The Predictive Power of Sources of Teacher Efficacy beliefs on Economics Teachers' Efficacy beliefs in the Implementation of Senior High School Economics Curriculum

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ABSTRACT

The objective of the study was to investigate the predictive power of sources of teacher efficacy beliefs on Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum. Random selection of 123 SHS Economics teachers from the Western Region of Ghana was surveyed for the study. Our empirical analysis from the multiple linear regression revealed the following key findings: First, mastery experiences appeared to have the strongest and positive predictive power of Economics teachers' efficacy beliefs in the implementation of SHS Economics curriculum but such predictive power is not significant under the prevailing teacher characteristics of SHS Economics teachers in the Region. Secondly, social persuasions and physiological states remained the primary sources of Economics teachers' efficacy beliefs for efficacies in instructional strategies and classroom management while vicarious experiences have the strongest predictive power on Economics teachers' efficacy in students' engagement. Based on the results, conclusions and recommendations were provided.

Keyword: *Sources of Teacher Efficacy beliefs, Economics teachers' efficacy beliefs, Economics Curriculum, Implementation.*

1. INTRODUCTION

The senior high schools (SHSs) in Ghana have undergone several phases of transformation and changes beginning from infrastructural development through to teacher and curriculum development (Ministry of Education; Anamush-Mensah & Benneh, 2014; Zainul-Deen, 2011). With the increasing investment in SHSs in Ghana, studies revealed that curriculum implementation in Ghana has not been impressive (Owusu, 2014; Kwarteng, 2013; 2009). Several factors have been identified to be affecting the successful implementation of the curriculum regardless of the efforts made by the various stakeholders in education. Some of these factors include conservatism on the part of teachers, lack of commitment from teachers, lack of clarity about the curriculum program to be implemented, teachers' capability to implement the curriculum, and constraints such as timetable, class size, and insufficient resources, length of time to implement the curriculum, among others (Owusu, 2014). For instance, Owusu from the perspective of Western Region reported that teachers resort to their own beliefs or ways of implementing the planned curriculum to achieve results that may not be similar to what it was intended. Similarly, Kwarteng (2013) revealed that accounting teachers are non-users of accounting syllabus and teachers give their own interpretation of curriculum implementation. The situation worsens when Economics students at the SHS level rated Economics teachers' effectiveness at an average level (Acquah, 2009).

Researchers own observation shows that Economics teachers mostly follow the lecture-discussion method in the implementation of the curriculum. Our interaction with some Economics teachers revealed that teachers' believe the nature of economics task at the SHS level and the time available requires such an approach to be able to execute the planned curriculum. Indeed, the nature of economics task as specified by the SHS curriculum is relatively difficult compared with other subjects taught at the SHS level, as it requires integrated approaches from mathematical, graphical and ordinary English Language and this calls for teachers with high-level understanding and efficacy to be able to integrate the approaches to successfully implement the curriculum.

With increasing investment in SHSs coupled with prevailing challenges impeding successful implementation of the curriculum, the debate now centers on the implementers of the curriculum. Critics' believe that in the face of challenges, implementers (teachers) participatory behavior in the implementation is paramount to successful curriculum implementation. Thus, questioning the self-efficacy of teachers in the implementation of the curriculum (Roth, 2005). Self-efficacy has been widely used as a powerful theoretical approach for determining and improving a person's participatory behavior and successful implementation of the curriculum (Iaochite, & Souza Neto, 2014; Bandura, 2006; 1997; 1977). Self-efficacy beliefs influence how much effort is spent on an activity, how much perseverance and persistence are evident when encountering obstacles, and how much resilience is brought forth in the face of adverse circumstances to bring about a desirable outcome (Bandura, 2006; Roth, 2005). A significant number of studies have shown a strong relationship between teachers' efficacy beliefs and educational outcomes (Bal-Taştan, 2018; Kim, 2018; Honicke & Broadbent, 2016; Chesnut & Burley, 2015). Regardless of the global attention on teacher efficacy research, studies show that only few teacher efficacy studies have been done within the African context where diverse cultural prevalence has the tendency of revealing using insights into the topic, leaving this area of research underdeveloped within the continent (Ntarmah, 2016; Cobbold & Boateng, 2015; Dibapile, 2012; Klaseen, et al. 2011).

Among the SHS teachers in the Western Region of Ghana where studies have consistently reported unimpressive curriculum implementation, Ntarmah (2016) revealed that SHS Economics teachers in the region have high efficacy beliefs yet their level of efficacy moderately translates into the successful implementation of SHS Economics curriculum. Thus, the finding contradicts earlier studies where teacher high efficacy beliefs lead to successful educational outcome. However, the theoretical argument put forward by self-efficacy theory and empirical studies shows that teachers may exhibit a high level of efficacy beliefs but the source in which they build the efficacy beliefs is of importance. For instance, if teachers build their efficacy beliefs around social persuasion, then it is likely that when the trust of the source of persuasion is doubted, efficacy believes may not necessarily translate into the successful accomplishment of results. The degree to which efficacy beliefs can influence curriculum implementation is influenced by the prevalence of the sources that efficacy beliefs were formed (Schunk & Pajares, 2009; Pajares, 1996). In this regard, the predictive power of sources of teacher efficacy beliefs is a critical factor in understanding why teachers' high levels of efficacy do not fully translate into successful curriculum implementation. With this in mind, it is prudent to thoroughly investigate where teachers derive their efficacy beliefs and identify their predictive power on Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum.

