 2	.209	.789	.705	.564
Model Number 3	.207	.775	.685	.554
Model Number 4	.207	.772	.681	.551
Model Number 5	.204	.789	.704	.563
Model Number 6	.198	.778	.689	.556
Model Number 7	.235	.779	.691	.557
Model Number 8	.224	.791	.708	.565
Model Number 9	.235	.768	.675	.548
Model Number 10	.203	.790	.702	.557
Model Number 11	.198	.785	.695	.553
Model Number 12	.207	.790	.703	.557
Model Number 13	.245	.787	.701	.562
Model Number 14	.250	.788	.703	.563
Model Number 15	.246	.781	.694	.558
model number 16	.236	.772	.681	.551
Model Number 17	.251	.788	.704	.563
Model Number 18	.234	.786	.700	.561

Model	RMR	GFI	AGFI	PGFI
Model Number 19	.259	.779	.690	.556
Saturated model	.000	1.000		
Independence model	.331	.634	.578	.550

Source: by the author

The Goodness of Fit Index (GFI) of model 5 is .789 which is the second highest figure in the column and Adjusted Goodness of Fit Index (AGFI) also has the second highest figure which is .704. According to the GFI and AGFI, the table above shows model 8 to be the best fit hence the need to check the Root Mean Square Error of Approximation (RMSEA).

Table 9: Root Mean Square Error of Approximation (RMSEA)

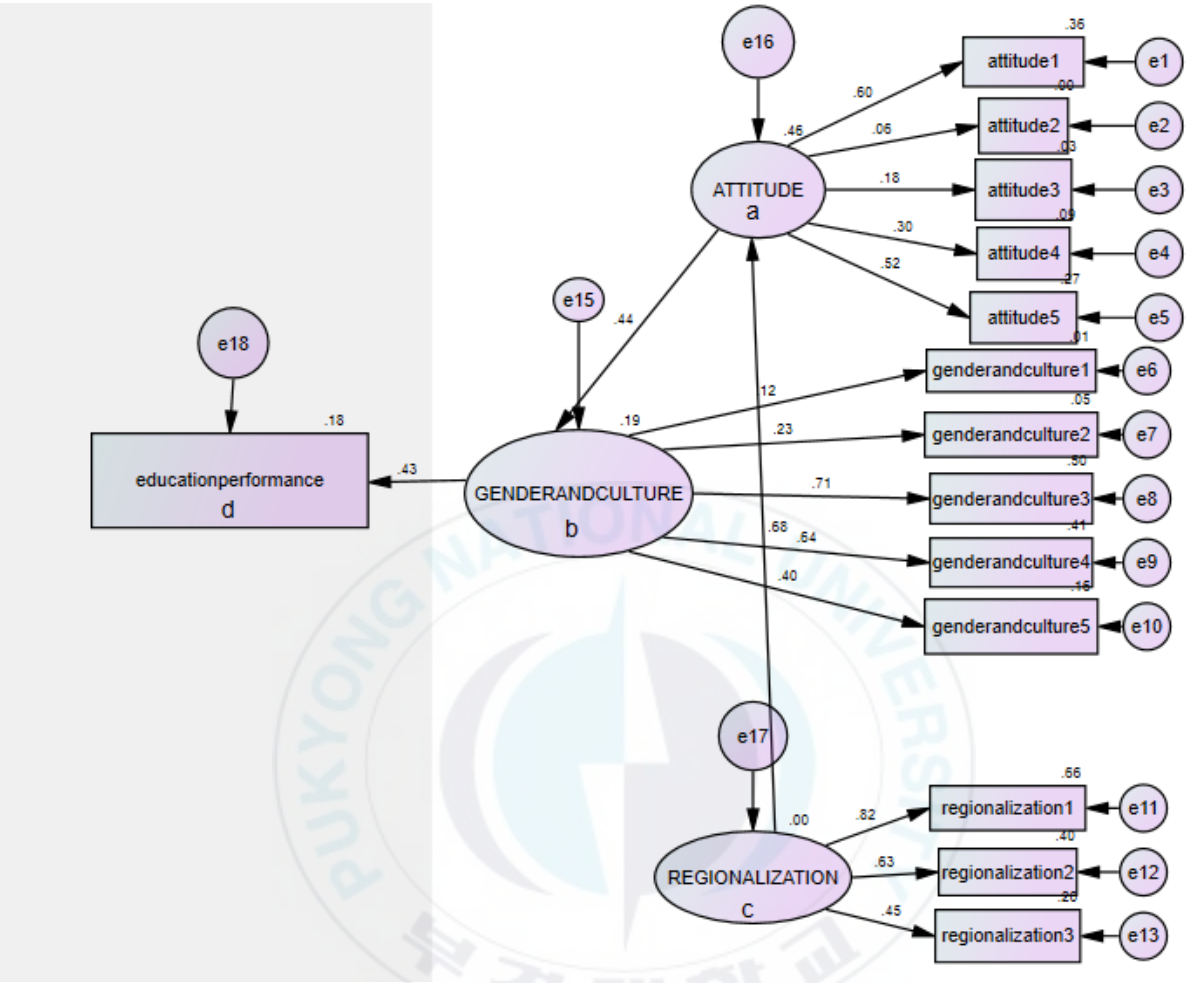
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.119	.094	.143	.000
Model Number 2	.120	.096	.144	.000
Model Number 3	.121	.097	.145	.000
Model Number 4	.124	.101	.148	.000
Model Number 5	.119	.095	.143	.000
Model Number 6	.121	.097	.145	.000
Model Number 7	.126	.103	.150	.000
Model Number 8	.121	.097	.145	.000
Model Number 9	.127	.104	.151	.000
Model Number 10	.120	.096	.144	.000
Model Number 11	.121	.097	.146	.000

