

## Examining demographic variables as predictors of self-efficacy among university teachers in Ghana

Inusah Salifu and Ebenezer Darkwah Odame

*University of Ghana, Ghana*

This study examined the influence of demographic variables on efficacious behaviour occurring in three domains of the work of university teachers – teaching, research, and service activities. The study used a quantitative cross-sectional survey with a sample of 567 teachers randomly selected from public and private universities across Ghana. Data were collected utilising a questionnaire developed by Hemmings and Kay (2009) and analysed using a one-way ANOVA to determine the association between demographic variables and self-efficacy, and linear regression to examine the influence of the demographic factors on self-efficacy. The study found significant relationships between self-efficacy and gender, age, marital status, academic qualification, the nature of a university, academic discipline, years of teaching, and rank of university teachers. The research also revealed that except for years of work and the kind of university that failed to predict research and service efficacies, the rest of the demographic variables significantly predicted all three self-efficacy domains. As suggested by the current research, ensuring self-efficacy in teaching, research, and service activities among university teachers is crucial because of its positive impact on those with lower qualifications, ranks, and experience. Given this, Ghanaian universities should grant study leave to university teachers with lower qualifications, especially those without terminal degrees, to encourage them to upgrade themselves. Such teachers would also benefit from effective mentoring from the professoriate to gain more teaching experience and be better scholars in writing and winning grants, conducting impactful research, and publishing.

### Introduction

All over the world, the work of university teachers (academic staff) has three dimensions – teaching, research, and service (Hemmings & Kay, 2009; Ismayilova & Klassen, 2019). This study focused on these core areas because they form the basis for recognising the hard work of university teachers. They also serve as areas of concentration to guide promotion and appointment boards in assessing promotion dossiers of applicants. Self-efficacy is utterly necessary for helping a teacher perform well in these areas to become ‘visible’ among peers, and enjoy job security and continuous career growth (Nejati et al., 2014). Many scholars explain self-efficacy according to their understanding of the concept and how they intend to apply it. Its application in this study is consistent with the assertion that it means accomplishing a task even if there are challenges (Bandura, 1997; Baleghizadeh & Shakouri, 2017; Klassen & Tze, 2014).

Several factors determine teachers’ efficacy beliefs about their professional disposition, including emotional and physiological situations, such as enthusiasm, anxiety, and demographic background (Ismayilova & Klassen, 2019; Shahzad & Naureen, 2017). The focus of this study was on the influence of demographic variables on the self-efficacy beliefs of university teachers, because most recent studies have concentrated only on the

relationship between emotional and physiological variables, and the results are known. However, few studies (e.g., Hemmings & Kay, 2016; Cao et al., 2018) exist on the relationship between the demographics of teachers and their self-efficacy, especially in the higher education sector. Even the focus of these few studies is situated in the contexts of the developed world.

Locally, an extensive literature search revealed that despite the availability of many previous studies on teacher self-efficacy beliefs in Ghana (see, for example, Abroampa et al., 2017; Boateng & Sekyere, 2018; Kuyini et al., 2020; Opoku et al., 2021; Sarfo et al., 2017; Sarfo et al., 2015), their concentration has been only on the pre-higher education level. They have also measured teacher-efficacy beliefs in the four domains of classroom management, persistent behaviour, classroom anxiety, and professional mastery, using Tschannen-Moran and Hoy's (2001) *Teachers' Sense of Efficacy Scale* (TSES). It is not clear whether their findings apply to the higher education level. This research is a pioneer effort to fill this gap. It is novel because it adapts a different scale developed by Hemmings and Kay (2009), to measure the influence of demographic variables on efficacious behaviour occurring in three domains of university teachers' work in Ghana - teaching, research, and service efficacy.

Based on the gap identified in the literature, the main thrust of this study is to determine whether demographic variables such as age, gender, marital status, and the number of dependents had any influence on teacher self-efficacy at the university level in Ghana. Understanding the relationship between the demographic dynamics of university teachers using a sample from a developing country, such as Ghana, is a worthy effort because it may help create a productive workforce (Ismayilova & Klassen, 2019). It may also guide policy leaders to use meaningful strategies to develop teachers' self-efficacy beliefs to make them more effective performers in every sphere of their work (Alwaleedi, 2017).

## Literature review

### Theoretical framework: Self-efficacy theory

The concept of self-efficacy was propounded by Albert Bandura in 1977 and discussed extensively in his 1989 social cognitive theory (Corry & Stella, 2018; Filatov & Pill, 2015). As a psychological framework, it explains human agency, which Zee and Koomen (2016) refer to as the belief that people can control actions that affect their lives. According to Skaalvik and Skaalvik (2014), "Self-efficacy judgements are not general judgements of one's skills and abilities but judgements of what one can do with whatever skills and abilities one possesses" (p. 69).

Self-efficacy affects every facet of human life, including emotions and cognitions (Bandura, 1977). It, for example, determines judgment about the ability to change even worse situations (Sarfo et al., 2015; Vieluf et al., 2013), "and the inclination to persist in a given task" (Ismayilova & Klassen, 2019), p. 56). It creates the feeling that challenges are an opportunity to learn and surmount rather than risks to evade (Mojavezi & Tamiz, 2012; Sarfo et al., 2017). Therefore, arguing from a self-efficacy theoretical perspective, failures

are mistakes to rectify, and challenging situations are temporary obstacles approachable with a can-do spirit (Malinen et al., 2013; Opoku et al., 2021; Woolfolk Hoy & Davis, 2006).

### **Teachers' self-efficacy beliefs in teaching, research, and service activities**

In the teaching profession, teacher-self efficacy (TSE) describes teachers' belief that they can cause desirable learning outcomes for students irrespective of their level of achievement (Horvitz et al., 2015; Skaalvik & Skaalvik, 2014; Tschannen-Moran & Hoy, 2001). Self-efficacy theory argues that despite the influence of a generalised expectancy for control on the abilities of teachers to teach and manage student learning, teachers' perceived capabilities to perform those activities in specific domains inspire them better (Morris et al., 2017; Zee & Koomen, 2016). Therefore, the notion of TSE transcends perceived environmental conditions, and although teachers could be aware that some achievements lead to expected outcomes, this awareness does mean anything to them unless they believe that they can create such actions.

