

Determinants of ICT Teacher Motivation and Retention in Ghanaian Senior High Schools

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Abstract

This study examined how selected motivators (Advancement, Status, Recognition and interpersonal relationship) influence the ICT teacher's intention to stay or leave the classroom in Ghana. A multi-stage sampling technique was used to sample 444 teachers drawn from a population of 4,350. A correlational research design was adopted for the study, and a structured questionnaire was used to gather data which was analysed using a logistic regression analysis.

The study found that the odds ratio of ICT teachers in Ghana choosing to stay in the classroom based on their Advancement was (Exp(B) 1.768 higher than the odds ratio of ICT teachers who choose to leave the classroom, with a 95% confidence interval ranging from 1.225 to 2.549. It also found a statistically significant correlation between the predictors (advancement, status, interpersonal relationship and recognition). For the predictive capacity of the model, it was discovered that the predictor (advancement) accounted for a higher positive variance in the factors that motivate ICT teachers to stay in the classroom in Ghana. The study revealed that advancement was a very important motivating factor for ICT teachers staying in the classroom in Ghana. The findings can contribute to developing staff motivation schemes and professional development programs for ICT teachers.

Keywords: ICT Teacher Motivation, Advancements, Status, recognition, interpersonal relationship.

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Introduction

Education is the basis of the development of every country (Durmaz, 2016). From the time Ghana became a sovereign country (Arthur-Nyarko, 2023) successive governments have given education much attention and tried to upgrade indicators, but advancement has been steady (Wiatr, 2022). Almost every aspect of a teacher's role in the educational system is impacted by their motivation (Brandmiller, Dumont, & Becker, 2020). Teachers are reported to have lower motivation levels than those in other occupations (Danilewicz et al 2019). There are not many studies where teachers felt that rewards were important (The impact of intrinsic and extrinsic rewards on teachers creativity, 2019). It is well-recognized that several factors that have an impact on the workforce are linked to occupational motivation (Dhaliwal, 2016). The relevance of motivation is demonstrated by taking into account the drawbacks of rewarding employees who perform their jobs well in the organisation and others (Lim, 2023). Danilewicz et al (2019) indicates that the more motivated teachers are, the more productive they become. According to Bosompem, Kwarteng, & Obeng-Mensah (2012), to improve the performance of teachers, motivation is necessary.

The social environment of some schools is such that most ICT teachers do not want to work in such a school (OECD, 2019). If the ICT teachers were free to choose, they would never continue teaching at such schools or accept a posting to do so (OECD, 2019). It has been observed that highly enthusiastic ICT teachers lose their motivation after accepting teaching positions in particular schools (Borgonovi, Pokropek, & Pokropek, 2023). The enthusiasm of the ICT teacher wanes over time (Borgonovi, Pokropek, & Pokropek, 2023). Even though the compensation and other circumstances stayed the same, there were also some situations where teachers who were not sufficiently motivated in some schools became highly driven after agreeing to teach in a new school (Borgonovi, Pokropek, & Pokropek, 2023). Ratnasari (2021) suggests that job motivation and satisfaction are the biggest determinants of intention to quit. This makes it obvious that there is disagreement in the literature over which of the criteria is the best predictor of intention to stay and retention.

The conditions of service of the professional ICT teachers compared with ICT professionals working in other sectors raise many concerns and emphasise the increasing importance of motivating ICT Teachers to achieve efficiency in their performance. The situation has not always received attention despite the obvious leading role they play in our schools in Ghana towards attaining educational objectives. Borgonovi, Pokropek, & Pokropek (2023) raised concerns about the situation of teachers in the school system in Ghana and Africa in general, which is so bad that it has reached “an intolerable low point”. The perception of teachers in society regarding their social standing, purchasing power, and other aspects has rendered the profession unappealing.

According to Chang et al. (2020), Teachers who hold advanced degrees from prestigious universities or have degrees in "high market-value" subjects like science, math, business administration, engineering, or mathematics tend to leave the classroom more frequently than their counterparts who lack these qualifications. The potential cost of remaining in the classroom for these teachers is greater than that of teachers with less lucrative careers outside of education. Against this background, the study was done to establish the factors motivating the ICT teacher's intention to stay in the classroom in Ghana.

Objectives of the Study:

The research aimed to establish the extent to which motivators such as (Advancement, Status, Recognition and interpersonal relationships) influence ICT teachers' intention to stay or leave the classroom in Ghana.

Hypothesis

- H₀: There is no significant influence of motivators on ICT teachers' intention to stay on their job.
- ii H₁: there is a significant influence of motivators on ICT teachers' intention to stay on their job.