Model	RMSEA	LO 90	HI 90	PCLOSE
Model Number 12	.121	.097	.145	.000
Model Number 13	.125	.101	.149	.000
Model Number 14	.125	.102	.149	.000
Model Number 15	.128	.104	.152	.000
model number 16	.127	.104	.151	.000
Model Number 17	.125	.102	.149	.000
Model Number 18	.122	.098	.146	.000
Model Number 19	.127	.103	.151	.000
Independence model	.161	.140	.181	.000

Source: by the author

The table shows that the RMSEA for model number 5 is .119 which when rounded off come to .10 which shows the model is reliable.

Figure 7: Final Male Path Diagram



Source: by the author

As seen in the above diagram, attitude and regionalization have no direct effect on the education performance on the male gender. Regionalization affects attitude, which in return affects gender and culture. Gender and culture is the only variable that directly affects education performance.

45% of the data in attitude explain gender and culture while 19% of the gender and culture data explain education performance.

Figure 8: Statistical Significance of model 5

Estimates (Group number 1 - Model Number 5)

Scalar Estimates (Group number 1 - Model Number 5)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Model Number 5)

			Estimate	S.E.	C.R.	P	Label
attitude1	<---	ATTITUDE	1.000				
attitude2	<---	ATTITUDE	.064	.338	.191	.849	par_4
attitude3	<---	ATTITUDE	.297	.347	.857	.392	par_5
attitude4	<---	ATTITUDE	.619	.371	1.668	.095	par_6
attitude5	<---	ATTITUDE	1.544	.591	2.611	.009	par_7
genderandculture1	<---	GENDERANDCULTURE	1.000				
genderandculture2	<---	GENDERANDCULTURE	.938	.581	1.613	.107	par_8
genderandculture3	<---	GENDERANDCULTURE	2.250	.972	2.314	.021	par_9
genderandculture4	<---	GENDERANDCULTURE	2.356	1.018	2.314	.021	par_10
genderandculture5	<---	GENDERANDCULTURE	1.275	.612	2.084	.037	par_11
regionalization1	<---	REGIONALIZATION	1.000				
regionalization2	<---	REGIONALIZATION	.729	.175	4.172	***	par_12
regionalization3	<---	REGIONALIZATION	.639	.187	3.407	***	par_13
educationperformance	<---	ATTITUDE	.000				
educationperformance	<---	GENDERANDCULTURE	1.331	.626	2.127	.033	bd
educationperformance	<---	REGIONALIZATION	.000				
GENDERANDCULTURE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	GENDERANDCULTURE	.000				
ATTITUDE	<---	GENDERANDCULTURE	.000				
GENDERANDCULTURE	<---	ATTITUDE	.504	.278	1.813	.070	ab
ATTITUDE	<---	REGIONALIZATION	.331	.130	2.544	.011	ca
REGIONALIZATION	<---	ATTITUDE	.000				

