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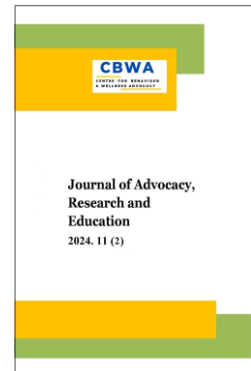
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Editorial

Funding Local Open Access Journals in Sub-Saharan Africa: Ethics and Strategies

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Abstract

Open access (OA) publishing is altering the scientific, academic, and industrial landscape in Sub-Saharan Africa by enhancing the visibility and accessibility of research. Nevertheless, the sustainability of local OA journals has been reported to be hindered by funding challenges. In this paper, I explored these issues and proposed strategic solutions to ensure the long-term viability of OA journals in the region amidst the current funding constraints. The paper briefly discusses OA publishing, ethical funding models, and strategies to ensure sustainable publishing in the global academic community.

Keywords: Open Access, Sub-Saharan Africa, Ethical Funding, Scholarly Publishing, Sustainability, Knowledge Dissemination.

1. Introduction

The introduction of open access (OA) models, which promise to allow unrestricted dissemination of scholarly research in scientific and academic publishing, has undergone a profound revolution (Fuchs, Sandoval, 2013). This shift is particularly significant for Sub-Saharan Africa, a region historically marginalised in the global research community due to several challenges (Gurib-Fakim, Signé, 2022; Sarfo, 2019). Traditionally, access to scholarly resources in this region has been constrained by financial and infrastructural limitations, hindering the participation of African researchers in the global knowledge economy (Gurib-Fakim, Signé, 2022; Sarfo, 2019).

It is a worrying fact that African governments, over the years, have invested less in science and research than other regions (Gurib-Fakim, Signé, 2022). With this inadequate level of funding investment into local African journals, the critical role played by these journals and their sustainability in the global research space can not be felt (Gurib-Fakim, Signé, 2022; Sarfo, 2019; Sarfo, 2023). Thus, the growth of OA publishing in Sub-Saharan Africa with sustainable funding opportunities will offer unrestricted access to research outputs and provide a platform for African and global scholars to contribute to and benefit from global academic discourse. Thus, this paper

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explores the ethical considerations, challenges, and potential strategies for funding local OA journals in Sub-Saharan Africa.

2. OA Publishing and Related Costs in Africa

Publishing OA in Sub-Saharan Africa has always faced challenges, although several journals in the region have made many strides (Sarfo, 2019; Sarfo, 2023). Despite the growing number of academic journals in the sub-region, many local scholars still opt to publish in international journals due to the prestige associated with being published in top-tier journals outside the continent (Alemna, 1996). Consequently, journals in Sub-Saharan Africa and even Africa compete to get quality papers to publish, and they may even collapse due to a lack of submissions (Sarfo, 2019; Tarkang, Bain, 2019).

In some cases, scholars submit to these foreign journals due to their swift review processes, higher publishing standards, and broader visibility through extensive abstracting and indexing services (Sarfo, 2019; Tarkang, Bain, 2019). As noted by Sarfo (2019), policies by some African universities regarding indexing and coverage of journals discourage African academics from publishing local journals compared to high-impact factor journals to gain promotions and enhance the university's global ranking (Clobridge, 2014; Sarfo, 2019).

Notwithstanding these challenges, journals in Sub-Saharan Africa, especially those that have adopted OA publishing models, are faced with serious funding issues. On the one hand, the OA model jettisons the financial barriers for readers. On the other hand, it provides new challenges for publishers with respect to financial and infrastructural demands. It has become evident over the years that local OA journals in Sub-Saharan Africa struggle with limited funding, inadequate infrastructure, and the lack of robust governance structures, all of which threaten their sustainability and quality (Sarfo, 2019; Tarkang, Bain, 2019). In a region where most researchers live and work in economically challenged countries, the ethical dilemmas associated with reliance on Article Processing Charges (APCs) will exclude financially disadvantaged researchers from publishing their work. The need for sustainable and ethical funding models for local OA journals in Sub-Saharan Africa is more crucial than ever.

3. Ethics of Funding Local OA Journals

Equity in Knowledge Dissemination

Equity should be the primary ethical ground for funding local OA journals in Sub-Saharan Africa. In history, African scholarship has been marginalised in global research databases, leading to underrepresentation in the global knowledge economy (Nwagwu, 2013; Sarfo, 2019). Therefore, OA journals ought to be supported in order to address this inequity. When equity is established in the publishing space, it will ensure that African researchers have platforms to publish their research work to both local and international audiences, first at home and then beyond. This democratisation of scientific and scholarly output will ensure academic inclusivity and integration (Chan et al., 2013).

Avoiding Ethical Pitfalls in Funding Models

In creating OA funding models, journals must be encouraged to opt for options that avoid ethical drawbacks. As noted in this paper, the benefits of OA are transparent when it comes to the reader, but the question about who should pay is often left to publishing houses to decide on. The biggest challenge is to determine what APCs are sufficient. In some cases, it is not clear whether APCs assigned to journals are due to their impact factor or are indeed the actual costs for processing. As observed by Sarfo (2019), APCs pose significant barriers for researchers from low-income countries to share their knowledge "freely" with the world. Thus, APCs can be an avenue to perpetuate inequalities, as only those with adequate financial resources can afford to publish their work.

4. Strategies for Sustainable Funding for OA Publishing in Sub-Saharan Africa

Government Support

Africa as a continent has been noted to provide a relatively small research output of approximately 2 %, with about 0.1 % of all global patents (Gurib-Fakim, Signé, 2022). Additionally, African governments are said to invest less in science and research than other continents globally (Gurib-Fakim, Signé, 2022). In order to provide support, governments and institutions should

recognise the strategic importance of OA publishing by allocating dedicated funds to cover the running of local journals.

Partnerships with Private Organisations

Partnerships can offer a promising avenue for sustainable funding for local publishing houses and institutions. For example, OA journals can partner with technology companies to provide digital platforms and services at reduced costs, which will drastically reduce the burden of processing costs. Such partnerships with organisations can be an excellent avenue to receive diverse support that will go beyond financial support to include technical expertise and resources.

Collaborative Funding Models

Another stable financial foundation for OA journals in Sub-Saharan Africa can be achieved through collaborative funding models that involve multiple stakeholders. Through this model, journals can pool resources from several international funding agencies, regional organisations, governments, and local institutions (Morrison, Rahman, 2013). Thus, this model can develop and enhance a more integrated and supportive research ecosystem in the region.

5. Conclusion

In conclusion, OA journals in Sub-Saharan Africa are clearly faced with financial constraints. However, achieving this goal requires a multifaceted appreciation of the challenges involved and the employing of strategic, sustainable funding models. To address these financial constraints, several ethical principles and opportunities have to be considered.

6. Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Conflict of interest statement

The author reports no conflicts of interest.