This study seeks to examine the predictive power of sources of teacher efficacy beliefs on Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum. Our study differs from earlier studies in a number of ways. First, our study extends on teacher efficacy studies by providing in-depth examination of the predictive power of sources of teacher efficacy beliefs from the perspective of SHS Economics teachers' in the Western Region of Ghana to explain why high level of Economics teachers efficacy beliefs may not fully translate into successful curriculum implementation while controlling for teacher characteristics. Secondly, we provide a clear-cut direction of which area of Economics teachers' efficacy beliefs do sources of teacher efficacy beliefs have high or low predictive power.

Our study offers a number of intended theoretical and practical contributions. Theoretically, it adds to the literature by providing empirical evidence to validate and widens the applicability of the relevance of self-efficacy theory and the predictive power of sources of teacher efficacy beliefs in the area of Economics teachers' efficacy in implementation of SHS Economics curriculum in the Western Region of Ghana. The findings may contribute to

ongoing sources of teacher efficacy and teacher efficacy beliefs debate by clarifying the predictive power of sources of teacher efficacy in building Economics teachers' efficacy beliefs. Practically, our study seeks to provide Economics teachers, teacher educators and policymakers in education with empirical evidence to understand which of the sources of efficacy beliefs truly predict Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum. Due to self-efficacy's malleability, educators may be provided with a notable influence on the development of Economics teachers' teaching efficacy (Schunk & Pajares, 2009; Pajares, 1996). Thus, this finding is intended to inform appropriate policies to aid teachers in building their efficacy beliefs from reliable and stronger sources.

The rest of the paper was organized as follows: section two dealt with materials and methods comprising variables, participants, instruments, procedure, econometric model, preliminary and diagnostics checks. Section three and four focused on results and discussions respectively while section five dealt with conclusions and recommendations.

2. MATERIALS AND METHODS

2.1 Variables

In this study, the dependent variable was Economics teachers' efficacy beliefs [ETEB] and the independent variable was sources of Economics teachers' efficacy beliefs [SETEB]. ETEB has three main dimensions: efficacy in students' engagement; efficacy in instructional strategies; and efficacy in classroom management. This study examined the full ETEB and the dimensions to understand the predictive power for the overall efficacy beliefs and the dimensions. According to self-efficacy theory, SETEB comes from four major sources: (a) performance accomplishments/mastery experience [ME], (b) vicarious observation/experience [VE], (c) verbal/social persuasion [SP], and (d) physiological states [PS] (Ferreira, 2013; Dibapile, 2012; Usher & Pajares, 2009). In addition to the dependent and independent variables, we controlled for teacher characteristics (TC). Specifically, we controlled for gender, age and teaching experiences of participants. Refer to Appendix for description of Variables.

2.2 Participants

We used a descriptive survey method for the study. Random selection of 123 participants out of 176 Economics teachers in the Western Region of Ghana were involved in the study. We used simple random sampling to select the participants. In terms of characteristics of the participants, 84.55% male while 15.45% female. Similarly, 34.14% are within the ages of 21-30 years, 45.53% are within the ages of 31-40 years and 20.33% are within the ages of 41-50 years. Regarding teaching experiences: 41.46% have taught between 1-5years, 22.76% between 6-10years, 20.33% between 11-15years, 8.13% between 16-20 years while only 7.32% have taught between 21-25 years.

2.3 Instruments

Considering the research objectives, the population, method and the design chosen, we identified questionnaire as the most appropriate for collecting data for this study. Questionnaire allowed the researchers to collect objective data in a large sample of the study population in order to obtain results that are statistically significant especially when resources are limited (Abawi, 2013). We adopted two sets of scales: (1) Sources of Self-efficacy Scale (SSES developed by Usher & Pajares, 2009) for measuring SETEB; and (b) Teacher Sense of Efficacy Scale (TSES developed by Tschannen-Moran & Woolfolk Hoy, 2001) for measuring ETEB. SETEB questionnaire had 24 items in all with six items for each of the four subscales. The subscales are Mastery experiences (ME); Vicarious Experiences (VE); Social Persuasions (SP); and Physiological States (PS). TSES also had 24 items with eight items for each of the three subscales (Efficacy in Student Engagement - ESE, Efficacy in Instructional Strategies - EIS and Efficacy in Classroom Management - ECM). Both SSES and TSES were measured on a 100 point scale with 10 point interval ranging from 0 (certainly cannot do at all) through 50 (moderately can do) to 100 (highly certain can do). We modified the original scales to suit our participants based on the recommendations of the scale developers (Usher & Pajares, 2009; Bandura, 2006; Pajares, Hartley, & Valiante, 2001).