Source: by the author

Figure 8 above shows the statistical significance of model 5 which is the best model for the male group. Statistical significance is achieved by looking at the p value. The p value of parameters 4 and 5 of attitude are insignificant hence we cannot say anything about them. Parameters 6 and 7 are significant at 10% and 5% respectively.

On the gender and culture, parameter 8 is insignificant but parameters 9, 10 and 11 are significant at 5%. Parameters 12 and 13 of regionalization are highly significant at 1% level.

Overall, the model shows that only gender and culture affect education performance directly. Looking at the p-value, gender and culture affect education performance at a significant level of 5%. It is also important to mention that the effect of attitude on gender and culture is insignificant while that of regionalization on attitude is significant at 5%.

4.4 Combined Data Analysis – male and female data

Here, a combined data of both the males and the females is going to be analyzed as one to see how different it is from the individual genders data. Same structural model was used as the one in the male and female data but a combination of the two sets of data is expected to give a different results. We will again look at the same model fit indexes which are the AIC, GFI, AGFI and RMSEA.

Table 10: Akaike Information Criterion (AIC) – Combined data

Model	AIC	BCC	BIC	CAIC
Default model	988.690	1014.720		
Model Number 2	983.913	1009.942		
Model Number 3	996.576	1022.606		
Model Number 4	1026.040	1052.069		
Model Number 5	974.938	1000.967		
Model Number 6	1000.050	1026.079		
Model Number 7	1021.826	1047.855		

Model	AIC	BCC	BIC	CAIC
Model Number 8	998.923	1024.953		
Model Number 9	1026.287	1052.317		
Model Number 10	967.995	994.334		
Model Number 11	985.307	1011.646		
Model Number 12	986.218	1012.557		
Model Number 13	1012.257	1038.286		
Model Number 14	1013.596	1039.626		
Model Number 15	1031.952	1057.982		
model number 16	1051.311	1077.340		
Model Number 17	1025.944	1051.974		
Model Number 18	1030.403	1056.433		
Model Number 19	1054.111	1080.141		
Saturated model	630.000	727.611		
Independence model	1508.790	1521.805		

Source: by the author

According to the table above, model 10 is our best model as it has the lowest figure compared to the other models. So we have to check other confirmatory model indexes.

Table 11: Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI)

Model	RMR	GFI	AGFI	PGFI
Default model	.203	.769	.685	.564

Model	RMR	GFI	AGFI	PGFI
Model Number 2	.212	.773	.690	.567
Model Number 3	.215	.767	.683	.563
Model Number 4	.220	.763	.677	.560
Model Number 5	.207	.776	.694	.569
Model Number 6	.210	.772	.690	.566
Model Number 7	.229	.766	.681	.562
Model Number 8	.217	.779	.699	.571
Model Number 9	.239	.764	.679	.560
Model Number 10	.208	.776	.694	.567
Model Number 11	.205	.774	.690	.565
Model Number 12	.211	.774	.691	.565
Model Number 13	.232	.774	.692	.568
Model Number 14	.255	.766	.681	.562
Model Number 15	.236	.769	.685	.564
model number 16	.240	.762	.675	.559
Model Number 17	.252	.767	.682	.562
Model Number 18	.239	.771	.688	.565
Model Number 19	.259	.758	.670	.556
Saturated model	.000	1.000		
Independence model	.324	.618	.559	.535

Source: by the author

The Goodness of Fit Index (GFI) shows model 10 is the second best model after model 8 as it has the second highest figure among the models in the table above hence the need to use Root Mean Square Error of Approximation (RMSEA) as another confirmatory index.