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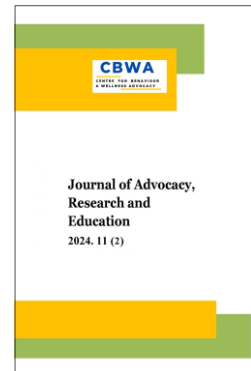
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Evaluating Health Markers Response to Aerobic Exercise Among Adult Keep Fit Clubs Members in Ghana: A Paired Analysis Across Genders

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Abstract

The prevalence of physical inactivity among adults and adolescents worldwide is alarmingly high, contributing to increased morbidity and mortality rates. The assessment of physiological and anthropometric markers holds significant implications in light of the global burden of physical inactivity, sedentary lifestyles, and non-communicable diseases. A pre-test post-test control group quasi-experimental design was used to examine participants' health markers response to aerobic exercise among Keep Fit clubs in Accra, Ghana. There was a total of 64 participants, 32 in each training group. Longitudinal data from 12-week intervals was collected on two different occasions to track the changes in the variables over time and among males and females. A paired sample t-test comparison of means was calculated for males and females separately to examine the effectiveness of the exercise protocols on the selected anthropometric and physiological measures. The results showed that males mostly responded to continuous exercise. At the same time, females responded better to single training.

Keywords: Aerobic Exercise, Anthropometric Health Markers, Continuous Training Exercise, One-Time Training, Physiological Health Markers.

1. Introduction

It is established that physical exercise is the most cost-effective preventive measure for public health against diseases and a powerful auxiliary medicine in many cases (Naci, Loannidis, 2015). Engaging in regular exercise offers a myriad of benefits that contribute to overall well-being and longevity. One of the primary advantages of regular physical activity is its positive impact on cardiovascular health (Sydo et al., 2014). Physical activity burns calories and increases metabolic rate, which can help individuals achieve and maintain a healthy body weight. Obesity is a significant risk factor for various chronic diseases, including type 2 diabetes, certain types of cancer, and osteoarthritis (Hruby, Hu, 2015).

Aerobic exercises, such as brisk walking, running, cycling, or swimming, have been shown to improve cardiovascular fitness by strengthening the heart muscle and improving blood circulation (Nystoriak, Bhatnagar, 2018). This, in turn, can reduce the risk of developing cardiovascular diseases, including heart attacks and strokes (Kyu et al., 2016). Furthermore, regular aerobic exercise plays a vital role in maintaining a healthy weight and preventing obesity (Swift et al., 2018).

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Physiological and anthropometric markers play a crucial role in assessing an individual's health and fitness levels. Indicators such as resting heart rate, blood pressure, and maximal oxygen uptake (VO₂ max) are important physiological markers of cardiovascular health and aerobic fitness. Lower resting heart rates and blood pressure readings, along with higher VO₂ max values, are generally associated with better cardiovascular fitness and reduced risk of cardiovascular diseases (Swift et al., 2018). Measures such as body mass index (BMI), waist-to-hip ratio, and body fat percentage can help assess body composition and identify potential health risks associated with excess body fat or low muscle mass (Bouchard et al., 2011). Simple measurements of height and weight can provide basic information about an individual's overall size and build. These measurements are often used in calculating other indices like BMI (Swift et al., 2018).

Numerous previous studies have highlighted the differences in how men and women respond to aerobic training, particularly in terms of changes in physiological parameters such as blood pressure, heart rate (HR), and body fat percentage. Maruf et al. (2012) concluded that gender moderates the effects of training on diastolic blood pressure (DBP), but it only matters for females regarding systolic blood pressure (SBP). This discovery that training has different effects on men and women agrees with the findings of several other studies (Sydo et al., 2014). According to Sydo et al. (2014), the HR responses to exercise differ between sexes, with men's HR responses following the standard formula (220-age), while women's peak HR had a lower intercept and fell more slowly with age (206-0.88age). In contrast, Hrubby et al. (2015) found that a well-designed 12-week endurance-training program reduced resting and submaximal HR in both young and old persons, regardless of gender.

Regarding body fat percentage (%BF), studies by Kolahdouzi et al. (2019) and Bradbury et al. (2017) have observed differences in how men and women respond to different training types and intensities. Kolahdouzi et al. (2019) concluded that both single and multiple exercises were effective in reducing %BF in males, while Bradbury et al. (2017) observed a correlation between body mass index (BMI) and %BF, with the strength of the correlation being higher in females than in males. A study by Min et al. (2019) empirically estimated the differences in %BF for males and females after controlling for BMI. Earlier, Kim et al. (2018) concluded that for the same level of BMI, the %BF of females was 10.4 % higher than that of males, which could explain why they respond differently to different durations and intensities of training when it comes to reducing body fat. Again, when comparing genders, Nystoriak et al. (2018) discovered that women significantly reduced body fat more than men. Williams et al. (2015) found a significant weak to moderate negative linear link between %BF and normalised strength in both sexes, but the relationships were more robust for women. Santanasto et al. (2015) agreed with these findings and suggested that a combination intervention would be most beneficial for women in reducing body fat.

Despite the positive effects of aerobic exercise on health, it has not been very successful in helping individuals begin and maintain a physically active lifestyle. It has been documented that 68 % of the population does not practice the recommended physical exercise (World Health Organization, WHO, 2018). Not meeting the recommended level of physical exercise has been established as a risk factor for non-communicable diseases (WHO, 2021). About 64 % of the population in Africa does not meet the recommended level of physical exercise, while 66 % of deaths in Africa are attributed to non-communicable diseases (WHO, 2021). In Ghana, about 60 % of the population does not meet the recommended level of physical exercise, and of this figure, about 30 % are obese (Ghana Health Service, 2023).

The assessment of physiological and anthropometric markers holds significant implications in light of the global burden of physical inactivity, sedentary lifestyles, and non-communicable diseases (Lee et al., 2021). These markers serve as vital tools for evaluating health and fitness levels, enabling early identification of potential risks and guiding targeted interventions. The prevalence of physical inactivity among adults and adolescents worldwide is alarmingly high, contributing to increased morbidity and mortality rates (WHO, 2018). In recognition of this pressing issue, the WHO has set forth a global action plan aimed at reducing the prevalence of physical inactivity by 15 % among adults and adolescents worldwide by 2026, relative to the baseline in 2018 (WHO, 2018). This ambitious goal underscores the urgency of addressing the physical inactivity epidemic and promoting active lifestyles to combat the rising tide of non-communicable diseases.

This research aligns with the United Nations Sustainable Development Goals (SDGs), SDGs 3 (Good Health and Well-being), and SDG 5 (Gender Equity). This study addresses a critical gap in understanding how aerobic exercise affects health markers differentially across genders, specifically within the urban African context of Accra, Ghana. This focus is particularly relevant given the rising prevalence of non-communicable diseases in sub-Saharan Africa and the potential role of physical activity in mitigating these health risks (WHO, 2018). Moreover, by examining gender-specific responses to exercise, this study contributes to the body of knowledge necessary for developing tailored health interventions. Such gender-sensitive approaches are crucial for achieving SDG 5, emphasising the need for gender equality and empowerment of all women and girls (United Nations, 2015). A literature review did not identify any studies conducted on gender differences in health marker response in Ghana, leaving a research gap that needs to be filled. The aim of this study was to examine gender differences in health marker response to aerobic exercise among Keep Fit clubs in Accra, Ghana.

2. Materials and Methods

Ethical Considerations

Ethical clearance was given by the University Cape Coast Institutional Review Board (UCCIRB) after the necessary documents were presented and assessed by the Board. The approval with reference number UCCIRB/CES/2020/23 was given. Participants were also assured of the confidentiality of their information, and the researcher ensured that the figures were only disclosed to the individual concerned. Numbers were used to identify the individuals and not the names for confidentiality purposes.

