The Predictability of Faculty Participation in Professional development Programs using Demographic, Academic, and Occupational Factors in Higher Education

Dibande Anna Itoe

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THE PREDICTABILITY OF FACULTY PARTICIPATION IN
PROFESSIONAL DEVELOPMENT PROGRAMS USING DEMOGRAPHIC,
ACADEMIC, AND OCCUPATIONAL FACTORS IN HIGHER EDUCATION

DISSERTATION
Presented in Partial Fulfillment of the Requirement for
the Degree Doctor of Education in the Graduate School
of Texas Southern University

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By
Dibande Itoe Anna, Ed.D.
Texas Southern University, 2022
Dr. Danita Bailey-Samples, Advisor

The purpose of this study was to determine if there exist any predictive relationships between faculty demographic, academic, and occupational factors, and faculty participation in professional development programs. Despite the established benefits of faculty participating in professional development programs and its corresponding impact on student learning and graduation rates, a critical issue for professional development centers has been how to attract and motivate faculty to participate in these programs (James Jacob et. al., 2019).

A correlational research procedure was used as the structural framework for conducting this study, and the population of interest were higher education faculty from two private research-intensive higher education institutions found in North America and West Africa. A voluntary response sample of 177 faculty was reached via the respective institutional email system of both institutions. The data was collected using a survey instrument managed by survey monkey. Data analysis was carried out on SPSS using binary logistic regression analysis at a .05 significance level. The demographic, academic, and occupational factors were all found to be statistically reliable in predicting those faculty who were more likely to participate in
professional development programs and those who were less likely to participate in professional development programs.

Faculty voiced their opinion on the rewards they would like to see associated with participation in professional development programs in an open-ended question and the results were summarized and presented. These findings formed the foundation of the recommendations made to administrators and to faculty with the hope that this could encourage institution wide practices that can work together to motivate higher participation rates in professional development programs among faculty members.
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DEDICATION

This dissertation is dedicated to my daughter Shiloh Margeret Ebongken Ewunkem.

To my siblings; Samuel Itoe, Itoe Egbe Hannah Missodi, Helen Itoe, Catherine Itoe, and

to the blessed memory of our mother Bertha Fese Itoe.
**VITA**

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**Major Field**

Administration of Higher Education
CHAPTER 1

INTRODUCTION

Many research studies have concluded that there are positive outcomes to faculty teaching quality and student success associated with faculty participation in professional development programs (Geertsema & Rijst, 2021 & James Jacob et al., 2019). Research into professional development programs for faculty in higher education is gaining more attention with growing evidence of positive impact on students, faculty, departments, and the institution (Geyte and Hadjianastasis, 2021; Eggins & Macdonald, 2003; Elvidge, 2004). This is supported by a growth in the implementation of professional development programs through the growing presence of centers for teaching and learning in Higher Education institutions around the world engendering the need to evaluate the effectiveness of the programs (Daumiller et al., 2020; Parsons et al., 2010 & Sutherland & Hall, 2018).

Professional development for faculty in higher education has grown in response to the need to improve on faculty pedagogical thinking and skills (Daumiller et al., 2020 & Postareff et al. 2007) amidst an evolving scope of concerns that have placed greater pressure for accountability on institutions of Higher Educations regarding the quality of education that is being offered to students (Nelson 2014; Seidman 2012). Chalmers (2019) showed that faculty participation in professional development programs has a positive impact on student overall success while Condon et al. (2016) concluded that faculty participation in professional development activities positively affects classroom pedagogy, student learning, and the overall culture of teaching and learning. Seidman (2012) also concluded that faculty participation in professional development programs
played a direct role in building effective pedagogy and curriculum and an indirect but essential role in improving student involvement, and therefore, student learning and ultimate success.

The movement to build on faculty pedagogical readiness may seem foreign in Higher Education because teachers everywhere in education are required to hold some form of teacher training certification as a condition for entry into teaching (Parsons et al., 2010; Postareff et al., 2007) but traditionally, entry into Higher Education teaching has been based on expertise in a field of knowledge. A Ph.D. or its equivalent has been the key criterion of qualification for entry into teaching in Higher Education, with no requirements to demonstrate pedagogical competence or the ability for quality teaching (Parsons et al., 2010).

Pedagogical competence has been defined as the ability of an individual to use a harmonious blending of tangible resources such as instructional materials and technology and intangible resources like pedagogical skills to achieve efficiency and effectiveness in teaching (Madhavaram & Laverie, 2010). The move to readdress faculty pedagogical competence through professional development programs has gained traction due to quality assurance measures that universities around the world are having to implement in response to the demand for accountability for higher education institutions (Parsons et al., 2010; Postereff et al., 2007).

In the United States and around the world, there is plenty of literature indicating that the higher education system is facing unprecedented challenges on a wide number of issues. According to Bastedo, Altbach & Gumport (2016) and Goodchild, Jonsen, Limerick, & Longanecker (2014) these challenges include changes in the funding
regimen from the government, rapidly increasing tuition rates, diminishing appropriations and modified governance relationships in addition to rapidly changing demographic characteristics of college students and more. Some of the accountability challenges institutions are being required to meet include not just on time graduations but also that graduates are equipped and ready to contribute to a complex global society that demands that they possess skills and capacities that are flexible enough to adapt and accommodate a rapidly changing global economy (Spellings Commission, 2006).

According to Fein (2014) and Kirst & Stevens (2015), higher education institutions are working to redefine and reinvent their curriculum, pedagogy, and assessment policies to ensure that graduates are equipped with the desired attributes and competencies required to contribute to and engage effectively in a global economy. In the domain of pedagogy, specifically in terms of teaching approaches, one of the main goals advanced by professional development programmers has been the coaching of faculty to move from the traditional teacher centered teaching methods to learner centered teaching methods (Coffey and Gibbs, 2002; Coffey and Gibbs, 2004; Postereff et al., 2007).

According to Parsons et al. (2010), academic interest in professional development for faculty in higher education has received increasing interest since 2003. This interest is partly owed to its established effectiveness in improving the outcomes among students of faculty who take part in these programs, but, however promising professional development programs for faculty has proven to be, Leslie (2002) notes that faculty, especially at research intensive institutions must, navigate conflicting expectations concerning their role as teachers and researchers because, even though institutions may
seem to publicly applaud quality teaching, institutions generally privately value research more, particularly in tenure and promotion decisions.

Research into professional development programs has shown remarkably low recorded participation rates among faculty (Bayer, 2013; Geertsema & Rijst, 2021 & Pesce, 2015). It is therefore the aim of this study to investigate some of the factors that can predict faculty participation in professional development programs using some selected demographic, academic, and occupational factors in hope that findings can inform practice that could boost participation rates.

**Statement of the Problem**

Despite the many benefits associated with faculty participation in professional development programs, programs still record incredibly low participation among faculty (MacKinnon, 2003). A critical issue for professional development centers has therefore been how to attract and motivate faculty to participate in programs (James Jacob et al., 2019). Furthermore, very few studies have focused on the relationships between faculty and institutional characteristics and participation in professional development programs (Pesce, 2015).

The purpose of this study is therefore specifically to examine the predictability of faculty participation in professional development programs using demographic (age and gender), academic (rank and discipline), and occupational (time, administrative rewards, and research orientation) factors as predictors.
Research Questions

This study seeks to answer the following research questions.

1. Do the variables age and gender have any predictive power on faculty participation in professional development programs?

2. Do the variables rank and discipline have any predictive power on faculty participation in professional development programs?

3. Do the variables time, administrative reward and research orientation have any predictive power on faculty participation in professional development programs?

Significance of the Study

It is hoped that the outcome of this study will be important in raising higher education administrators’ awareness of faculty needs and of factors that affect faculty members’ choices to participate or not to participate in professional development programs. This study’s findings will therefore be primarily beneficial towards Higher Education administrators such as presidents, provosts, deans, heads of teaching and learning centers, researchers, and professional development program developers and faculty. Essentially this study should inform the development of institutional policies that can change faculty approaches towards professional development programs and motivate participation.

The study will also help inform deans and departmental leaders in decision making processes related to professional development programs and help to support the promotion of a culture of instructional quality and effectiveness that would motivate and promote faculty reception and participation and even the implementation of training knowledge received from professional development programs within departments.
Furthermore, this study will help inform other studies aimed at continuing faculty reflection and assessment of faculty professional training for teaching in Higher Education. It is expected that the knowledge gained from this study will help inform professional development program developers in their efforts to create and implement programs in ways that will respond to the needs of faculty members.

**Theoretical Framework**

Faculty background and the attributes that could motivate a particular choice vary from one faculty to another. According to Pesce (2015), any project that seeks to study faculty motivation must examine the total context of a faculty member’s background to be able to assess how the elements impacting the life of faculty can work together to influence or determine the choices made. Two theories, the expectancy theory by Victor Vroom and Urie Bronfenbrenner’s ecological systems theory, were therefore found to be appropriate theories for interpreting the individual characteristics and occupational factors that can influence faculty participation in professional development programs.

**The Expectancy Theory by Victor H. Vroom (1964)**

According to Vroom, the fundamental problem of motivation is to explain the choices made by employees among different voluntary options. Vroom believed employees consciously decided whether to perform or not to perform at the job and this decision according to him depended solely on the employee’s motivation level. An employee according to Vroom will decide to pursue a certain course of action because they are motivated to select that specific behavior over other behaviors due to what they expect to be the outcome of that selected course of action. The theory is built around three main variables: Expectancy, instrumentality, and valence.
**Expectancy** ($E \rightarrow P$) is the belief an employee holds that if he or she puts in enough effort (work) this effort will lead to achievement of the expected performance level that has been set by the organization. Expectancy is the confidence that more efforts will lead to a better performance. Employees may hold varying levels of confidence about what they can do. Expectancy can be supported by factors such as an employee's possession of necessary skills, confidence level, experience, accessibility of required resources, availability of vital information, perceived difficulty of the task, and availability of support for completing the job to meet the set performance level. Expectancy can be assigned a value from zero (if the performance will not be reached by the effort invested) to one (if the performance level will be reach by the effort invested). Administrators must therefore discover and ensure that employees have the required resources, training, and supervision they need to enable them to achieve the desired performance.

**Instrumentality** ($P \rightarrow O$) is the degree of an employee's belief in the likelihood that he or she will actually receive the promised reward if they achieve the expected performance level set by the organization is achieved. It is based on the assurance that if you meet the set performance standard, then you would effectively receive the promised reward outcome. Instrumentality is influenced by factors such as employee trust in the decision makers who decide who receives what outcome, the simplicity of the process of deciding who gets what outcome, and clarity of relationship between performance and outcomes. The existence of negative factors such as organizational politics, nepotism, lobbying, and the inability to maintain the rewards system can influence this variable.
Administrators need to ensure that promised rewards are fulfilled and that employees are aware that promises are being fulfilled.

**Valence** \( (V(R)) \) is the value that an employee places on the reward associated with achieving the recommended performance level. Valence is, in effect, an emotional orientation that employees hold with respect to rewards. As such, rewards can be extrinsic (such as financial) or intrinsic (such as satisfaction, job fulfilment). It is therefore important for administrators to discover what employees value or take into consideration employee preferences. An outcome can be said to be positively valent when an individual prefers attaining that outcome rather than not; it is negatively valent when an individual prefers not to attain that outcome; and when he or she is indifferent to whether an outcome is attained or not, it can be said to be of a zero valence.

Vroom proposes that a given employee’s motivation is equal to the product of the expectancy, the instrumentality, and the valence, as described by the following conceptual framework.

\[
\text{Motivation} = \text{Expectancy} \times \text{Instrumentality} \times \text{Valence}
\]
Implication of the Expectancy Theory to Higher Education Administrators

The expectancy theory will not work in practice without an understanding and consideration on the part of administrators about what faculty value as rewards. It is therefore imperative that administrators strive to know what faculty value through interventions such as regular interactions with faculty and survey polls. Administrators must also accurately assess faculty capabilities and make available all the right resources to help faculty be successful in meeting the desired teaching performance such as providing and motivating faculty to attend professional development programs.

Administrators must equally demonstrate that faculty will indeed get the promised reward (instrumentality) by holding award ceremonies or producing posters to celebrate faculty achievements in teaching excellence. The primary implication of this theory for administrators is to encourage the desired performance outcome by tailoring rewards to what employees value. Incentives and benefits should be explicitly linked to performance
goals which are in line with the institutions’s strategic mission, and which will contribute to achieving organizational or institutional success. It is also important to provide variable reward options to expand the appeal of the rewards available to faculty, thereby allowing rewards to be positively valent to various faculty members.

**Ecological Systems Theory**

Bronfenbrenner was a twentieth century Russian ecological theorist who developed the ecological systems model. In the ecological model he studied how interactions between various “systems” work together to influence human development. He named the first system the individual, the second the microsystem, the third the mesosystem, the fourth the exosystem, the fifth the macrosystem, and the sixth, finally, the chronosystem. Bronfenbrenner initially developed this theory to explain how a child's development is affected by the social relationships around him or her. However, the theory has been applied to the understanding of different social contexts and their relationship with the development of individuals within these environments. This theory can be used to analyze how the environment that surrounds a faculty can potentially influence a faculty’s determination to participate or not to participate in professional development activities.

**The Individual** level constitutes the first level in the theory. Individuals are influenced by factors such as age, ethnicity, gender, experience, and developmentally instigative characteristics. These factors according to Bronfenbrenner, can either attract or deter reactions from the environment. An individual’s developmentally instigative characteristics encompass an individual’s beliefs about his or her relationship with the environment. According to Pesce (2015) developmentally instigative characteristics
Figure 1: The Ecological Systems Theory (wordpress.com)

would affect faculty belief about professional development and the way faculty members prefer to teach.

The Microsystem is the next level after the individual. The individual can be influenced directly by the people within his or her immediate cycle of life. Those with whom the individual makes direct contact on a regular basis typically includes family,
peers, colleagues, caregivers, spouses, and neighbors. In the case of faculty, this level will include factors such as the relationship with colleagues, children, spouses, students, etc.

**The Mesosystem** is the next level surrounding the microsystem and is the area where Bronfenbrenner proposes that the elements in an individual’s microsystems function by reciprocal interconnecting with one another. Thus, the mesosystem consists of the result of the interactions between the different parts of the microsystem. The microsystems interconnect here and exert impact on one another and on the individual. Relationships at this level are not unidirectional but bilateral, suggesting that the way you relate with other individuals within this level will typically influence the way they relate with you. The mesosystem for faculty members can contain the relationship between colleagues, racial interaction, and the direct/indirect influence these exert on the faculty.

**The Exosystem** encompasses the mesosystem. According to Bronfenbrenner, the exosystem incorporates other formal and informal social structures that affect the other microsystems but do not directly have an influence on the individual. The exosystem, for example, can represent one’s neighborhood, mass media, the friends of one’s friends, the church, which all constitute influences that are external to the individual but still influence the experience of the individual. In Higher Education, this would involve higher education policies such as laws and policies, tenure/promotion procedures, the academic calendar, insurance and benefits, professional development for teaching and the impact these have on the individual (Pesce, 2015).