Table 12: Root Mean Square Error of Approximation (RMSEA)

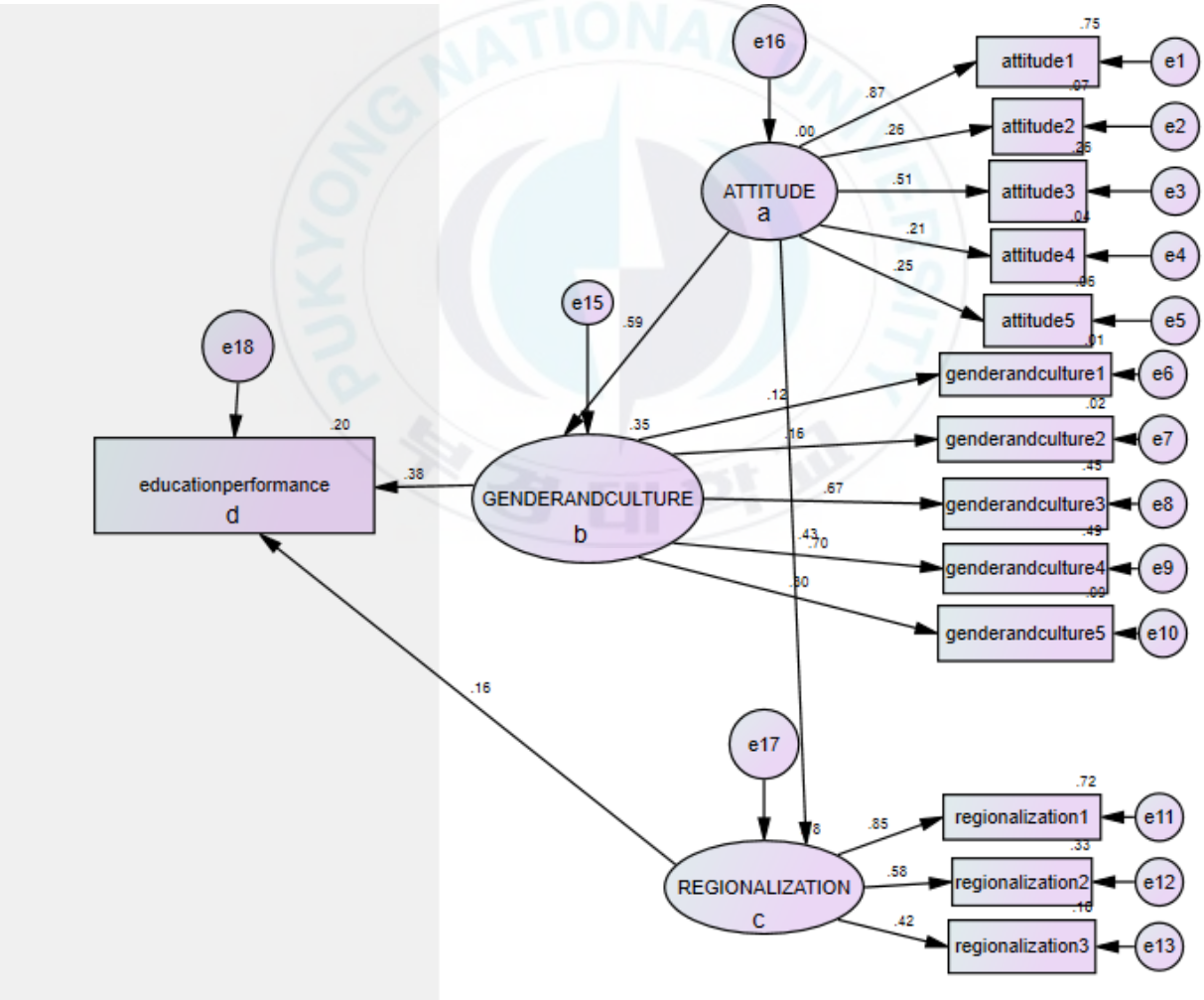
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.082	.076	.088	.000
Model Number 2	.081	.075	.087	.000
Model Number 3	.082	.076	.088	.000
Model Number 4	.084	.078	.090	.000
Model Number 5	.081	.075	.087	.000
Model Number 6	.082	.076	.088	.000
Model Number 7	.084	.078	.090	.000
Model Number 8	.082	.076	.088	.000
Model Number 9	.084	.078	.090	.000
Model Number 10	.080	.074	.086	.000
Model Number 11	.081	.075	.087	.000
Model Number 12	.081	.075	.088	.000
Model Number 13	.083	.077	.089	.000
Model Number 14	.083	.077	.089	.000
Model Number 15	.084	.079	.091	.000
model number 16	.086	.080	.092	.000
Model Number 17	.084	.078	.090	.000
Model Number 18	.084	.078	.090	.000