Study Design

A pre-test and post-test control group quasi-experimental design was used to find the effect of long-duration aerobic exercise on blood pressure, HR, and percentage of body fat of Keep Fit Club members in Accra. In this design, quasi-experimental control groups were used for the study because random sampling and assignment to the groups could not be done; rather, intact groups were used (Ofori, Dampson, 2011). There were two intact groups at the centre, namely those who participated once a week and those with two or more days of participation in an exercise. Both groups were pre-tested on blood pressure, HR, and percentage of body fat; before the experimental group was exposed to the intervention, a post-test was conducted on both groups to assess the effect of the treatment (Cohen, 2013).

Population

The target population was all regular and active exercise programme participants in the Keep Fit Club in Adentan Municipality. The target population was 108, of which 23 were adolescents under the age of 19 and 85 were adults. The accessible population was expected to be 85 adults, comprising 45 males and 40 females (Gymike Fitness Centre, 2019). Adults were used because the American College of Sports Medicine protocol used in this study was designed for adults.

Sample

A purposive sampling technique was used to select Gymike Keep Fit Club because the fitness centre had participants with unique characteristics of age and fitness level, which suit the purpose of the study. The fitness centre had much patronage from people and was well known. It is also well organised and has written records of the participants, making monitoring easy. Out of the accessible population of 85 participants targeted, a sample of 64 volunteers representing 75 % of the accessible population from the Keep Fit Club participated in this research after the participants were enlightened about the purpose of the study. Those who volunteered were 64 from both groups, who exercised once a week and two or more times a week, hence the sample size. It was not possible to randomly select and assign the participants; thus, the intact groups of exercising once a week and 2 or 3 times a week were used. Fifty per cent (n=32) of the participants in the study were from the intact group who exercise once a week, and the other 50 % (n=32) of the participants were also from the other intact groups who exercise three times a week. The participants comprised 53 % (n=34) males and 47 % (n = 30) females. Each intact group had 17 males and 15 females.

Measures

Physical Activity Readiness Questionnaire (PAR-Q): The PAR-Q was adopted from the “Canadian Society for Exercise Physiology” (2002) and used for pre-exercise screening. The questionnaire has seven questions to screen individuals with known diseases or signs or

symptoms of diseases that may be at high risk of adverse effects during physical exercise. A 'yes' response to any of the seven questions on PAR-Q by a participant did not engage in an exercise programme without seeking guidance from a health professional. However, a 'no' response to all seven questions on PAR-Q was given by a participant who participated in the exercise programme without further consulting a health professional. The instrument's reliability was 0.9 by the "Canadian Society for Exercise Physiology" (2002) and was considered high (Benjamin et al., 2018).

Omron Automatic Digital Blood Pressure Monitor: Both systolic and diastolic blood pressure were taken with an automatic BP monitor (Omron Automatic Digital BP Monitor, Hem-7134-E) endorsed by the American Heart Association, model M3 Basic, according to the procedures of the British Hypertension Society (Whelton et al., 2018; Williams et al., 2018).

Stadiometer: Stadiometer readings were taken barefooted and in minimum athletic attire to the closest centimetre (0.1cm) to measure the height of participants. The stadiometer had a reliability coefficient of 0.96, as reported in the user manual (Hruby et al., 2015). Again, the reliability was calculated from the pre-testing of the instrument, which yielded a reliability coefficient of 0.95 and was also compared to the already established co-efficient of 0.96 reported in the user manual. This was also considered high (Benjamin et al., 2018).

Weighing Scale: The weight of the participants was measured with a weighing scale. A scale was placed on a level, hard and uncarpeted floor. The reliability was calculated from the pre-testing of the instrument, which yielded a reliability coefficient of 0.95 and was also compared to the already established co-efficient of 0.96 reported in the user manual. This was considered to be high (Benjamin et al., 2018).

Bioelectrical Impedance: Body fat measurement was computed using a Bioelectrical Impedance, Omron Body Composition Monitor, BF511, made in Japan (William et al., 2018). Before the participants' %BF was measured, the participants' data (gender, weight, height, and age) were taken. The participants were directed one after the other to stand on the weighing scale, and the participants' data (gender, weight, height, and age) were imputed into the Bioelectrical Impedance machine by the researcher. Values were also rated against the WHO (2010) and Netfit (2016) recommendations. The weighing scale's reliability coefficient was 0.96, as reported in the user manual (Katyal et al., 2011; Mwangi, Rintaugu, 2017). The reliability was calculated from the pre-testing of the instrument, which yielded a reliability coefficient of 0.96 and was also compared to the already established co-efficient of 0.96 reported in the user manual. This was considered to be high (Benjamin et al., 2018).

Standard Non-elastic Measuring Tape: The waist and hip circumferences were measured with a standard non-elastic measuring tape (capacity of 150 centimetres) following the guidelines recommended in the Anthropometric Standardisation Reference Manual (Stewart et al., 2011) and according to the procedures described by (Venkateswarlu, 2011). The waist-to-hip ratio between 0.80 – 0.90 were considered safe (Gotlib, 2011). The standard non-elastic measuring tape (capacity of 150 centimetres) has a reliability coefficient of 0.97, as reported by the user manual (Damuesh, 2015). The reliability was calculated from the pre-testing of the instrument, which yielded a reliability coefficient of 0.96 and was also compared to the already established coefficient of 0.97 reported in the user manual. This was considered to be high (Benjamin et al., 2018).

Wristwatch Smart Band: Exercise intensity was measured with a wristwatch smart band version BT 4.0, which is programmable to monitor HR, the number of steps taken, calories burnt, and time. The intensity of aerobic exercise training is usually determined as a range: 20-40 % of HR as light intensity, 40-60 % of HR as moderate intensity, 60-90 % of HR as vigorous intensity, and 91-100 % of HR as maximal intensity (Garber et al., 2011). The instrument had a reliability of 0.94.

Data Collection Procedure

An introductory letter was obtained from the Department of Health, Physical Education and Recreation to the management of the Keep Fit Centre, where permission was granted to conduct the study. The following biodata of participants, including age and gender, was collected. After obtaining informed consent and collecting bio-data, the participants were tested using the following sequence.

- Measurement of blood pressure and HR
- Recording of weight
- Measurement of height
- Analysis of per cent body fat
- Waist circumference

– Hip circumference

These tests were conducted in the morning, preceding the commencement of the aerobic exercise section. The researcher explained the details concerning the 12-week training programme to the participants. Only those who volunteered were screened using PAR-Q for the study. Physiological variables of measurements were taken on two different occasions: before exercise programme T1 (pre-test) and after completing the 12-week aerobic exercise programme T2 (post-test). The procedures for measuring these variables were non-invasive.

The researcher and the research assistants conducted the pre-test and the post-test on the dependent variables, which were recorded according to exercise groups. Two days were used for the pre-test, a day for a particular group; after the pre-test, the researcher described to the participants all activities and procedures involved during the exercise programme for the various groups.

At the end of week 12, all the participants in the different groups were tested (post-test), and the researcher, with the research assistants, conducted the post-test on the participants. The researcher and research assistants in each group administered the tests to the groups. The scores of the measurements were collected on the spot.