The theory suggests that personal self-efficacy beliefs are the most likely predictors of teacher behaviour. Thus, self-efficacy is the predictor of outcome expectancies of teachers and determines their thoughts. It also regulates their choices of which course of action to follow and whether to persevere regardless of environmental challenges (Abroampa et al., 2017; Boateng & Sekyere, 2018). A strong sense of self-efficacy engenders improved psychological well-being for teachers and gives them greater job satisfaction and commitment while reducing stress and burnout (Bailey, 1999; Kuyini et al., 2020). It also enables teachers to plan and deliver instructional content according to learner ability and effectively manage behaviour in the classroom (Lazarides & Warner, 2020; Zee & Koomen, 2016). Again, self-efficacy instils in teachers the will to try new teaching techniques to meet the needs of students (Shahzad & Naureen, 2017; Shaukat & Iqbal, 2012). Self-efficacious teachers have high expectations for learners and are willing to help them accomplish personal goals (Sarfo et al., 2015).

TSE beliefs have different sources known as mastery of years of teaching, vicarious experience, social persuasion, and physiological and emotional experience (Abroampa et al., 2017; Shahzad & Naureen, 2017). However, Lazarides and Warner (2020) noted that these four sources of self-efficacy do not straightforwardly influence self-efficacy as their effects hinge on a teacher's interpretation of their experiences. TSE beliefs are context-specific, manifesting differently according to the task at hand, nature of learners, and classroom contexts (Filatov & Pill, 2015; Siaw-Marfo, 2011; Zee & Koomen, 2016). For instance, a university teacher may have a very high self-efficacy for executing a research project but may not have the same level of confidence teaching in an overcrowded lecture room (Ismayilova & Klassen, 2019).

Furthermore, TSE beliefs occur at individual and group levels for different behavioural domains. The individual level, which dominated earlier explanations of the concept of self-efficacy, is personal. However, the group level refers to teachers' collective efficacy beliefs. It is the belief of the entire teaching staff of an academic institution that their

combined capability would help them “organize the courses of action required for effective teaching and successful academic development in students” (Lazarides & Warner, 2020, p. 3). On a broader note, the realms include classroom management and anxiety, student engagement, persistent behaviour, and professional mastery (Alwaleedi, 2017; Lazarides & Warner, 2020). However, in the context of higher education, the domains are three, covering teaching, research, and services (Hemmings, 2015; Hemmings & Hill, 2009; Hemmings & Kay, 2010; Hemmings et al., 2015; Ismayilova & Klassen, 2019). While internal service activities include leadership roles, mentoring, academic advising, and serving as departmental examination officers and proctors, external service activities involve consultancy, guest-editing, journal reviewing, and assessment of theses and promotion dossiers of other universities (Hemmings & Kay, 2009).

Studies have established that writing culture among teachers in higher education is necessary for developing their research efficacy (Hemmings & Kay, 2016; Hemmings et al., 2012; Hemmings et al., 2007). Despite having the skill to conduct research, university teachers may not develop efficacy for publication if structures are not in place to encourage them to do so. Most university teachers lack the confidence to engage in research projects and have unimpressive research and publication records because of low levels of self-efficacy in research (Ismayilova & Klassen, 2019). The current global competitive grading of universities, such as *Times Higher Education World University Rankings* and *QS World University Rankings*, apparently give more recognition to research output (Ismayilova & Klassen, 2019). Perhaps, this is the reason why a substantial volume of the literature (e.g., Cao et al., 2018; Tait & Mundia, 2014; Hemmings & Kay, 2009; Sikes, 2006) suggests that higher education institutions (HEIs) in the developed world are increasingly putting a premium on research above teaching and service. HEIs in the developing world were lagging in faculty research output a few decades ago. However, the trend has changed lately, and academic staff “risk stagnation in their present ranks and endanger their chances for tenure and promotion” (Ismayilova & Klassen, 2019, p. 57) if they are not active in research and publication.

### **Influence of demographic variables on teacher self-efficacy**

A burgeoning body of research (e.g., Ahmad & Rehman, 2015; Alwaleedi, 2017; Atta et al., 2012; Hemmings & Kay, 2010; Nejati et al., 2014; Ismayilova & Klassen, 2019; Sarfo et al., 2015; Schoen & Winocur, 1988) documents that, in higher education, demographic variables significantly determine teacher self-efficacy beliefs. For instance, in terms of gender, Alwaleedi (2017), Hemmings and Kay (2010), and Ismayilova and Klassen (2019) have found that male university teachers have superior research efficacy and tend to be more active in research than their female colleagues. However, the females are also more confident in the classroom and teach better. Similarly, male university teachers have higher efficacy for publications and applying for promotion than females – a situation attributed to family commitments and a masculinity ideology favouring male dominance (Alwaleedi, 2017; Atta et al., 2012; Hemmings & Kay, 2010).

Aside from gender, longevity of occupational practice with accumulated experience also influences teacher-self efficacy, especially for teaching. In effect, the longer a person

teaches in higher education, the more they gain experience and the better the quality of their classroom delivery (Mahmood et al., 2021; Ismayilova & Klassen, 2019). However, other previous studies, such as Fives and Looney (2009) and Vera et al. (2011), have found no significant correlation between years of teaching and teacher self-efficacy, especially in teaching.

