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# Evaluating the Effects of Online Training on Employee Self-efficacy. A Dilemma from the Banking Industry in Ghana

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## ABSTRACT

Online training has become an essential instrument and the alliance of efficacy. There is a comprehensive and constant discussion in our banking industry about the impact of effective online training on self-efficacy. This study, therefore, sought to analyze the effects of online training on the probability (likelihood) to enhance self-efficacy in the banking system in Ghana. The study used Individual Employee Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment as variables measuring the elements of online training.

In this study, the descriptive research design was adopted and data of 510 respondents were collected through a questionnaire survey for analysis. With the application of logistic regression analysis as the key statistical tool, the study centered on Wald test values, p-values and odds ratio values identified used Individual Perspective, Technology Perspective, Instructor Perspective and Managers Support as elements of online training that significantly contributes to the likelihood of enhancing employee self-efficacy. The study recommended that elements of online training with the exception of instructor's perspective should be intensified in various banking industry so as to enhance employee self-efficacy.

Keywords: Elements of online training, Self-efficacy, banking industry, logistic regression.
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## 1.    Introduction

It is surprising to know that, as at now in this 21st century traditional training continues to be the most preferred form of training employees in Africa. According to the annual training survey bankers-led training accounted for 41% of the organization's total training time, whilst online training

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accounted for 30%, and social and mobile learning accounted for less than 5% (Training Industry Report, 2016).

An increase in technological work-related issues has improved the importance of online training in the recent past. Online training is becoming the most demanding investment by the managers and board of directors, to enhance the productivity of the organization. As high level of skills, abilities, aptitude, attitude, and knowledge are the demands of organizations and so managers focus to identify the ability among current bank employees who can be equipped with such skills by providing online training. Such skills help the employees to accomplish not only the ordinary tasks but to cater to the unique and critical kind of problems. Such skills and behaviors help organizations to create competitive advantage and for survival (Chiaburu & Lindsay, 2008). Further, the investment in online training and development is considered as a central strategy to attract the competitive pool in an organization. This investment in human capital also brings satisfaction to employees and increases their capabilities (Bagès & Martinot, 2012). Employees are critical for organizations and they spend their other resources on upgrading their prime resource of human beings. Organizations increase their attraction ability by their success and repute so that they can exert a pull on the finest human resource. Not only in attracting, hiring, and compensation but, also companies nowadays are very considerate about upgrading the skills of their human capital. Through the help of online training and development, the human capital is refined, polished, upgraded, and refreshed from time to time, so they can meet the necessary challenges. Ability, motivation, and situational factors are three basic cues for human functioning. All of these social perspectives are included in the model of implementation, which also included a new dimension of self-efficacy (Bakar, Ali & Zaki, 2016). This is because of the fact that individuals' actions are motivated by their beliefs. Previous literature on this perspective suggests that self-efficacy levels must be escalated in order to get better outcomes. Online training program by the organizations serves the objective of individual and institutional learning (Usher & Pajares, 2009; Dicke, Parker, Marsh, Kunter, Schmeck & Leutner, 2014).

According to Cascio (2019) online training has become very relevant because of increase in globalization and technology. The ability of any individual or organization to compete, connect, exchange, or collaborate globally has become mind blowing. Globalization has made it possible to digitize so many things to send them anywhere around the world and to pull them in from everywhere via the Internet. It has undeniably unleashed a torrent of global flows of information and knowledge. Online Training and learning has changed from a world of orderly subjects and courses to an atmosphere of increasing importance for information communication technologies. It has now affected how training is given to new and old employees. Now, employees can take online training courses on almost any topic without changing their location (Jafari Navimipour & Zareie, 2015). For example agents in Amazon now use new technologies such as touch screens and robots to reduce the number of hours they train new employees (Cascio, 2019)

These technological changes have brought about a paradigm shift in the banking industry. Now banks have moved from branch banking to branchless banking (online banking) (Kurila, Lazuras, & Ketikidis, 2016). Financial innovations have also significantly improved the financial system globally by introducing new payment, clearing and settlement methods such as mobile banking which to some great extent has eased out activities in banks (Safeena, Date, Kammani, & Hundewale, 2012).

Regardless of some of the limitations recorded by users of training platforms, other studies proved that learners have interest in online training because it reduces travel cost, cost of saving and the mode of delivery is flexible. Corporate organisations also praise online training as a cost-effective, convenient, and effective way to deliver corporate education (Strother, 2002). Newman, Tse, Schwarz, and Nielsen (2018) assert that online training does not only have an impact on organization, but also has an influence on employees' self-efficacy.

In fact, some empirical studies have found that training practices and the productivity of the banking industry are strongly influenced by online training on college student performance (Sitzmann and Weinhardt, 2018) as well as the correlation amid profitability, growth , experience and survival, together with transnational and domestic TFP (Bloom et al., 2014).

This current research therefore is uniquely positioned to address gaps with regards to elements of online training issues in relation to employee self-efficacy in the banking industry in Ghana. Research and discussions with regards to the effect of online training on employee self-efficacy are only when

banking issues crop up. Concerted effort to improve online training in the banking industry is one of the most promising points of intervention to raise maintenance, the quality and efficiency of financial training in Ghana.