**The Macrosystem** constitutes those elements of norms, beliefs, and values that affect an individual’s and perceptions about life events. For higher education faculty, the
macrosystem encompasses societal and cultural expectations, norms, and values, along with the economic, legal, and educational structures and ideologies that affect the job of a faculty member (Pesce, 2015). These influences for a faculty in the United States may be completely different for faculty in Japan because of the differences in cultural norms and beliefs.

The Chronosystem is the level of the system that cuts across all the other systems. It refers to the stage of life of the individual in relation to the situations he or she is going through. It consists of the negative and positive changes that have occurred over a lifetime and how these changes influence the individual. In the case of faculty in higher education, for example, the COVID-19 pandemic has affected the way in which faculty exercise their role(s) as teachers and researchers. The new norm has led to increased dependence on technology and the need to train faculty to be skilled in its use. This specific timing might impact faculty ecologies in that the barrier between home and work for instance has become much slimmer than they were for previous generations of faculty as faculty have been obliged to learn how to use technology to provide lectures for students from their home.

Bronfenbrenner’s 1979 ecological systems theory can be used to show how faculty environmental interactions can be used to explain faculty behaviors. The theory can also allow faculty members view of professional development to be placed into a proper framework, allowing professional development course developers and administrators to learn when and how to encourage faculty members to participate in professional development activities (Pesce, 2015).
Statement of the Hypotheses

The following hypotheses were set for this study:

(H1): There is a statistically significant relationship between age and gender and faculty participation in professional development activities.

(H2): There is statistically significant relationship between faculty rank and discipline and faculty participation in professional development activities.

(H3): There is a statistically significant relationship between time, administrative reward and research orientation and faculty participation in professional development.

Research Assumptions

The following assumptions were applied for this study.

1. It was assumed that participants will give truthful and honest answers to the survey that will allow for valid conclusions.

2. It was assumed that participants are interested in participating and will not intentionally attempt to skew results.

3. It was assumed that participants understand the meaning of professional development in the self-reporting survey instrument.

Limitations/Delimitation

For this study, only faculty at two private research-intensive universities found in North America and Western Nigeria were participants. This is therefore likely to generate responses that will not be generalizable to faculty at other types of institutions. It is also possible that the results are influenced by the institutional philosophy of education and faculty development practices and may therefore not be generalizable to faculty in another context. Using two institutions from two different continents in this study, might
also influence generalizability because of the broad geographical and contextual differences between the two universities. There may also be a risk of sample bias because faculty will receive this survey by email and responses will be given voluntarily which presents a risk in terms of faculty representation which may also influence generalizability.

**Definition of Key Terms**

**Professional Development**

Professional development as used in this research study refers to those programs which specifically aim at developing university faculty members’ teaching skills for their role as teachers. It can be described as any initiative specifically planned to enhance course design or teaching approaches so that student learning is supported (Taylor & Rege Colet, 2010). Another definition of the term was offered by Gaf (1975) as activities designed to enhance the talent, expand the interest, improve the competence, and facilitate the professional and personal growth of faculty members particularly in their role as instructors.

**Quality Teaching**

Quality teaching according to the Institutional Management of Higher Education (2012) can be defined as the use of pedagogical techniques to produce quality learning outcomes for students. It involves several interventions, which include elements such as the effective design of curriculum, a variety of learning contexts (such as independent study, project-based learning, collaborative learning, experimentation, etc.), soliciting
responses, using feedback, and effective evaluation of learning outcomes within a well-adapted learning environment with a robust student support service.

**Gender**

Gender as used in this study refers to the fact of being biologically male or female. According to the Oxford advanced learners Dictionary, the term gender as it refers to being male or female is especially important “when considered with reference to social and cultural differences,”

**Age**

Age as used in this study refers to the total number of years of life of a faculty member.

**Rank**

Rank as found within this study refers to the standard academic ranking of a college or university faculty member ranging from instructor, lecturer, senior lecturer, and master lecturer, assistant professor, associate professor, to professor and above. Discussions under this title within this study also covers various modifications of status offered in various institutions such as non-tenure-track, tenure-track, or tenured, as well as adjunct full-time and part-time appointments

**Discipline**

The term discipline in this study refers to the academic discipline or field of study of faculty within a college or a university setting such as business (accounting,
economics, finance, management, marketing), humanities (art, history, languages, literature, music, philosophy, religion, theater), natural and applied sciences (biology, chemistry, computer science, engineering, geology, mathematics, physics, medicine) and social sciences (anthropology, education, geography, law, political science, psychology, sociology), etc.

**Time**

Time as used in this study refers to the specific administrative action of setting out time outside of teaching time (which may or may not be embedded within the institutional policy framework) to allow faculty to participate in professional development programs.

**Administrative Reward**

Administrative reward within this study refers to any administrative action taken to recognize faculty participation in professional development programs and quality teaching (which may or may not be embedded within the institutional policy framework).

**Research Orientation**

Research orientation as used within this study refers to a general administrative and institutional culture (which may or may not be embedded within the institutional policy framework) that demonstrates whether or not the administration places value the value on quality teaching that is equal to the value placed on research publications.
Chapter Summary/Organization of the Study

This chapter presents the background to this research study and constructs the theoretical orientations which this research study is going to take in the investigation of the topic under consideration. This study is aimed at investigating the predictability of faculty participation in professional development programs using demographic, academic, and occupational factors in higher education. This chapter covers the general introduction to the study, the theoretical background, the statement of the problem, the significance of the study, the statement of hypotheses, the study assumptions, limitations and delimitations and the summary. The next chapter, chapter two, will review what other researchers have written on the subject in the review of related literature.
CHAPTER 2

LITERATURE REVIEW

The purpose of this study is to determine the predictability of faculty participation in professional development programs using demographic, academic, and occupational factors in Higher Education. This chapter is intended to provide a review of research studies and writings on the topic under investigation. It is worth noting that although a lot of ground has been covered through research works on the benefits of professional development activities in several nations around the world, there is extraordinarily little literature if any covering various faculty attributes, institutional practices and policies and the impact these have in determining faculty participation in professional development activities.

This review of literature is organized in the following order: section I covers approaches to teaching in higher education; section II portrays an overview of the historical progress of professional development for faculty in Higher Education; section III presents the benefits of faculty participation in professional development programs; section IV outlines the methods used for the implementation of faculty development programs in countries around the world; section V brings out faculty demographics and participation in professional development; section VI covers academic factors and faculty participation in professional development; section VII discusses occupational factors and faculty participation in professional development and the chapter ends with a conclusion.
**Approaches to Teaching in Higher Education**

According to Lee (2011), during the period from the mid-1800s to the 1960s American university faculty related with their students based on the “in loco parentis” model. Under this model, faculty responsibility over their students went beyond the academic domain of teaching and learning into the out of class personal experiences and the general development and welfare of the students, with the incorporation of a rigid set of “character-building” rules and regulations that had to be strictly enforced with corresponding punishment for non-compliance (Rentz, 2004). The role of faculty at the time allowed for close interactions between faculty/tutors and their students in and outside of the classroom. Faculty/tutors mainly used the lecture method and students demonstrated their learning by memorization and recitation of what had been taught (Thelin, 2011).

The lecture method of teaching focuses on the transmission of facts and is classified as a teacher centered instructional method where the teacher does more of the talking while the student listens, takes note, memorizes, and reproduces what was taught. This teaching method generally has the students in the classroom as passive learners and does not consider the needs of the students nor allow students to actively participate in the teaching and learning process (Weimer, 2013). There has however been a preferred shift in instructional methods in higher education from the traditional teacher-centered teaching methods such as the lecture method to more student-centered collaborative teaching methods such as team-based learning, project-based learning, inquiry-based instruction, etc. (Doyle, 2011; Reynolds, Stevens, & West, 2013).
During the Civil Rights Movement of the 1960s, college students took an active role in protesting racism and demanding more rights for students as well as the redressing of other social injustices (Franklin & Moss, 1994; Rhoads, 1998; Williams, 1987). Some of these protests as they related to student experiences, were a direct result of issues that came up with challenges to student discipline related to the “in loco parentis” model (Rentz, 2004). Several court cases were heard during this period to address issues with student discipline and the question of who should be accountable for students. An important case which brought some level of clarification on the role of college administrations regarding the discipline of their students was the “Dixon 1961” case which clarified the steps of due process for students at colleges. A court ruling reached in the 80s made colleges accountable to the public for “sensible” actions to keep their students safe.

According to Bickel and Lake (1999) the newly recommended model to guide the relationship between universities and their students was termed the "facilitator model." The facilitator model introduced a student-teacher relationship which changed the dynamics of the classroom teaching interaction from the typical lecture method used by faculty to the facilitator method where faculty, instead of transferring knowledge, would rather facilitate the acquisition of knowledge with the active involvement of the students in the learning process (Rentz, 2004 & Weimer, 2013). Student learning and social development were directed through the provision of guidance for learning, guidelines for appropriate behavior, and the outline of possible results of breaching any of the recommended guidelines, while respecting the due process rights of their responsible adult students in matters of correctional action (Rentz, 2004).
As students progressed into evaluating what they were being taught, they merged into groups of extracurricular societies to investigate topics that interested them, but there was little to no debate questioning the teaching techniques of faculty or the processes by which they were trained (Brubacher & Rudy, 1997). The paradigm shift to a collaboratively based approach to college teaching facilitates co-construction of knowledge amongst teachers and students. This new paradigm would build on the development of student abilities to create connections between course content and other areas of learning and experience, increase motivation for learning and empower students through inquiry-based learning. It also provides students with authority in their acquisition of subject matter and focuses on assisting students in the process of developing skills and aptitudes (Holloway, 2003).

Fink (2003) advances that although faculty members generally want their students to achieve higher kinds of learning, faculty tend to use teaching styles which are not effective in promoting such higher levels of learning, as these approaches are mostly based on the long-practiced lecture-based instructional method. The traditional lecture-based teaching method was imported at the end of the 19th century when American institutions adopted the German research university model, which had faculty focusing more on research than teaching (Brubacher & Rudy, 1997).

The very first inclinations towards questioning faculty and the quality of teaching arose when more federal funding began pouring into higher education institutions post WWII. This resulted in an academic atmosphere where research of a particularly scientific nature took on more prestige over teaching. As this orientation towards research grew, teaching lost its importance and its central place in academia, both teaching time
and interaction with undergraduate students were reduced extensively (Kerr, 2001). Funding structures and incentives from the Federal government in the long run influenced the transformation of teaching universities into research universities. Faculty thereafter were consequently being hired by colleges and universities for their research and grant-winning abilities and not for their teaching abilities, as more grants meant more income and prestige for that university (Bis). These dynamics caught the interest of many researchers who were hired as faculty but were brought into teaching only because of their desire to continue researching into their specialty and not necessarily out of their commitment to teaching (Lee, 2011).

The Advisory Committee to the National Science Foundation report of 1996 denotes that the earliest moves towards teacher training programs in higher education in the United States occurred as a response to the need to train graduate teaching assistants who were increasingly filling in for professors who had gotten more invested in graduate studies thereby according less time to undergraduate studies. As graduate education expanded, professors taught smaller number of undergraduate hours. This left most undergraduate courses in the hands of graduate teaching assistants who were deemed to have poor teaching skills.

Following strong criticisms of the adequacy of the teaching skills of graduate teaching assistants, training courses were suggested for all students in graduate school (Brubacher & Rudy, 1997). A proposition was eventually reached where all Ph.D. programs would be required to include both the theoretical study of education and a supervised teaching practicum (Brubacher & Rudy, 1997). Though the integration of teacher training for graduate students has been recognized since the 1960s, it has not gotten
any formal systematic unified application in all graduate programs across the United States. In 1973, The United States Council of Graduate Schools acknowledged that it was vital to raise teaching to the same level of recognition and prestige as research in the higher education platform especially from a reward point of view. This decision would begin the long process of changing the academic culture within academic circles especially as tenure processes have been more informed by faculty research works and publishing and not so much by their teaching record (Eagan et. al., 2014).

**Historical Progression of Professional Development Programs for Faculty in Higher Education**

Chism, Gosling, & Sorcinelli (2008) have traced professional development for Higher Education faculty through five stages of development: the age of the scholar, the age of the teacher, the age of the developer, the age of the learner, and the age of networking.

**The Age of the Scholar**

According to Chism, Gosling, & Sorcinelli (2008) the age of the scholar can be identified by the years 1950 to 1960. Rice (1996) holds that any form of professional development in existence at this time was geared towards keeping faculty updated on developing trends and competences in their scholarly disciplines. This was important because research in faculty’s discipline held a higher level of importance over teaching.

Kerr (2001) holds that teaching had lost its significance as new federal funding structures during this time frame were focused on the research productivity of universities. Faculty hirings into various institutions was on the bases of how much grant
money they could bring into the institution building up the prestige of the institution. Only a few colleges and universities had formal professional development programs, and there were few measures of outcomes (Beach et. al., 2016).

**The Age of the Teacher**

The age of the teacher is identified by Chism, Gosling, & Sorcinelli (2008) as the period between 1960 and 1970. The age of the teacher emphasized the need for faculty renewal and development, as there was a marked increase in student enrollment into colleges because the civil rights protests engendered increased government funding and establishment of graduate schools (Brubacher and Rudy, 1997).

The earliest notions of teaching training programs in higher education can be traced back to this time frame as the Advisory Committee to the National Science Foundation report of 1996 mentions proposals for the training of graduate students to make up for the shortage of professors, who were by this time more focused on graduate education. This training was designed to incorporate both the theoretical study of teaching and learning and teaching practicum into all Ph.D. programs (Brubacher & Rudy, 1997).

**The Age of the Developer**

The age of the developer according to Beach et al. (2016), spanned the period between 1970 and 1980. The age of the developer was characterized by growth in the establishment of teaching and learning centers on campuses around the United States and other countries around the world such as South Africa, Australia, and Canada. The decision to invest more resources into student learning by revamping faculty development programs across the states came in response to some critical reports such
as “A Nation at Risk” of April 1983 by the National Commission on Excellence in Education which highlighted the reality of the state of Higher Education in America.

Faculty development was achieved through the development of several different programs that were meant to support faculty at every level of their career. It was also in this decade that measurements of the outcome of faculty development programs became an area of interest for researchers. By 1986, Ericson (1986) found that about 50% of all 4-year colleges in the United States offered some formal form of faculty development programs. In addition to these milestones, Beach et al. (2016) state that faculty development secured a professional identity in the United States via the establishment of the Professional and Organizational Development (POD) Network which is the largest professional association in the world for faculty developers.

**The Age of the Learner**

According to Chism, Gosling, & Sorcinelli (2008), the age of the learner in the professional development timeline can be traced through the 1990s when the understanding of the dynamics of teaching and learning began shifting. Faculty perception of students was changing from seeing students as being mere passive learners to a perception of students being real persons having a mind of their own and having a capacity for complex reasoning. This brought about a change in the delivery of teaching from a point of view of a faculty as a transmitter of knowledge to that of faculty being a facilitator of student learning (Parsons et al., 2012; Gibbs, 2012).