Furthermore, the academic qualifications of university teachers positively relate to their self-efficacy beliefs in all the domains of teaching, research, and service. According to the extant literature (e.g., Bentley 2015; Hemmings & Kay, 2009), academic staff with higher qualifications, such as the doctoral degree, have better self-efficacy in research and tend to publish more than those with lower qualifications. According to Ismayilova and Klassen (2019), the situation is so because “completing a doctorate builds essential research skills, fosters self-assurance, and results in increased publications” (p. 57). Also, such holders of higher qualifications have higher efficacy in service activities such as managing administrative positions and playing other leadership roles (Hemmings & Kay, 2010). Focusing on the potential influence of age on the efficacious behaviour of university teachers, results from Kuyini et al.’s (2020) research evinces that older faculty members with vast experience exhibit more efficacy in both teaching and research than inexperienced younger ones. From the review, it is evident that demographic characteristics of university teachers could engender differences in their self-efficacy beliefs in the three domains of teaching, research, and service. Most of the literature we engaged with regarding self-efficacy beliefs of university teachers focused on contexts other than Ghana. Given the role socio-cultural dynamics plays in influencing research outcome, the current study could generate novel findings to contribute to existing knowledge. Thus, the study hypothesised the following:

1. There is no significant association between the composite demographic variables of university teachers in Ghana and their self-efficacy beliefs in teaching, research, and service activities, considering each in isolation.
2. None of the demographic variables better predicts the university teachers’ self-efficacy beliefs in teaching, research, and services, considering each in isolation.

## **Method**

### **Design and participants**

We used a quantitative cross-sectional survey design and involved 567 teaching staff drawn across 67 accredited public and private universities in Ghana (Table 1).

### **Sampling**

We used a simple random sampling technique for the study. We initially obtained the list of all accredited public and private universities in Ghana from the Ghana Tertiary Education Commission (GTEC), a body established by an Act of Parliament to regulate tertiary education in Ghana. We identified public and private universities, randomly selecting two from each category, bringing the number of sampled universities to four.

Table 1: Demographic details of participants (N=567)

Variables	Description	No.	%
Gender	Female	250	44.1
	Male	317	55.9
Age (years)	30-34	47	8.3
	35-39	141	24.9
	40-44	95	16.8
	45-49	94	16.6
	50-54	143	25.2
	55-59	47	8.3
Marital status	Single	94	16.6
	Married	425	75.0
	Divorced	48	8.5
No. of family dependents	1-3	189	33.3
	4 and above	378	66.7
Highest academic qualification	PhD	453	79.9
	Masters	114	20.1
Nature of university	Private	154	27.2
	Public	413	72.8
Years of service	1-5	180	31.7
	6-10	173	30.5
	11-15	96	16.9
	16-20	24	4.2
	21-25	47	8.3
	26-30	47	8.3
Academic discipline	Business	160	28.2
	Education	80	14.1
	Humanities	230	40.6
	Sciences	97	17.1
Rank	Assistant lecturer	50	8.8
	Lecturer	207	36.5
	Senior lecturer	198	34.9
	Associate professor	65	11.5
	Professor	47	8.3
Level of involvement in university activities	Highly involved	331	58.4
	Somewhat involved	189	33.3
	Not involved	47	8.3
Health challenges	No	473	83.4
	Yes	94	16.6

### Instruments

We administered a self-efficacy questionnaire designed and validated by Hemmings and Kay (2009). We utilised the instrument because many previous users across the globe, including a recent study by Ismayilova and Klassen (2019), have reported tolerable reliability and construct validity evidence for it. The original instrument had three sections.

However, our modified version had four parts – Part A to D. Part A had 12 items seeking information on demographic background, including age, gender, and marital status. Part B posed 21 items eliciting information on teaching self-efficacy beliefs. Part C comprised 33 items requesting opinions on research self-efficacy beliefs. The last section (Part D) comprised 24 items soliciting views on service self-efficacy beliefs. As done in Hemmings and Kay (2009), we designed and measured the items in the second, third and fourth sections according to a 10-point scale ranging from ‘Not at all confident’=1, to ‘Completely confident’=10. Although Hemmings and Kay validated the original version, given the socio-cultural variations between Australian and Ghanaian contexts, we conducted a pilot study involving 51 university teachers in Ghana outside the sample frame to determine the appropriateness or otherwise of the instrument for a Ghanaian context. The outcome of the reliability test evinced an overall Cronbach’s alpha of 0.98. However, the reliability for each sub-scale or category of self-efficacy belief ranged from 0.76 to 0.98. Specifically, Cronbach’s alpha for the teaching, research and services subscales was 0.76, 0.98 and 0.95, respectively.

### Procedure

After satisfying each institution’s ethical requirements for research, we sent an invitation to all university teachers in the four selected institutions using their institutional email list servers. We assured them of anonymity and informed them that participation was voluntary. After contacting volunteers, we sent them a link to a *Qualtrics* online survey presenting our instrument. Of the 810 volunteers, 597 completed the questionnaire, giving a response rate of 73.7%. However, as done by Hemmings and Kay (2009), we removed 30 cases that had missing data, leaving  $N=567$  for analysis. The data collection exercise took 92 days to complete, beginning in March 2022 and ending in June 2022.

### Analysis and results

H1: There is no significant association between the composite demographic variables of university teachers in Ghana and their self-efficacy beliefs in teaching, research, and service activities, considering each in isolation.

To test this hypothesis, a one-way ANOVA was computed to ascertain the extent to which demographic variables (gender, age, marital status, academic qualification, university type, academic discipline, and rank of university teachers) varied with self-efficacy beliefs in three domains, teaching, research, and service activities. Average scores for the three subscales, teaching, research, and service self-efficacies, were computed, together with overall self-efficacy. Results are presented in Table 2.

The results show significant differences in teaching, research, and service self-efficacies between genders of the respondents. For instance, even though both males and females recorded high mean scores in terms of teaching self-efficacy, males ( $M=8.68$ ,  $SD=0.23$ ) comparably recorded a higher score than females ( $M=8.63$ ,  $SD=0.25$ ), suggesting that the males were more likely to be efficacious in teaching than female counterparts. However, in the case of research self-efficacy, females recorded a higher mean score than males (8.04

vs. 7.89), implying that the females had more research efficacy beliefs than their male colleagues. Similarly, the females recorded higher mean scores than the males considering service self-efficacy (8.02 vs. 7.70), suggesting that the former had more efficacy belief in service activities than the latter. Using the overall self-efficacy in the three domains based on gender, the results show that the females ( $M=8.23$ ,  $SD=0.39$ ) were more efficacious than their male colleagues ( $M=8.09$ ,  $SD=0.61$ ).