The following conditions were observed:

1. The researcher ensured that all measurements were conducted on the same day and time to ensure equal testing conditions for all participants.
2. The purposes of each test item were explained to the participants before the commencement of the test and exercise training programme.
3. The time and place for the commencement of the test range from 6.00 am to 9.00 am or 4.00 pm to 6.30 pm on each test and exercise day because this is the time of the day that is more convenient to exercise, and the temperature was suitable for physical activity.
4. All participants were asked to maintain their current lifestyle, including their normal meals, for a 3-month run-in period followed by pre-exercise testing.
5. All participants were encouraged to wear sports outfits appropriate for the test and training conditions.
6. All participants were assured of confidentiality of their records.

One physical education teacher, a nurse, and a fitness instructor served as research assistants for this research. The researcher adequately explained the purposes of each test item and the protocol involved to the research assistants. This was to guide them in effectively evaluating the different parameters of the participants assigned. In addition, they were involved in recording, taking measurements, and supervising participants during the training sessions.

Table 1. Exercise and Data Collection Time Table

Week	Exercise Schedule/Data Collection
1	Baseline Data Collection/ Exercise
2	Exercise
3	Exercise
4	Exercise
5	Exercise
6	Exercise
7	Exercise
8	Exercise
9	Exercise
10	Exercise
11	Exercise
12	Post Data Collection/Exercise

Data Analysis

A paired sample t-test comparison of means was calculated to determine gender differences in the effectiveness of the exercise protocols on the selected anthropometric and physiological measures for both males and females separately.

3. Results

A paired sample t-test comparison of means analysis was performed on each of the selected variables. Figure 1 presents the mean plot of the respondents' average SBP across gender and training schedules.

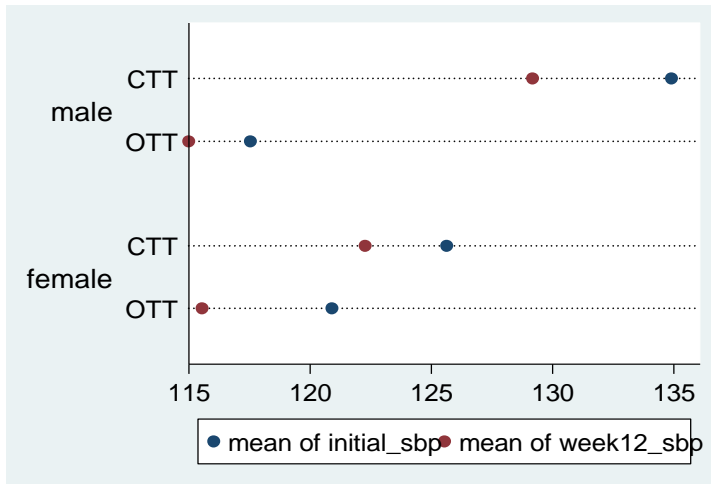


Fig. 1. Effectiveness of Exercise Protocol on SBP among Males and Females

The results revealed that the mean SBP of males in the continuous training (CTT) group was about 134.91 at the onset of the training, which reduced to 129.18 after 12 weeks. The paired sample t-test output suggests that the SBP of the male participants in the CTT group significantly reduced by about 5.73 at the 5 % significance level ($t = 6.79$, $df = 15$, $\text{mean}(\text{diff}) > 0$, $p\text{-value} < 0.001$).

Also, the males in the one-time training (OTT) group began the training with an average SBP of about 117.55 and ended with an average SBP of about 115.00. The paired sample t-test indicated that the SBP of the males in the OTT group significantly reduced by about 2.55 at the 5 % significance level ($t = 2.23$, $df = 15$, $p < 0.001$). The average reduction in SBP of males in the CTT group was about twice that of the males in the OTT group, which confirms the observation that CTT training could be more beneficial to males than OTT training when it comes to reducing SBP.

The results in Figure 1 further suggest that the females in the CTT group began with an average SBP of about 125.64 and ended with 122.27 after 12 weeks of training. The paired sample t-test results indicate that females in the CTT group reduced SBP by about 3.36, and the difference was statistically significant at the 5 % significance level ($t = 5.68$, $df = 15$, $p < 0.001$). Also, the females in the OTT group began the training with an average SBP of 120.91 and ended with an average SBP of about 115.54. The mean comparison test suggested an average reduction of about 5.36 ($t = 10.74$, $df = 15$, $p\text{-value} < 0.001$) for females participating in the OTT.

Figure 2 presents the mean plot of the respondents' average DBP across gender and training schedules.

The results indicated that the mean DBP of males in the CTT group was about 85.6364 at the onset of training, which reduced to 81.616 after 12 weeks. The paired sample t-test results suggest that the DBP of the male participants in the CTT group significantly reduced by about 5.727 at the 5 % significance level ($t = 4.000$, $df = 15$, $H_a: \text{mean}(\text{diff}) > 0$, $p\text{-value} < 0.001$). Also, males in the OTT group began the training with an average DBP of about 80.9091 and ended with an average DBP of about 78.272. The paired sample t-test indicates that the DBP of the males in the OTT group significantly dropped by about 2.636 ($t = 5.823$, $df = 15$, $p < 0.001$). The average drop in DBP of males in the CTT group was about 1.5 times that of the males in the OTT group, which confirms the observation that CTT training could be more beneficial to males than OTT training when it comes to reducing DBP.

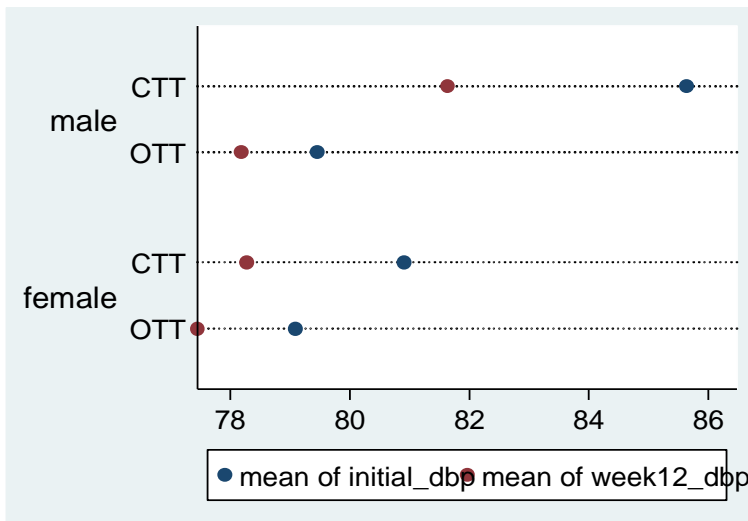


Fig. 2. Effectiveness of Exercise Protocol on DBP among Males and Females

The results in Figure 2 further revealed that the females in the CTT group began with an average DBP of about 79.454 and ended with 78.181 after 12 weeks of training. The paired sample t-test results indicate that females in the CTT group dropped in DBP by about 1.272, and the difference was statistically significant at the 5 % significance level ($t = 2.353$, $df = 15$, $p = 0.02$). Also, the females in the OTT group began the training with an average DBP of about 79.0909 and ended with an average DBP of about 77.454 after the 12 weeks of training. The mean comparison test suggests an average significant drop of about 1.636 ($t = 3.008$, $df = 15$, $p\text{-value} < 0.001$) for males participating in the OTT.