With respect to the banking history in Ghana, it is clear that training existed in our community before independence. Training of banking industries has become a newsworthy as many people have made an attempt to draw a strong relationship between effective online training and employee self-efficacy. According to Kraiger, Ford, and Salas (1993) research on the impact of online training on employee self-efficacy is scarce. Barbaranelli, & Tramontano, (2018) also attested to the fact that online training has only been assessed primarily on the basis of work performance and has not explored the emotional domains including self-efficacy Discourse in management roles of online training for bank managers have been conducted in various banks but none of them touched on the effects of online training effectiveness on the employee self-efficacy in the banking industry in Ghana, particularly Ashanti Region. It is therefore against this background and its associated consequences that this study was undertaken by employing a stepwise logistic regression analysis in order to determine elements of online training that significantly enhance the efficacy of employees in the banking industry specifically in Ashanti region of Ghana. To the best of our knowledge, such an analysis has not been conducted to determine the elements of online training that significantly affect the efficacy of employees in various banking industry in the region under study.

This current research adopted the descriptive survey research design to give a response to one hypothesis. Since the data used in the study was based on a primary source, structured questionnaires were designed for five hundred and ten (510) respondents which including bank tellers, human resource managers, and bank managers for various banks sampled for the study. The study employed both the simple random sampling and purposive sampling techniques in selecting respondents as well as banks for the study within the region. The data obtained from the respondent were then organized and analyzed using the stepwise logistic regression analysis to estimate the effect of online training on the likelihood to enhance employee self-efficacy.

The main research findings include no multicollinearity exist among explanatory variables employed in a stepwise multiple logistic regression model as elements of online training. Again, with the aim of examining the online training on the likelihood of enhancing employee self-efficacy, estimation of a proposed stepwise logistic regression reported Individual Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment significantly as elements of online training that significantly triggers the enhancement of employee self-efficacy. Finally, various goodness of fit test which includes Omnibus test as well as the Hosmer and Lemeshow tests revealed that our estimated logistic regression model is significant and can as well predict the likelihood (probability) of enhancing employee self-efficacy in various banking industry.

The structure of the paper is therefore as follows, literature review is presented Section 2, Section 3 outlines the methodology which includes research methodology and details of empirical results and discussions are posted in Section 4 where Section 5 which is the last section gives the concluding remarks and as well suggest some recommendations.

## 2.    Theoretical frame work and related literature

The banking sector of Ghana is playing a significant role and playing as a leader in the financial, industrial and commercial activities. Debnath (2003) indicates that productivity of manpower in the banking sector of Ghana will have to be increased and advanced by proper technological training both on the job and off the job. Moreover, Decenzo & Robins (2003) state "online training brings about the changes in ability, awareness, approach and behavior". Besides, Griffin (2003) supports online training usually in human resources management perspective refers to teaching operational and technical employees as to how to do the job with advance or electronic tools for which they were hired. Furthermore, Mathis & Jackson (2004) state 'online training as a procedure whereby people obtain capabilities to assist in the accomplishment of organizational objectives'. Besides, McGehee and Thayer (1999) support online training as, "the formal procedures a company uses to facilitate employees' learning so that their resultant behavior contributes to attainment of the company's goals and objectives". More specifically, online training is a systematic approach to skills and knowledge

acquisition or attitudinal enhancement that improves performance (Goldstein, 2001). Therefore, Rothwell, (2002) indicates effective training as systematically designed learning, based on a complete analysis of job requirements and trainee compatibility.

## 2.1 Online training

Sahinidis and Bouris (2008) defined online training as a deliberate and planned practice of human resource management, which results in enhancing employee functioning. Concept of online training came from change by learning and change is necessary for human development (Katz & Stupel, 2015). Online training can help an organization to achieve competitive factors like flexibility, permanence adaptability in crux it helps an organization to cope with change (Al-Khayyat & Elgamal, 1997). According to Dale S. Beach (2016) Online Training is defined as 'the organized procedure by which people learn the technological system, knowledge and/or skill for a definite purpose'. Online training refers to the teaching and learning activities carried on for the primary purpose of helping members of an organization acquire and apply the knowledge, skills, abilities, and attitudes needed by a particular job and organization. Online training is becoming an integral part of corporate training. Organizations that use online platform for employee training have a better chance of achieving business and financial returns because of the positive impact it has on work motivation (Bawa, 2016). Online training has become so popular in the working industry, it provides so many elements that are seen as capable of making learning and instructions easier (Simonson, Zvacek, & Smaldino, 2019). Ghebregiorgis and Karsten (2007) argued that online training provides a practical approach towards the development of skills attitude, which helps in gaining confidence and overcoming the mistakes. This confidence makes employees feel more equipped. This confidence in their own skills boosts the self-efficacy of employees. Their belief about their self gets stronger and their attitude becomes very positive towards the job, which enhances their performance (Gist & Mitchell, 1992). Many of the indirect effects of online training identified to enhance employee functioning as training enhances the confidence to perform the task and provides skill learning ability, which drives the performance (Vlachos, 2008). Online training helps in the ultimate motivation to achieve the goals (Griffeth, Hom & Gaertner 2000; Joet, Usher & Bressoux, 2011). Moreover, Martocchio and Hertenstein (2003) have noted that online training that results in high self-efficacy is more likely to lead to positive outcomes. Self-efficacy is the belief of an individual which is related to the training in two ways, treating it as an antecedent to training and an outcome as well (Yi & Davis, 2003). Online training programs are significant and vital to boost an employee's self- efficacy, but this training must be designed in a way to deal with the mandatory competencies. Training programs can also be planned by the inclusion of Bandura's (2015) experiences in order to increase the self-efficacy and competency of a trainee.