Table 2: Summary of ANOVA results comparing dimensions of self-efficacy across demographic characteristics

Demographic variables	N	Dimensions of self-efficacy						Overall self-efficacy		
		Teaching		Research		Service		M (SD)	F, p	
		M (SD)	F, p	M (SD)	F, p	M (SD)	F, p			
Gender	Female	250	8.63 (0.25)	F=4.13,	8.04 (0.80)	F=28.0,	8.02 (0.43)	F=8.23	8.23 (0.39)	F=10.03
	Male	317	8.68 (0.23)	p<0.05	7.89 (1.01)	p<0.01	7.70 (0.88)	p<0.01	8.09 (0.61)	p<0.01
Age (years)	30-34	47	8.6 (0.05)	F= 80,	8.6 (0.01)	F=	8.4 (0.00)	F= 61.2,	8.5 (0.02)	F=45.5,
	35-39	141	8.8 (0.11)	p<0.01	7.6 (1.14)	48.6,	7.3 (0.98)	p<0.01	7.9 (0.68)	p<0.01
	40-44	95	8.4 (0.15)		7.3 (0.90)	p<0.01	8.2 (0.08)		7.9 (0.23)	
	45-49	94	4.6 (0.36)		7.8 (0.89)		7.5 (0.67)		7.9 (0.64)	
	50-54	143	8.6 (0.13)		8.4 (0.19)		8.1 (0.38)		8.4 (0.20)	
	55-59	47	8.9 (0.02)		8.8 (0.03)		8.5 (0.00)		8.7 (0.02)	
Marital status	Single	94	8.74 (0.08)	F=10.5,	8.41 (0.06)	F=	7.96 (0.17)	F=10.9,	8.37 (0.04)	F=25.9,
	Married	425	8.65 (0.27)	p<0.01	8.03 (0.90)	119.0,	7.77 (0.83)	p<0.01	8.15 (0.58)	p<0.01
	Divorced	48	8.56 (0.07)		2.36 (0.00)	p<0.01	8.25 (0.00)		7.72 (0.02)	
Highest acad. qual.	PhD	453	8.7 (0.22)	F= 24.5,	8.1 (0.83)	F=72.4,	8.0 (0.56)	F=183.0,	8.3 (0.42)	F=148.0,
	Masters	114	8.6 (0.27)	p<0.01	7.3 (1.02)	p<0.01	7.1 (0.89)	p<0.01	7.7 (0.64)	p<0.01
Nature of university	Private	413	8.7 (0.24)	F= 7.6,	7.9 (0.97)	F=3.98,	7.8 (0.81)	F=2.8,	8.2 (0.42)	F=5.3,
	Public	154	8.6 (0.23)	p<0.01	8.1 (0.78)	p<0.05	3.9 (0.44)	p>0.05	8.1 (0.56)	p<0.05
Academic discipline	Business	160	8.65 (0.26)	F= 10.2,	8.15 (0.78)	F=	7.95 (0.73)	F=5.0,	8.25 (0.58)	F=11.0,
	Education	80	8.53 (0.14)	p<0.01	8.30 (0.05)	18.7,	7.84 (0.14)	p<0.01	8.21 (0.03)	p<0.01
	Humanit.	230	8.70 (0.26)		7.62 (1.13)	p<0.01	7.71 (0.92)		8.01 (0.61)	
	Natural & appl. sci.	97	8.71 (0.13)		8.20 (0.73)		7.98 (0.41)		8.29 (0.32)	
Rank	Assist. lec	50	8.67 (0.10)	F=51.6,	8.58 (0.53)	F=94.6	8.24 (0.25)	F= 49.5,	8.49 (0.07)	F= 92.0,
	Lecturer	207	8.68 (0.20)	p<0.01	7.24 (1.08)	p<0.01	7.47 (0.94)	p<0.01	7.80 (0.59)	p<0.01
	Senior lec.	198	8.53 (0.25)		8.12 (0.50)		7.79 (0.42)		8.15 (0.35)	
	A/Prof.	65	8.75 (0.15)		8.66 (0.05)		8.46 (0.21)		8.62 (0.03)	
	Prof.	47	8.98 (0.02)		8.79 (0.03)		8.46 (0.00)		8.74 (0.02)	

Age was found to show a significant association with teaching, research, and service self-efficacies ( $p<0.01$ ). Compared to other age groups, respondents within the 55-59 age cohort recorded higher mean scores across self-efficacies associated with teaching, research, and service activities. Also, significant associations were found between marital status and self-efficacies in teaching, research, and service ( $p<0.01$ ). Generally, single respondents ( $M=8.4$ ,  $SD=0.04$ ) recorded higher mean scores relative to those married ( $M=8.2$ ,  $SD=0.58$ ) or divorced ( $M=7.7$ ,  $SD=0.02$ ). However, whereas respondents who were divorced recorded the highest mean score in terms of self-efficacies in service activities ( $M=8.25$ ), those who were single recorded the highest mean score in terms of teaching ( $M=8.74$ ) and research ( $M=8.41$ ).



Additionally, significant differences in teaching, research, and service self-efficacies were found concerning respondents' highest academic qualifications ( $p < 0.01$ ). Compared to respondents with masters degrees, those with PhD recorded a higher mean score in terms of their overall self-efficacy ( $M = 8.3$  vs.  $M = 7.7$ ). This shows that respondents with PhDs were more efficacious than those with masters degrees based on teaching, research, and service activities.