Teacher Advancement

Advancement is an actual change in job status. According to Dodgen and Williams-Nickelson (2022), advancement is an improvement in a specific activity or area of expertise. Job fulfilment and job satisfaction are significantly influenced by advancement. For some employees, such as ICT teachers, development or growth in terms of knowledge and skill acquisition is crucial. However, others find hierarchy progression important (Orina, 2022).

Teacher advancement is the upward progression of an ICT teacher's professional journey, which includes moving up the corporate ladder from an entry-level job to management and changing careers (Dodgen & Williams-Nickelson, 2022). According to Achieng (2025), development includes actions to enhance teachers' knowledge, skills, and other qualities. Teachers' personal development includes learning new job-related knowledge and skills that will enable them to complete tasks more quickly and effectively and to be in a position to show initiative and creativity, which frequently leads to increased responsibility and compensation. growth can take the form of ongoing instruction, training, or mentorship.

On the one hand Yeo (2021) highlighted the fact that ICT teachers' roles require constant learning and evolution however on the other hand, Herzberg et al (2011) indicates that advancement in the hierarchy, such as a promotion, is typically a reward for steadfastness and diligence.

Recognition is one of the factors identified by Frederick Herzberg as a factor that motivates employees. According to Amoatema, & Kyeremeh (2016), employee recognition is the practice of expressing gratitude and acknowledgement to employees for their accomplishments to the organisation that are related to its mission. In this study, Information communication technology (ICT) teacher recognition is the act of acknowledging (ICT) teachers for exemplary performance, which primarily aims to encourage certain behaviours, practices, or actions that lead to improved performance and fruitful outcomes. Being held in high esteem by their coworkers is one of the main motivators for employees; the best approach to gain this respect is to be recognised for one's professional abilities (Roslon, 2020). According to Roston, although most individuals associate incentives and recognition with cash bonuses or luxurious awarding events, showing appreciation for employees doesn't have to be that expensive or flashy. Roston continues to say that employee recognition can be a simple pat on the back or a sincere comment. A simple "thank you" email or a cordial greeting at work can also suffice.

Herzberg's Two-factor Theory

Herzberg proposed the two-factor theory to explain the motivation of workers. The fundamental principle of this content theory is that there are qualitative differences between the elements that contribute to job satisfaction and those that contribute to job dissatisfaction (Zeng, 2020). According to Alshmemri et al (2017), after Herzberg

and his colleagues Mousner and Snyderman conducted research in 1959 into the factors influencing the job satisfaction and discontent of engineers and accountants in Pittsburgh, Pennsylvania, the Herzberg motivational hygiene theory was born. According to the hypothesis, certain workplace factors lead to job satisfaction. In contrast, different circumstances contribute to job dissatisfaction, and job satisfaction and dissatisfaction function independently (Herzberg et al., 1959).

Workers may become dissatisfied with their jobs if hygiene standards aren't met in a workplace setting. The purpose of hygiene considerations is to keep employees happy. The implication is that the presence of these factors does not result in higher levels of motivation, but rather, their absence leads to dissatisfaction. On the other hand, motivating factors, also known as satisfiers, lead to job satisfaction and can lead to superior work performance. Hygiene factors include job security, salary, career stability, supervision, and guaranteed retirement funds. Examples of motivating factors are a passion for the job, the opportunity for advancement, status, praise, recognition

For example, Ruthankoon and Ogunlana assessed Herzberg's two-factor theory in the Thai construction industry and discovered that distinct hygiene and motivation factors apply differently in different roles. (Ruthankoon and Olu Ogunlana, 2003). These variables were found to be a significant moderator of job satisfaction among insurance company employees in Pakistan (Rahman et al., 2017). Other examples include the hospitality sector Zhao et al (2016), Alrawahi et al (2020) and mobile data services (Lee et al., 2009).

Herzberg's Two-Factor theory is closely related to Maslow's Needs theory. They both identify and categorise human needs and state that they must be satisfied to motivate employees (Rasheed, Aslam & Sarwar, 2010). The main difference between these theories is that Maslow regards the lower-level needs of individuals, such as food, shelter, and job security, as having the ability to motivate workers. However, to Herzberg, these are just hygienic factors; if they are absent, there is dissatisfaction, but their presence does not serve as a source of motivation (Herzberg, 1959). This paper believes that employees will likely be motivated to effectively perform their jobs if both intrinsic and extrinsic factors are satisfied. The biggest criticism of this hypothesis is that it assumes that satisfied employees produce more, which is not always the case; it also applies to only white-collar jobs.