### 2.1.1 Technology perspective

The technology perspective refers to the software or the training system that carries the training content and is used for conducting trainings for employees. Studies have shown that the success of online training is dependent on the technology being used (Almarashdeh, 2016). The technology adopted for the training is considered as one of the key factors to the success of content delivery (Almarashdeh, 2016).

Online training is a growing topic in banking organizations and institutions, with the emerging technology readiness, still not all online trainings are successful, prior researches provides some drawbacks on the use of technology (Almarashdeh & Alsmadi, 2016).

### 2.1.2 Individual perspective

The individual perspective is made up of the factors that influences the learner's attitude towards learning during online training, for example learning motivation and individual learning styles. Empirical studies have shown that they both play a role in achieving success in online training (Cokley, 2015). Individual Employees' adaptation to online training is different, thus it is necessary to inculcate the differences in individual learning styles and learning motivation in online trainings to enhance self-efficacy (Britt, Shen, Sinclair, Grossman, & Klieger, 2016; Huang, Lin, & Huang, 2012). Previous studies affirm that People learn differently. However, most online-trainers and online-training platforms provide the same training content or resources for the same learners without taking into consideration

the learning style of each individual. Presently most online training platforms are not adaptive in nature (Goldberg, Davis, Riley, & Boyce, 2017). Studies have shown that trainees learn according to their learning style, therefore it is crucial for online platforms to be adaptive to satisfy the individual needs and preferences (Bajaj & Sharma, 2018).

Irrespective of differences in learning styles, the motivation to learn is paramount to online learning. Learning motivation is that special desire of the trainee to make effort to learn the contents of the training program(Lim, Lee, & Nam, 2007) and it can be affected by environmental factors such as the learning process or infrastructure use for learning (Mohammadi, 2015). Previous studies have proved that online training can be as effective as face to face training but when differences in learning outcomes occurs, it is often due to the individual trainee attitude towards learning, (Saleem, Al-Saqri, & Ahmad, 2016).

### 2.1.3    Instructors perspectives

It refers to the teachers teaching styles, its includes his competence and his enthusiasm towards teachings The instructor is responsible for delivering trainings to employees, there is no substitute for the diligence or the competence of the instructor (Sitzmann & Weinhardt, 2018). The actual transfer of training depends a lot on the trainer because it is the trainer only who can remove the mental block of employees, motivates them to learn, deletes the negative perception of the trainees regarding the training (Sitzmann & Weinhardt, 2019). Studies have shown that the instructors timely responses on the online platform has a significant relationship with satisfaction of the users of the platform (Geraci, 2016, Manu 2017).

### 2.1.4    Managers support

One of the factors that is paramount to online training success is support from management (Giran, Amin et al. 2014). Training support is driven by the immediate manager, the role played by immediate manager in training is very crucial to develop employee's self-efficacy (Giran, Amin, & Bahyah, 2014).Though the success of online training relies on several other factors, maximum training effectiveness cannot be achieved without subjective factors such as manager's support (Lim et al., 2007). As the empirical studied discussed, it can be concluded that employees with high manager's support are more likely to learn as much as possible compared to those who are not. Employees with high self-efficacy are believed to have fully benefited from training programs (Giran, Amin et al. 2014). In summation support from managers in training is crucial to build self-efficacy.

### 2.1.5    Training environment

The online training environment allows trainees to undertake online training at any time and any place (Lim et al., 2007). The online training environment facilitates communications between physically and geographically separated trainers and trainees, it also provides for shared training material, and allow for debate among participants. The design and format of the training environment will affect how easily trainees and trainers can do these things. For example chat rooms and multimedia functions enable trainees to easily use the training platform (Lim et al., 2007).

### 2.2    Self-efficacy

Bandura (2015) defined self-efficacy as an individual's confidence in himself and his ability to execute tasks effectively. He further suggested that the employee's perceived ability affect its performance during tasks. Kanter (2006) viewed self-efficacy as self-confidence. Bandura (2015) identified four sources of self-efficacy that serve as prominent cues: mastery experiences, vicarious experiences, social persuasion, and physiological responses. According to Bandura (2001), the most prominent among them is mastery through experiences, as employees when learning through their previous performance get more confident in their efficacy beliefs. The second source vicarious experience is by observing the peers, an individual may get influenced by it. Observing a peer succeeding in career increases an individual's efficacy level. The third source of self-efficacy involves acknowledging individuals about their abilities and building confidence in their potential. Chen, Gully, and Eden (2003) suggested that employees get motivated by their leader's persuasion. Lastly, on the existence of a fourth efficacy source, Bandura (2015) argued that physiological cues depict self-efficacy.