Figure 3 presents the mean plot of the respondents' average HR across gender and training schedules.

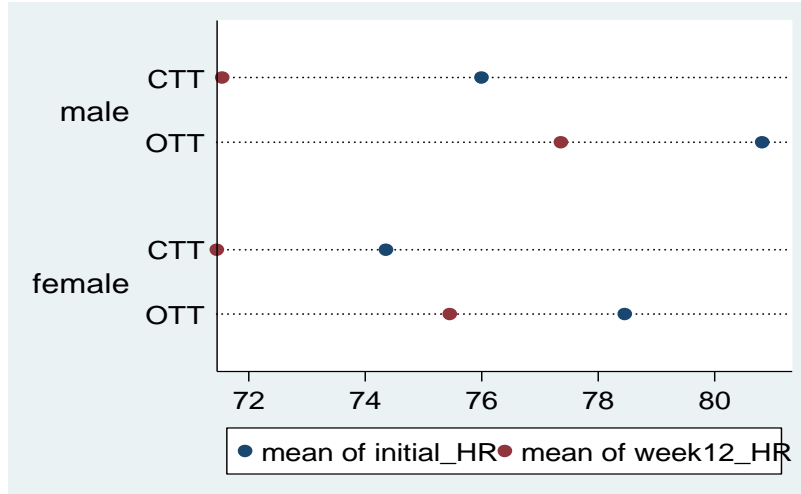


Fig. 3. Effectiveness of Exercise Protocol on HR among Males and Females

The results showed that the mean HR of males in the CTT group was about 76.00 at the beginning of the training, which reduced to 71.55 after 12 weeks. In addition, the paired sample t-test results revealed that the HR of the male participants in the CTT group significantly decreased by 4.45 at the 5 % significance level ($t = 6.69$, $df = 15$, $H_a: \text{mean}(\text{diff}) > 0$, $p\text{-value} < 0.001$). Also, the males in the OTT group began the training with an average HR of 80.82 and ended with an average HR of 77.36. The paired sample t-test indicates that the HR of the males in the OTT group significantly reduced by 3.45 ($t = 6.536$, $df = 15$, $p < 0.001$). The results of the one-sample t-test suggest that the average reduction in HR of males in the CTT group was significantly higher than that of the males in the OTT group ($t = -1.86$, $df = 15$, $p < 0.001$), which suggests that CTT training is more beneficial to males than OTT training when it comes to reducing the HR.

The results in [Figure 3](#) further revealed that the females in the CTT group began with an average HR of 74.36 and ended with 71.45 after 12 weeks of training. The paired sample t-test results indicate that females in the CTT group reduced HR by about 2.90, and the difference was statistically significant at the 5 % significance level ($t = 11.61$, $df = 15$, $p < 0.001$). Also, the females in the OTT group began the training with an average HR of 78.45 and ended with an average HR of 75.45. The mean comparison test indicated an average significant reduction of 3.00 ($t = 1.744$, $df = 15$, $p\text{-value} < 0.001$) for females who participated in the OTT protocol.

Further, the effectiveness of the exercise protocols on the percentage of body fat (BF) reduction among males and females was examined. [Figure 4](#) presents the mean plot of the respondents' average percentage of body fat (%BF) across gender and training schedules.

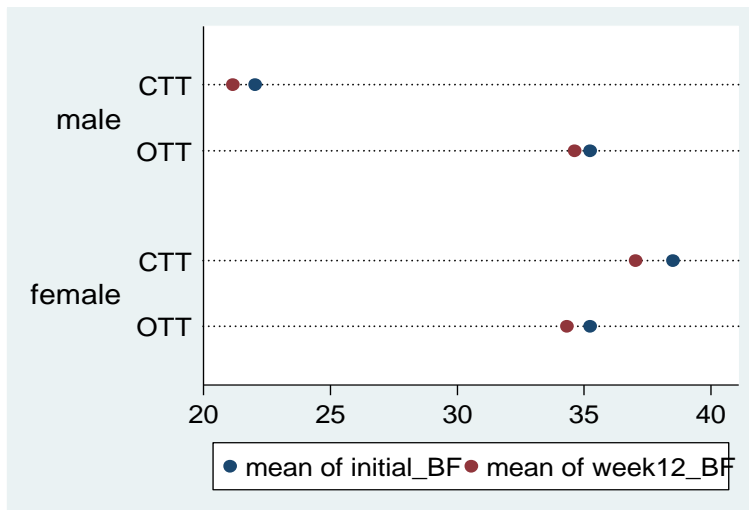


Fig. 4. Effectiveness of the Exercise Protocols on Percent Body Fat (BF) among Males and Females

The results indicated that the mean %BF of males in the CTT group was about 22.04 at the beginning of the training, which reduced to 21.15 after 12 weeks. The paired sample t-test results suggest that the %BF of the male participants in the CTT group significantly reduced by about 0.88 at the 5 % significance level ($t = 5.06$, $df = 15$, $H_a: \text{mean}(\text{diff}) > 0$, $p\text{-value} < 0.001$). Also, the males in the OTT group began the training with an average %BF of about 35.25 and ended with an average %BF of about 34.64. The paired sample t-test indicated that the %BF of the males in the OTT group significantly dropped by about 0.61 ($t = 9.091$, $df = 15$, $p < 0.001$). The average drop in %BF of males in the CTT group was higher than that of the males in the OTT group.

The results in [Figure 4](#) further revealed that the females in the CTT group began with an average %BF of about 38.51 and ended with 37.04 after 12 weeks of training. The paired sample t-test results indicated that females' %BF in the CTT group dropped by 1.47, and the difference was statistically significant at the 5 % significance level ($t = 10.050$, $df = 15$, $p < 0.001$). Also, the females in the OTT group began the training with an average %BF of 35.24 and ended with an average %BF of about 34.34. The mean comparison test suggested an average significant reduction of about 0.90 ($t = 1.744$, $df = 15$, $p\text{-value} < 0.001$) for females participating in the OTT.

4. Discussion

The results indicate that the CTT training leads to a significantly broader drop in DBP for females and males. The results support the findings of Maruf et al. (2012), who concluded that differences exist in the effects of training on DBP, but it only matters to females regarding SBP. A similar explanation could be that the endurance of males for the multiple training exercises could be considered to be higher than that of the females; hence, females may find the OTT an easier option than the multiple exercise plan (Evetovich, Eckerson, 2018). The results indicate that the CTT training leads to a significantly greater percentage reduction in HR for males than females. In comparison, the OTT training schedule leads to a greater percentage reduction in HR for females than males when all other factors are constant. The results suggest that training type has an effect on HR for males and females.

This discovery that training has different effects on men and women agrees with those of several previous studies (Sydo et al., 2014). According to Sydo et al. (2014), the HR responses to exercise differ between sexes. Using the standard formula (220-age), Sedo et al. found that men's HR responses were similar to those obtained, but women's peak HR had a lower intercept and fell more slowly with age (206-0.88 age). Therefore, men and women of the same age can have differing HR response rates to the same type of exercise, even if all other parameters are constant. In contrast, Hruby et al. (2015) found that a well-designed 12-week endurance training programme reduced resting and submaximal HR in both young and old persons.