Hinrichs & Mischkind (1967) and House & Wigdor (1967) have criticised that certain behavioural criteria are absent in Herzberg's theory. These include factors like performance, absenteeism and labour turnover; he only concentrated on satisfaction and dissatisfaction. This indicates that some social scientists are sceptical of Herzberg's theory based on its applicability to non-professional groups and his use of the concept of job satisfaction. They contended that this is not the same as motivation. Cole did note, however, that studies conducted after Herzberg's findings have largely concurred that satisfaction is influenced by both intrinsic and extrinsic elements. It should be mentioned that the contribution of Herzberg's study outweighs its limitations. Emphasising the necessity of comprehending motivation's function in organisations encouraged more research on employee motivation.

Schunk et al (2014) have described motivation as a person's urge to act and carry out particular activities and actions. If someone is motivated, they will produce better results than those who are not (Pinder, 2014). Motivation is important because performance is also linked to it (Bosompem, Kwarteng, & Obeng-Mensah, 2012). Teacher motivation is, by and large, the major determinant of students' success during the schooling process. This is primarily because a motivated teacher is likely to be more engaged and enthusiastic in the workplace (Oyiego, Kanjogu, & P., 2022). Motivated teachers tend to be better performers in instructing students (Suárez-Mesa & Gómez, 2021). Motivation is likely essential for improving information technology teachers' effectiveness. According to this paper, in order to enhance the information technology teachers' performance and intention to stay in the classroom, motivation becomes extremely important. The teaching methods used, the pedagogy used by teachers, the availability of computers in classrooms, projectors, information technology labs, the internet, and how instructions are presented to pupils are all likely to affect how well ICT teachers impact knowledge. It is also expected that the motivation of information technology teachers will indirectly impact instruction quality. Generally, ICT teachers, in addition to the core role of teaching ICT to students, also engage in the installation of software programs, develop software, work on the network, and use technology to make life easier for their school. The effectiveness of a modern educational environment largely depends on performing these tasks and what motivates them to achieve this. ICT teachers' motivation is regarded as a significant factor influencing students' interest in pursuing technology and for other subject teachers to use technology. A teacher's goal orientation and achievement orientation determine the use of technology and new pedagogical methods (Karaseva et al., 2018).

ICT teachers are unique in certain respects, and understanding their motivations is complex. With a rapidly changing technology environment, ICT teachers often face unique challenges, such as keeping up with rapid technological changes and integrating these changes into the curriculum. The nature of teaching ICT can be inherently motivating for teachers who are passionate about technology and education. They are more likely to find their work fulfilling when they are given the autonomy to design and implement innovative teaching methods. This will provide opportunities for creative teaching approaches, and allowing teachers to experiment with new technologies in the classroom can enhance job satisfaction.

As mentioned earlier, ICT teachers perform other technology-related roles, such as leading technology integration projects or mentoring other teachers, which can increase their sense of importance, ownership, and job satisfaction. This could also provide additional clear pathways for career advancement, such as professional development opportunities and leadership roles within the school and the education service and can help retain ICT teachers. It has been suggested that investing in the professional growth of ICT staff is more likely to see higher retention rates (Bassett-Jones & Lloyd, 2005).

As mentioned earlier, the technology landscape is highly changeable; hence, ICT teachers need to obtain opportunities to stay updated with the latest technological advancements. Schools that offer opportunities to stay abreast with technology improve the teachers' skills and enhance their job satisfaction by addressing their need for personal growth and professional achievement (Houle & Koustas, 2018).

Methodology

The accessible population in this study was 4325 ICT teachers in the senior high school, as indicated by the Ministry of Education in 2022. The Mugenda and Mugenda's formula was used to obtain a sample size of 353; however, to account for non-response, the study proposed a sample size of 360.

A 10-part questionnaire was used, the first of which dealt with the socio-demographic background of the ICT teachers, and the other nine (9) sections were developed to cover the variables adapted for the study based on Frederick Herzberg's motivational theory (1959).

The outcome of the dependent variable was dichotomous, hence binary logistic regression analysis was used since it gave the opportunity to calculate the probability of success over the probability of failure. The results of the analysis were in the form of odds ratios, which were used to assess the strength of the relationship between the dependent and independent variables. It helped predict how much variance is accounted for in a dependent variable by a set of independent variables.

The probability ratio, $P(A)/P(B)$, is known as the odds ratio. It illustrates the connection between the outcome and the predictors. $B(\text{Beta})$ is the predicted change in Log Odds; for every one-unit change in the predictor, there is an $\text{Exp}(B)$ change in the probability of the outcome. The beta coefficient can be negative or positive. Further explaining the variables in the equation, if the odds are exactly 1, the probability of falling into the target group is equal to that of falling into the non-target group. If the probability is > 1 , it means that the probability of falling into the target group is greater than the probability of falling into the non-target group. The event is likely to occur. If the odds ratio is < 1 , it means the probability of falling into the target group is less than the probability of falling into the non-target group.