The level of self-efficacy can be observed by physiological symptoms (Jones, Paretti, Hein, and Knott, 2010). Self-efficacy has been viewed as a strong predictor in training and development and performance under varied contexts (Kraut, Chandler & Kathlee, 2016). Bandura and Locke (2003) also validated that employee performance is significantly affected by self-efficacy beliefs. Sherer and Carol (2016) divided self-efficacy into two types; work specific and general self-efficacy. He further explained work specifically as an individual's sense of ability related to a specific task, whereas general self-efficacy is one's common confidence in capability to thrive. Bandura (2015) referred to self-efficacy as a construct of social learning theory. Naquin and Holton (2002) suggested that incorporating the issue of self-efficacy in training program leads to positive change in the trainee. Appelbaum and Hare (1996) suggested that goal-setting theory closely goes with the self-efficacy, as challenging goals motivate employees towards a high level of self-efficacy and in consequence higher performance e Self-efficacy as defined by Bandura is the personal judgment of ones believes to organize and execute courses of action to achieve a specific goal (Bandura, 2003). In other words, it is rooted in the core believe that one has the power to effect a change by one's actions. Chang et al. (2016) have shown that technology training plays a role in attaining self-efficacy, it holds the assertion that online training may be associated with increased efficacy beliefs. Shen, Cho, Tsai, and Marra (2013) mentioned that online training courses offered to learners had significant impact on their self-efficacy. Evidence from other studies have shown that online training has a strong impact on employee self-efficacy (Giran, Amin et al. 2014). From such a fundamental and sweeping view it can be concluded that online training aids in achieving self-efficacy. Other studies have also argued that online training leads to satisfaction but cannot directly lead to self-efficacy (Athar & Shah, 2015). However, some studies have confirmed that intermediary factors such as instructor's enthusiasm and the design and delivery of the platform is believed to activate learners interest on online platforms which can lead to self-efficacy (Manu et al, 2019).

When examining online training, this study focus at the individual perspective, instructor's perspective technology perspective, manager's support, and finally from the training environment. Previous research have dwelled on either one of these perspectives (Sun, 2014),in this study we combined five constructs and evaluated the role they play in determining the impact on employee self-efficacy.

## 2.3 Theoretical framework

This model is proposed by the current study and it examines the effects of Online training on Employee Self Efficacy. Previously performed studies have analyzed the relationship of self-efficacy with training and training with employee performance but the current study proposes the new model, which covers both relations as a whole and testing these relations using a logistic regression analysis in



Elements of online training

Individual Perspective

Technology Perspective

Instructor Perspective

Managers Support

Training Environment

Employee Self-efficacy

a series: 1) individual perspective 2) technology perspective 3) instructor perspective 4) managers support and 5) training environment as responses to experiences, as prominent part of online training content. According to Martocchio and Hertenstein (2003) results suggested that learning orientation and efficacy showed a strong relationship in the perspective of learning, but not with respect to performance. Katz and Stupel (2015) suggested that the content of the online training can affect self-efficacy level of individuals. Brouwers and Tomic (2000) suggested that perceived self- efficacy significantly causes employee burnout and fatigue. This paper tends to minimize these outcomes by
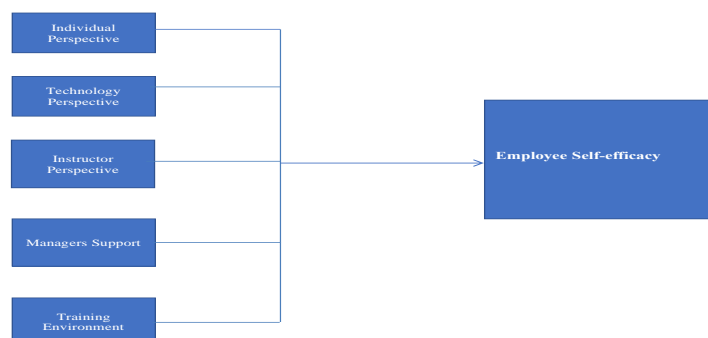
increasing self- efficacy, which leads to employee enhancement. Brouwers and Tomic (2000) also studied that decreased self-efficacy comes as an outcome of decreasing functioning levels. Furthermore, Bandura (2001), explained that mastery experiences and physiological responses are prominently the two sources of self-efficacy that lead to less fatigue and better performance. Joet, Usher, and Bressoux (2011) suggested that the four cues of self-efficacy although have been authenticated by many researchers, but this research must be done in organizational work settings to validate their impact. Lunenburg (2011) suggested that when choosing employees for training and development, self-efficacy levels must also be considered. Online training and development are used to improve employees' presentations (Campbell & Kuncel, 2001; Manu et al 2019). Sources of self-efficacy should be included in the training to improve good act (Loo1 &Choy, 2013). Putting the consideration on all previous literature, the above- mentioned model is worth testing empirically, describing the impact of online training on self-efficacy levels, which leads to enhanced employee level of confidence. On the basis of the above theoretical modeling and in-depth review of literature following hypothesis are formulated for this study: It is estimated that about 80% of employees drop out of online training before the training ends and this is an utmost detriment to the success of online training (De Medio, Limongelli, Sciarrone, & Temperini, 2018). Studies have proven that training can be as effective as face to face implementation but when differences in learning outcomes occurs, it is often due to the trainee attitude towards learning, characteristics of the instructor, or the technology being used for the training (Saleem, Al-Saqri, & Ahmad, 2016). This complexity brings difficulties in measuring online training and assessing how the administration affects the results. However, in the context of this study, the elements of online training is defined as the role of a body set up by the relevant authority to train and implement decisions in the banking industry, Ghana. Given that, the literature seeks to identify whether training practices can be universal or if efficiency is derived from the specificities of each organization and the environment in which they are inserted.