Furthermore, the type of university (public or private) is significantly associated with teaching ( $p < 0.01$ ) and research ( $p < 0.05$ ) self-efficacies, excluding service self-efficacy ( $p > 0.05$ ). Considering research, the results indicate that teachers from public universities had more research efficacy ( $M = 8.1$ ,  $SD = 0.0.78$ ) than those from private universities ( $M = 7.9$ ,  $SD = 0.97$ ). In contrast, private university teachers had more efficacy belief in their teaching ( $M = 8.7$ ,  $SD = 0.24$ ) than public university teachers. Also, the type of academic discipline and the rank of respondents varied significantly with reported self-efficacy in teaching, research, and service ( $p < 0.01$ ). Relative to the other positions, the professorial rank, for instance, recorded higher mean scores with regards to teaching ( $M = 8.98$ ,  $SD = 0.02$ ), research ( $M = 8.79$ ,  $SD = 0.03$ ), and service ( $M = 8.46$ ) activities.

H2: None of the demographic variables better predicts the university teachers' self-efficacy beliefs in teaching, research, and services, considering each in isolation.

A linear regression analysis was computed to test this hypothesis, and the results are presented in Table 3. Apart from years of teaching, which was a continuous variable, the rest of the predictors were used as dummy variables given their nominal nature. The initial regression model had age and rank as part of the predictors, but they were excluded because of multicollinearity. Both recorded a variance inflation factor score of 12.5 and 9.4 respectively. The set of predictors selected could account for 74 percent of the variance in teaching self-efficacy (adjusted  $R^2 = 0.74$ ), 56 percent of the variance in research self-efficacy (adjusted  $R^2 = 0.54$ ) and 43 percent of the variance in service self-efficacy (Adjusted  $R^2 = 0.43$ ). Gender, years of teaching, highest academic qualification, academic discipline, and level of involvement in university activities were found to be significant predictors of teaching self-efficacy ( $p < 0.01$ ).

From the results, males were about 0.145 percentage points more likely to be self-efficacious teachers than female colleagues. Also, an increase in the number of years of service was more likely to impact teaching efficacy positively than the other domains. Furthermore, those with masters degrees were less likely to be efficacious in teaching activities than those with PhDs. Similarly, the likelihood of being a self-efficacious teacher decreased among respondents from private universities than among those from public universities. Additionally, respondents within the business and education disciplines were less likely to be efficacious in teaching activities than those from the humanities. Notably, only years of teaching and the nature of university were not significant predictors ( $p > 0.05$ ) of self-efficacy in research activities and service activities.

Table 3: Summary of regression analysis output estimating the influence of university teachers' demographic characteristics on their self-efficacy beliefs in teaching, research, and services

Predictors		Self-efficacy					
		Teaching		Research		Services	
		$\beta$	S.E.	$\beta$	S.E.	B	S.E.
Gender	Male	0.145***	0.020	-0.413***	0.062	-0.346***	0.056
	Female (ref. categ.)						
Years of teaching		0.006***	0.002	0.008	0.005	0.006	0.005
Highest acad. qualification	Masters	-0.154***	0.027	-0.876***	.084	-0.966***	0.076
	PhD (ref. categ.)						
Nature of university	Private	-0.099***	.022	-0.020	0.070	0.088	0.063
	Public (ref. categ.)						
Academic discipline	Business	-0.097***	0.025	0.170*	0.79	0.108	0.071
	Education	-0.280***	.035	-0.024	0.111	-0.228*	0.100
	Natural and applied sciences	-0.015	0.028	0.031	0.088	0.013	0.079
	Humanities (ref. cat.)						
Level of involvement in university activities	Somewhat involved	-0.064***	0.26	-1.240***	0.082	-0.576***	0.074
	Not involved	0.147***	0.035	0.286*	0.110	0.096	0.099
	Highly involved (reference category)						
<i>Intercept</i>		<i>8.691***</i>	<i>0.033</i>	<i>8.80***</i>	<i>0.104</i>	<i>8.162***</i>	<i>0.093</i>

\*\*\*  $p < 0.01$ , \* $p < 0.05$

The results reveal that males were 0.41 percentage points less likely to be efficacious in research than females. Also, the likelihood of being efficacious in research decreased by 0.88 percentage points among respondents with master's degrees than amongst those with PhDs. Moreover, respondents within the business discipline were 0.17 percentage points more likely to be efficient at research than those within the humanities. Again, respondents who were not involved were about 0.29 percentage points more likely to be efficacious in research activities than those who were highly involved.

In terms of service self-efficacy, gender, academic qualification, academic discipline, and level of involvement in university activities were the only significant predictors ( $p < 0.05$ ). The likelihood of having higher efficacy in service activities decreased among males and respondents with masters degrees than among females and respondents with PhDs. Respondents within the Education discipline were 0.23 less likely to have efficacy in service activities than those within the Humanities. Lastly, respondents who were somewhat involved in university activities were 0.58 percentage points less likely to be efficacious in service activities than those who were highly involved.

## Discussion

This research examined whether demographic variables for university teachers in Ghana predicted their self-efficacy beliefs in teaching, research, and services. The study first sought to ascertain the association between demographic variables for teachers (gender, years of work, academic qualification, academic discipline, and level of involvement) and their self-efficacy in the three areas. It further examined whether the demographic variables significantly predicted all three self-efficacy domains.

Regarding the first objective, the study found significant differences in teaching, research, and service efficacies among male and female university teachers in Ghana. Mostly, females reported higher self-efficacy than males. While the males had higher teaching efficacy than the females, the latter were comparably better in research efficacy and service activities than the former. This finding is at variance with the findings by Hemmings and Kay (2010) in Australia and Ismayilova and Klassen (2019) in Azerbaijan and Turkey, where females were noted to be more efficacious in teaching than males. Our Ghanaian finding, to some extent, shows the gains made by female university teachers. It also lends weight to recent debates in Africa that, unlike in the past, females in academia are now gradually catching up with males, perhaps because of the encouragement to break the barriers associated with family commitments and male dominance stymieing their self-efficacy. Although in terms of teaching, the current study accords with Hemmings and Kay's (2010) and Ismayilova and Klassen's (2019) research revealing that males were more self-efficacious in teaching than females, though it contradicts Alwaleedi (2017), who found a contrary result in Saudi Arabia.