The instruments were used for three main reasons: Firstly, the instruments' design follows the theoretical underpinning (Self-efficacy Theory – Bandura, 1977) of this study. Secondly, the development of the scales followed the guidelines suggested by Bandura for measuring teachers' efficacy beliefs. Additionally, the instruments address the multifaceted nature of the teacher efficacy construct by assessing teachers' efficacy beliefs (Usher & Pajares, 2009; Bandura, 2006; Tschannen-Moran & Woolfolk Hoy, 2001). A pre-test was conducted in similar Senior High Schools in the Cape Coast Metropolis whose characteristics are similar to the study area. The reliabilities of the SETEB from the pre-test was 0.91 for the full range and the subscales were: 0.85 for ME; 0.87 for VE; 0.93 for SP; and 0.87 for PS. Reliabilities of ETEB range from 0.93 for the full scale to 0.87 for the subscales. Reliabilities for the subscales are 0.87 for ESE; 0.96 for EIS; and 0.96 for ECM. These reliabilities are in accordance with the reliabilities of other studies (Ferreira, 2013; Dibapile, 2012; Usher & Pajares, 2009; Tschannen-Moran & Woolfolk Hoy, 2007).

2.3 Procedure

The researchers sort permission from the schools two weeks before the actual data collection. The researchers collected the data themselves. This allowed the researchers to clarify the misunderstandings that arose during the data collection. Data collection took three weeks. Data were screened and the completed questionnaires were entered in Stata software version 15 for analysis. In order to identify the reliable model and statistical methods for analyzing the data, preliminary checks were performed.

2.4 Preliminary Checks

In order to identify appropriate method for estimating the results, preliminary check of the data was perform. The data largely met the assumptions of linear regression (Appendix for preliminary results). For instance, Figures 1 – 4 illustrates that the residuals are normally distributed. In addition, Table 2 shows absence of multicollinearity while Figure 5 shows linearity and error variables.

2.5 Econometric Model

In this study, we hypothesized that ETEB, which is the dependent variable, is a function of SETEB, which is the independent variable. Therefore, the general equation is hypothesized to reflect the objectives for the study as:

$$ETEB = f\left(SETEB\right) \tag{1}$$

Based on the preliminary check, we identified the multiple linear regression as the most appropriate for the study. Therefore, we modeled the relationship from a classical linear regression model to reflect the hypothesized model in equation (1) to include control variables as:

$$Y = a_0 + \beta_1 X' + \beta_2 Z' + \varepsilon \tag{2}$$

where Y is the dependent variable, α_0 is the intercept; β_1 and β_2 represent the coefficients of the independent variables and control variables ($\beta \neq 0$) respectively; X' represents the vector of independent variables, Z' represents the vector of control variables, and ε is the error. At this point, we introduce the variables into the hypothesized model in equation (2).

$$ETEB = a_0 + \beta_1 SETEB + \beta_2 TC + \varepsilon \tag{3}$$

where ETEB is the dependent variable (can be either ETEB, ESE, EIS or ECM), SETEB represents the vector of independent variables, TC (teacher characteristics) represents the control variables. By specifying equation (3), the actual model can be rewritten as:

$$ETEB = a_0 + \beta_1 ME + \beta_2 VE + \beta_3 SP + \beta_4 PS + \beta_5 GEN + \beta_6 AGE + \beta_7 TE + \varepsilon \tag{4}$$

where ETEB is the dependent variable (can be either ETEB, ESE, EIS or ECM), $\beta_1 - \beta_4$ represent the coefficient of the independent variables ME, VE, SP and PS respectively. $\beta_5 - \beta_7$ represent coefficient of the control variables gender (GEN), age (AGE), and teaching experiences (TE).

2.6 Diagnostic Checks

The multiple linear regression model employed in our study makes assumptions such as homoscedasticity, normal distribution, and linearity (Casson & Farmer, 2014; Osborne & Waters, 2002). However, our data did not meet the assumption of homoscedasticity. Hence, we applied suggested techniques for correcting heteroscedasticity in multiple linear regression estimation. Therefore, we used robust standard errors approach to correct for error variance. In addition, F-test and R-squared were checked for joint significant of explanatory variables and explanatory power respectively. This was done to identify whether SETEB truly explain ETEB.

3. RESULTS

In order to provide empirical results to address the objectives of the study, we perform series of estimations. For each of the objective, five different estimations were performed. The results are presented below.

The Predictive Power of SETEB on ETEB

The main objective examined the predictive power of SETEB on ETEB. The result is presented in Table 3.

Table-3: The Predictive Power of SETEB on ETEB

ETEB	Linear Estimations				
	(1)	(2)	(3)	(4)	(5)
ME	0.213** (0.090)	0.201** (0.092)	0.371*** (0.120)	0.031 (0.102)	0.030 (0.095)
VE	0.102** (0.047)	0.103** (0.048)	-0.006 (0.084)	0.232*** (0.046)	0.197*** (0.049)
SP	-0.139*** (0.051)	-0.134*** (0.057)	-0.199*** (0.063)	-0.158*** (0.050)	-0.323*** (0.077)
PS	-0.185*** (0.045)	-0.191*** (0.052)	-0.183*** (0.041)	-0.184*** (0.051)	-0.225*** (0.052)
Gender		-0.746 (1.942)			-5.386*** (1.400)
Age			-4.625** (2.146)		-12.777*** (2.848)
Teaching experience				2.963*** (0.762)	8.719*** (1.911)
Cons	65.572*** (7.270)	67.215*** (6.646)	72.453*** (8.590)	67.875*** (7.164)	103.229*** (9.615)
R-Squared	0.080	0.081	0.120	0.103	0.263
F test	8.79***	6.95***	9.97***	12.51***	18.08***
Observation	123	123	123	123	123