Different from preceding studies, this empirical research focuses on estimating the effect of online training which includes Individual Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment on the likelihood to enhance employee self-efficacy in a multivariate framework using a stepwise logistic regression model. This study therefore is anticipated to contribute much into body of knowledge on the elements of online training that are implemented by various board of directors and managers in Ghana as a whole. In summary, the review of related works featured in this study attempted to make a survey of the effect of online training on employee self-efficacy in the banking industry in Ghana.

## 3. Research methodology and model specification

A research design is a lucidity that connects data to be collected and conclusions drawn to the initial question from a study. Thus, it can be regarded as a basic plan for performing the data collection and analysis phase. This study therefore employs the descriptive research design. The descriptive research design according to Orodho (2012) is used in preliminary and exploratory research to allow the researcher to gather information, summarize, present and as well interpret for the purpose of clarification. It also noted in the literature that, the aforementioned research design is envisioned to produce statistical information about aspects of education that interest bank employees and policy makers in the banking industry. The population on the other hand describes the entire group of people the researcher wishes to investigate.

Thus, based on the preceding view about population, the population of study was made up of all bank tellers, human resource managers and bank managers of all the banking industry in Ashanti region. Statistically, the region is estimated to have about 63 public and private banks, 4,721 banking staff including managers and 1,321 board of directors.

According to Punch (1998), one cannot study everyone, everywhere, doing everything, thus sampling decisions are required not only about which people to interview or which event to observe but also settings and processes. In view of this, the study employed both probability and non-probability sampling techniques which includes simple random sampling and purposive sampling techniques respectively.

Specifically, the purposive sampling technique was used in selecting the banks, human resource manager and bank managers whilst the bank tellers were on the other hand chosen base on the simple random sampling. In all 30 public and private banks, as well as 510 respondents, were respectively selected for the study. The total number of respondents (510) comprised of bank tellers, human resource managers and managers from each of the banking industry selected for the study. Specifically, in terms of gender distribution of respondents regarding the sample selected for the study, twenty (19) of the managers were males whereas ten (11) were females; seventy-six (77) of the human resource manager too were male's whist seventy-four (73) were females; two hundred and fifteen (215) of the bank tellers were males whilst one hundred and fifteen (115) were females. In totality, the study comprised of three hundred and eleven (311) males and one hundred and ninety-nine (199) females. The above statistics are outlined in Table 1 and further supported by Figure 1;

Table 1.

*Respondent and gender cross-tabulation*

| Respondent | Gender | | |
| --- | --- | --- | --- |
| | Male | Female | Total |
| Bank managers | 19 | 11 | 30 |
| Human resource managers | 77 | 73 | 150 |
| Bank tellers | 215 | 115 | 330 |
| Total | 311 | 199 | 510 |

Data was gathered from the aforementioned respondents in various selected banking industry using a structured questionnaire. Questionnaires were chosen and considered appropriated because; they would shield a large sample of respondents, thereby allowing a reasonable degree of



generalizability of the findings. In view of Emery and Cooper (2003), the raw data obtained for a study is not valuable unless it is changed into information for the drive of the research. Hence after the data was collected from the various groups of respondents involved in the study, data cleaning was firstly done in order to improve the quality of the responses. The data obtained based on the responses from

respondent were then coded and entered using the Statistical Package for Social Sciences (SPSS) version 22.0. The qualitative data was then analysed using correlation analysis to assess the impact of Online training on Employee Self Efficacy as well as stepwise logistic regression analysis to examine the elements of online training that significantly enhance the self-efficacy of employees in the banking industry. Before conducting further analysis regarding the correlation analysis and the stepwise logistic regression analysis, a reliability test using the Cronbach's Alpha was used to assess the extent of internal consistency of variables or items in the questionnaire. Since the questionnaires were answered by various categories of respondents, the reliability test was based on the categories. This was fundamentally placed into three groups which include: bank tellers as one group then bank managers and human resource managers also in another group. Per the findings of Nunnally and Bernstein (2014) an Alpha value which is greater than 0.8 is reflected to be satisfactory. Base on this assertion, responses on the items Individual Perspective and Employee self-efficacy from the side of human resource managers and bank managers as well as Technology Perspective, Instructor Perspective, managers and Training environment from the side of both groups (bank tellers inclusive) received satisfactory reliability since their respective Alpha values were above 0.80. The remaining item from Table 2 had high scored but not satisfactory thus above 0.6.

Table 2.

*Testing the consistency of variables used in the questionnaire*

| | Cronbach's Alpha | | |
|---|---|---|---|
| Variable | Bank managers | Human resource manager | Bank tellers |
| Individual Perspective | | | 0.80 |
| Technology Perspective | | | 0.89 |
| Instructor Perspective | | | 0.93 |
| Managers Support | 0.78 | 0.65 | |
| Training environment | 0.84 | 0.81 | 0.90 |
| Employee Self-efficacy | 0.90 | 0.93 | 0.89 |

## 3.1 Model specification

With the main aim of determining the elements of online training that significantly enhance self-efficacy of employees in the banking industry, this study as earlier mentioned utilized a stepwise logistic regression model. Generally, the stepwise logistic regression model has become an integral component of any data concerned with the connection between a dichotomous response variable with one or more explanatory variables. The stepwise logistic regression model is a type of generalized linear model (GLM) with two components which includes the random component and systematic component. The random component represents the response variable which in this study is employee self-efficacy defined as;

$$SE = \begin{cases} 1, & if\ employees'selfefficacy\ is\ enhanced\ by\ elements\ of\ online\ training \\ 0, & if\ employees'\ self\ efficacy\ is\ not\ enhanced\ by\ elements\ of\ online\ training \end{cases}$$

(1)

where SE represents the self-efficacy of employees.