Another important finding of this study was the influence of the ages and academic qualifications of the university teachers on their teaching, research, and service efficacies. The revelation that respondents within the 55-59 age group were relatively more efficacious in the areas than the other age groups affirms Kuyini et al.'s (2020) assertion that older faculty members of universities are more likely to exhibit efficacy in both teaching and research. However, the finding appears intriguing because by virtue of their youthfulness, younger university teachers are expected to be more active in their work than their older colleagues, and a study such as Hanna et al. (2019) has shown that the more active a person engages in an activity, the more efficacious they become in the activity. Regarding academic qualification, the study found that the participants with PhDs were more efficacious in teaching, research, and service activities than those with master's degrees. The finding supports the literature (e.g., Bentley 2015; Hemmings and Kay, 2009), arguing that university teachers with higher qualifications have better self-efficacy. It also validates Ismayilova and Klassen's (2019) argument that because of the research component of doctoral education, people with PhDs are supposed to be equipped with the skills needed to gain efficacy in research. It has, however, been observed that high self-efficacy in research does not necessarily translate into the same level of self-efficacy in teaching. (Abroampa et al., 2017; Shahzad & Naureen, 2017).

The rank of university teachers significantly varied with their self-efficacy in teaching, research, and services. The professor-participants in this research were found to have more self-efficacy than the other ranks. Perhaps, this is to be expected because they are supposed to be more experienced, longer-serving teachers. The finding buttresses aspects

of the literature suggesting that the longer a person teaches in higher education, the more they gain experience and the better the quality of occupational practice (Mahmood et al., 2021; Ismayilova & Klassen, 2019). However, this is not always the case because studies such as Fives and Looney (2009) and Vera et al. (2011) have revealed the contrary, claiming that there is no significant connection between the longevity of teaching and teacher self-efficacy.

Aside from the demographic variables discussed above, we also explored the association between the nature of university and self-efficacy. We did that to ascertain how public and private university teachers differed in their self-efficacy beliefs in teaching, research, and service activities. In the case of service activities, the study uncovered no significant variations between public and private universities. However, private university teachers were found to be more effective in teaching activities than public university teachers. Because most private universities in Ghana are fee-paying, they usually have a smaller student intake. The situation could explain why their teachers were more efficacious in teaching-related activities such as providing feedback on assessments and assignments, responding to student feedback, facilitating discussions among students, and supervising students. Nevertheless, the importance attached to research during promotions exercises in public universities could equally explain the reason why their teachers are rather more efficacious in research activities than those from private universities.

Focusing on the second objective, which was to examine whether the demographic variables significantly predicted all three self-efficacy domains of teaching, research, and service activities, the study revealed results that were very similar to those of the first objective. Thus, apart from two variables (years of work and the nature of a university), all the demographic variables (gender, age, marital status, academic qualification, the nature of a university, academic discipline, years of teaching, and rank of university teachers) significantly predicted all three self-efficacy domains.

## Conclusion

This research examined the influence of demographic variables on self-efficacy among university teachers. Specifically, it assessed the relationship between the demographic characteristics of university teachers and their self-efficacy in teaching, research, and service activities. Further, it examined whether demographic variables such as gender, years of teaching, academic qualification, academic discipline, and level of involvement predicted university teachers' self-efficacies in teaching, research, and service activities. The study found significant relationships between self-efficacy and gender, age, marital status, academic qualification, the nature of a university, academic discipline, years of teaching, and rank of university teachers. It also revealed that except for years of work and the kind of university that both failed to predict research and service efficacies, the rest of the demographic variables significantly predicted all three self-efficacy domains.

The study has limitations. First, it relied only on a quantitative approach to examine the influence of demographic variables on efficacious behaviour occurring in three domains

of the work of university teachers, teaching, research and service, using a Ghanaian sample. There is, therefore, the need to qualitatively understand the reasons behind these relationships and how university teachers' self-efficacy impacts academic activities in these institutions. This calls for a future mixed-method study in which follow-up interviews could be used to explore the issue in depth. Also, considering that the sample was randomly drawn from only four universities in Ghana, a future study could use a larger sample drawn from more Ghanaian universities. Finally, the study used only a Ghanaian sample. Further comparative research may be required to examine the issue across two or more West African countries.

Despite its limitations, this study conveys crucial implications for policy and practice within the developing world context, especially Ghana, to improve self-efficacy among inexperienced university teachers. As revealed by this study, university teachers with terminal degrees, such as PhDs, and with a depth of work experience, such as professors, are more likely to be effective in teaching, research, and service activities compared to those with lower academic qualifications, rank, and experience. As revealed by this study, university teachers with terminal degrees, such as PhDs, and with a depth of work experience, such as professors, are more likely to be effective in teaching, research, and service activities compared to those with lower academic qualifications, rank, and experience. Given this, Ghanaian universities should grant study leave to university teachers with lower qualifications, especially those without terminal degrees, to encourage them to upgrade. Such teachers would also benefit from effective mentoring from the professoriate to gain more teaching experience and be better scholars in writing and winning grants, conducting impactful research, and publishing.

## References

- Abroampa, W. K., Rotimi, W. O. & Asante, J. N. (2017). Sources of efficacy as predictors of early childhood pre-service teachers' self-efficacy in Ghanaian teacher education universities. *Asia-Pacific Journal of Research in Early Childhood Education*, 11(2), 67-84. <https://doi.org/10.17206/apjrece.2017.11.2.67>
- Ahmad, R., Khan, S. & Rehman, S. (2015). Comparative study to investigate the sense of teacher efficacy between male and female teachers. *Asian Journal of Management Sciences & Education*, 4(2), 29-35. [http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.4\(2\)/AJMSE2015\(4.2-04\).pdf](http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.4(2)/AJMSE2015(4.2-04).pdf)
- Alwaleedi, M. A. (2017). Impact of demographic variables in the development of teachers' self-efficacy beliefs in the context of Saudi Arabia. *Asian Social Science*, 13(1), 1-10. <https://doi.org/10.5539/ass.v13n1p1>
- Atta, N., Ahmad N., Ahmed, M. & Ali, Z. (2012). Role of gender and teaching experience on teachers' self-efficacy. *Language in India*, 12(9), 251-262.
- Bailey, J. G. (1999). Academics' motivation and self-efficacy for teaching and research. *Higher Education Research & Development*, 18(3), 343-359. <https://doi.org/10.1080/0729436990180305>
- Baleghizadeh, S. & Shakouri, M. (2017). Investigating the relationship between teaching styles and teacher self-efficacy among some Iranian ESP university instructors.