***,** Significant at 1% and 5% respectively. Robust standard errors are in parenthesis.

The result in Table 3 shows that sources of economics teachers' efficacy beliefs significantly influence economics teachers efficacy beliefs with mastery experiences (b=0.213, p<0.05) having stronger influence than vicarious experiences (b=0.102, p<0.05), social persuasions (b= - 0.139, p<0.01) and physiological states (b= - 0.185, p<0.01) without controlling for teacher characteristics. This result is similar to the influence of sources of teachers' efficacy beliefs on economics teachers' efficacy beliefs in the implementation of SHS economics curriculum when

controlling for either gender, age or teaching experiences except vicarious experiences and mastery experiences when controlling for age and teaching experiences respectively (see Table 3). The results indicate positive influence of mastery experiences and vicarious experiences on Economics teachers' efficacy beliefs while social persuasions and physiological states have negative influence. Regardless its stronger predictive power, mastery experiences do not significantly (see Table 3) influence economics teachers' efficacy beliefs in the implementation of SHS economics curriculum when controlling for teacher characteristics (gender, age, and teaching experiences).

The Predictive Power of SETEB on each of the dimensions of ETEB (EIS, ESE, ECM)

The second objective examined the predictive power of SETEB on each of the dimensions of Economics teachers' efficacy beliefs. This provided the opportunity to reveal the predictive power of SETEB on EIS, ESE and ECM. Tables 4, 5 and 6 present the results of SETEB on each of the dimensions of ETEB.

Table-4: The Predictive Power of SETEB on EIS

EIS	Linear Estimations				
	(6)	(7)	(8)	(9)	(10)
ME	0.327*** (0.087)	0.278*** (0.092)	0.482*** (0.111)	0.184* (0.101)	0.158* (0.096)
VE	0.103** (0.048)	0.108** (0.047)	-0.002 (0.075)	0.206*** (0.052)	0.163*** (0.048)
SP	-0.199*** (0.051)	-0.179*** (0.057)	-0.257*** (0.061)	-0.214*** (0.050)	-0.366*** (0.072)
PS	-0.210*** (0.042)	-0.237*** (0.048)	-0.208*** (0.038)	-0.209*** (0.046)	-0.273*** (0.048)
Gender		-3.019 (1.882)			-7.982*** (1.505)
Age			-4.515** (1.893)		-13.158*** (2.520)
Teaching experience				2.337*** (0.795)	8.013*** (1.708)
Cons	62.695*** (6.927)	69.349*** (6.786)	69.414*** (7.989)	64.512*** (6.848)	106.093*** (9.227)
R-Squared	0.126	0.139	0.1637	0.1402	0.3206
F test	13.48***	10.25***	12.97***	13.06***	18.96***
Observation	123	123	123	123	123

***,**,* Significant at 1%, 5% and 10% respectively. Robust standard errors are in parenthesis.

The results in Table 4 show that sources of economics teachers' efficacy beliefs significantly influence Economics teachers' efficacy in instructional strategies with mastery experiences having stronger influence than vicarious experiences, social persuasions and physiological states except controlling for teaching experiences or all other teacher characteristics simultaneously. For instance, when controlling for teacher characteristics, mastery experiences (b = 0.158, p<0.10) becomes the weakest but positive predictor of Economics teachers' efficacy in instructional strategies against social persuasion (b= - 0.366, p<0.01) as the strongest and a negative predictor.

Table-5: The Predictive Power of SETEB on ESE

ESE	Linear Estimations				
	(11)	(12)	(13)	(14)	(15)
ME	0.050 (0.093)	0.017 (0.096)	0.123 (0.122)	-0.161 (0.103)	-0.174* (0.100)
VE	0.165*** (0.045)	0.169*** (0.045)	0.116 (0.081)	0.317*** (0.045)	0.288*** (0.049)
SP	-0.135*** (0.046)	-0.122** (0.054)	-0.163*** (0.063)	-0.157*** (0.046)	-0.269*** (0.078)
PS	-0.145*** (0.047)	-0.163*** (0.052)	-0.145*** (0.046)	-0.144*** (0.054)	-0.186*** (0.054)
Gender		-2.041 (2.030)			-5.250*** (1.518)
Age			-2.139 (2.085)		-9.425*** (2.896)
Teaching experience				3.442*** (0.873)	7.556*** (1.957)
Cons	71.575*** (7.203)	76.074*** (6.979)	74.758*** (8.596)	74.250*** (6.998)	103.041*** (9.890)
R-Squared	0.063	0.0687	0.0712	0.093	0.1794
F test	10.48***	9.88***	9.72***	18.11***	41.49***
Observation	123	123	123	123	123

***,**,* Significant at 1%, 5% and 10% respectively. Robust standard errors are in parenthesis.

With regards, Economics teachers' efficacy in students engagement, the results in Table 5 show that mastery experiences is not a significant predictor except when controlling all the teacher characteristics simultaneously, yet negative and only at 10% significant level. On the contrary, Table 5 revealed vicarious experience (b = 0.288, p<0.01) as the strongest predictor of Economics teachers' efficacy in students engagement. Such strong predictive power of vicarious experiences on Economics teachers' efficacy in students' engagement runs through the estimations exception when controlling for age where the variable is not significant (See Table 5). Interestingly, social persuasion and physiological states that are often regarded as weak variables within teacher efficacy development remained significantly negative predictor of Economics teachers' efficacy in students' engagement in all the estimations**.**