In this case, the study is interested in the probability that $SE_i = 1$ that is $P(SE_i = 1)$ indicating the probability that employee self-efficacy will be good follows the binomial distribution. The systematic component on the other hand is linear combination of the explanatory variables and their respective parameters to be estimated which takes the form: $\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_m x_m$. The explanatory variables may be quantitative (continuous), qualitative (categorical) or even both (mixture).

The general logistic regression model is formulated as;

$$logit(\pi_i) = log_e\left(\frac{\pi_i}{1 - \pi_i}\right) = X_i^T \beta$$

(2)

Where $X_i$ is a vector of continuous measurements corresponding to covariates and $\beta$ is the vector consisting of parameter estimates.

For binary response variable $AP$ with multiple explanatory variables $x_1, x_2, \ldots, x_m$ the model in Equation (2) becomes;

$$\pi(x) = \frac{exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_m x_m)}{1 + exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_m x_m)}$$

(3)

With regards to this study, the dependent variable as mentioned is self-efficacy which is binary. The dependent variable "self-efficacy" from Equation (1) has two levels; 0 if employee self-efficacy is bad and 1 if the self-efficacy is good. The factors assumed to be contributing to self-efficacy are used as explanatory variables. The explanatory variables used in the model includes; Individual Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment

The logistic regression model therefore used is formulated as;

$$P(if\ employee\ selfefficacy\ is\ enhanced\ by\ elements\ of\ online\ training) = \pi(x) = \frac{e^{g(x)}}{1 + e^{g(x)}}$$

(4)

and

$$P(if\ employee\ selfefficacy\ is\ not\ enhanced\ by\ elements\ of\ online\ training) = 1 - \pi(x) = \frac{1}{1 + e^{g(x)}}$$

(5)

Where $g(x)$ represents the function of the linear combination of the independent variables and their respective parameter estimates. This is called the logit function and is specified in terms of the variables used in the study as;

$$g(x) = \beta_0 + \beta_1 IP + \beta_2 TP + \beta_3 InstP + \beta_4 MS + \beta_5 TE + \varepsilon$$

(6)

Where $IP$, $TP$, $InstP$, $MS$ and $TE$ are the explanatory variables already defined and $\varepsilon$ represents the error term.

## 3.1    Hypothesis

Considering the logistic regression model formulated in the previous section, this current seeks to test the following hypothesis at 5% level of significance as follows:

$H_0$: There exist no significant linkage between employee self-efficacy and its determinants
$H_A$: There exist significant linkage between employee self-efficacy and its determinants

## 4.    Results and discussions

## 4.1    Summary of descriptive statistics

A brief summary of the descriptive statistics is presented in Table 1. With respect to our findings, the most important refers to the actual deviation from the mean value for the variables used in the study. To be more specific, the value of the standard deviation of the dependent variable (self-efficacy) is equal to 1.97. Furthermore, the same statistics for Individual Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment, are respectively equal to 0.31, 2.40, 1.49, 1.57, and 0.28. Additionally, Table 1 gives values on skewness, kurtosis as well as the Jarque-Bera test which helps to identify as to whether the data with respect to the variables follows a normal distribution. It can therefore be deduced that the dependent variable together with independent variables Technology Perspective, Instructor Perspective and Managers Support, are negatively skewed, flattering to the left as compared to the normal distribution.  Also, the variables Individual Perspective and training environment are positively skewed, flattering to the right. The kurtosis value of the dependent variable is observed to be greater than the normal value (3). This indicates that, the shape of this distribution is leptokurtic.

The explanatory variables which includes Technology Perspective, and Managers Support, are deduced to be mesokurtic in terms of shape since they respectively have kurtosis values which are approximately 3 and Instructor Perspective are identified to be platykurtic in terms of shape since it respectively has its kurtosis to be approximately less than 3. Generally, the normal value of the

skewness is "zero" and that of kurtosis is "three" when the observed series is normally distributed. The result per kurtosis and skewness for various variables used in the study is in line with Jarque-Bera test statistics in which all its values are not approximately zero or exactly zero. The JB test is used to determine whether the given series is normally distributed or not, with the null hypothesis that the series follows a normal distribution against the alternative hypothesis that the series is not normally distributed. The result from the JB test therefore rejects the null hypothesis that the series is normally distributed. Therefore, the series is not normally distributed.

Table 3.