Model	RMSEA	LO 90	HI 90	PCLOSE
Model Number 19	.086	.080	.092	.000
Independence model	.105	.099	.110	.000

Source: by the author

From the above table, we can conclude that model 10 is our best model as it has its RMSEA at .08 which is significant as it is equal to .1 when rounded off.

Figure 9: Final male and female path diagram



Source: by the author

The model above is very similar to the female model save for the difference in data. It shows that regionalization does not affect gender or attitude in any way but it has direct effects on education performance of both male and female students.

Attitude on the other hand, according to the model above does not have direct effect on education performance. However, it affects gender and culture and regionalization which then affect education performance.

Figure 10: Statistical Significance of model 5

			Estimate	S.E.	C.R.	P	Label
attitude1	<---	ATTITUDE	1.000				
attitude2	<---	ATTITUDE	.285	.091	3.140	.002	par_5
attitude3	<---	ATTITUDE	.618	.110	5.641	***	par_6
attitude4	<---	ATTITUDE	.229	.087	2.625	.009	par_7
attitude5	<---	ATTITUDE	.320	.102	3.129	.002	par_8
genderandculture1	<---	GENDERANDCULTURE	1.000				
genderandculture2	<---	GENDERANDCULTURE	1.356	.898	1.511	.131	par_9
genderandculture3	<---	GENDERANDCULTURE	5.510	2.345	2.350	.019	par_10
genderandculture4	<---	GENDERANDCULTURE	6.135	2.601	2.358	.018	par_11
genderandculture5	<---	GENDERANDCULTURE	2.039	1.003	2.033	.042	par_12
regionalization1	<---	REGIONALIZATION	1.000				
regionalization2	<---	REGIONALIZATION	.649	.126	5.161	***	par_13
regionalization3	<---	REGIONALIZATION	.580	.132	4.392	***	par_14
educationperformance	<---	ATTITUDE	.000				
educationperformance	<---	GENDERANDCULTURE	2.727	1.147	2.377	.017	bd
educationperformance	<---	REGIONALIZATION	.159	.062	2.578	.010	cd
GENDERANDCULTURE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	GENDERANDCULTURE	.000				
ATTITUDE	<---	GENDERANDCULTURE	.000				
GENDERANDCULTURE	<---	ATTITUDE	.095	.040	2.395	.017	ab
ATTITUDE	<---	REGIONALIZATION	.000				
REGIONALIZATION	<---	ATTITUDE	.409	.064	6.397	***	ac

Source: by the author

All the parameters weighted on attitude are significant at 5% except parameter 6 which is highly significant at 1%. Gender and culture parameters are all significant at 5% save for parameter 9 which is insignificant. Regionalization parameters are highly significant at 1%.

According to the model, gender and culture and regionalization affect education performance directly. Jointly we can see the effect of gender and culture and that of regionalization on education performance are significant at 5%.

We can also not ignore the fact that attitude is affect gender at 5% significant level and it's effect on regionalization is also highly significant at 1%.

According to Creswell (2003) this is interpreted that there is a 2% probability that the variables tested are independent on education. This therefore validates the finding earlier received in the literature as true. This paves way for the introduction of the regressions analysis that this report shares for the individual weights.