Table-6: The Predictive Power of SETEB on ECM

ECM	Linear Estimations				
	(16)	(17)	(18)	(19)	(20)
ME	0.261*** (0.098)	0.307** (0.099)	0.508** (0.134)	0.070 (0.112)	0.105 (0.100)
VE	0.036 (0.053)	0.032 (0.056)	-0.132 (0.099)	0.173*** (0.047)	0.141** (0.056)
SP	-0.083 (0.063)	-0.101 (0.069)	-0.176** (0.071)	-0.103 (0.063)	-0.333*** (0.089)
PS	-0.199***	-0.175*** (0.058)	-0.197***	-0.198***	-0.216*** (0.057)

	(0.051)		(0.043)	(0.057)	
Gender		2.825 (2.104)			-2.924* (1.535)
Age			-7.220*** (2.533)		-15.748*** (3.232)
Teaching experience				3.112*** (0.751)	10.590*** (2.145)
Cons	62.454*** (7.875)	56.227*** (6.716)	73.197*** (9.408)	64.872*** (7.845)	100.561*** (10.492)
R-Squared	0.072	0.082	0.152	0.093	0.308
F test	6.65***	6.73***	9.08***	10.27***	11.09***
Observation	123	123	123	123	123

***,**,* Significant at 1%, 5% and 10% respectively. Robust standard errors are in parenthesis.

With the exception of mastery experiences, all other sources of Economics teachers' efficacy beliefs are significant predictors of Economics teachers' efficacy in classroom management when controlling for teacher characteristics (See Table 6). Even though, the results revealed social persuasions (b = -0.333, p<0.01) as a strongest predictor, the variable was not found to be consistent predictor for a number of estimations. However, physiological states remained the single most influential variable throughout the estimations while mastery experiences was found to be strongest predictor with or without controlling for gender or age (See Table 6).

4. DISCUSSION

The results of the study offer empirical evidence for teacher efficacy literature as it reveals useful insights into predictive power of Economics teachers' sources of efficacy beliefs to build their efficacy beliefs in the implementation of the SHS Economics curriculum. Even though mastery experiences appeared to be the strongest predictor of Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum, such predictive power is not significant under the prevailing teacher characteristics of SHS Economics teachers in the Western Region of Ghana. The implication of this result is that considering the prevailing characteristics of Economics teachers in the region, a high or low level of Economics teachers' efficacy beliefs in implementation is likely for be formed from other sources of efficacy beliefs such as vicarious experiences, social persuasions and physiological states other than mastery experiences. This finding contradicts the theoretical argument of self-efficacy theory and the finding of Usher et al. (2019) where mastery experiences are argued to have the strongest predictive power of self-efficacy. Such sources of building efficacy beliefs by SHS Economics teachers according to self-efficacy theory and literature may not necessarily translate the high level of efficacy beliefs into successful curriculum implementation since these sources of information are not directly derived from the direct experiences of the teachers. This partly explains why even though Economics teachers have high efficacy beliefs, yet, it does not translate the successful implementation of the SHS Economics curriculum (Ntarmah, 2016). Surprisingly, social persuasions remain a negative predictor of Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum regardless of the controlling effects of teacher characteristics. The finding seems to suggest that as the Economics teachers receive advice, compliment and other positive comments from parents, peers and other people they initially develop high confidence in themselves. This influences them to sometimes set unrealistic tasks for themselves consequently having negative repercussions on building their efficacy beliefs.

Similarly, the results show that social persuasions have the strongest but negative predictive power on Economics teachers' efficacy in instructional strategies in the implementation of the SHS Economics curriculum with teacher characteristics having controlling effects while mastery experiences have the weakest but positive predictive power. Arguably, social persuasions and physiological states consistently prove relatively high predictive power than other sources of efficacy beliefs especially considering teacher characteristics such as gender, age and teaching

experiences. This finding is consistent with the findings of Kiran and Sungur (2012), and Chen and Usher (2013). Thus, this study reports the powerful role social persuasions and physiological states in building Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum. In this regard, the efficacy beliefs of Economics teachers in the Region are likely to be minimized by the strong and negative repercussions of social persuasions and physiological states.

Concerning Economics teachers' efficacy in students' engagement, vicarious experiences have the strongest and positive predictive power than the other sources of efficacy beliefs with or without controlling for gender, age and teaching experiences. Surprisingly, mastery experiences are the weakest and a negative predictor of Economics teachers' efficacy in students' engagement. Again, social persuasions and physiological states remained negative predictors of Economics teachers' efficacy in students' engagement. This result is similar to earlier finding where social persuasions and physiological states (even though the predictive power here is relatively small) consistently showed negative influence on Economics teachers' efficacy beliefs in the implementation of SHS Economics curriculum. This finding validates the study of Iaochite and Souza Neto (2014) where vicarious experiences and social persuasions were the main sources of efficacy information for building efficacy beliefs.