Results

The main goal here is to establish how motivators such as Advancement, Status, Recognition and interpersonal relationships influence ICT teachers' intention to stay or leave the classroom in Ghana. The collected data was analysed using binary logistic regression in SPSS and documented for wider readability and understanding. The results are summarised themes.

Table 1: Variables in the Equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Mean_IR	-0.374	0.211	3.162	1	0.075	0.688	0.455	1.039
Mean_RE	-0.189	0.123	2.343	1	0.126	0.828	0.65	1.054
Mean_AD	0.57	0.187	9.291	1	0.002	1.768	1.225	2.549
Mean_ST	0.262	0.158	2.738	1	0.098	1.299	0.953	1.772

a. Variable(s) entered on step 1: Mean_IR, Mean_RE, Mean_AD, Mean_ST.

A binary logistic regression analysis was conducted to examine the extent to which selected motivational factors namely interpersonal relationships (Mean_IR), recognition (Mean_RE), advancement (Mean_AD), and status (Mean_ST) to predict ICT teachers' intention to remain in the classroom. The results of the model are presented in Table 1.

The analysis revealed that advancement (Mean_AD) was the only statistically significant predictor of teachers' intention to stay in the classroom. The odds ratio for Mean_AD was $\text{Exp}(B) = 1.768$ with a 95% confidence interval of [1.225, 2.549], and the associated Wald statistic was significant ($p = 0.002$). The results is interpreted to mean that for every one-unit increase in opportunities for advancement, the chance of an ICT teacher's intention to remain in the classroom increases by about 76.8%, if all other factors remain constant. This suggests that advancement is a significantly strong motivational factor influencing teacher retention.

Interpersonal relationships (Mean_IR) however did not emerge as a statistically significant predictor at the conventional 0.05 level. The estimated odds ratio was 0.688 with a 95% confidence interval of [0.455, 1.039] and a p-value of 0.075. Although this result is close to statistical significance, the confidence interval includes unity, indicating that the effect cannot be considered statistically reliable. The negative coefficient suggests a tendency toward lower odds of staying with increasing Mean_IR; however, this relationship should be interpreted with caution due to its marginal significance.

Similarly, recognition (Mean_RE) was not a significant predictor of ICT teachers' intention to stay in the classroom ($\text{Exp}(B) = 0.828$, 95% CI [0.650, 1.054], $p = 0.126$). The confidence interval includes the value of one, and the non-significant p-value indicates insufficient evidence to conclude that recognition independently influences retention intentions in the presence of other motivational variables.

Finally, status (Mean_ST) also did not demonstrate a statistically significant effect ($\text{Exp}(B) = 1.299$, 95% CI [0.953, 1.772], $p = 0.098$). While the odds ratio suggests a positive association, the lack of statistical significance implies that perceived status alone does not reliably predict ICT teachers' intention to remain in the classroom.

Overall, the results indicate that among the motivational factors examined, advancement plays a central and statistically significant role in influencing ICT teachers' intention to stay in the classroom, whereas interpersonal relationships, recognition, and status do not exhibit independent predictive effects within the model.

Discussions

This result is inconsistent with Bosompem, Kwarteng, and Obeng-Mensah (2012), which indicated that recognition was the best factor in Determining the motivation of senior high school agricultural science teachers in the Central Region of Ghana. Regarding ICT teachers in Ghana, advancement is more significant than recognition. The results agree with Turhan, M., & Memduhoglu (2022); according to the research results, giving additional seniority/service points to teachers for the time they work in regions with high turnover may encourage them to stay. Furthermore, the study also corroborates the finding of Oyiego, Kanjogu, and P. (2022) in their study that looked at the determinants of teachers' motivation and professional development in public secondary schools in Kenya, the results showed that the factor that had the highest teachers' motivation impact was opportunities for career progression (mean=3.720; $\beta=0.238$), followed by compensation (mean=3.477; $\beta=0.175$).

Conclusions and Recommendations:

ICT teachers should be accorded the needed opportunities for advancement in their various schools by the Ghana Education Service (GES). This can be achieved by organising seminars for all stakeholders involved in

education on the importance of ICT teachers to every nation. Efforts should be made by both ICT teachers and Ghana Education Service to promote the image of the ICT teachers through adverts in the media and punish people who assault ICT teachers.

Any improvement in education made by GES at the senior high level should seek the interest of ICT teachers, and part of the GETFUND should be used to improve the lot of ICT teachers to ensure they continue to give their best. The study was situated in the public schools of Ghana Education Service. Future studies could look at factors that motivate ICT teachers to stay in the classroom at other teaching levels and examine the likely course of the difference if they exist. However, further research may be needed to understand better the relationship between these variables (advancement, interpersonal relationship, Recognition and Status).

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