- Innovations in Education and Teaching International*, 54(4), 394-402.  
<https://doi.org/10.1080/14703297.2015.1087329>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.
- Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development*. Vol.6. *Six theories of child development*. JAI Press.
- Bentley, P. J. (2015). Cross-country differences in publishing productivity of academics in research universities. *Scientometrics*, 102(1), 865-883. <https://doi.org/10.1007/s11192-014-1430-4>
- Boateng, P. & Sekyere, F. O. (2018). Exploring in-service teachers' self-efficacy in the kindergarten classrooms in Ghana. *International Journal of Instruction*, 11(1), 239-254. <https://doi.org/10.12973/iji.2018.11117a>
- Cao, Y., Postareff, L., Lindblom, S. & Toom, A. (2018). Teacher educators' approaches to teaching and the nexus with self-efficacy and burnout: examples from two teachers' universities in China. *Journal of Education for Teaching*, 44(4), 479-495. <https://doi.org/10.1080/02607476.2018.1450954>
- Corry, M. & Stella, J. (2018). Teacher self-efficacy in online education: A review of the literature. *Research in Learning Technology*, 26, article 2047. <https://doi.org/10.25304/rlt.v26.2047>
- Filatov, K. & Pill, S. (2015). The relationship between university learning experiences and English teaching self-efficacy: Perspectives of five final-year pre-service English teachers. *Australian Journal of Teacher Education*, 40(6), 33-59. <https://doi.org/10.14221/ajte.2015v40n6.3>
- Fives, H. & Looney, L. (2009). College instructors' sense of teaching and collective efficacy. *International journal of Teaching and Learning in Higher Education*, 20(2), 182-191. <https://eric.ed.gov/?id=EJ864335>
- Hanna, P., Wijesinghe, S., Paliatsos, I., Walker, C., Adams, M. & Kimbu, A. (2019). Active engagement with nature: Outdoor adventure tourism, sustainability and wellbeing. *Journal of Sustainable Tourism*, 27(9), 1355-1373. <https://doi.org/10.1080/09669582.2019.1621883>
- Hemmings, B. C. (2015). Strengthening the teaching self-efficacy of early career academics. *Issues in Educational Research*, 25(1), 1-17. <http://www.iier.org.au/iier25/hemmings.pdf>
- Hemmings, B. & Hill, D. (2009). The development of lecturer research expertise: Towards a unifying model. *Issues in Educational Research*, 19(1), 14-24. <http://www.iier.org.au/iier19/hemmings1.pdf>
- Hemmings, B. & Kay, R. (2009). Lecturer self-efficacy: Its related dimensions and the influence of gender and qualifications. *Issues in Educational Research*, 19(3), 243-254. <https://www.iier.org.au/iier19/hemmings3.pdf>
- Hemmings, B. & Kay, R. (2010). University lecturer publication output: Qualifications, time and confidence count. *Journal of Higher Education Policy and Management*, 32(2), 185-197. <https://doi.org/10.1080/13600800903575520>
- Hemmings, B. & Kay, R. (2016). The relationship between research self-efficacy, research disposition and publication output. *Educational Psychology*, 36(2), 347-361. <https://psycnet.apa.org/doi/10.1080/01443410.2015.1025704>

- Hemmings, B. C., Kay, R., Sharp, J., & Taylor, C. (2012). A transnational comparison of lecturer self-efficacy. *Journal of Further and Higher Education*, 36(3), 291-307. <https://doi.org/10.1080/0309877X.2011.614932>
- Hemmings, B. C., Rushbrook, P. & Smith, E. (2007). Academics' views on publishing refereed works: A content analysis. *Higher Education*, 54(2), 307-332. <https://doi.org/10.1007/s10734-005-8608-x>
- Horvitz, B. S., Beach, A. L., Anderson, M. L. & Xia, J. (2015). Examination of faculty self-efficacy related to online teaching. *Innovative Higher Education*, 40(4), 305-316. <https://doi.org/10.1007/s10755-014-9316-1>
- Ismayilova, K. & Klassen, R. M. (2019). Research and teaching self-efficacy of university faculty: Relations with job satisfaction. *International Journal of Educational Research*, 98, 55-66. <https://doi.org/10.1016/j.ijer.2019.08.012>
- Klassen, R. M. & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, 12, 59-76. <https://doi.org/10.1016/j.edurev.2014.06.001>
- Kuyini, A. B., Desai, I. & Sharma, U. (2020). Teachers' self-efficacy beliefs, attitudes and concerns about implementing inclusive education in Ghana. *International Journal of Inclusive Education*, 24(14), 1509-1526. <https://doi.org/10.1080/13603116.2018.1544298>
- Lazarides, R. & Warner, L. M. (2020). Teacher self-efficacy. In *Oxford Research Encyclopedia of Education*. <https://doi.org/10.1093/acrefore/9780190264093.013.890>
- Mahmood, S., Mohamed, O., Mustafa, S. M. S. & Mohd Noor, Z. (2021). The influence of demographic factors on teacher-written feedback self-efficacy in Malaysian secondary school teachers. *Journal of Language and Linguistic Studies*, 17(4), 2111-2122.
- Malinen, O. P., Savolainen, H., Engelbrecht, P., Xu, J., Nel, M., Nel, N. & Tlale, D. (2013). Exploring teacher self-efficacy for inclusive practices in three diverse countries. *Teaching and Teacher Education*, 33, 34-44. <https://doi.org/10.1016/j.tate.2013.02.004>
- Mojavezi, A. & Tamiz, M. P. (2012). The impact of teacher self-efficacy on the students' motivation and achievement. *Theory and Practice in Language Studies*, 2(3), 483-491. <https://www.academypublication.com/issues/past/tpls/vol02/03/08.pdf>
- Morris, D. B., Usher, E. L. & Chen, J. A. (2017). Reconceptualizing the sources of teaching self-efficacy: A critical review of emerging literature. *Educational Psychology Review*, 29(4), 795-833. <https://doi.org/10.1007/s10648-016-9378-y>
- Nejati, R., Hassani, M. T. & Sahrapour, H. A. (2014). The relationship between gender and student engagement, instructional strategies, and classroom management of Iranian EFL teachers. *Theory and Practice in Language Studies*, 4(6), 1219-1226. <https://doi.org/10.4304/tpls.4.6.1219-1226>
- Opoku, M. P., Cuskelly, M., Pedersen, S. J. & Rayner, C. S. (2021). Attitudes and self-efficacy as significant predictors of intention of secondary school teachers towards the implementation of inclusive education in Ghana. *European Journal of Psychology of Education*, 36(3), 673-691. <https://doi.org/10.1007/s10212-020-00490-5>
- Sarfo, F. K., Amankwah, F. & Konin, D. (2017). Computer self-efficacy among senior high school teachers in Ghana and the functionality of demographic variables on their computer self-efficacy. *Turkish Online Journal of Educational Technology*, 16(1), 19-31. <https://eric.ed.gov/?id=EJ1124909>