Professional development programs at this point focused on assisting faculty in their understanding of learning theories and expanding faculty knowledge about teaching skills and strategies associated with active learning, in response to the changing
educational needs of students (Beach et al., 2016). This period was also marked by an increase in online course offerings and logically increased use of technology. In addition to these shifts were rising demands for accountability and evidence of the work of teaching and learning centers (Chism, Gosling, & Sorcinelli, 2008).

The interest in the professional development of faculty gained much momentum in so many countries around the world that the initiative was reached to create the International Consortium for Educational Development (ICED) founded in 1993 with the goal of promoting faculty development in higher education worldwide (Parsons et al., 2012). This changing awareness has triggered the creation of national-level professional development societies for teaching and learning in countries such as Denmark, Finland, Germany, Ireland, New Zealand, Norway, the Netherlands, Sweden, and the United Kingdom (Postareff et al., 2007).

**The Age of Network**

In addition to the four eras in the professional development time frame Chism, Gosling, & Sorcinelli (2008) identified a fifth stage or era, which they coined the age of network. This era would be a result of the changing nature of college students, the professorial body and changing concepts of teaching and learning, which together increase the complexity of issues faculty developers would need to address. Meeting these new dynamics, would require collaborative efforts between all stakeholders within the higher education circle such as libraries, teaching centers, instructional technology units, and assessment offices as well as academic departments, with professional development program developers (Beach et al., 2016).
Over the years, several organizations have been created within the Higher Education Platform to advance the cause for professional development of higher education faculty. Some of these include but are not limited to the National Association for Integration of Research, Teaching, and Learning (NAIRTL), the International Society for the Scholarship of Teaching and Learning (ISSOTL), the International Consortium for Educational Development (ICED) formed in 1993 with initial financial support from British Telecom initiated by Graham Gibbs and international colleagues and intended as a forum for international collaboration. The International Consortium for Educational Development (ICED) sponsors the International Journal for Academic Development published by Taylor and Francis. The later journal enables educational developers in higher education from across the world to exchange ideas about best practices with the goal of improving the quality of higher education internationally.

These groups hold conferences and publish newsletters and articles that draw attention to the scholarship of teaching and foster collaboration across various disciplines and cultures. In addition, institutions around the world have started mandatory post-tenure review and peer-review processes for both tenure track and tenured faculty members (Altbach, 2011). Many colleges and universities now have on their campuses centers for teaching and learning or faculty professional development centers that hold workshops, tutorials, learning communities, and other professional development support programs to encourage faculty members to develop more effective teaching approaches (Chism, Lees & Evenbeck, 2002).
Major Contributors to the Need for Faculty Professional Development

Programs in the 21st Century

Within the context of the 21st century, steps have been taken towards the reevaluation of faculty teaching practices and the overall relevance of a college education. These steps have been influenced by the need to respond to emerging issues that have added to initial forces. These issues have brought higher education institutions under heightened public scrutiny, demanding for colleges to demonstrate that they are actually successful in preparing their graduates for a rapidly changing labor market which for employers translates into graduates who are well equipped with the skills needed to evolve professionally over short periods of time (Organization of Economic and Cultural Development, 2012).

In addition to increased public scrutiny, universities are also challenged by changes in the demographic composition of students resulting from the increase in the pool of students enrolling in colleges and universities. There are particularly younger students enrolling alongside adult working students (Rentz, 2004). Professional development programs can help faculty build the skill sets necessary to create inclusive classroom environments that respond to and builds on student diversity because aside from the age range of students there is also more diversity in ethnicity, gender, physical ability/disability, socioeconomic background, and first-generation students attending college resulting in college implementation of developmental education courses as a means of accommodating students with achievement gaps. These programs are structured to assist faculty in the development and delivery of lessons that foster the social and cognitive development of their students (Bowman 2010; Gurin, Nagda, and Lopez 2004)
as instructional quality has been found to be the main influence on students’ motivation and learning (Elliot and Dweck 2005; Jankowski 2017).

However, Kreber & Brook (2001) hold that the inference measures for the success or failure of development programs are weak, as participant perception/satisfaction and participation numbers, being increasingly valued institutionally to determine return on investment of services because these are indices that can be easily measured. However, while access to professional development programs is important, and while participant satisfaction and participation numbers do matter, to what extent do these really indicate success? Furthermore, professional development programs differ with the setting in which they are implemented and are delivered by persons who come from diverse backgrounds (Green & Little, 2016; Bolander Laksov & Huijser, 2020) making it more difficult to calibrate measures of success.

**Benefits of Faculty Participation in Professional Development Programs**

Studies of the benefits of faculty participation in professional development programs can be classified into student benefits, faculty benefits, departmental benefits, and institutional benefits. Research studies on the benefits relating to student success often find a significant correlation between the two (Geertsema & Rijst, 2021; Sutherland & Hall, 2018), however these studies have been largely more in the qualitative framework than quantitative (Pesce, 2015). In a study carried out by Ambrosino and Peel (2011) the researchers followed 10 faculty after they had participated in a faculty development program at a United States health science university. Upon receiving student feedback on these faculty and evaluating the faculty reflections, the researchers
found a positive relationship between faculty participation in professional development and instructional change, student learning outcomes and student motivation outcomes.

McShannon et al. (2006) conducted an evaluation on faculty at a community college who had participated in a professional development program focused on student retention for an entire semester and found an increased rate of course completion and persistence among the students of participating faculty over students of non-participating faculty. This study concurs with one of the major studies on the impact of professional development programs conducted by Gibbs and Coffey (2004), in which they examined the impact of the training of faculty on approaches to teaching, teaching skills and approaches to learning of their students. They investigated a training group of teachers and their students and a non-training group and their students at the beginning of training, and 1 year later. The training group was noted to become less teacher-centered and more student-centered by the end of the 4 to 18 months of training. In addition, after a student evaluation, their students found their teaching skills to have improved after the training. The researchers further found that students took a surface approach to learning to a significantly lesser extent and a deep approach to a deeper extent, but these changes were not statistically significant. The findings of this research have drawn many researchers to criticize the study in that one cannot based on this study conclude that faculty development will lead to positive changes in faculty teaching or student learning and that any change registered could be attributed to factors outside of the training program.

In another study recording the outcome of the students of faculty who had participated in a semester long faculty development program focused on student retention at a community college, Perez, McShannon and Hynes (2012) found that students of
faculty who participated in professional development programs had a recorded increase in their rate of course completion and persistence to the next year of their program. When studying another group of students whose faculty had participated in professional development, Khoule et al. (2015) also found that LaGuardia Community College of the City University of New York students who attended developmental math and English with instructors who had participated in a two-semester, online faculty development program that had emphasized reflective practice had higher passing and retention rates than the students of faculty who had not participated.

Postareff et al. (2007) also studied 200 higher education teachers from different disciplines across two institutions to investigate the benefit of the pedagogical training of faculty. They also examined whether the length of training of faculty can have an influence on faculty approaches to teaching. The result showed that participating faculty exhibited the change towards becoming more student-centered than those who did not participate in training only after a year-long process of pedagogical training. The researchers in an additional study conducted interviews on a smaller group of voluntary faculty from the initial survey. Faculty mentioned only positive effects of pedagogical training on their teaching and how training had made them more aware of their approach to teaching and the teaching methods they used in the classroom. The authors concluded that the awareness of one’s own approach to teaching is essential in the journey of improving one’s teaching practices. The researchers also found that for faculty who had participated in the programs for a shorter duration, training rather seemed to make such teachers more uncertain about themselves as teachers, whereas a longer course increased faculty self-efficacy, and supported conceptual changes. This study brings to light the
importance of the element of duration of training programs or the length of the programs which is an important element about professional development for faculty and which may make the difference in the effectiveness of the program.

Wheeler and Bach (2021) carried out a study to determine the impact of professional development programs on classroom instruction and student achievement in STEM undergraduate courses. Their study suggests that well designed and executed student-centered instruction and active learning pedagogies have the potential to close the achievement gap of underrepresented student groups, which is an ongoing concern for all higher education institutions around the world. The authors emphasize that using one particular instructional approach is not what makes a difference, but whether the teacher is using these approaches appropriately.

After carrying out a study evaluating a group of students at LaGuardia Community College of The City University New York, Khoule (2015) found out that students who took developmental Math and English from instructors who had participated in a two-semester long faculty development program online which focused on reflective practice had higher pass rates and retention rates. The finding of this study can be compared to the findings by Cordon et. al (2015) who find that faculty participation in professional development programs had a long-term impact on student learning as student of participating faculty showed improved learning over time.

According to the Organization for Economic and Cultural Development (2021), quality teaching constitutes one of the most important contributing factors to student success, including graduation rates, persistence rates, retention rates, academic self-sufficiency, and sense of belonging. In an examination of institutional action on retention,
Condon et al. (2016) associated faculty participation in professional development programs with student learning. According to these researchers, faculty development plays a direct role in shaping pedagogy and curriculum and an indirect but particularly important role in student engagement, leading to improved student learning and ultimately to student success. The researchers further demonstrated that faculty participation in professional development activities positively influenced classroom pedagogy and the overall culture of the teaching and learning environment.

In addition to student benefits, faculty participation in professional development programs has also been shown to lead to the cultivation of an improved institutional culture that supports quality teaching and learning and faculty transition from a teacher-oriented method of teaching to a more student-oriented methods of teaching (Parsons et al., 2012; Postereff et al., 2007). In a research study to review the nature of the relationship between teachers' approaches to teaching and students' approaches to learning, Trigwell, Prossner, and Waterhouse (1999) surveyed students and teachers in 48 first year science classes and collected data by adopting a tracking-back approach to the study. Data was analyzed in two phases, and the results showed that teachers who described their teaching as teacher focused or traditional were found to more likely to be teaching students who reported adopting a surface approach. Meanwhile, faculty who described their teaching as student focused or learner centered were found to more likely to be teaching students who reported adopting a deeper approach to learning, which lends to more positive learning outcomes on for their students.

Austin (1992) conducted an evaluation of the Lilly Endowment’s Teaching Fellows Program (a program that was created with the goal of supporting new faculty
members in their teaching and professional development endeavors). Her survey analyzed the effectiveness of the program on impacting faculty on aspects such as their relationships with colleagues, career development, and teaching. She found that the program had a great impact on improving faculty members’ attitudes towards teaching and teaching skills. This professional development program helped the new faculty members develop more interest in teaching and generate a renewed commitment to being effective educators.

According to Gibbs (2012) and Parsons et al. (2012), faculty participation in professional development programs has also been linked to a cultivation of an improved institutional culture that supports quality teaching and learning. When students perform better, this helps improve on indexes such as the rate of attrition, the number of courses repeated, and the length of time taken to graduate which implies that there could be a financial incentive for institutions when they decide to invest in professional development programs for faculty.

**Strategies Used in the Implementation of Professional Development Programs**

Voluntary and mandatory methods have been used across the world for the implementation of professional development training for faculty in higher education under different strategic and funding stimuli (Parsons et al., 2012). For some countries in Europe, new and aspiring academic staff have mandatory qualification/certification requirements, and this is becoming the more established pathway that institutions have adopted for entry into teaching in higher education (Postareff et al., 2007). Schmidt (2008) suggests that the logical time to prepare faculty for quality teaching would be during their master’s and
doctoral degree programs. The foundation of knowledge and skill established during this period according to the author can then be augmented by faculty development workshops throughout their teaching careers.

According to Posterreff et al., (2007), an extensive range of approaches is employed to implement professional development programs, such as workshops, seminars, peer review, small group teaching, projects, mentoring, and portfolios in Sri Lanka. A major focus in this country’s approach is the promotion of the scholarship of teaching that is equal to the promotion of research. Sri Lanka is one of the countries in the world where higher education faculty are mandated to hold some form of teaching certification or training as a prerequisite to entry into teaching in higher education (Gibbs & Coffey, 2004, Posterreff et al., 2007).

In Australia, Ling (2009) states that almost all universities have a central academic development unit for the support of quality in teaching and of continued career-related professional development opportunities. Faculty within the first year of their appointment, are encouraged to participate in professional development through an extensive range of program offerings. With greater attention being paid to the quality of teaching in universities here, there is clear expectation that teaching staff will provide evidence of the quality of their teaching and of ongoing participation in teacher development programs (Parsons et al., 2012; Postareff et al., 2007). Australia equally has a Higher Education Standards Framework with stringent national standards applied to graduate certificates in teaching and learning (The International Consortium for Educational Development report, 2020). Policy varies from university to university
ranging from mandatory completion of a graduate certificate in tertiary teaching to foundations of university teaching programs to short induction programs.

In the UK, hybrid forms are often used in some institutions which can include course offerings by the center for teaching and learning for in-service training of faculty, teaching excellence awards and competitions for remarkable improvements. According to the International Consortium for Educational Development report (2020), many universities in the UK have made their postgraduate certificate compulsory for full-time lecturers by including it as a requirement of contractual probation, and for progression beyond probation. In Ireland accreditation trainings are strongly recommended in most higher education institutions for all academic staff. However, a small number of institutions require new faculty to take mandatory accredited programs. Geyte & Hadjianastasis (2021) studied the value of centralized accredited and non-accredited courses and their perceived and actual benefits on postgraduate teaching assistants at the University of Birmingham in UK. They found that accredited courses were found to have positive impact for institutions and students regarding learning, employability, professional confidence, and gaining a qualification. They concluded that accredited courses lead to a noticeable enhancement of professional knowledge, ability, and confidence.

In the Netherlands, the International Consortium for Educational Development report (2020) stated that the country signed the mutual agreement of university teaching qualification, guaranteeing that each university will provide a university teaching quality regulation and rendering the Dutch University Teaching Qualification mandatory but not enforceable by law. The courses for university staff in the Netherlands are usually led by
teacher trainers who work in the educational development unit of the universities. Evidence from Australia, New Zealand, and the United States suggests that differences in disciplinary contexts are reflected not just in disciplinary pedagogies, but disciplinary cultures underpinning philosophies of teaching (Goody, 2011).

In Finland, Postareff et al. (2007) state that the qualification pathway is also becoming a more established strategy for institutions. Teacher development initiatives began in university central administration over 20 years ago and are now being directed to the faculty of Education. Universities in Finland have their own frameworks; for example, some universities require a 10 European Credit Transfer points (ECTs) course. In the International Consortium for Educational Development report (2020) it is stated that implementation practices in Denmark are more heterogeneous, as senior faculty members, for example, usually take courses that vary from Doctoral/Research supervision to E-learning and Course Leadership. Other implementation formats also vary including courses, development projects, departmental seminars, cross-disciplinary mirroring processes of education, collegial supervision, and mentoring.