The results indicate that the CTT training leads to a greater percentage reduction in %BF for both males and females. In comparison, the OTT training schedule leads to a lower percentage reduction for females than males when all other factors are constant. The observation that both types of training were significantly effective for males was consistent with the studies of Kolahdouzi et al. (2019), who reached a similar conclusion after comparing single and multiple exercises. Females were found to benefit less from a single exercise per week compared to three times per week, which implies they have different responses to training types when it comes to reducing the percentage of body fat. Bradbury et al. (2017) observed the correlation between the BMI of males and females, which could explain the differences observed in the current study about the gender effects of training exercises. Bradbury et al. indicated that though strong positive correlations exist between the percentage of body fat and BMI among males and females, the strength is more muscular among females than among males. They concluded that among males and females of identical BMI, females are more likely to have a higher percentage of body fat than males, which explains why some training exercises that could work for males may not work for females.

A study by Min et al. (2019) empirically estimated the differences in the percentage of body fats for males and females after controlling for BMI. Earlier, Kim et al. (2018) concluded that for the same level of BMI, the percentage of body fat of females was 10.4 % higher than that of males, which could make them respond differently to different durations and intensities of training when it comes to reducing body fat. When comparing genders, Nystoriak et al. (2018) discovered that women significantly reduced body fat. There was a significant weak to moderate negative linear link between the percentage of body fat and normalised strength in both sexes, as shown by Williams et al. (2015). Women, however, had more robust relationships. Santanasto et al. (2015) agreed with these findings and suggested that combination intervention would be most beneficial to women.

5. Strengths and Limitations

The study captured how aerobic exercise affects health markers in the complex, multifaceted reality of people's lives in Accra rather than in an artificial, controlled environment. The results are more likely to apply to other real-world urban African contexts where people's lives are similarly complex and varied. It provides information on the effectiveness of community-based fitness programmes (Keep Fit Clubs) in improving health outcomes despite the variability in participants' lifestyles.

Physiological and anthropometric health markers of an individual are not determined by exercise alone. The researcher had no control over their diet since they all lived in various homes and planned their menu. Diet affects some physiological variables, and that may have affected the results. Apart from diet, other factors such as where participants live, their occupation, or physical activity level, which could affect the results, were not considered in the research. The result may be affected by the variables mentioned above and their influence on human health. The groups were intact or in place before the study; therefore, the base variables were not identical from the beginning of this study. These limitations of diet, occupation and physical activity will affect the generalizability of the finding beyond the sample. The study mainly focused on evaluating treatment responses within each gender but did not directly compare the responses between males and females. This limits our ability to determine whether the observed differences are statistically significant across genders.

6. Implications of the Study

Theoretically, the study contributes to the understanding of the effects of different exercise protocols (continuous training vs. one-time training) on various anthropometric and physiological

measures. It provides insights into the effectiveness of these exercise protocols in reducing systolic blood pressure, diastolic blood pressure, heart rate, and body fat percentage across genders.

Practically, the findings suggest that CTT may be more beneficial than one-time training OTT for males in reducing systolic blood pressure, diastolic blood pressure, heart rate, and body fat percentage. For females, both CTT and OTT protocols were effective in reducing the measured variables, but the relative effectiveness varied depending on the specific measure. These insights can inform the development of tailored exercise programmes and recommendations based on gender and desired health outcomes.

7. Conclusion

Based on the results presented, the following conclusions are drawn: CTT was more effective than one-time training OTT for reducing SBP, DBP, HR, and %BF in both males and females. Gender differences exist in the effects of the training protocols on the measured variables. For SBP and DBP reduction, CTT was more beneficial for males than females, while OTT was more effective for females than males. For HR reduction, CTT led to a significantly greater percentage reduction in males than females, while OTT led to a greater percentage reduction in females than males. For %BF reduction, CTT led to a greater percentage reduction for both males and females, but OTT was more effective for males than females. The differences in the responses of males and females to the training protocols are attributed to factors such as differences in endurance levels, heart rate responses to exercise, the relationship between body fat percentage and BMI, and the potential influence of hormonal factors. The results suggest that to optimise the effectiveness of exercise protocols, gender should be considered as a moderating factor, and exercise programs may need to be tailored differently for males and females to achieve desired outcomes in variables like blood pressure, heart rate, and body fat reduction. In summary, the study highlights the importance of considering gender differences when designing and implementing exercise protocols, as males and females may respond differently to different training schedules and intensities, particularly for variables related to cardiovascular health and body composition.

8. Declarations

Ethics approval and consent to participate

The UCCIRB granted ethical approval for the study (UCCIRB/CES/2020/23).

Consent for publication

All authors read and approved the final version of the manuscript for publication and agree to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Availability of data and materials

The data supporting this study will be made available upon reasonable request to the corresponding author (daniel.apaak@ucc.edu.gh).

Conflict of interest statement

The authors do not have any personal or financial interest in this study.

Funding

The study received no funding


Authors' contributions


NA and DA conceptualised the study. NA and DA designed the study with input from NA, DA, and CA, and analysed and interpreted the data. CA drafted the initial manuscript. NA, DA and CA contributed to the revision and finalisation of the manuscript. All authors read and approved the final version of the manuscript.


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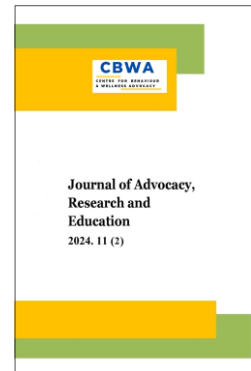
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Exploring the Link Between Financial Inclusion and Saving Behaviors Among Private Security Employees in Mexico: An Empirical Study

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Abstract

Savings related to sociodemographic variables and financial inclusion can be studied from various perspectives. Motivation, without a doubt, is a determinant that triggers certain decisions, such as saving. Individuals create a motivation to save that includes trends in their daily life in order to be able to save something for a future that could be uncertain at the time of making their decision. The purpose of this study was to determine the relationship between workers' savings motives and sociodemographic variables and financial inclusion. The study adopted a non-experimental, descriptive, correlational, and cross-sectional design. The scale designed by Contreras-Rodríguez et al. (2017) was used to collect data from 355 workers. The main findings showed that saving is related to income; thus, the higher, the better. Also, participants who were actively employed, as a determining variable, improved their likelihood of saving for emergencies. Likewise, it was found that men were more likely to save up to invest compared to women. For men, saving up to invest was more important than saving for personal reasons. Our study has implications for practice, policy, research, and education on financial inclusion, credit products, and human development in Mexico.

Keywords: Financial Inclusion, Multinomial Logit Model, Savings, Savings Motive, Sociodemographic Variables.

1. Introduction

Financial education in Mexico is deficient; this is reflected in the use of financial services. Ignorance leads individuals to lack financial planning, which necessarily has an impact on their financial decisions. García et al. (2015) report that financial institutions have not reached their levels of competitiveness in the country. Financial Education in Mexico has been omitted for years, compared to other countries where it has been integrated into educational programs, according to the report of the Comisión Nacional para la Defensa de los Usuarios de Servicios Financieros [by its acronym in English National Commission for the Defense of Users of Financial Services (CONDUSEF, 2010)].