With the exception of physiological states, no sources of teachers' efficacy beliefs were consistent in its predictive power on Economics teachers' efficacy in classroom management for all the estimations. This finding corroborates with that of Lin et al. (2013) who found physiological states as a primary source of building efficacy beliefs. However, physiological states remain negative predictors of Economics teachers' efficacy in classroom management. This means that the teachers' human body often inform them of emotions that may not be evident in the classroom when dealing with classroom management (Bandura, 2004). Thus, anxiety, students' negative behavior among others that Economics teachers do not expect in the implementation of the curriculum does affect their efficacy in classroom management (Kennedy, 2013). Regardless of physiological states' consistency in predicting Economics teachers' efficacy in classroom management, social persuasions have the strongest predictive power taking into consideration teacher characteristics such as gender, age and teaching experiences even though the direction of the influence is negative. The implication is that in reality, it may actually be easier to undermine Economics teachers' efficacy in classroom management through social persuasions than to enhance it, particularly where teachers eagerly attend to the messages they receive from those close to them (Bandura, 1997).

5. CONCLUSION AND RECOMMENDATIONS

The study investigated the predictive power of sources of teacher efficacy beliefs on Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum. Based on the empirical results, the following conclusions were drawn. Firstly, mastery experiences have the strongest and positive predictive power on Economics teachers' efficacy beliefs in the implementation of the SHS Economics curriculum but such predictive power disappears under the prevailing SHS Economics teachers' characteristics in the Western Region of Ghana. Thus, vicarious experiences, social persuasions and physiological states predict the efficacy beliefs of Economics teachers other than mastery experiences. Secondly, social persuasions have the strongest but negative predictive power on Economics teachers' efficacy in instructional strategies with teacher characteristics having controlling effects while mastery experiences have the weakest but positive predictive power. Thirdly, vicarious experiences have the strongest and positive predictive power on Economics teachers' efficacy in students' engagement while mastery experiences are the weakest and a negative predictor of Economics teachers' efficacy in students' engagement. Finally, physiological states are the primary source of teacher efficacy beliefs that consistently maintained its predictive power on Economics teachers' efficacy in classroom management.

Based on the conclusions, we outline the following recommendations. Firstly, teacher educators, head teachers, supervisors and education authorities should encourage teachers to use mastery experiences as their main primary source of building efficacy beliefs in the implementation of the SHS Economics curriculum. Secondly, parents, friends, colleague teachers and other people Economics trust should try their best to provide Economics teachers with objective comments about their successes and failures of instructional strategies so that it truly builds their efficacy beliefs in a positive direction. Furthermore, Economics teachers should sit in classes of colleague teachers who are experienced in students' engagement to enable them to build their efficacy in students' engagement.

Finally, school authorities should provide in-service training on classroom management strategies for Economics teachers. In addition, teacher educators should provide trainee teachers with classroom management practice skills. This is intended to enable Economics teachers to' minimize the degree to which efficacy beliefs are influenced by physiological states.

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APPENDICES: PRELIMINARY RESULTS

Table-1: Description of Variables

Variable	Description
Dependent Variable	
Economics Teachers' Efficacy Beliefs (ETEB)	ETEB refers to Economics teachers' belief in their capabilities to organize and execute courses of action required to successfully implement the SHS economics curriculum.
Efficacy in Students' Engagement (ESE)	ESE refers to teachers' belief in their ability to encourage a student to value learning and motivate an atmosphere of learning (Tschannen-Moran & Woolfolk Hoy, 2001).
Efficacy in Instructional Strategies (EIS)	EIS refers to teachers' belief in their ability to use techniques that support independent thinking, creativity in teaching, and strategic methods for assessment (Tschannen-Moran & Woolfolk Hoy, 2001).
Efficacy in Classroom Management (ECM)	ECM refers to teachers' belief in their ability to develop strategies that emphasize encouragement for desirable behaviors in students through positive reinforcement, inspiration, and devotion, despite disruptive behavior (Emmer & Hickman, 1991).
Independent Variable (SETEB)	
Mastery Experiences (ME)	ME are those instances in which teachers actually perform the act under question. When one teaches a class, has field experience, or tutors a child, these instances provide perspectives or practicing teachers with source material for the formation and development of their efficacy beliefs. Efficacy beliefs are formed based on the degree of success or failure one feels in each of these direct experiences (Dibapile, 2012). In social cognitive theory, direct experiences, both positive and negative are considered to be the most powerful sources of efficacy beliefs (Lopez, et al., 1997)
Vicarious Experiences (VE)	VE is where teachers build their efficacy beliefs by observing others. In many academic endeavors, there are no absolute measures of proficiency (Usher & Pajares, 2009). Hence, teachers can gauge their capabilities in relation to the performance of others. Teachers compare themselves to particular individuals such as peers and adults as they make judgements' about their own academic capabilities.
Social Persuasions (SP)	SP are the encouragement from parents, teachers, and peers whom teachers trust can boost teachers' confidence in curriculum implementation. Supportive messages can serve to bolster a teacher's effort and self-confidence, particularly when accompanied by conditions and enabling environment that help bring about success (Hattie & Timperley, 2007). Social persuasions may be limited in their ability to create enduring increases in self-efficacy. However, it may actually be easier to undermine an individual's self-efficacy through social persuasions than to enhance it, particularly in the formative years during which youngsters eagerly attend to the messages they receive from those close to them (Bandura, 1997).
Physiological States (PS)	PS are the instances where the human body inform its owner of emotions that may not be evident on the surface (Bandura, 2004). Thus, excitement and anxieties serve to inform individuals of how they are doing in a mastery experience. If a teacher feels nervous each time he/she must teach a particular topic that seems difficult, then he/she may quickly come to believe that this is something that cannot be done regardless of the actual performance (Kennedy, 2013). Similarly, another teacher may complete a topic and feels very happy because the responses from the students show that he/she has done a great job (Kennedy, 2013).
Control Variables (TC)	
Gender (GEN)	GEN refers to participant being male or female