In the United States, Pesce (2015) states, two major strategies are used to implement training for faculty: an initial training which faculty members may or may not receive while enrolled in their doctoral studies, and an ongoing faculty development they could participate in once they begin teaching. She further stated that university teaching centers, departments, and schools of education provide a range of one day programs for new staff. Provisions are made for a face-to-face model that incorporates a range of participative approaches including workshops, projects, portfolio, teaching observation, individualized consultation, and, increasingly, a blended online provision.
Demographic Factors and Faculty Participation in Professional Development Programs

Pesce (2015), in her dissertation research study entitled “Professional Development for Teaching in Higher Education: Faculty Perceptions and Attitudes,” found that younger faculty were more likely to participate in or to have participated in professional development programs than the more senior faculty members; and younger faculty were more likely to believe that teaching development was adequately emphasized on the campuses she studied. She also found with respect to gender that female faculty were statistically more likely than the male faculty to have participated in and to hold positive views on professional development for teaching and more likely to say they would attend professional development programs in the future.

Postareff et al. (2007), in a study on the effect of pedagogical training on teaching in higher education, compared how faculty experience by years of service influenced their approaches to teaching (assessed using the approaches to teaching inventory) and found that there were no significant shifts from teacher-centered to student-centered teaching practices based on faculty years of service or experience. Efficacy was, however, found to be significantly improved with experience. The researchers signified that as valuable as efficacy in teaching could be, it should not be interpreted as quality teaching, and thus still constitutes a cause for concern. Faculty members have been using the teacher centered approach for a long time, completely convinced that a teacher-centered approach is effective. According to Gibbs and Coffey (2004) and Lindblom-Ylänne et al. (2006), the teacher centered approach to teaching has not only been found ineffective but has been shown to be highly resistant to change.
Kezar et al. (2015), in a STEM study entitled “Implicit Theories of Change as a Barrier to Change on College Campuses: An Examination of STEM Reform,” found that female faculty reported a higher benefit resulting from their participation in the professional development programs when they were compared with their male counterparts. Another longitudinal study by Kezar and Gehrk (2015) on mutual mentoring network in research and teaching including about 40 percent of all full-time instructional faculty on one campus, with women and faculty of color overrepresented, found that female faculty are more likely than their male counterparts to participate in faculty professional development programs.

Gibbs & Coffey (2004) conducted a research where they measured the impact of a professional training program at 22 different institutions. The focus of the research was particularly on how the training program had affected faculty members’ approaches to teaching and student learning. Students and faculty completed surveys both at the beginning of the training program and one year later. The study found that positive changes had occurred among the group of faculty who had participated in training, but negative changes were observed among the group of faculty in the control group who had not participated in the training program.

One important finding derived from the study suggests that faculty members of the control group had noticed their teaching deteriorate over the course of one year. The implication of this finding for higher education is that teachers who may have been at an institution for many years could see their teaching quality depreciate annually instead of improving by virtue of experience. The study also found that women and adjunct faculty participated in professional development programs more often than men or full
professors. These findings can be used to review and improve on the value placed on teaching within the institutional culture.

**Academic Factors and Faculty Participation in Professional Development Programs**

Even though most faculty positions at colleges and universities are primarily teaching positions, a research study by Austin (2002) concluded that the professional culture of colleges/universities has a history of considering teaching as being lower in status than research. This imposes on faculty the dilemma of having to choose between investing their time on research or developing the skill sets for quality teaching. For most science faculty, for instance, professional identity is almost completely defined by their research activity. This research identity starts being constructed all the way from graduate school, as most science graduate students’ training is focused on how to conduct research. Graduate education plays an important role in socializing and preparing students for their future responsibilities in teaching. Since faculty members’ perceptions of the value of teaching and research are set as far back as graduate school, science faculty are less likely to change their perception on teaching once their positions have been secured, making this group of faculty less likely to want to attend professional development activities. It is, therefore, important that the emphasis on quality teaching and the training process it entails begin while academics are still in graduate school (Austin and McDaniels, 2006).

According to Eagan et al. (2014) in a research report of a survey of undergraduate faculty between 2013 and 2014, the researchers found that various practices and hiring agreements in the integration of undergraduate faculty play varying roles in influencing faculty access and motivation to participate in professional development that is organized
on campus. They found that even though adjunct faculty, for instance, constitute a substantially growing population if not the majority on many campuses, adjunct faculty reported limited access to professional development programs. According to Pesce (2015) tenure track faculty were found to be statistically more likely than tenured and non-tenure track faculty to have participated, more likely to say they would participate in professional development programs in the future, and also more likely to hold positive views on professional development for teaching.

According to Figlio, Schapiro, and Soter (2015), non-tenure track faculty equally teach most mission-critical undergraduate courses to freshman students, and this group of faculty have been found to be better at working with disadvantaged students than tenured colleagues. Non-tenure track faculty, however, have the most limitations and least motivation to participate in professional development programs. The American Association of University Professors (Taylor, 2017) projected the growth in number of contingent faculty numbers will continue to increase in the coming years and encourages the centers of teaching and learning to have a plan ready to reach this group of faculty using alternate approaches such as online services.

McComb, Eather, and Imig (2021) provide an important synopsis of pressing issues surrounding the ever-increasing number of adjunct faculty, who are now responsible for most of the teaching that takes place in higher education. These faculty occupy a position that has been simplified often with teaching-only contracts without the opportunity to advance in their careers and are in a clear need for development opportunities to be provided for them. Following an overview of adjunct faculty professional development programs and a few reports on the simplification of the role of
such faculty in higher education, the researchers call for a fundamental shift in administrative approach to the development and support of adjunct faculty and make a number of policy recommendations such as including provision of mentoring and closer involvement of such faculty in the development and delivery of faculty development programs.

The job of building the teaching capacity of contingent faculty, who now make up half of college instructors nationwide, is becoming one of paramount importance (American Association of University Professors, 2017; Austin, 2002; Bowen and McPherson, 2016), especially as this number is expected to increase each year for the foreseeable future. Non tenure track faculty should logically not be required to participate in professional development without a consideration of fair compensation (Taylor 2017). Pesce (2015) found that newly recruited faculty members often do not feel prepared to teach and consider themselves novices. Though they can reflect on what they are doing in the classroom, very few of them incorporate this self-reflection or any teaching theory they may have learned back into their teaching routine.

Key negative factors to faculty participation in professional development as identified by (Butcher and Stoncel, 2012; Gibbs and Coffey, 2004; Parsons et al. 2012; and Postareff et al., 2007) included large classes, pressures for more research and publishing, and lack of practical and policy support from the institutional administration. The most frequently cited factor that participants in programs have indicated compromised the impact of the teacher development programs was lack of consensus and collaboration with colleagues (Stes et al. 2010).
According to Chalmers (2015), Goody (2011), and Parsons et al. (2012), institutions reportedly make only (12%) of faculty promotion decisions based on teaching excellence, signaling a lack of institutional support towards faculty teaching excellence. Another prominent barrier according to Parsons et al. (2011) is the omission of faculty in decisions concerning pedagogical changes. In higher education, many pedagogical decisions are made by administrators, which leaves faculty voiceless in teaching reform processes and in some instances without the resources necessary for the implementation of recommended changes even while being responsible for the implementation of such changes.

The conflict between teaching and research in higher education has been a long-standing debate. Faculty have consistently in research surveys expressed the fact that research is more valued than teaching quality, especially in promotion decisions. The emphasis on research performance has traditionally overshadowed the teaching quality and student learning (Eagan et al., 2014). In interview with faculty members, Pesce (2015) found that many faculty members mentioned the tension point between maintaining faculty professional identity in terms of research expectations and participating in pedagogical changes, because teaching is often regarded as a professional requirement that is of lower status than research, particularly in the scientific disciplines.

Over the past 30 years, doctoral and postdoctoral training at research institutions has put a tremendous emphasis on research, immersing students in the culture of research for a scientific discipline, while often ignoring teaching. There is thus a tension point among graduate students, especially in the science disciplines, between maintaining one's professional identity and participating in pedagogical change in that teaching is often
regarded as lower in status than research (Beath et al., 2012). Though pressured by the demands of publication and research for tenure (Boice, 1992, Fairweather, 2002, Tang & Chamberlain, 2003, and Wolverton, 1998), there is clear expectation that professors will be required to provide evidence of the quality of their teaching and of ongoing participation in professional development programs (Parsons et al., 2012; Postareff et al., 2007).

Dominique et. al. (2021) found that merely implementing academic development does not ensure improvement in teaching quality. They conducted an action research project, which demonstrated that the combination of Teaching Advantage Global teaching development program with a professional recognition through fellowship of faculty significantly improved the self-efficacy belief of faculty in China and Hong Kong, demonstrating that professional development and recognition can support institution wide strategic change. Their findings emphasize the need for building professional development communities within and between departments.

**Occupational Factors and Faculty Professional Development**

According to Daumiller, et al., (2021) it is important to understand how academics’ achievement goals relate to their engagement in and gains from professional development courses. In a self-reported pre-test post-test design, the impact of a variety of full-day professional development program courses that focused on enhancing teaching skills was calculated. They focused on the mediating effects of academics’ achievement goals on their engagement and the learning gains resulting from the initiatives. They recommended that the learning goals of academics should be supported to allow for more successful outcomes in professional development courses. From these
finding, they noted administrators may require having to provide dedicated time to academics to complete these courses, so they need not “worry about other work-related tasks,” suggesting the need to integrate professional development with their other academic concerns.

According to Pesce (2015), collaboration with other faculty, food provision, stipends, promotion, and tenure were cited by faculty as forms of compensation for participation in professional development programs that could motivate faculty to participate in trainings designed for enriching the pedagogical approaches of faculty members. In another research dissertation study of “Factors Influencing Participation in Professional Development to Promote Online Course Excellence and the Impact on Faculty Confidence and Teaching” by Elizabeth Ann Mascher (2016), the lack of time and institutional research requirements were cited as the most significant factors impacting faculties’ decision to participate in faculty professional development, followed by a lack of incentives and scheduling difficulties. Pesce (2015) also cited lack of time as the major reason faculty opt out of participating in professional development programs, but she also found that some faculty do not participate in these programs because they thought they were already excellent teachers.

According to Miller et al. (2000), student centered methods of teaching when compared with teacher centered methods, take more time to prepare and to present. Additionally, they state that faculty at most 4-year institutions are required to carry out research as a requirement to progress into higher academic ranks or to achieve tenure status; and because some research studies can attract significant amounts of funding in the form of external grants that add prestige to the institution, these faculty members
receive a fair amount of recognition from the institution and the higher education platform. This expectation mostly places pressures on pre-tenured faculty to spend most of their time on research, sometimes at the expense of quality teaching (Kloser et al., 2001). According to Leslie (2002), faculty especially at research intensive institutions usually must navigate conflicting expectations concerning their teaching responsibilities and research publication expectations because though institutions may seem to publicly applaud quality teaching, institutions generally privately value good research more, particularly in tenure and promotion decisions.

According to Massarella (1980), reforms in professional development ought to be introduced and carried out by individual teachers and school-based personnel. However, research finds that the most successful professional development programs for faculty in higher education are those that are guided by a clear leadership vision that goes far beyond faculty in classrooms, and this can be attributed to the fact that faculty alone generally lack the capacity to conceive and implement institution wide improvements on their own. An important element in assessing instructional quality involves obtaining constructive feedback from students, which may not be straightforward as students may be reluctant to provide feedback. These concerns may be intensified if it is hard for them to see signs of action that are a direct result of the evaluations in which they participate (Barth, 1991). This would suggest that institutional leadership must be implicated in introducing and managing professional development strategies in their institutions.

Among factors that administrative policy must take into consideration are issues such as the time sensitive elements in the recommendation for teaching strategies to move towards a more student-oriented approach and the training requirements involved
by offering some administrative incentives that can motivate faculty participation (Kember and McKay, 1996). Other proposed actions include lowering teaching loads, associating financial benefits, and getting recognition for tenure and teaching awards. This is especially crucial as it has been noted in some cases that pedagogical changes in the classroom sometimes cause poor faculty evaluations by students due to student resistance to the change, which can negatively affect progression to tenure (Romano et al., 2004).

Recommendations for an appropriate institutional environment for the promotion of teaching excellence requires overall support from institutional leadership (Frayer, 1999). According to the Association of American Universities (AAU) STEM Initiative, institutional leadership can build a culture of teaching excellence through resource reallocation toward instructional processes, provision of incentives and rewards to encourage good teaching, and development of teaching infrastructure such as centers for teaching and learning, among others. Without institutional leadership to provide these incentives and rewards for teaching excellence, faculty may be unable to perform this important role in assisting students to succeed. Wergin (2003) describes leadership commitment to excellence in teaching, student learning, and scholarship as a central pillar to a quality higher education experience.

Bachrach (2005) also finds that funding faculty development is a measure of institutional commitment both towards the development of faculty and student outcomes and the mission of an institution. If faculty development is to progress, there must be a robust and continual institutional commitment to this field. The faculty development office also will need to be held in the same esteem as any other office sitting at executive
council meetings. Such an office should also face the same expectations, with annual reports including reliable review data and contributions to campus wide strategic planning (OECD, 2021).

Generally, the consensus in much of higher education literature on teaching training and faculty development is that, while it is effective, it is not evaluated, published, or given enough weight in higher education. Researchers argue for organizational restructuring as a means of effecting change, recommending a top-down approach from the administration in how they reward quality teaching (Gibbs, 2005; Sorcinelli & Davis, 1996), while others endorse a redefining of the position that quality teaching takes on a campus (Healey, 2000) and how it is promoted through faculty development programs.

**Professional Development and Institutional Revenue in Higher Education**

In the study conducted by Perez, McShannon and Hynes (2012) carrying out an evaluation of faculty at a community college who had participated in a professional development program focused on student retention for an entire semester. These researchers found an increased rate of course completion and persistence among the students of participating faculty over the students of non-participating faculty. The question was thus asked to know if faculty participation in professional development could have any impact on institutional revenue in higher education?

According to Perez, McShannon, and Hynes (2012), while admitting to the fact that no studies had been carried out that directly explored a relationship between instructional quality and revenue in higher education, they developed a conceptual
framework that visualizes how an improvement in instructional quality can lead to better student outcomes such as increased retention rates, decreased repetition of courses, and shorter time to complete degrees. In their conceptual framework, inputs for instructional quality include behaviors, materials, and characteristics of instructors or the instructional process, usually assessed through observations, curricular artifacts, student artifacts, tests of teaching skills, or student surveys. Instructional quality was found to have a positive relationship with student retention.

This framework proposes that since improvements in instructional quality had been shown to lead to improvements in student outcomes, and improvements in student outcomes have led to increases in institutional revenue, it was therefore possible to conclude that faculty participation in professional development programs can lead to increase in institutional revenue by improving on student outcomes.

Hossler and Bean (1990), projected that when a student remains enrolled at an institution for four years, that one student generates the same amount of revenue as four new students who leave after one year. Student attrition is therefore an important issue for institutions to address since higher education institutions of all types are facing increasing financial challenges and budgetary constraints (Ostashevky, 2016; Seltzer, 2016), institutions must simultaneously cut costs and improve student outcomes. When students attrite, institutions lose revenue from lost tuition, fees, and other purchases (textbooks, dining, housing, etc.). According to Johnson (2012), about 20% average educational expenses of institutions are directed toward students who end not earning their degrees. A conclusion can therefore be drawn that since revenue is lost from
attrition, initiatives aimed at increasing retention are cost effective and can lead to net revenue generation.