The low level of Financial Education is reflected in the limited use of financial products and services, as well as in bad habits when acquiring them - if they do so - and in addition to this, in the lack of knowledge of individual rights and obligations. This, in turn, impacts well-being and quality

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of life. Furthermore, financial institutions do not achieve their levels of competitiveness precisely due to the low level of knowledge of their population, which generates stagnation of economic development in the country (García et al., 2015).

The study carried out by the Institute of Financial Studies (IEF, 2020) presents some interesting data, which is discussed below. They point out some of the characteristics of the financial behavior of the Mexican population, among which a trend in the abuse of credit is observed, an over-indebtedness that exceeds credit capacity, which brings with it a delinquency rate. Additionally, 31 % of Mexicans spend more than they receive in income. Half of Mexican companies use banking products to settle debts with suppliers and third parties. A large percentage (80 %) of families save informally, that is, outside the Mexican financial system.

The same report from the Instituto de Estudios Financieros [for its acronym in English Institute of Financial Studies] points out that there is a solid initiative to promote Financial Education with the participation of the private and government sectors. At the end of 2009, at least 53 initiatives on Financial Education had been identified in the National context. With these data, Mexico has been recognized for having improved in this agenda. However, they consider that it has not been enough since only 31 % of the population has basic financial knowledge, so greater progress is required in the matter. However, they consider that it has not been enough since only 31 % of the population has basic financial knowledge, so greater progress is required in the matter (Instituto de Estudios Financieros, 2020).

Justifying the existence of Financial Education plans begs the question: Why is it necessary and essential to develop Financial Education plans for Mexican children and young people? Some of the proposed answers from the Institute of Financial Studies are to acquire knowledge of the financial products and services offered by the market and to understand the importance of technology in the world of finance and economics. To understand how important the field of savings is and, with it, the creation of a fund to face contingencies that may arise and that will always be unforeseen, to learn about alternative investment and savings methods, which do not subscribe exclusively to traditional first-tier banking, but also involve the stock markets, to manage one's future and most importantly to know the value of money over time (Instituto de Estudios Financieros, 2020).

Theoretical Framework

The issue of motivation is undoubtedly a determinant that triggers certain decisions, such as the reason to save. Individuals create a motivation to save that includes trends in daily life in order to be able to save something for a future that could be uncertain at the time of making their decision. Keynes (1936, translated by Hornedo, 1983) identified eight different motivations: precaution, foresight, calculation, improvement, independence, enterprise, pride, and avarice. Furthermore, Browning and Lusardi (1996) added another reason, which was the accumulation of deposits to buy goods, such as houses and cars, among others. Among these motives, the precautionary motive refers to the human tendency to reduce future uncertainties in life. To minimize these uncertainties, individuals prefer something that guarantees the certainty of reducing losses/damages (Zakaria et al., 2016).

In 1936, John Maynard Keynes, in his work "General Theory of Employment, Interest and Money", indicated that savings, rather than depending on the interest rate, depends on the income that people receive, thus showing a positive relationship between these variables, that is, with a higher level of income, individuals have a greater capacity to save. In 1954, Franco Modigliani postulated in his "Life Cycle Theory" that people organize their consumption and savings, distributing their income equitably their lives; that is, individuals accumulate wealth during their working lives -their savings- which is subsequently distributed for consumption during old age. In a complementary way, in 1957, Milton Friedman proposed the "Theory of permanent income", which consists of the successive percentage of expenditure that a person makes throughout their lifetime, considering their total present resources for consumption in the short and long term.

In countries such as Bangladesh, whose population is 90.39 % Muslim, attempts have been made to identify individuals' savings motives and their role in religion (Hasan, Rahman, 2023). The authors found that attitude, subjective norms, perceived behavioral control, promotional campaigns and religiosity influence the intention to save. In Vietnam, the behavior of household heads towards savings has more relevant effects on rural households than on urban households (Hua, Erreygers, 2020). Household characteristics have stronger effects in lower quartiles. The marginal propensity to save in households in low quartiles is greater than those in high

quartiles. Household characteristics and household heads significantly influence rural households more than urban households. Furthermore, the workforce at home should include children and older adults instead of being dependents in order to increase the domestic savings rate.

On the other hand, the adoption of mobile payments increased during the COVID-19 pandemic in rural and urban areas. In this regard, Jayarathne et al. (2023) identified that mobile payments had shortcomings, such as a lack of familiarity with customers, a lack of knowledge of employees about mobile payment systems, poor management orientation, and a lack of computer skills among customers. On the other hand, it is worth mentioning that emergency savings strategies must be multifaceted since it is necessary to include the assistance of advisors and financial educators in order to create greater financial comfort. This will allow programs to increase access to short-term savings opportunities and incentives (Despard et al., 2020).

Having a savings account is a predictor which explains an increase in the probability of having an emergency fund. Likewise, the workplace is another channel to promote emergency savings. In this regard, Harvey et al. (2018) identified that the majority of employees expressed the desire to enroll in a “rainy day” savings program with payroll deduction if their employer offered it. However, according to the Federal Deposit Insurance Corporation (FDIC, 2018), more than half of individuals in households with bank accounts set aside money for emergencies, and only 17 % of households do not have bank accounts. Consequently, parents are an important influence on their adult children’s retirement savings decisions (Robertson-Rose, 2020). In relation to sociodemographic characteristics, in regions like Oromia in Ethiopia, 14.5 % of households were not saving with financial institutions, while around 85.5 % were saved in financial institutions (Zelege, Endris, 2019). Furthermore, the age and occupation of household heads in the household, knowledge of interest rates, household income, and family size were significant determinants of household savings status.

In the same idea, age does significantly influence household savings by 5 %, but especially heads of families between 26 to 35 and 46 years old are less likely to save than those in the 18 – to 25-year-old group (Bizuneh, 2011; Bogale et al., 2017; Girma et al., 2013; Saliya, 2018; Njung’e, 2013; Quartey, Blankson, 2008). Consequently, the age of the household is positively related to the motivation to save.

In countries like Kenya, men and women save a portion of their income equally. This same study found that the population in the 45-65 age range had the highest savings rate of 65.6 %; savings are positively related to total income, gender and education but negatively associated with employment status and age (Njung’e, 2013). Women are experts in informal savings due to the lack of use of mobile banking services (Loaba, 2022). In South Gondar in the Libokemkemm district of Ethiopia, 85.8% of the population who were married were the population who saved the least compared to single people. In comparison, 83.5 % of men were non-savers (Mazengiya et al., 2022). Table 1 shows a summary table of the variables related to savings.

Table 1. Theoretical Contributions on Savings Motives

Savings reasons	Relationship	Author
Age	Positive	Zelege and Endris (2019); Quartey, Blankson (2008); Bizuneh (2011); Njung'e (2013); Girma et al. (2018)
Household income	Positive	Zelege and Endris (2019)
Financial inclusion	Positive	Jayarathne et al. (2023); Harvey et al. (2018); Despard et al. (2020)
Family size	Positive	Zelege and Endris (2019)
Employment status of the head of household	Positive	Hua, Erreygers (2020); Zelege and Endris (2019)
Genre	Positive	Njung'e (2013)
Civil status	Positive	Mazengiya et al. (2022)

Recently, in Mexico, the date of the National Financial Education Week was set, and it is scheduled for October 4 to 15, 2021. The National Commission for the Protection and Defense of Users of Financial Services (CONDUSEF) carries out this effort, as well as institutions from the private and public financial sectors, as well as academia represented by educational and social Institutions. The topics are divided into different categories: children, young people, adults, seniors, SMEs and Mexicans who are abroad. The purpose of this categorization is to ensure attractive activities for all (Condusef, 2021).