The interest is to have the regressed weights interpreted as predictable thus supporting our thesis on the factors attitude, gender and culture and regionalization affecting education as tallied to the exogenous variables. In seeking to interest the null hypotheses, the valuation will be seeking the number that is close to zero such that the null hypothesis can be rejected. In this case the null hypothesis formulated with the AMOS data are

- $H0_1$ - attitude does affect the education performance in Kenya
- $H0_2$ - gender and culture affect education performance in Kenya
- $H0_3$ – Regionalization does affect the education performance in Kenya

Under Gender and culture the variables tested show a very strong variation. Attitude on the other hand, is appreciated as a factor affecting the education performance though indirectly. The valuation for the propensities of test in this case the weight of the endogenous variable is high. Gender and culture is a strong factor as far as education performance is concerned. Attitude ranks last in the factors affecting the other predetermined variables within our model of research compared to gender and culture and regionalization. The results are also seen to be the same even with the standardized effect which factor in the variance, the direct and the indirect effect. The data analyzed indicate that gender and culture and regionalization are the major factors affecting education. This is due to the fact that they have direct effect on the education performance.

From the model analysis the interest from the data observed by AMOS was placed on identifying the model with the lowest AIC. Therefore, model 10 shows that other than gender, regionalization is also affected by the students' attitude. This is true as students whose schools exist in rural areas always feel marginalized and deprived of facilities such as social amenities, infrastructure, stationery, and qualified teachers that the schools in urban areas enjoy. Nonetheless, this pushes for the interest that attitude therefore has as developed in the theoretical analysis.

Attitude affects both gender and culture and regionalization hence it is an indirect contributing factor of education performance. The relationship between gender and education performance has forever remained an unsolved myth by many researchers. This research shows that gender and culture and regionalization directly affect education performance.

Table 13: summary of findings

#	Section	Results	Explanation
	Gender	Female: 54 % Male: 46%	Majority of the population who are recorded in the institutions of learning are females. hence reason behind the affirmative actions
	Average satisfaction with government provision and protection services for education (inclusive of subsidizing education)	not good: 12% good : 18% improving : 15% stagnant over the years: 45% excellent : 10%	The satisfaction levels indicate on the average position that the four factor affecting education top of them being states influence have on the stakeholders of the education sector.
	Aspect of regionalization and attitude for education	regionalization has increased the number of national and county level schools by more than 100%	This growth however does not add up when the education infrastructure is considered. This trickled

#	Section	Results	Explanation
			back to the effects of cost of education

Source: by the author

5.0 Conclusion

The discussion is based on the research objectives, the research questions, the research model in relation to the findings from the quantitative data collected from the methodology and that of the literature findings. Thus looking at the main concern that the data collection and the data management had on interpretation, the identified objectives of the research was two in number. This discussion of the data collected will be more inclined at looking and highlighting the position that the research has had in executing and examining the position of the objectives conclusively. The objectives of this report were narrowed into two very precise ones making the assumptions that the education performance in Kenya has better handling process. Thus, looking at the findings and the impacts of these factors the stakeholders should develop avenues of improving the performance of education in Kenya. Interesting will be to suggest a complete overhaul of the developments and the historical perspective of the Kenyan education system. Thus, following results that have been provided by the ever-changing environment, the new Kenyan constitution should have provided a better position with the regionalization of education, the change of the attitude towards education, and the gender and culture that affect the country's education performance.

The characteristics below influence the stakeholders' acceptance of the Kenyan education products and services are: (this is as developed from the literature review findings)

- ✓ Relative Advantage of those with monetary endowment in terms of the cost of education

- ✓ Effectively committing to the regionalization of education in terms of administration and management.
- ✓ Providing more relevant incentives to the primary and the secondary education levels.

The Kenyan education sector therefore will need to use a different approach in implementation of its programs. These are the segmentation strategies that are ineffective for innovation, according to Duflo, Dupas & Kremer (2014, p. 17) this will aim to explain and capitalize on differences with the stakeholders needs. They will have different unmet outcomes because they struggle differently when executing and implementing the factors affecting education performance. These insights make it possible to surgically formulate a segmentation strategy that will lead to growth.

The unique factors affecting the Kenyan education performance have been identified, with the gender and culture coming out as the strongest variable compared to regionalization and attitude. Regionalization also affects education performance directly going by the combined male and female data. The data shows that students' attitude does not directly affect their education performance.