*Summary of descriptive statistics*

| Variable | Mean | Std. Dev. | Skewness | Kurtosis | J-B test |
|---|---|---|---|---|---|
| Dependent variable | | | | | |
| Self-efficacy | 7.63 | 1.97 | -2.43 | 9.48 | 329.93 *** |
| Independent variable (management functions) | | | | | |
| Individual Perspective | 5.77 | 0.31 | 0.74 | 1.67 | 16.83*** |
| Technology Perspective | 8.56 | 2.40 | -0.45 | 2.50 | 5.22** |
| Instructor's Perspective | 6.64 | 1.49 | -1.38 | 2.34 | 30.64*** |
| Managers Support | 7.19 | 1.57 | -1.57 | 2.55 | 45.20*** |
| Training Environment | 2.52 | 0.28 | 1.19 | 2.09 | 27.05*** |

Note: *** and ** indicates the rejection of the Jarque-Bera (JB) null hypothesis of normality at 1% and 5% level of significance.

## 4.2    Multicollinearity test

This study further test for multicollinearity among the independent variables using the VIF and Tolerance. Table 4 therefore shows the multicollinearity test results with respect to the independent variables used in the study. The VIF values are much less than 10 whilst the values of the tolerance on the other hand are also more than 0.2. This therefore implies that, there exists no multicollinearity among the variables within the multiple logistic regression model in Equation (6) when employee self-efficacy is used as the dependent variable. Since there exists no multicollinearity in the multiple logistic regression specified in the study we went further to estimate the determinants of employee self-efficacy in the subsequent section.

Table 4.

*Multicollinearity test using VIF and Tolerance*

| Independent variables (elements of online training) | VIF | Tolerance |
|---|---|---|
| Individual Perspective | 8.25 | 0.47 |
| Technology Perspective | 5.21 | 0.76 |
| Instructor's Perspective | 1.77 | 0.83 |
| Managers Support | 1.89 | 0.88 |
| Training Environment | 9.17 | 0.75 |

Note: the values of both the VIF and Tolerance are based on the dependent variable (employee self-efficacy). The VIF values are expected to be below 10 and that of Tolerance to be more than 0.2.

## 4.3    Estimating the effect of online training elements on employee self-efficacy
### 4.3.1    Model summary

The model summary provides information on the usefulness of the model. The model summary results as shown in Table 5 gives the respective value of the Cox and Snell R-square as well as Negelkerke R-square which depicts the amount of variations in the response variable explained by the model from a minimum value of 0 to a maximum value of approximately 1. The aforementioned statistics are described as a Pseudo R-square statistic value than the R-square value that is used in a multiple linear regression analysis output.  Findings from the analysis pertaining Cox and Snell R-square

together with Negelkerke R-square gives the values 0.581 and 0.785 respectively suggesting that, between 58.1% and 78.5% of the variability in the response variable (employee self-efficacy) has been explained by the set of explanatory variables used in the model. This further indicates that a substantial amount of variation in the response variable has been explained. Table 4 additionally reports a -2log-likelihood value of 23577.164 which comparatively is smaller than that of an empty model (model at the initial stage (step 0) consisting of only the constant) from the logistic regression output, indicating that, the final model will be very useful in predicting the likelihood of employee self-efficacy being good or bad.

Table 5.

*Results from the Model Summary*

| Step | -2log-likelihood | -2log-likelihood |
|------|------------------|------------------|
| 1 | 23577.164 | 23577.164 |

### 4.3.2 Omnibus test of model coefficients

The Omnibus test of model coefficients discloses the overall indication of how well the model performs over and above an empty model (model with no predictor variable entered). This is referred to as the goodness of fit test. The results from Table 6 thus gives a p-value of the model as 0.000 which is less than the level of significance of 0.05 with a Chi-square value of 133.042 and a degree of freedom (df) of 27. This suggests that the model is significantly fit better than an empty model (model in step 0) which as a result leads to the rejection of the null hypothesis. This therefore brings out the indication that, there exists a significant relationship between employee self-efficacy and elements of online training due to the fact that the model expressed as an element of online training is significant (p-value<0.000).

Table 6.

*Results from the Omnibus test of model coefficients*

| | Chi-square | df | Prob. Value |
|------|-----------|-----|-------------|
| Step | 133.02 | 27 | 0.000 |
| Block | 133.042 | 27 | 0.000 |
| Model | 133.042 | 27 | 0.000 |

### 4.3.3 Hosmer and Lemeshow test

The Hosmer and Lemeshow test on the other hand is used in testing the significance of the model and also used to support the model as being worthwhile. This test is interpreted very differently from the Omnibus test of model fit in the previous section. For the Hosmer and Lemeshow goodness of fit test, poor fit is indicated by a probability value less than 0.05. Hence in order to support the model as significantly fit in relation to the Omnibus test, a probability value greater than the level of significance 0.05 is needed. The results from the Hosmer and Lemeshow test as Table 7 depicts gives a Chi-square value of 8.883 with a probability value of 0.352. This probability value is greater than the level of significance of 0.05, therefore indicating support for the model as worthwhile or very significant. This outcome is in line with the findings of Huaisheng et al (2019), for the factors affecting students' academic performance and some related factors using logistic regression analysis.

Table 7.