Age	Age refers to the length of time (in years) participants have lived
Teaching Experiences (TE)	TE refers to the number of years participants have taught Economics at SHS

Tests Multiple Linear Regression Assumptions

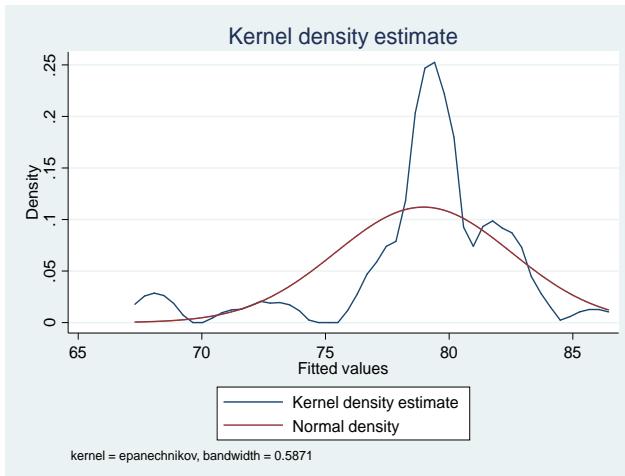**Multivariate Normality Result**

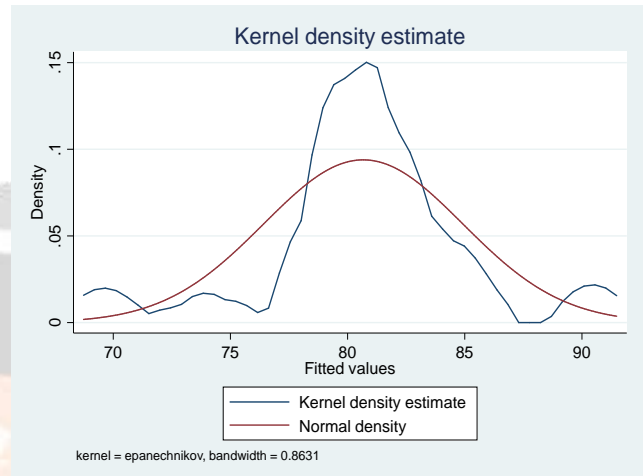Fig- 1. Residual normality plot of ECM and SETEB

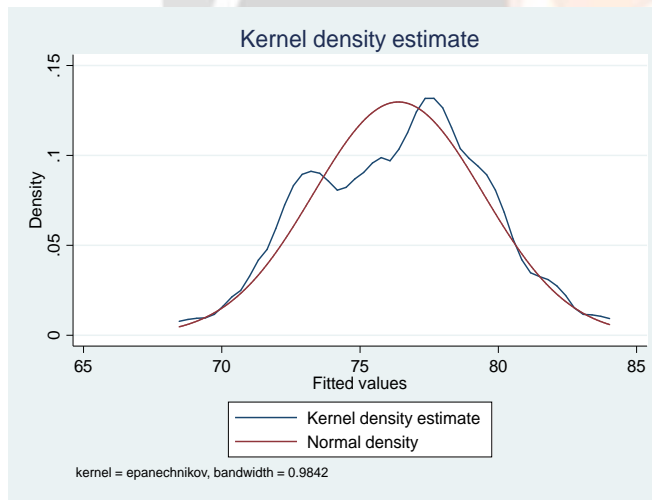Fig. -2. Residual normality plot of EIS and SETEB
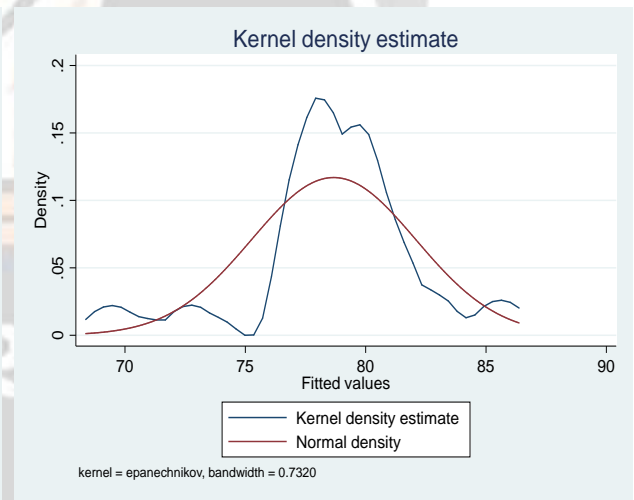