Policy implications

Recommendations on how Kenya can improve its performance and return in human capital creation journey are derived from the identification of gaps between the desired current experience and the former experience actually received. Actions that need to be taken to bridge such gaps as put forward.

The Kenyan government, through the body that governs education in different counties spread all over the country should look into Gender and culture as the main factor affecting the education performance.

The male and female students should be given equal opportunities and equally conducive environment for learning.

Regionalization of education was recently put in place when the government changed several provincial schools to national school status and several colleges in different counties to university colleges. This was a good move but the government should consider developing infrastructure and furnishing schools in the different regions with amenities, and facilities to help them have an environment that is as conducive as the environment in urban areas.

The limitations of the research

Subjective analysis of data, this is based on the nature of data being collected having a qualitative aspect nevertheless lacking in numerical inference ability.

The personal bias by individuals filling out the questionnaires cannot be assumed as the education system in Kenya has got two very competitive functions (the public and the private).

The questionnaire may have limited the kind of information provided, based on the extensiveness of the matter being handled these questionnaires cannot be said to be fully recognisant and conclusive in the handling of the matters of educations and the factors affecting education in Kenya.

Owing to the need to have the report carry our research conclusively, sampling will be sued as the entire education population cannot be served in this case. Therefore, the recommendations of this study will be fully based on the characteristic of the sample population. According to Creswell

(2003), the major shortfall in sampling is that the likelihood of leaving out a major or specifically important part of the population is very eminent. Nevertheless, these reports will only acknowledge the shortfalls of sampling as valid to the certain sections of data collected.

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QUESTIONNAIRE

Dear respondents,

My name is Desmona Atieno Okech. I am a graduate student at Pukyong National University. My thesis research topic is ‘A study on the education system in devolved Kenya. I am conducting a research to determine to what extent education performance has changed since devolution was embraced a few years ago in Kenya. I have also included attitude and gender /culture as other factors that contribute to education performance.

I would love to know about your views on this through the questionnaire.

Do not hesitate to contact me in case of any queries. Below is my contact information:

Desmona Atieno Okech

Master’s Degree student

Pukyong National University

Email: desmona.atieno@gmail.com

Tel: +821068933566

917-4 Daeyeon dong Namgu Busan 608-813, South Korea

The survey will only take 5 minutes, and your responses are completely anonymous. You can only take the survey once.

I really appreciate your input!

Part 1: Demographic Questions

For the following question, tick (✓) where appropriate

1.	Gender	Male ☐ Female ☐
2.	Age	20-29☐ 30-39☐ 40 and over☐
3.	Education level	Undergraduate degree☐ Graduate (Masters) ☐ Doctorate☐
4.	Parents' income	≤ KSHS 50,000☐ KSHS 50,000-200,000☐ ≥KSHS 200,000 ☐
5.	Cost of education	
	Early childhood education	≤ KSHS 40,000☐
	Primary education	KSHS 40,000-80,000☐
	Secondary education	KSHS 80,000-100,000☐
	University and college education	≥KSHS 100,000 ☐

PART 2

The following questions are about to how attitude, gender and regionalization affect education performance.

Please indicate the degree to which you perceive the following statements by ticking (✓) in the appropriate space.

Strongly Agree
Slightly Agree
Maybe
Slightly Disagree
Strongly Disagree

#	Question	Strongly agree	Slightly agree	Maybe	Slightly disagree	Strongly disagree
1	Attitude affects education performance					
2	My attitude influences my teachers acceptance or rejection					
3	My living environment affects my attitude towards education.					
4	My culture affects my attitude towards education.					
5	My attitude affects my completion of classroom tasks					
6	My cultural perception on gender affects my learning					
7	I feel the male gender is prioritized in learning					
8	My gender impacts my level of learning					
9	Gender gaps affects literacy					
10	Gender identity affects selection of courses					
11	My location affects my learning process					
12	My learning is affected by regional resources					
13	The value of education in my region affects my learning outcomes					
14	My attitude, gender and location collectively affect my education performance					

Thank you so much for your participation!!!

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