*Results from the Hosmer and Lemeshow Test*

| Step | Chi-square | df | Prob. value |
|------|-----------|-----|-------------|
| 1 | 8.883 | 8 | 0.352 |

### 4.3.4 Model estimation results

After affirming the significance of the logistic regression model, it is of interest to pin down to estimate the effect of the various elements of online training on employee self-efficacy within the banking industry in Ghana specifically in the Ashanti region of Ghana as a study case. Table 8 thus outlines the results based on the estimates of the logistic regression model for the association of elements of online training assumed to be enhancing the efficacy of employees in the banking industry. Results given in Table 8 are based on the parameter estimates, standard error values, Wald test, odds ratios and p-values of the various variables used in the study. The parameters estimates are interpreted

in terms of the p-values, Wald test values as well as the odds ratio $\exp(\beta)$. The p-values and the Wald test helps to identify the variable that makes a significant contribution to the response variable whereas the odds ratio $\exp(\beta)$ reflects the multiplicative effect of the various variables in the model assumed to be enhancing employee self-efficacy. From Table 8, the intercept with parameter estimate of 0.850 and a p-value of 0.000 as well as Wald test value of 68.562 is statistically significant and different from zero at 1% level of significance. Among the explanatory variables (elements of online training) assumed to enhance the efficacy of employees in the banking industry, only Instructors perspective is identified to be statistically insignificant. This therefore gives the indication that; the enhancement of employee self-efficacy in the various banking industry does not rely on instructor's perspective. This variable (instructor's perspective) is reported to have a p-value of 0.145 which is greater than all the standard levels of significance (1%, 5% and 10% respectively). Concerning the significant variables, the estimated results further reveals that, development in individual perspective in various banking industry has imperative effect on increasing the likelihood of enhancing employee self-efficacy. This is in supported by the odds ratio of 1.181 indicating that, progress in improving individual perspective is 1.181 times likely to enhance employee self-efficacy in the banking industry. Also, the technology perspective is reported to be statistically significant at 1% level with a Wald test and odds ratio value of 7.716 and 1.132 respectively. This, therefore, suggests that upsurge in technology perspective in the banking industry is 1.132 times more likely to enhance employee self-efficacy.

Interestingly and as expected, at 5% level of significance, managers support had statistically significant p-value of 0.027 and odds ratio of 1.166 indicating that, the aforementioned variable is 1.166 times more likely to enhance the efficacy of employees in the banking industry with no doubt. Finally, results from the estimations moreover show that training environment also have a significant role to play when it comes to employee self-efficacy. This evidenced from the fact that, training environment from the results in Table 8 has a statistically significant impact on self-efficacy with a positive parameter estimate of 0.341 and an odds ratio of 1.398 suggesting that upsurge with respect to training from the environment will 1.398 times more likely to enhance employee self-efficacy in the banking industry.

Depending on the results per the significant explanatory variables, the logit function $(g(x))$ from Equation (6) can be estimated as;

$$g(x) = 0.850 + 0.167IP + 0.120TP + 0.152MS + 0.341TE$$

(7)

Thus, ceteris paribus the probability that employee self-efficacy can be enhanced is estimated using the fitted logistic regression model;

$$\pi(x) = \frac{e^{0.850+0.167IP+0.120TP+0.152MS+0.341TE}}{1 + e^{0.850+0.167IP+0.120TP+0.152MS+0.341TE}}$$

(8)

Where $\pi(x)$ represents the probability the employee self-efficacy can be enhanced by elements of online training.

Table 8.

Results from the logistic regression Model estimation

| Variable | Parameter estimates | Wald test value | Std. error | Exp(Beta) | Prob.value |
|---|---|---|---|---|---|
| Intercept | 0.850*** | 68.562 | 0.103 | 2.339 | 0.000 |
| Individual Perspective | 0.167*** | 12.025 | 0.053 | 1.181 | 0.002 |
| Technology Perspective | 0.120*** | 7.814 | 0.047 | 1.132 | 0.008 |
| Instructor's Perspective | 0.004 | 2.163 | 0.003 | 1.004 | 0.145 |
| Managers Support | 0.152** | 5.435 | 0.075 | 1.166 | 0.027 |
| Training Environment | 0.341*** | 13.168 | 0.092 | 1.398 | 0.000 |

## 5.    Conclusion

Online training in banks (SHS) has become a remarkable as many people have made an attempt to draw a strong relationship between effective elements of online training and employee self-efficacy. Discourse in online training roles of managers for instance bank managers have been conducted in banks but none of them touched on the role of its effectiveness on the employee self-efficacy in Ghana,

particularly Ashanti Region. This current study therefore evaluated the effect of online training assumed to be contributing to the enhancement of employee self-efficacy in the banking industry in Ashanti region of Ghana. With the help of a stepwise multiple logistic regression, Individual Perspective, Technology Perspective, Instructor Perspective, Managers Support and training environment were used as explanatory variables conforming to the elements of online training whereas employee self-efficacy on the other hand was employed as a dichotomous response variable. Various goodness of fit test which includes Omnibus test as well as the Hosmer and Lemeshow tests revealed that, our estimated logistic regression model is significant and can as well predict the likelihood (probability) of enhancing employee self-efficacy in various banking industries. With regards to the estimated results it was evidenced that based on the Wald test values, p-values and odds ratio values, Individual Perspective, Technology Perspective, Managers Support, and training environment significantly contributed to the likelihood (probability) that employee self-efficacy can be enhanced. Only Instructor Perspective as an element of online training did not appear to be significant. With respect to the findings obtained from this current study, we recommend that element of online training with the exception of Instructor Perspective should be reinforced in various banking industries in the Ashanti region of Ghana so as to enhance employee self-efficacy.

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