In some states like Tennessee with the Tennessee Higher Education Commission outcomes-based funding initiative allocates fundings to higher education institutions based on the extent to which students at that institution meet success goals linked with progression, completion, transfer, and employment. It can therefore be concluded that, improving student outcomes has the potential of increasing institutional net revenue by increasing an institution’s eligibility for outcomes-based funding.

**Chapter Summary**

The purpose of this study is to determine the predictability faculty participation in professional development programs using demographic, academic and occupational factors in Higher Education. Though there is extraordinarily little literature covering the impact of various faculty attributes and institutional environment characteristics and their impact on faculty participation in professional development activities, this chapter however presented literature that covered topics such as approaches to teaching in Higher Education, the historical development of Professional Development for faculty in Higher Education, the benefits of faculty professional development, the methods of implementation used for the implementation of faculty development programs in countries around the world, demographic factors and professional development, academic factors and professional development, occupational factors and professional development. In the next chapter, the research methodology is going to be discussed.
CHAPTER 3

METHODOLOGY/RESEARCH DESIGN

The purpose of this study was to determine the predictability of faculty participation in professional development programs using demographic, academic, and occupational factors in higher education. This study sought to explore the following research question: Do the variables age and gender have any predictive power on faculty participation in professional development activities? Do the variables faculty rank and academic discipline have any predictive power on faculty participation in professional development activities? Do the variables time availability, administrative reward, and research prioritization have any predictive power on faculty participation in professional development activities?

This chapter describes the research methodology and the chapter is structured as follows: section one covers the research design; section two describes the population and the research setting; section three presents the sampling procedure; section four describes the research instrument; section five covers the procedure for establishing the validity of the instrument; section six describes the procedure for establishing the reliability of the instrument; section seven presents the procedure for data collection; in section eight, the independent and dependent variables are identified; section nine presents the null hypotheses; section ten discusses statistical analysis methods; section eleven presents the evaluation of statistical assumptions for the selected statistical tests, and the chapter ends with a summary to the chapter.
The Research Design

A quantitative research approach was the preferred approach chosen for this study. Quantitative research is the process of collecting and analyzing numerical data specifically to find averages, make predictions, determine causality, and generalize results to wider populations. A quantitative approach was chosen because it allows the use of large samples that enables generalizability of the results of the study. A correlational research design was specifically used to allow for the discovery of any relationships between the variables under investigation (Gay, Mills & Airasian, 2001). This research design was chosen for this study because it allows researchers the opportunity to determine if there is a connection between two or more variables. The purpose of this study was to investigate if there exists any predictive relationship between demographic factors (faculty age, faculty gender), academic factors (faculty rank, faculty academic discipline), and occupational factors (time availability, administrative reward, and research prioritization) and faculty participation in professional development activities.

The use of correlational research designs presents some disadvantages in that even though it may reveal the presence of a relationship between two variables, this design does not permit the researcher to establish a cause-and-effect relationship between the variables being investigated and it does not allow for the manipulation of any of the variables being investigated. The design, however, has some strengths in that it allows a researcher to carry out investigations in relatively new areas to establish relationships and even make predictions about any variables of interest in a study (Gay, Mills & Airasian, 2011).
Population and the Research Setting

The target population of this study is higher education faculty specifically from two private denominational research-intensive higher education institutions who uphold quality teaching and have established faculty professional development programs on campus. Institution A has a fully functioning center for teaching and learning on campus. Institutions A is found in North America and instituting B is found in West Africa.

Institution A was established in 1874 and has since grown into a beautiful institution occupying about 2,400 acres of landed property with a complex of academic buildings, residence halls, apartments and service buildings and has been on an ongoing journey to understand, pursue and best implement serious scholarship, quality research, and practical Christianity as a core strength of the university's curriculum. Institution A enrolls more than 3,500 students annually from most of the 50 states and nearly 100 other countries and territories around the world, studying at off-campus locations both nationally and internationally.

Institution A has been identified by U.S. News and World Report as one of the most culturally diverse universities in the United States. The university consists of eight schools or colleges, offering 130 undergraduate majors and 70 graduate majors. The university also has a Center for Teaching and Learning (CTL) which provides opportunities, support, and resources that foster effective pedagogical practices through individual consultations, in service follow up for new faculty members, conferences, and other adapted services for the professional growth of faculty. The institution is home to a total of about 200 faculty members.
According to their web site, Institution B, found in the Western part of Nigeria, holds a total of about 487 faculty members. Institution B went operational in 1959, and in 1975 Institution B got into a signed affiliation agreement with Institution A that enabled Institution B to award bachelor’s degrees from Institution A in Biology, Business Administration, History, Religion, and Secretarial Studies. In 1988, Institution B reached another academic milestone through another affiliation agreement with Institution A which authorized it to offer a Master of Arts in Pastoral Ministry and a Master of Arts in Religion in 1990. The University commenced with three faculties which eventually grew into schools, the School of Law and Security Studies becoming the fourth school. Institution B has a postgraduate school which became operational since in 2010 and a medical school launched in January 2012.

Institution B holds a deliberate expansion policy of their programs to meet up with the demands of the market and maximum service delivery which results in corresponding departmental upgrades and the addition of new programs. Institution B is presently host to the following schools: Benjamin Carson School of Medicine, Computing and Engineering Sciences, Education and Humanities, Law and Security Studies, Management Sciences, School of Nursing Sciences, Public and Allied Health, Science and Technology, Veronica Adeleke School of Social Sciences, and the College of Postgraduate Studies offering undergraduate, Masters, and Doctoral degrees.

Sampling Procedures

Institution A holds a total of about 200 faculty members while institution B holds a total of 487 faculty members. Based on this statistic and following the table developed by Krejcie and Morgan (1970) for the determination of sample sizes for a given
population, a good sample of a population with approximately 200 faculty was determined at 127 while a good sample for the population of Institution B with a population of about 487 faculty was determined as 217, making a total sample of at least 344 faculty. A satisfactory return rate was set at 50.3%. The return rate came at 51.5% with a total return of 177 surveys.

The sampling technique used for recruiting participants for this study was a non-probability sampling technique. A voluntary response sampling method was specifically used to recruit participants for this research study. The survey was sent electronically to every faculty of the respective institutions via the office of the provosts using the respective institutional email systems. Faculty upon reception of the survey link via their official institutional email accounts responded voluntarily to the survey providing the data necessary to carry out this study.

**Instrumentation**

The instrument (Appendix A) used for this study was a two-part survey instrument consisted of a total of 16 questions. The survey was a researcher developed questionnaire based on information gleaned from the review of related literature. The first part of the survey consisting of 5 questions which requested demographic information. The first question requested for gender information with the answer options being Male or Female; question two asked for faculty age which was an open ended question; question three asked for faculty to select their academic rank with three grouped answer options provided (option 1- Assistant lecturer, lecturer, senior lecturer, option 2- Assistant Professor, Associate Professor, option 3- Full Professor and above); question four asked faculty to select their academic discipline out of four grouped answer options
(1) Business (Accounting, economics, finance, management, marketing), (2) Humanities (Art, history, languages, literature, music, philosophy, religion, theater), (3) Social science (Anthropology, education, geography, law, political science, psychology, sociology), (4) Natural and applied Sciences (Biology, chemistry, computer science, engineering, geology, mathematics, physics, medicine). Question five asked about faculty status in terms of whether they are permanent or visiting/contractual.

The second half of the survey consisted of 11 questions, specifically linked to professional development and some occupational characteristics. Faculty were directed to select the option that was most representative of their opinions regarding their institution’s practices linked with professional development. Question number six asked for faculty to check their level of agreement to a statement on weather their institution places high value on quality teaching with five answer choices - Strongly Agree (2) Agree (3) Undecided (4) Disagree (5) Strongly Disagree. Question seven asked if faculty felt that professional development programs were useful towards improving faculty teaching with five answer choices indicative of faculty agreement to the statement (1) Strongly Agree (2) Agree (3) Undecided (4) Disagree (5) Strongly Disagree. Question eight asked if the faculty thought that their institution assigned equal value to research and quality teaching with two answer options - (1) Yes and (2) No. Question nine ask if faculty thought that their institutions reward faculty participation in professional development programs with two answer choices - (1) Yes or (2) No. question ten asked faculty to indicate if participation in professional development programs at their institution was (1) Mandatory (2) Voluntary, and (3) Not available. Question eleven asked the faculty to indicate if their institution specifically allots time for faculty to
participate in professional development programs with the following answer options (1) Yes or (2) No. Question twelve asked if the faculty thought that participating in professional development programs counts towards faculty promotion decisions in their institution with the following answer options - (1) Yes or (2) No. Question thirteen asked if the faculty thought that quality teaching got as much recognition as research publications at their institution with the following answer options - (1) Strongly Agree (2) Agree (3) Undecided (4) Disagree (5) Strongly Disagree. Question 14 asked faculty to indicate if their institution provided additional remuneration for faculty who demonstrate excellence in teaching, with the following answer options (1) Yes or (2) No. Question 15 asked for faculty to indicate if they would gladly participate in professional development programs to improve on their teaching with the following answer options - (1) Yes (2) No. Question 16 was an open ended question that asked faculty to list what type(s) of rewards they would like to see associated with faculty participation in professional development programs.

**Validity of the Instrument**

Following Fraenkel, Wallen & Hyun (2011), the process of expert review and pilot testing was used to establish validity. Feedback from both processes was used to refine the survey before it was sent out to faculty. Validity as defined by Gay, Mills, & Airasian (2006) is a measure of how well the instrument to be used for a study captures the data necessary to provide answers to the research questions. Once the survey instrument was developed by the researcher, a total of four experts were approached to review the instrument, and feedback from these experts was used to modify and update the instrument which was then sent back to the experts for more review. This process
went on until the instrument was deemed suitable enough to capture the data required to provide answers to the research questions.

Once the process of expert review was completed, the survey was pilot tested at a sister institution to Institution A and B found in Cameroon, with five faculty representatives from the School of Education, School of Management and Computer Sciences, School of Health Sciences, and the School of Theology. Results from this pilot study indicated that faculty were able to access the survey instrument online, read, understand, and sign the consent document and successfully provide answers to the questions on the survey online, and finally submit the survey without any problems. Once this was evaluated, the researcher then created two links to the survey from the survey monkey engine, one for Institution A and the other for Institution B.

**Reliability of the Instrument**

The reliability of an instrument can be defined as the consistency by which an instrument measures what it is intended to measure. Interrater reliability was used to establish the reliability of the instrument. Consensus estimates interrater reliability measures were generated by two raters of the instrument. Consensus estimates are used to evaluate the extent to which raters assign the same score to the same variable on the instrument as raters share a common interpretation of the construct. A consensus estimates interrater reliability was selected because the instrument carried questions that are ordinal in nature. On evaluation of the instrument, the judges reached agreement about the quantitative levels of the construct under investigation. A rating scale ranging from 1–7 was used to evaluate items. Raters were said to be in consensus if the ratings did not differ by more than one point above or below the other rater. The percentage
agreement was obtained by calculating the number of times the raters agreed on a rating, divided by the total number of ratings multiplied by 100. For this instrument, raters reached a 90% consensus.

**Data Collection Procedures**

The survey instrument was administered to faculty in both institutions by e-mail. Initially, a request letter (Request for Permission to Conduct a Research Study [Appendix C]) accompanied by a copy of the survey instrument was sent by email to the office of the Vice Presidents for Academic Affairs & Research/Provost for both institutions asking for the permission to have their faculty participate in this research study. Once the permission was granted (Appendix E), all faculty members at each of the two institutions were contacted by email using their institutional email addresses obtained from the faculty directory or directly through the provost office. Each faculty received a solicitation email (Solicitation E-mail to Faculty [Appendix D]) introducing the researcher, presenting the purpose of the research study, and explaining what faculty were expected to do to participate. If the faculty member agreed to participate, he or she clicked on the link at the end of the email invitation that led him or her to the informed consent page (Appendix B).

After reading and e-signing the consent form, participants were led to the survey. The survey was managed online by Survey Monkey. The expected satisfactory return rate for this study was set at 50.3% but the final return rate was 51.5%. Faculty had a period of two months to respond to the survey and reminders were sent out weekly for two months after the initial email.

The survey did not collect any self-identifying information for this research study. Once the survey was completed by participants, it was automatically uploaded into the
online management platform on Survey Monkey. This data was subsequently coded for statistical analysis using the statistical package for social sciences (SPSS).

**Identification of Independent and Dependent Variables**

This research study was focused on one dependent and seven independent variables. The dependent variable was the outcome of the faculty willingness or unwillingness to participate in professional development programs. This variable had two levels, Yes and No. The independent variables for the study are faculty gender, faculty age, faculty academic rank, faculty academic discipline, time availability, administrative reward, and research orientation.

The independent variable gender had two levels either male or female. The independent variable faculty rank was assigned three levels: level 1 included faculty who fell between Assistant Lecturer, Lecturer, Senior Lecturer; level 2 included faculty who were between Assistant Professor and Associate Professor, and level 3 included Full Professors and beyond. The independent variable academic discipline was divided into four levels: level 1 was for faculty who categorized themselves as Business (Accounting, Economics, Finance, Management, Marketing), level 2 Humanities (Art, History, Languages, Literature, Music, Philosophy, Religion, Theater), level 3 Social science (Anthropology, Education, Geography, Law, Political Science, Psychology, Sociology), and level 4 Natural and Applied Sciences (Biology, Chemistry, Computer Science, Engineering, Geology, Mathematics, Physics, Medicine).

The independent variable time availability was assigned two levels Yes and No and this was based on whether faculty have administratively scheduled time to
specifically participate in professional development or no if time is not administratively scheduled for faculty to specifically participate in professional development. The independent variable administrative reward had two assigned levels, Yes and No depending on whether faculty receive administrative rewards for participating in professional development programs or whether faculty do not receive administrative rewards for participation in professional development programs. Institutional research orientation was divided into two levels, Yes and No, depending on whether faculty thought their institution assigns equal value to quality teaching as it did to research or if faculty thought their institution did not assign equal value to quality teaching as it did research.

**Null Hypothesis**

Based on the research question, the following null hypotheses were generated.

Ho1: There is no statistically significant relationship between demographic factors (age, gender) and faculty participation in professional development programs.

Ho2: There is no statistically significant relationship between academic factors (rank, academic discipline) and faculty participation in professional development programs.

Ho3: There is no statistically significant relationship between occupational factors (time availability, administrative reward, research orientation) and faculty participation in professional development programs.
**Statistical Analysis**

The data provided by faculty was collected on Survey Monkey website, and the data obtained from Survey Monkey was coded and transported to SPSS to generate descriptive statistics and then tests were carried out to test each of the null hypotheses.