- Sarfo, F. K., Amankwah, F., Sam, F. K. & Konin, D. (2015). Teachers' self-efficacy beliefs: The relationship between gender and instructional strategies, classroom management and student engagement. *Ghana Journal of Development Studies*, 12(1-2), 19-32. <https://doi.org/10.4314/gjds.v12i1-2.2>
- Schoen, L.G. & Winocur, S. (1988). An investigation of the self-efficacy of male and female academics. *Journal of Vocational Behavior*, 32(3), 307-320. [https://doi.org/10.1016/0001-8791\(88\)90022-X](https://doi.org/10.1016/0001-8791(88)90022-X)
- Shahzad, K. & Naureen, S. (2017). Impact of teacher self-efficacy on secondary school students' academic achievement. *Journal of Education and Educational Development*, 4(1), 48-72. <https://eric.ed.gov/?id=EJ1161518>
- Shaukat, S. & Iqbal, H. M. (2012). Teacher self-efficacy as a function of student engagement, instructional strategies and classroom management. *Pakistan Journal of Social and Clinical Psychology*, 10(2), 82-85. <https://www.gcu.edu.pk/pages/gcupress/pjscp/volumes/pjscp2012july-13.pdf>
- Siaw-Marfo, D. (2011). *Teacher efficacy in the teaching senior high school social studies in the Greater Accra Region of Ghana*. Doctoral dissertation, University of Cape Coast, Ghana. <http://hdl.handle.net/123456789/958>
- Skaalvik, E. M. & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports*, 114(1), 68-77. <https://doi.org/10.2466/14.02.PR0.114k14w0>
- Sikes, P. (2006). Working in a 'new' university: In the shadow of the research assessment exercise? *Studies in Higher Education*, 31(5), 555-568. <https://doi.org/10.1080/03075070600922758>
- Tait, K. & L. Mundia (2014). A comparison of Brunei and Hong Kong – SAR student teachers' self-efficacy in implementing inclusive education practices: Implications for teacher education. *Asian Social Science*, 10(1), 51-60. <https://doi.org/10.5539/ass.v10n1p51>
- Tschannen-Moran, M. & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- Vera, M., Salanova, M. & Martín del Río, B. (2011). Self-efficacy among university faculty: How to develop an adjusted scale. *Anales de Psicología*, 27(3), 800-807. <https://digitum.um.es/digitum/bitstream/10201/26593/1/Self-eficacy%20among%20university%20faculty%20how%20to%20develop%20an%20adjusted%20scale.pdf>
- Vieluf, S., Kunter, M. & van de Vijver, F. J. R. (2013). Teacher self-efficacy in cross-national perspective. *Teaching and Teacher Education*, 35, 92-103. <https://doi.org/10.1016/j.tate.2013.05.006>
- Woolfolk Hoy, A. & Davis, H. A. (2006). Teacher self-efficacy and its influence on the achievement of adolescents. In T. Urdan & F. Pajares (Eds.), *Self-efficacy beliefs of adolescents* (pp. 117-137). Information Age Publishing. <https://www.infoagepub.com/products/Self-Efficacy-Beliefs-of-Adolescents>
- Zee, M. & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981-1015. <https://doi.org/10.3102/0034654315626801>



**Dr Inusah Salifu** (corresponding author) is a Senior Lecturer at the Department of Adult Education and Human Resource Studies, University of Ghana. His research interests cover teaching, learning, and general educational administration/management/leadership at the tertiary and pre-tertiary levels.  
ORCID: <https://orcid.org/0000-0002-9626-6211>  
Email: [isalifu@ug.edu.gh](mailto:isalifu@ug.edu.gh), [insalifu1@yahoo.co.uk](mailto:insalifu1@yahoo.co.uk)

**Mr Ebenezer Darkwah Odame** is an Assistant Lecturer at the Department of Distance Education, University of Ghana. His research interests are educational research, spatiotemporal analysis of health and development, urban development studies, and climate change adaptation.  
ORCID: <https://orcid.org/0000-0003-4023-3952>  
Email: [eodame@ug.edu.gh](mailto:eodame@ug.edu.gh)

**Please cite as:** Salifu, I. & Odame, E. D. (2023). Examining demographic variables as predictors of self-efficacy among university teachers in Ghana. *Issues in Educational Research*, 33(1), 352-368. <http://www.iier.org.au/iier33/salifu.pdf>