Fig.- 3. Residual normality plot of ESE and SETEB

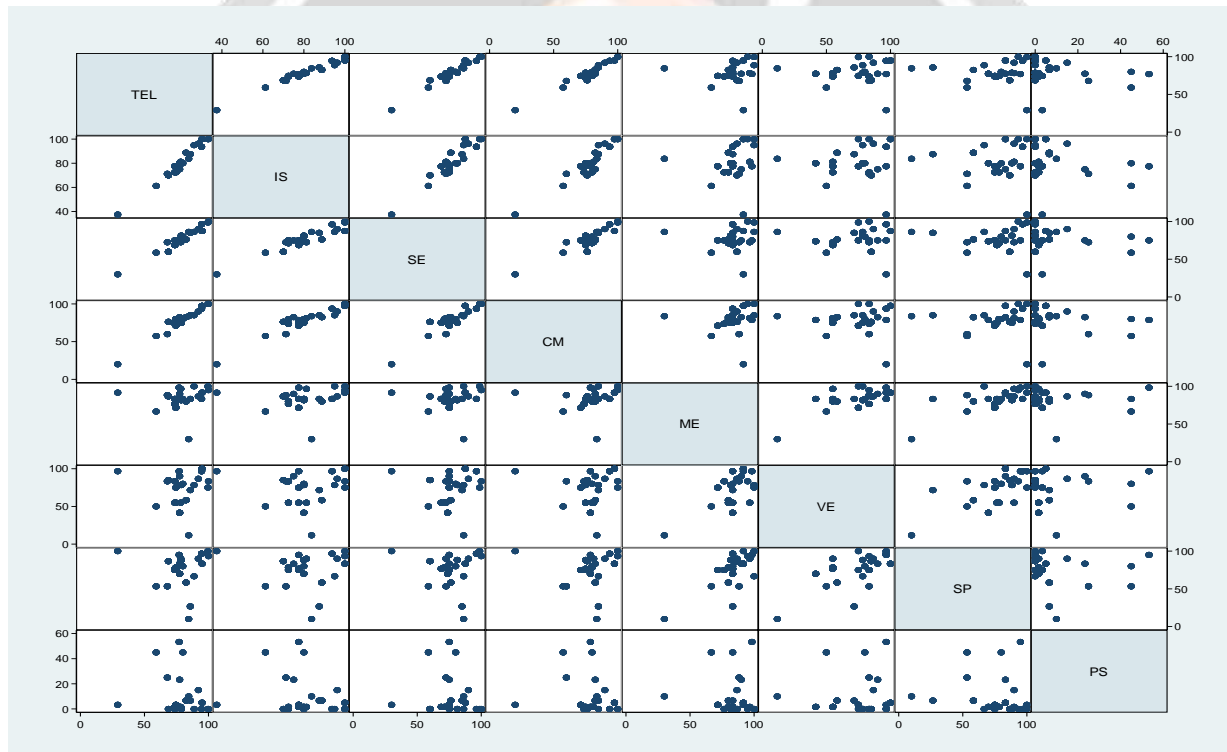Fig.- 4. Residual normality plot of ETEB and SETEB

i.   **Table- 2: Multicollinearity Result**

	Gender	age	Years of teaching	ME	CP	VE	SP	PS	SE	IS	CM	TEL
Gender	1	-.407**	-.180*	-.180*	-.240**	-.022	.082	-.276**	-.055	-.123	.096	-.024
age	-.407**	1	.692**	-.034	-.245**	-.539**	-.373**	-.009	-.133	-.128	-.199**	-.160*

Years of teaching	-.180[*]	.692[**]	1	.282[**]	-.194[**]	-.427[**]	.049	-.098	.016	.100	.146	.092
ME	-.180[*]	-.034	.282[**]	1	.366[**]	.564[**]	.629[**]	.020	.064	.203[**]	.174[*]	.153[*]
CP	-.240[**]	-.245[**]	-.194[**]	.366[**]	1	.754[**]	.382[**]	-.050	.271[**]	.244[**]	.131	.221[**]
VE	-.022	-.539[**]	-.427[**]	.564[**]	.754[**]	1	.579[**]	.104	.156[*]	.138	.090	.132
SP	.082	-.373[**]	.049	.629[**]	.382[**]	.579[**]	1	-.118	-.002	.011	.079	.032
PS	-.276[**]	-.009	-.098	.020	-.050	.104	-.118	1	-.111	-.181[*]	-.184[*]	-.165[*]
SE	-.055	-.133	.016	.064	.271[**]	.156[*]	-.002	-.111	1	.910[**]	.859[**]	.956[**]
IS	-.123	-.128	.100	.203[**]	.244[**]	.138	.011	-.181[*]	.910[**]	1	.916[**]	.976[**]
CM	.096	-.199[**]	.146	.174[*]	.131	.090	.079	-.184[*]	.859[**]	.916[**]	1	.962[**]
TEL	-.024	-.160[*]	.092	.153[*]	.221[**]	.132	.032	-.165[*]	.956[**]	.976[**]	962[**]	1

ii.   **Figure 5: Linearity and Homoscedasticity Result**

TEL = ETEB, IS = EIS, SE = ESE, CM = ECM