A logistic regression analysis was performed to allow the researcher to either accept or reject the null hypothesis and unveil any predictive relationship between the predictors and the criterion variables. The results from the statistical tests were compared to test if the null hypothesis was true or false and consequently determine if faculty participation in professional development programs can be predicted by faculty gender, faculty age, faculty discipline, academic rank, time availability, administrative reward, or research orientation. The Statistical Package for Social Sciences (SPSS) IBM SPSS © version 24 program was used for the multivariate analysis and the null hypotheses were tested at the .05 significance level or better.

**Assumptions for Simple Logistic Regression**

According to Mertler & Vannata (2010) the following assumptions for simple logistic regression will be made:

- That there is a linear relationship between faculty participation in professional development programs and the independent variables.

- That the sample is large enough to maintain reliability.

- That the independent variables are not highly correlated with each other.

- That there is variance of error (homoscedasticity)

- That the dependent and independent variables are normally distributed.
Chapter Summary

This chapter covered the research methodology which outlined the procedure that was followed by the researcher to arrive at scientific conclusions to the hypotheses. The chapter was presented in the following order; section one covered the research design, section two described the population and the research setting, section three presented the sampling procedure, section four described the research instrument, section five covered the validity of the instrument, section six described procedures for establishing the reliability of the instrument, section seven described the data collection procedures, section eight described the independent and dependent variables, section nine presented the null hypotheses, section ten discussed the methods used for statistical analysis, section eleven presented the assumptions for the statistical tests and finally a summary of the chapter. The next chapter will present the data analysis.
CHAPTER 4

DATA ANALYSIS

The purpose of this study was to examine the predictability of faculty participation in professional development programs using demographic (age and gender), academic (rank and discipline) and occupational (time, administrative rewards, and research orientation) factors in Higher Education: Answers to the following questions were sought:

1. Do the variables age and gender have any predictive power on faculty participation in professional development activities?
2. Do the variables rank, and discipline have any predictive power on faculty participation in professional development activities?
3. Do the variables time, administrative reward, and research orientation have any predictive power on faculty participation in professional development activities?

The sample population for this study consisted of 177 faculty members employed at two private denominational research-intensive higher education institutions. One of the institutions was located in the United States and the other institution was located in West Africa. A researcher developed instrument containing 16 questions was used to collect the data for this study. The analysis for this chapter was divided into two major sections. The first section consisted of the demographic profile of the participants in the study. The second section contained the evaluation of the statistical (Null) hypothesis generated for this study. The Binary Logistic Regression procedure was utilized to analyze the data for the study. All three null hypotheses were tested at the .05 level of significance or better.
Demographic Characteristics of Participants in the Study

There were 177 faculty members who participated in this present study. These faculty members were described demographically by their gender and age.

Gender

There were 106 or 59.9 percent male faculty members who participated in the study. By contrast, there were 71 or 41.1 percent female faculty members involved in the study. See Table 1 for these results.

Table 1

Frequency Distribution of Participants by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>106</td>
<td>59.9</td>
</tr>
<tr>
<td>Female</td>
<td>71</td>
<td>40.1</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.</td>
</tr>
</tbody>
</table>

Age

The variable age was categorized into three distinct groups for this study. There were 28 or 15.8 percent of the faculty members who indicated their age was between 25
and 35 and 59 or 33.3 percent of them reported their age was between 36 and 44. Eighty-seven or 49.2 percent of

the faculty member participants reported their age was 46 and above. There were three missing cases (1.7%) identified in this category. See Table 2 for these findings.

Table 2

Frequency Distribution of Participants by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 – 35</td>
<td>28</td>
<td>15.8</td>
</tr>
<tr>
<td>36 – 45</td>
<td>59</td>
<td>33.3</td>
</tr>
<tr>
<td>46 and above</td>
<td>87</td>
<td>49.2</td>
</tr>
<tr>
<td>Missing codes</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Academic Characteristics of Participants in the Study

The 177 faculty members who participated in this present study were described academically by their academic rank and academic discipline.

Academic Rank

Regarding the variable academic rank, there were 95 or 53.7 percent of the faculty members who reported their academic rank as assistant lecture, lecturer, or senior lecturer
and 43 or 24.3 percent of them expressed their academic rank as assistant professor or associate professor. On the other hand, 36 or 20.3 percent of faculty members revealed their academic rank as full professor. There were three missing cases. See Table 3 for these analyses.

Table 3

Frequency Distribution of Participants by Rank

<table>
<thead>
<tr>
<th>Rank</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Lecture/lecturer, senior lecturer</td>
<td>95</td>
<td>53.7</td>
</tr>
<tr>
<td>Assistant Professor/Associate Professor</td>
<td>43</td>
<td>24.3</td>
</tr>
<tr>
<td>Full Professor and Above</td>
<td>36</td>
<td>20.3</td>
</tr>
<tr>
<td>Missing Cases</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Academic Discipline**

The variable academic discipline was classified into five categories for this investigation. There were 15 or 8.5 percent of the faculty members who reported their academic area as Business and 35 or 19.8 percent of them indicated Humanities as their academic disciplines. Forty-one or 23.2 percent of the faculty members acknowledged their academic discipline as social science.
Likewise, 71 or 40.1 percent of faculty members expressed that their academic field was natural or applied science and 9 or 5.1 percent of them said technology was their academic area. There were six missing cases. See Table 4 for these results.

Table 4

Frequency Distribution of Participants by Academic Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>15</td>
<td>8.5</td>
</tr>
<tr>
<td>Humanities</td>
<td>35</td>
<td>19.8</td>
</tr>
<tr>
<td>Social Studies</td>
<td>41</td>
<td>23.2</td>
</tr>
<tr>
<td>Natural and Applied Science</td>
<td>71</td>
<td>40.1</td>
</tr>
<tr>
<td>Technology</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td>Missing Data</td>
<td>6</td>
<td>3.4</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Position**

There were 160 or 90.4 percent of faculty members who reported their academic positions at the institution was permanent. In comparison, 16 or 9 percent of faculty members revealed that their academic position with the institution was either visiting or contractual. There was one missing case. See Table 5 for these analyses.
Table 5

Frequency Distribution of Participants by Employment Status

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>160</td>
<td>90.4</td>
</tr>
<tr>
<td>Visiting/Contractual</td>
<td>16</td>
<td>9.0</td>
</tr>
<tr>
<td>Missing Cases</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Occupational Factors**

**Research Orientation**

Regarding the variable research orientation, value of research, 115 or 65 percent of the faculty member participants in this study revealed that their institution placed equal value on research as they did value teaching. Notwithstanding, 62 or 35 percent of the faculty members involved in this study felt that their institution did not place equal value on research and quality teaching. See Table 6 for these findings.
Table 6

Frequency Distribution of Participants by Equality of Value Assigned to Research and Teaching

<table>
<thead>
<tr>
<th>Research</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>115</td>
<td>65.0</td>
</tr>
<tr>
<td>No</td>
<td>62</td>
<td>35.0</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Administrative Rewards**

There were 123 or 69.5 percent of the faculty participants employed at the two targeted higher education institutions who reported that their institutions did reward them for participating in professional development programs. On the other hand, 54 or 30.5 percent of them expressed that their institutions did not reward faculty for participating in professional development programs. See Table 7 for these results.
Table 7

Frequency Distribution of Participants by Availability of Administrative Rewards

<table>
<thead>
<tr>
<th>Rewards</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>123</td>
<td>69.5</td>
</tr>
<tr>
<td>No</td>
<td>54</td>
<td>30.5</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Time Availability for Professional Development**

One hundred twenty-five or 70.7 percent of the faculty members who were involved in this study said that their institutions did allot time for participating in professional development programs. In contrast, 50 or 28.2 percent of the faculty participants revealed that their institutions did not allot time for participation in professional development program. There were two missing cases. See Table 8 for these findings.
Table 8

Frequency Distribution of Participants by Time Allotted for Professional Development

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>125</td>
<td>70.7</td>
</tr>
<tr>
<td>No</td>
<td>50</td>
<td>28.2</td>
</tr>
<tr>
<td>Missing Cases</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Examination of Hypotheses**

HO1: There is no statistically significant relationship between demographic factors (age and gender) and faculty participation in professional development activities.

A Binary Logistic Regression technique was computed to assess the relationship between demographic factors (age and gender) and faculty participation in professional development activities. Regression results indicated that the overall model of the two demographic factors of age and gender were statistically reliable in distinguishing between those faculty members who would participate in professional development activities and those who would not participate in professional development activities (-2 log likelihood = 182.258, $X^2 (2) = 14.014$, $P = .001$). Additionally, the NagelKerke $R^2$ Square procedure reported that the variables age and gender combined accounted for 11.4
percent of the variance in the participation in professional development activities (See Table 9).

Table 9

Overall Model Fit Results Regarding the Relationship Between Demographic Factors and Professional Development Programs.

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi Square</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>14.014</td>
<td>2</td>
<td>.001***</td>
</tr>
</tbody>
</table>

-2 Log Likelihood= 182.258; NagelKerke R Square = .114

***Significant at the .001 level

Moreover, based on the classification Table (Table 10), 95.5 percent of the cases in the target group (participation group) were correctly classified by the model. On the other hand, only 2.3 percent of the cases in the “other’ group (non-participation) were correctly classified by the model. Overall, the model correctly classified 72.9 percent of the cases (See Table 10).
Table 10

Classification Table Results Regarding Participation in Professional Development Activities

<table>
<thead>
<tr>
<th>Participation</th>
<th>No</th>
<th>Yes</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
<td>42</td>
<td>2.3</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>128</td>
<td>95.5</td>
</tr>
</tbody>
</table>

**Overall Correct=72.9**

Furthermore, the Wald Statistics was used to evaluate the contribution of each individual predictor on faculty members’ participation in professional development activities. The Wald test revealed that the variable age (Z = 8.846, P < .01) was found to be an independent predictor of participation in professional development activities. Finally, the odds of participating in professional development activities was 1.06 times greater for older faculty members than for younger faculty members (See Table 11). Thus, hypothesis one was rejected.
Table 11
Regression Coefficients Regarding the Relationship Between Demographic Factors and Participation in Professional Development Activities

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Exp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.452</td>
<td>.373</td>
<td>1.468</td>
<td>1</td>
<td>.226</td>
<td>.637</td>
</tr>
<tr>
<td>Age</td>
<td>.0543</td>
<td>.018</td>
<td>8.846</td>
<td>1</td>
<td>.003</td>
<td>1.055**</td>
</tr>
<tr>
<td>Constant</td>
<td>-.678</td>
<td>1.063</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the .01 level

HO2: There is no statistically significant relationship between academic factors (faculty rank and academic discipline) and faculty participation in professional development activities.

Reported in Table 12 were the Logistic Regression Analysis pertaining to the relationship between academic factors (faculty rank and academic discipline) and faculty participation in professional development activities. The regression results indicated that the two academic factors of rank and discipline were statistically reliable in predicting those faculty members who would participate in professional development activities and those who would not (-2 Log Likelihood = 164.816, \( X^2 (2) =22.457, P <.001\)). The NagelKerke R Square test revealed that the academic factors (faculty rank and academic
discipline) collectively accounted for 18.6 percent of the variance in participation in professional development activities (See Table 12).

Table 12

Overall Model Fit Results Regarding the Relationship Between Academic Factors and Participation in Professional Development Activities

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi-Square</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>22.457</td>
<td>2</td>
<td>.000***</td>
</tr>
</tbody>
</table>

\(-2 \text{ Log Likelihood}=164.816; \text{NagelKerke R Square }=.186\)

***Significant at the .001 level

Additionally, the classification table (Table 13) revealed that 100 percent of the cases in the target (participation) groups were correctly classified by the model. By contrast zero percent of the cases in the “other” group (non-participation) were correctly classified by the model. Overall, the model correctly classified 75.7 percent of the cases (Table 13).
Table 13

Classification Table Results Regarding Professional Development Activities

<table>
<thead>
<tr>
<th>Participation</th>
<th>No</th>
<th>Yes</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0</td>
<td>41</td>
<td>0.0</td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>128</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Overall Correct=75.7

Moreover, the Wald Statistic revealed that academic rank (Z=14.008, P<.001) was an independent predictor of participation in professional development activities. The odds of participating in professional development activities were 3.80 percent higher for faculty members who were senior level professors than those who were not senior level professors (Table 14). Therefore, hypothesis two was rejected.

Table 14

Regression Coefficients Regarding the Relationship Between Academic Factors and Participation in Professional Development Activities

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>1.336</td>
<td>.357</td>
<td>14.008</td>
<td>1</td>
<td>.000</td>
<td>3.804***</td>
</tr>
<tr>
<td>Discipline</td>
<td>-1.148</td>
<td>.180</td>
<td>.682</td>
<td>1</td>
<td>.409</td>
<td>.862</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.317</td>
<td>.779</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the .001 level**
H03: There is no statistically significant relationship between occupational factor (time, administrative reward, and research orientation) and faculty participation in professional development activities.

Shown in Table 15 is the Standard Binary Logistic analyses regarding the relationship between occupational factors and faculty participation in professional development activities. The regression results reported that the three occupational factors (time, administrative reward, and research orientation) were statistically reliable in predicting those faculty members who would participate in professional development activities and those who would not participate (-2 log likelihood = 189.772, $X^2 = 14.501$, P < .01).

Table 15

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi Square</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>14.501</td>
<td>3</td>
<td>.002**</td>
</tr>
</tbody>
</table>

-2 Log likelihood=189.772; NagelKerke R Square=.117

**Significant at the .01 level

The NagelKerke R Square procedure indicated that the three occupational variables of time, administrative reward and research orientation combined accounted for 11.7 percent of the variance in professional development activities (See Table 15). In addition, the classification table revealed that 93.3 percent of the cases in the participation group were correctly classified by the model. Nonetheless, only 18.6 percent
of the non-participation group were correctly classified by the model. Overall, the model correctly classified 75.1 percent of the cases (See Table 16).

Table 16
Classification Table Results Regarding Participation in Professional Development Activities

<table>
<thead>
<tr>
<th>Participation</th>
<th>No</th>
<th>Yes</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>8</td>
<td>35</td>
<td>18.6</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>125</td>
<td>93.3</td>
</tr>
</tbody>
</table>

Overall correct =75.1

Additionally, the Wald Statistic revealed that time allotted for professional development (Z=8.651, P <.01) was a significant independent predictor of participation in professional development activities among faculty members. The odds of participating in professional development activities were 3.18 percent greater for faculty members who were allotted time to participate in professional development than those faculty members who were not allotted time to participate in professional development (See Table 17). Consequently, hypothesis three was rejected.
Table 17

Regression Coefficients Regarding the Relationship Between Occupational Factors and Participation in Professional Development Programs

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Exp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1.155</td>
<td>.393</td>
<td>8.651</td>
<td>1</td>
<td>.003</td>
<td>3.175**</td>
</tr>
<tr>
<td>Reward</td>
<td>-.550</td>
<td>.406</td>
<td>1.838</td>
<td>1</td>
<td>.175</td>
<td>.577</td>
</tr>
<tr>
<td>Research</td>
<td>-.080</td>
<td>.415</td>
<td>.037</td>
<td>1</td>
<td>.847</td>
<td>.923</td>
</tr>
<tr>
<td>Constant</td>
<td>1.248</td>
<td>.788</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the .01 level

Summary of Hypotheses

There were three null hypotheses tested in the present study. All three statistical hypotheses were tested to assess the relationship and predictability of selected demographic, academic and occupational factors on participation in professional development activities among faculty members. All three null hypothesis were found to be significant.

Demographic factors (hypothesis one) of gender and age were found to be statistically reliable in distinguishing those faculty members who would participate in professional development activities and those who would not participate in professional
development activities. The variable age was found to be an independent predictor of participation in professional development activities.

Moreover, the academic factors of faculty rank and academic discipline were found to be statistically reliable in distinguishing those faculty members who would participate in professional development activities and those who would not participate in professional development activities. The variable academic rank was found to be an independent predictor of participation in professional development activities.

Finally, occupational factors (hypothesis three) of time, reward and research were found to be statistically reliable in predicting those faculty members who would participate in professional development activities and those who would not participate in professional development activities. The variable time was found to be an independent predictor of participation in professional development activities.

Table 18
Summary Table of Hypotheses Tested

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>(X^2)</th>
<th>(R^2)</th>
<th>df</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HO(_1)</td>
<td>14.014</td>
<td>.114</td>
<td>2</td>
<td>Significant</td>
</tr>
<tr>
<td>HO(_2)</td>
<td>22.457</td>
<td>.186</td>
<td>2</td>
<td>Significant</td>
</tr>
<tr>
<td>HO(_3)</td>
<td>14.501</td>
<td>.117</td>
<td>3</td>
<td>Significant</td>
</tr>
</tbody>
</table>
CHAPTER 5
SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the predictability of faculty participation in professional development programs using demographic (age and gender), academic (rank and discipline) and occupational (time, administrative rewards, and research orientation) factors in Higher Education. The specific aim of the study was to determine if any predictive relationships existed between the predictor variables age, gender, rank, academic discipline, time availability, administrative reward and research orientation, and the criterion variable faculty participation in professional development programs.

A correlational research design was specifically used to allow for the discovery of the relationships between the predictor variables and the criterion variable under investigation. A binary logistic regression analysis was utilized to analyze the data for the study. All three null hypotheses set for this study were tested at the .05 level of significance or better. The sample population for this study consisted of 177 faculty members employed at two private denominational research-intensive higher education institutions. One of the institutions is found in the United States and the other institution in West Africa.

The following null hypotheses were tested.

HO1: There is no statistically significant relationship between demographic factors (age and gender) and faculty participation in professional development activities.
HO2: There is no statistically significant relationship between academic factors (rank and discipline) and faculty participation in professional development activities.

HO3: There is no statistically significant relationship between occupational factor (time availability, administrative reward, and research orientation) and faculty participation in professional development activities.

The result of the tests unveiled the predictability of faculty participation in professional development programs by demographic (age and gender), academic (rank and discipline) and occupational factors (time, administrative reward, and research orientation) among faculty in a denominational research-intensive higher education institution. All three null hypothesis were found to be significant.

Demographic factors age and gender were found to be statistically reliable in predicting the faculty who were more likely to participate in professional development programs and those who were less likely to participate. The demographic characteristic considered faculty age was found to be an independent predictor of faculty participation in professional development programs over gender.

Among the faculty academic factors considered in this study (rank and discipline), the result of the analysis revealed that academic factors were in effect a statistically reliable predictor of faculty participation in professional development programs in higher education. Among the two variables, academic rank was found to be an independent predictor of faculty participation in professional development programs while academic discipline showed no significance.
Finally, the result of the test for the occupational factors (time, administrative reward, and research orientation) showed occupational factors to be statistically reliable in predicting faculty participation in professional development activities. The variable time was however found to be an independent predictor of faculty participation in professional development activities over the other occupational factors administrative reward and research orientation.

An open-ended question asked faculty to state what rewards they would like to see associated with faculty participation in professional development programs. The responses submitted by faculty were summarized and categorized into themes. Faculty recurringly stated that they would like the rewards associated with participation in professional development programs to be “similar to those associated with research activity.”

On the other hand, some faculty were of the opinion that it was not necessary to reward faculty participation in professional development programs. The sentiment of faculty members with a similar opinion could be reflected in the voice of one faculty who explained that,

“Faculty should be self-motivated to attend such programs. After all, we should want to do excellent work in our chosen profession. I don't think motivations (other than not being overworked in the first place) such as financial remuneration, awards, and recognition, will motivate faculty who are dedicated to the task itself. However, during the pandemic, faculty were pushed to the limit emotionally due to the need to quickly accommodate remote teaching. In that case, faculty operated more in survival mode and professional development
programs (other than those directly related to remote teaching), should be put on hold. However, as a rule, I really appreciate the number, quality, and variety of teacher development programming and assistance available at my institution. I don't care about some type of reward for attending professional development programs. What I'd like to see is programming that would fit into a faculty member's schedule to allow them to participate.”

Even though the response from the faculty quoted above touched on some important issues raised by other faculty, more faculty responses revealed that faculty were in fact of the opinion that participation in professional development programs should be tied to some kind of rewards. The types of rewards suggested could be summarized under the following themes: financial rewards, promotions, tenure, time off, reduction in teaching assignments, certifications, recognition for service and teaching, journal subscriptions, travel benefits, and books.

Discussion

Demographic Factors and Faculty Participation in Professional Development Programs

The demographic factor age was found to be a statistically significant attribute in predicting faculty participation in professional development programs over the variable gender. The findings showed that the more advanced in age a faculty member was, the more likely the faculty member was to participate in professional development programs. This finding is coherent with the findings of Bayer (2013) who found a statistically significant relationship between faculty age and faculty participation in professional
development programs, where older faculty were found to be more likely to participate in professional development programs than younger faculty.

This finding is however contrary to other research findings such as the findings of Pesce (2015) who found gender to be the most significant demographic factor in predicting faculty participation in professional development programs, where female faculty members were found to be statistically more likely to have participated in professional development programs and more likely to say they would participate in the future. Age represented a statistically significant demographic variable in Pesce’s findings, but age was only found to be significant in accounting for faculty belief in the fact that teaching development programs were sufficiently emphasized in their institutions where younger faculty were more likely to hold such beliefs. Kezar and Gehrk (2015), in their study, like Pesce also found that female faculty were more likely than their male colleagues to participate in faculty professional development programs.

The finding of this study can be paralleled with the findings of Gibbs & Coffey (2004) who found that as faculty years in service increased, faculty had reported seeing their teaching deteriorate. This could lead to the conclusion that faculty who have been teaching for many years could see their teaching quality depreciate annually instead of improving by virtue of experience. The finding by Gibbs & Coffey can help explain why age was found to be a statistically significant predictor of faculty participation in professional development programs with older faculty being more likely to participate than younger faculty.

This finding becomes even more clearer when interpreted under the lens of Kegan’s order of consciousness (1994) which explains the changes or evolution in an
individual’s thought process over time. According to Kegan’s order of consciousness explaining the different levels in the thought process by time, once an individual attains fourth level thinking, they are categorized as having attained the level of self-authorship.

When applied to faculty development for instance, faculty at this level can be said to have become capable of viewing their teaching as an object of reflection and analysis, rather than a definition of who they are as a person. When a faculty for example reaches self-authorship and can finally view their teaching as an object of reflection rather than a definition of who they are as a person, they are more likely to attend professional development programs as they are willing to approach their teaching as a work-in-progress and therefore are more willing to engage in a critical evaluation of their teaching without interpreting this as a threat to their identity.

Pesce (2015) proposed that faculty individual (demographic) characteristics such as gender, age, race, years of teaching experience, marital status, number of children and other developmentally instigative characteristics such as faculty motivation, and professional identity, fall at the level of the “individual” within Bronfenbrenner’s ecological system theory. Bronfenbrenner also finds that these constitute some of the most pertinent factors that can determine faculty members internal motivation on issues such as participating in professional development programs.

When the demographic characteristics of an individual are considered in relation to the expectancy theory by Vroom, we find that the value(valence) an individual will assign to a promised reward constitutes the main focus of the expectancy theory. The value assigned to the reward associated with participation professional development programs will depend on the individual’s personal attributes and their developmentally
instigative characteristics that define attitudes and motivation. For example, while one faculty member could propose that rewards for participation in professional development programs should be equal to the incentives associated with research accomplishments (extrinsic motivation), another faculty member thinks that faculty participation in professional development programs would not need to be rewarded externally but should be an intrinsic motivation where faculty should want to be the best in their profession as teachers. In essence, reward structures will appeal to individuals differently based on the realities of their personal characteristics such as male/female, young/old, years of experience etc. in combination with other factors associated with their work environment.

**Academic Factors and Faculty Participation in Professional Development Programs**

The academic factor rank stood out as statistically significant in predicting faculty participation in professional development programs over academic discipline. The findings indicated that the odds of participating in professional development programs was higher for faculty members who were senior level professors than those who were not senior level professors. The academic discipline of faculty was not found to be a statistically significant predictor of faculty participation in professional development programs.

This finding is consistent with the findings of Pesce (2015). Pesce found that there were no statistically significant differences in the participation rates in professional development programs among faculty members of different academic disciplines, but, found statistically significant differences in faculty participation in professional development programs among faculty according to faculty tenure status, where non-
tenure track faculty were more likely to say they have participated and would participate in professional development in the future.

Higher education institutions reportedly make, only (12%) of faculty promotion decisions based on teaching excellence, signaling a lack of institutional support towards teaching excellence (Chalmers, 2015). This reality in many higher education institutions can explain why faculty who are on the higher end of the academic ranking system and non-tenure track can be found to pay more attention to the quality of their teaching while faculty on the lower levels of the academic rank and tenure-track faculty would focus more of their attention on research. Essentially faculty on the higher end of the academic ranking system and non-tenure track faculty are not under pressure to produce research which can explain why more senior level professors, having attained the top of the academic ranking system, may now have the desire to redirect their focus to refining their teaching.

According to Gast, Schildkamp, & van der Veen (2017), higher education faculty are mostly identified as experts in their field of knowledge, as researchers first and teachers second, meaning that their focus is primarily on their research activities, an orientation which strongly influences their professional identity. Miller et al. (2000) equally forwards a claim which stands out as a reality in most higher education institutions whether public or private, that faculty at most 4-year research intensive institutions are required to carry out research as a requirement to progress into higher academic ranks or to achieve tenure status. Additionally, Miller et al pointed out that because some research studies attract significant amounts of funding by way of external grants, faculty members engaging in these types of research receive a fair amount of recognition from the institution. This
expectation therefore places pressure mostly on pre-tenured/tenure-track faculty to spend most of their time on research, sometimes at the expense of quality teaching (Kloser et al., 2001). This may explain why the odds of participating in professional development activities were found to be higher for faculty members who were senior level professors than those who were not senior level professors.

Campoy (2002) states that overcoming the research-oriented culture of higher education institutions would mean challenging a deeply rooted research-oriented culture that has developed within institutions of higher education. In this culture, the greatest rewards go to faculty with higher numbers of research and publications while teaching, for example, suffers a lack of sustained attention thereby discouraging faculty interest in investing in its quality.

Collegiality and collaboration among colleagues of the same discipline, even though not an element of focus in this study is identified as a key academic factor in promoting faculty participation in professional development programs (Stes et. al., 2010), but in any institution with a pervasive research-oriented culture, collegial support and collaboration for higher quality teaching may not be encouraged. In fact, the lack of support and collaboration with other colleagues in the same discipline could actually discourage faculty from participating in professional development activities (Austin, 2002). While collegial relationships within academic disciplines was not the focus of this study, this indicates that, a supportive collegial relationship among faculty within the same institution and particularly within the same discipline can boost faculty commitment in participating in professional development programs.
Occupational factors were found to be statistically significant predictors of faculty participation in professional development programs. Specifically, time availability was found to be a stronger predictor of faculty participation in professional development programs over administrative reward, and research orientation. This means that faculty are more likely to participate in professional development programs if time was specifically allotted for faculty to participate in professional development programs. This finding is consistent with the findings of other researchers such as Mascher (2016) who found that the lack of time was one of the most significant factors impacting faculties’ decision to participate in or not to participate in professional development programs, followed by the lack of incentives for participation. Pesce (2015) equally cites a lack of time as the major reason identified by faculty explaining why they would opt out of participating in professional development programs.

Bayer (2013) similarly found a statistically significant relationship between time availability and faculty participation in professional development programs. In this study it was found that while faculty who have time constraints showed lower participation rates in professional development programs, faculty who had time specifically allotted for participation in professional development training were more likely to participate in professional development programs. It can thus be inferred that providing adequate time specifically for participation in professional development programs must become top priority in higher education policy when developing strategic interventions to expand faculty participation in professional development programs.
No predictive relationship was found between administrative reward and faculty participation in professional development programs. Faculty however suggested some rewards they would like to see associated with participation in professional development programs. Some faculty indicated that they would like to have rewards that were similar to those associated with research activity incentives. Other faculty believed that rewards were not a necessary strategy to encouraging faculty participation in professional development programs, because they felt that faculty should be self-motivated to attend such programs since they should want to do excellent work in their chosen profession. Other faculty responses pinpointed specific rewards that could be grouped under the following themes: financial rewards, promotions/tenure, time off, certificates, award recognition, journal subscriptions, travel benefits, and books.

James Jacob et al. (2019) identified that the flagship universities investigated in their study for their robust faculty professional development programs used some of the same reward structures proposed by the faculty to motivate their faculty to participate in professional development programs. Examples of the overlapping reward structures are certificate awards defined in the study as a nationally recognized teaching certificate given to faculty or graduate students upon completion of an accredited professional development program. Faculty in their study identified certification as the most effective reward structure motivating faculty participation in professional development programs. The flagship universities studied equally presented awards to faculty for participating in professional development programs especially for those faculty who showed excellence in teaching. Other forms of incentives were also applied to faculty for participation in professional development to foster a teaching-valued culture within the institutions.
The research findings show that there was no statistically significant relationship between the research orientation of the institutions and faculty participation in professional development programs. This finding is contrary to the findings of other researchers such as Austin (2002) who found that there was a statistically significant relationship between research orientation and faculty participation in professional development programs consistent with professional culture that has a history of considering teaching as being lower in status than research. This is a culture that imposes on mostly lower ranking faculty the dilemma of having to choose between investing their time on research or on developing the skill sets for quality teaching. The findings were however in agreement with the findings of Bayer (2013) who found no statistically significant relationship between research orientation and faculty participation in professional development programs.

**Conclusion**

There were three null hypotheses tested in the present study. All three statistical hypotheses were tested to evaluate the relationship and predictability of selected demographic, academic and occupational factors on participation in professional development activities among faculty members. All three null hypothesis were found to be significant.

Demographic factors (hypothesis one) of gender and age were found to be statistically reliable in distinguishing those faculty members who would participate in professional development activities and those who would not participate in professional development activities. The variable age was found to be an independent predictor of participation in professional development activities.
Academic factors of faculty rank and academic discipline were found to be statistically reliable in distinguishing those faculty members who would participate in professional development activities and those who would not participate in professional development activities. The variable academic rank was found to be an independent predictor of participation in professional development activities.

Among the three occupational factors of time, administrative reward and research orientation, time was found to be the more statistically reliable factor in predicting faculty participation in professional development programs. The findings reveal that faculty were much more likely to participate in professional development activities if time was specifically allotted for faculty to participate in professional development programs.

Faculty further proposed some rewards that they thought they would like to see associated with faculty participation in professional development programs. The proposed answers were summarized as follows: financial rewards, promotions/tenure, time off, teaching load reduction, cash bonuses, micro-certifications/recognition for service and teaching, journal subscriptions, travel benefits, and books. Some faculty were of the opinion that the rewards associated with faculty participation in professional development programs should be the same as those associated with research accomplishments while other faculty felt that faculty should be willing to participate in professional development programs without expecting any rewards since faculty should naturally want to be good teachers and should therefore be willing to participate in programs that can help them develop to become more effective teachers.
Implications of the Study

The findings of this study contribute to higher education administrators understanding of some of the factors that can influence faculty participation in professional development programs. This knowledge is essential to the higher education system because the interaction between faculty and students gives the traditional higher education system its unique value as the goal of Higher Education Institutions from its foundation has been teaching. This unique goal makes it imperative for institutions to demonstrate their commitment to teaching especially with the persistent increase in higher education tuition rates. The present and future relevance of this system may be well dependent on the quality of the interaction between faculty and students considering the emerging technological advancements that offer students several learning options.

Provosts and other administrators, such as deans, can build from the findings of this study as they gain a better understanding of the dynamics of a research-based culture and how this culture can influence faculty responses to participation in professional development programs. Even though most of the faculty in this study responded that their institutions do value teaching as much as they value research and the majority did as well respond that their institutions do reward faculty for participation in professional development programs, more in depth responses from faculty revealed that the rewards associated with participation in professional development programs were not comparable to the rewards associated with research publications. Statistical analysis further revealed that older faculty as well as faculty who are higher in academic rank were found to be more likely to participation in professional development activities over younger faculty and faculty lower in the academic rank.
This trend seems to be indicative of the value that the promotion and tenure guidelines of higher education institutions have placed on research rather than on quality teaching. Higher education institutions could change these dynamics through a review of policy guidelines that address this dissonance by adjusting reward structures in ways that reflect equality in the value placed on both research and teaching. Reward structures must be clear enough to indicate when, how and why faculty will be evaluated.

Deans of graduate schools and heads of departments can work to integrate teaching training for graduate students in doctoral programs. Specifically, teaching and learning centers can develop graduate specific programming and deans of colleges/faculty can work to include these programs as a part of the degree plans for graduate students. This step can help prospective faculty understand the importance of teaching and help mitigate the drive to focus on research once graduate students transition into serving as faculty within institutions.

Deans of schools or faculty members can also work to emphasize quality teaching by creating a culture that recognizes and rewards excellence in teaching, even from graduate school, by including teaching internships in all doctoral level programs. This step can encourage not only faculty but graduate students as well to participate in professional development programs to improve their teaching. This would work in sending a stronger message to faculty about the value the institution places on teaching as well as to graduate students to show that teaching is valued within the college.

Even though it was not the focus of this study, deans can work together to support collegial relationships among faculty within the same institution, school and department as this practice can boost faculty confidence and promote higher participation rates in
professional development programs among faculty. A collective value system among faculty members on the value of quality teaching can help reshape a culture that has previously placed more value on research. This can be summarized in the following modified conceptual design of the ecological systems theory.

Figure 3: The Ecological Systems Theory and Faculty Participation in Professional Development Programs
The institutional mission statement can play a key role in establishing the value of quality teaching within an institution, especially if quality teaching is given a central place within such statements and is backed up by practical measures and actions that support the overall mission. Deans and Heads of Departments can equally propel this institutional mission into their colleges and schools setting a deliberate tone that emphasizes quality in teaching. Such an endeavor, if followed up by a well-structured reward system and promotion system, can begin to break down the dissonance between research and quality teaching.

Among the three occupational factors considered, time availability was found to be the most relevant factor in predicting faculty participation in professional development programs as faculty were found to be much more likely to participate in professional development programs if time was specifically allotted for faculty to participate in such programs. The development of institutional policies can also change faculty’s approach towards professional development programs and can motivate participation. The outcome of this study is especially important in raising higher education administrators’ awareness of faculty need for time to be set aside or strategically included as paid time in faculty members yearly schedule for participation in professional development programs. Relevant institutional administrators can specifically set aside time for faculty to participate in professional development activities through resource reallocation that can free up funding to be redirected towards hiring qualified help for students and free up time for faculty to participate in professional development programs.

Recognizing and rewarding faculty excellence in teaching creates a teaching-valued culture within universities and colleges. A well-defined reward structure performs
a vital role in influencing faculty members to participate in professional development programs. Institutions should establish a detailed reward structure to motivate faculty participation in professional development programs and promote an institution wide culture of excellence in teaching. It would be even more effective to take into consideration the rewards structures that faculty members value as this would yield a positive valence as summarized in the modified conceptual diagram below.

![Expectancy Theory Diagram]

Figure 4: The Expectancy Theory and Faculty Participation in Professional Development Programs

The expectancy theory suggests that individuals will only work harder to achieve an established performance if the reward associated with achieving that set performance is appealing to the individual. It would therefore be profitable to recognize what faculty value as reward. For this study, faculty proposed the following reward structures to be associated with faculty participation in professional development programs: financial rewards, promotions/tenure, time off, teaching load reduction, cash bonuses, micro-
certifications/ recognition for service and teaching, journal subscriptions, travel benefits, and books.

**Recommendations for Further Studies**

The purpose of this study was to examine the predictability of faculty participation in professional development programs using demographic (age and gender), academic (rank and discipline) and occupational (time, administrative rewards, and research orientation) factors in Higher Education. The findings of this study give some direction to future research.

1) This study can be replicated using many more institutions from the same system so that findings maybe more generalizable.

2) The study can be replicated using a comparative research method to find the difference in the predictability between a private research-intensive institution and a public research-intensive institution.

3) A follow up mixed method study can be carried out to get a clearer faculty interpretation of the occupational factors (time, administrative rewards, and research orientation) and how these factors can predict faculty participation in professional development programs.

4) This study can be further replicated to study the predictability of faculty participation in professional development programs using demographic (age and gender), academic (rank and years of experience) and occupational (time, administrative rewards, and research orientation) factors within specific academic departments.
Appendix

Appendix A: Survey Instrument

The Predictability of Faculty Participation in Professional Development Programs Using Demographic, Academic, and Occupational Factors in Higher Education.

There are 16 questions which should take no more than 5 minutes

All your answers to this survey will be anonymous and will not be linked to your IP address

Demographics:

1) Gender
   Male
   Female

2) Please what is your age? ....................

3) Please select your rank
   Assistant lecturer, lecturer, senior lecturer
   Assistant Professor, Associate Professor
   Full Professor and above

4) Please select an appropriate academic field
   Business
   Humanities
   Social science
Natural and applied Sciences
Technology

5) I am a ____________ faculty

Permanent
Visiting/contractual

For the next set of questions, please select the option that is most representative of your opinion.

Note: The term professional development in some of these questions refers to any activity designed to specifically improve on the pedagogical knowledge and teaching skills of faculty.

6) My institution places high value on quality teaching.
   Strongly Agree
   Agree
   Undecided
   Disagree
   Strongly Disagree

7) I feel professional development programs are useful towards improving faculty teaching.
   Strongly Agree
   Agree
   Undecided
Disagree

Strongly Disagree

8) My institution assigns equal value to research and quality teaching.
   Yes
   No

9) My institution rewards faculty participation in professional development programs.
   Yes
   No

10) Faculty participation in Professional Development programs at my institution is ......
    Mandatory
    Voluntary
    Not available

11) My institution specifically allots time for faculty professional development programs.
    Yes
    No

12) Participation in professional development programs counts towards faculty promotion decisions in my institution.
    Yes
    No

13) Quality teaching gets as much recognition as research publications at my institution.
    Strongly Agree
    Agree
14) My institution provides additional remuneration for faculty who demonstrate excellence in teaching.
   Yes
   No

15) I would gladly attend professional development programs to improve on my teaching.
   Yes
   No

16) What type(s) of rewards would you like to see associated with participation in professional development programs?
Appendix B: Informed Consent Document

Dibande Itoe Anna
TEXAS SOUTHERN UNIVERSITY
College of Education
Educational Administration

d.itoe5703@student.tsu.edu
346-754-0500

The Predictability of Faculty Participation in Professional Development Programs Using Demographic, Academic, and Occupational Factors in Higher Education.

INFORMED CONSENT

You are invited to participate in a research study conducted by Dibande Itoe Anna a doctoral student from Texas Southern University.

Study Purpose/Description: The purpose of this study is to investigate if faculty demographic, academic and occupational factors can predict faculty participation in Professional Development Programs. The result from this research study will be useful to university/college administrators in developing policy and best practices for faculty professional development programs that can better accommodate faculty differences and needs and encourage faculty to participate. This study will be carried out using an anonymous survey administered to all faculty at your institution. Completion of the survey is expected to take between about ten minutes.

Risk: The probability and magnitude of discomfort anticipated in this research are not greater in and of themselves than those ordinarily encountered in the daily life of faculty.
Benefits: There will be no direct benefit to your participation in this research study, but the outcome of the research with your input can inform better decision-making concerning faculty professional development needs at your institution.

Voluntary Participation: Your participation in this study is voluntary, and you may choose to not participate at all by not completing the survey. You will not be penalized in any manner for not participating in the study.

Anonymity: Your identity will not be attached to the data (you will remain anonymous).

Confidentiality: Your information will be maintained in the strictest terms of confidentiality, and electronic security.

Records (Electronic): Electronic data records will be password protected, in which only the investigator will have password access.

This study has been explained to me. I have had an opportunity to ask questions. If I have questions later about the research, I can ask the researcher named above. If I have questions about my rights as a research participant, I can call the Texas Southern University Office of Research at 713-313-4301 or go to visit the Office of Research on the Texas Southern University website (http://www.tsu.edu/research).

Thank you for agreeing to participate in this study. Should you have questions or need to contact me about the research, I may be reached at the e-mail address on the top of this Informed Consent document. You may also contact my advisor Dr. Bailey Samples in the Department of Educational Administration at; danita.bailey@tsu.edu or (713) 313-4418)
My signature affirms that I have read, agreed to, and do understand this Informed Consent form; my rights as a participant, and the research in which I am agreeing to participate.

_________________________________________  __________________
Participant Signature                      Date
Appendix C: Request for Permission to Conduct a Research Study

The Provost/Vice President for Academic Affairs & Research
Babcock University
Dear Provost,

Permission to Conduct a Research Study

I am writing to request permission to conduct research at your institution. I am a doctoral candidate of the department of Educational Administration in the College of Education of Texas Southern University. My dissertation topic is: “The Predictability of Faculty Participation in Professional Development Programs Using Demographic, Academic, and Occupational Factors in Higher Education.”

I hope that your office will grant me permission to send out surveys to faculty at your institution (copy attached). Faculty will receive a solicitation email and faculty participation will be voluntary. Faculty who are willing to complete the survey will e-sign a consent form (copy attached) before completing the survey. It is my wish that faculty receive the survey link through their official institutional email. Completing the survey should take at most 10 minutes of faculty’s time. The survey results will be pooled for the dissertation and individual responses to the survey will remain confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by your institution or participating faculty.

Your approval of my request will be sincerely appreciated. I would be happy to answer any questions at: d.itoе5703@student.tsu.edu or dibande83@yahoo.com or by telephone at: (346) 754-0500. You may also contact my advisor Dr. Bailey Samples in the
Department of Educational Administration at; danita.bailey@tsu.edu or (713) 313-4418.

Thank you.

Sincerely,

Dibande Itoe Anna

Approved by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Signature</th>
<th>Date</th>
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Appendix D: Solicitation E-mail to Faculty

Dear Faculty,

I am Dibande Itoe Anna, a doctoral candidate in the College of Education at Texas Southern University, and I am writing my dissertation research titled:

“The Predictability of Faculty Participation in Professional Development Programs using Demographic, Academic and Occupational Factors in Higher Education.”

As part of this research study, I am sending out a survey that will allow me to collect data for my study from faculty in Higher Education institutions. Your help in completing this survey would be sincerely appreciated. It should take no more than 10 minutes to complete.

All information you input will be kept anonymous and your responses will not be associated with your e-mail address or your IP address.

Thank you very much,
Sincerely,
DIBANDE ITOE ANNA

Please click on the link below to access the survey:
SURVEY LINK WILL BE HERE
Appendix E: IRB Approval Letters

IRB Approval Institution A

[Image of IRB approval letter]

Dhonde,

Congratulations! Your IRB application for approval of research involving human subjects entitled: "The predictability of faculty participation in professional development programs using demographic, academic, and occupational factors in higher education" IRB protocol # 21-088 has been evaluated and determined Exempt from IRB review under regulation CFR 46.104 (I). Please find attached your letter of determination.

You may contact Andrews University Provost’s Office to extend your invitation to faculty. The following information should be included in the recruitment request letter:

1. A link to the survey
2. A statement indicating that the protocol has been reviewed by the Andrews University IRB under protocol # 21-088.

If we can be of further assistance, please contact us at 269-471-6361 or via email at irb@andrews.edu.

Sincerely,

[Signature]

Mordka Ongco, Ph D.
Research Integrity & Compliance Officer
Andrews University
Buler Hall 234
8408 E. Campus Circle Dr
Berrien Springs, MI 49104-0365
IRB Approval Institution B

NAME OF PRINCIPAL INVESTIGATOR: DIBANDE ITOE ANNA.

TITLE OF STUDY: PREDICTABILITY OF FACULTY PARTICIPATION IN PROFESSIONAL DEVELOPMENT PROGRAMS USING DEMOGRAPHIC, ACADEMIC, AND OCCUPATIONAL FACTORS IN HIGHER EDUCATION.

RESEARCH LOCATION:

NOTIFICATION FOR ETHICAL APPROVAL

Babcock University Health Research Ethics Committee has approved your research proposal and other related materials after the necessary reviews and corrections.

The National code for Health Research Ethics requires that you comply with all institutional guidelines, rules and regulations. All forms and questionnaire must carry the assigned BUHREC number. No changes are permitted in the research without prior approval by the Committee.

Please, note that the Committee will monitor the research study. All data collection must be completed within twelve calendar months (One year), from the date stated on this approval.

You are expected to give a progress report of the investigation and submit a final copy of the research to the Committee.

This approval is with effect from July 26, 2021.

Thank you.

Professor S. O. Fapohunda
Chairman, Babcock University Health Research Ethics Committee
09133507122
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