These types of activities denote the interest of the authorities in Mexico in promoting initiatives that seek to increase Mexican society’s interest in personal finance issues, such as savings, investment, budgets, credit, insurance, credit bureau, fraud prevention, financial technology (FINTECH), psycho-finance, and financial intelligence, among other topics.

Problem Formulation

Main question: What is the relationship between workers’ savings motives and sociodemographic variables and financial inclusion?

Study Objectives

To determine the relationship between workers’ savings motives and sociodemographic variables and financial inclusion.

Conceptual Model for the Study (Preliminary Construct)

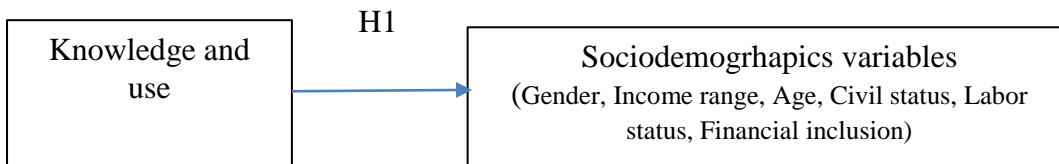


Fig. 1. Empirical study route

2. Methods

Research Design

The research has a non-experimental design since no independent variable (X) is manipulated or altered, with the idea of modifying the effect on the dependent variable (Y). Therefore, the study is approached from the hypothetico-deductive paradigm.

Population and Sample

The type of sampling is non-probabilistic due to self-determination. The questionnaire was distributed physically *face to face* in those cases where workers were within reach by geographic location. In the case of workers who were not, they were contacted through an electronic questionnaire with the support of the human resources department staff in each area. The instrument was applied from April 1, 2023, to September 30, 2023. Participants were 355 employees of the Duxon corporation, between 18 and 53 years of age. Duxon is a firm in the field of private security, with fiscal domicile in the city of Veracruz, in addition to having its headquarters in Mexico City. As an inclusion criterion, workers are those considered to be hired under the salaries and wages regime and are also registered with the Mexican Institute of Social Security.

The instrument used for this study is the scale referred to in the work of Contreras-Rodríguez et al. (2017). The instrument is divided into items on the socioeconomic profile, a section that integrates items on financial knowledge in topics such as savings, credit management, credit cards, budget management and a specific section in Likert format that collects information inherent to the topic of financial inclusion.

To evaluate the level of financial literacy of workers with respect to knowledge and use of savings accounts, credit and budgets, the multinomial Logit model is used (Greene, 2002).

The model is denoted as:

$$P_{from\ the} = \frac{\exp(x_i\beta_j)}{1+\sum_{k=1}^{m-1}\exp(x_i\beta_k)} \quad j = 1, \dots, m - 1$$

$$P_{me} = \frac{1}{1+\sum_{k=1}^{m-1}\exp(x_i\beta_k)}$$

For example, in the case $m=2$,

$$P_{1i} = \frac{\exp(x_i\beta_1)}{1+\exp(x_i\beta_1)} \text{ and } P_{2i} = \frac{1}{1+\exp(x_i\beta_1)}$$

For example, in the case $m=3$,

$$P_{1i} = \frac{\exp(x_i\beta_1)}{1+\exp(x_i\beta_1)+\exp(\beta_2)} \tag{1}$$

$$P_{2i} = \frac{\exp(x_i\beta_1)}{1+\exp(x_i\beta_1)+\exp(x_i\beta_2)} \tag{2}$$

$$P_{3i} = \frac{1}{1+\exp(x_i\beta_1)+\exp(x_i\beta_2)} \tag{3}$$

To estimate the $m-1$ parameter vectors, $\beta_1, \beta_2, \dots, \beta_{m-1}$, the likelihood function is maximized

$$L = \prod_{i=1}^n P_{i1}^{Y_{i1}} P_{i2}^{Y_{i2}} \dots P_{im}^{Y_{im}}$$

Taking logarithms

$$\ln L = \sum_{j=1}^m \sum_{i=1}^n Y_{ij} \ln P_{ij}$$

By maximizing this function, the estimators are obtained

$$\beta_1, \beta_2, \dots, \beta_{m-1}$$

In the binomial logit case ($m=2$), it is true that

$$P_i = \frac{\exp(x_i\beta)}{1+\exp(x_i\beta)} \text{ and } 1 - P_i = \frac{1}{1+\exp(x_i\beta)}$$

Taking logarithm $\ln\left(\frac{p_{in}}{1-p_i}\right) = x_i\beta$

That is, the β in the logit is the impact of X on the logarithm of the relative risk ratio. From the estimation, the significant variables related to the decision to save are identified, for which the z-contrast statistic is used. In our model, the independent variables are age, marital status, employment status, income range, financial inclusion, and gender.

Operationalization of the Variables.

The operationalization of the variables is shown in [Table 2](#).

Conceptual Definition of Variables

Table 2. Conceptual definition of dependent variables in the model

Variable	Definition	Author
Savings reasons	Reasons such as accumulating savings to purchase assets like houses and cars. Among these reasons, the precautionary motive refers to the human tendency to mitigate future uncertainties. To manage these uncertainties, individuals prefer to have something that ensures protection	Browning, Lusardi (1996); Zakaria et al. (2016); Zeleke and Endris (2019)

Variable	Definition	Author
	against potential losses or damages.	

Operational Analysis of Each Variable

Next, [Table 3](#) presents each of the variables that, in this case, are the dependent variables in this research, along with their corresponding categories and their coding. [Table 4](#) presents each of the variables that, in this case, are the independent variables.

Table 3. Coding of Dependent Variables in the Models

Variable	Categories	Coding
Savings reasons	<ol style="list-style-type: none"> 1. Miscellaneous reasons 2. All reasons are important 3. Emergencies 4. Health 5. For old age 6. Investment 	<p>Multinomial categorical variable: the categories are mutually exclusive, and for the purposes of incorporating the information into the model, a numerical value is assigned to each category. Of all the possible responses regarding savings motives, the most frequent categories are identified and with which the savings motives variable is constructed.</p> <p>Reference category: Various reasons (food, housing, education, when there is no work, personal expenses, saving money) (Shin, Kyoung 2018; Haider et al., 2018).</p>

Table 4. Coding of Independent Variables of the Research

Variable and Categories	Coding
Gender Women Man	<p>Dichotomous variable: the value one is assigned to the male category and zero to the female category.</p> <p>Reference category: Women (Shin, Kyoung, 2018).</p>
Income range <ol style="list-style-type: none"> 1. Monthly minimum wage 2. Minimum monthly salary 3. Minimum monthly salary or more 	<p>Categorical variable. Dichotomous variables are designed for each category. The value one is signed if the characteristic is present and zero otherwise. Reference category: 1 monthly minimum wage (Shin, Kyoung, 2018).</p>
Age (Age range) 18 to 25 years 26 to 30 years 30 to 40 years More than 40 years	<p>Categorical variable. Dichotomous variables are designed for each category. The value one is signed if the characteristic is present and zero otherwise. Reference category: 18 to 25 years old. (Iregui et al., 2018)</p>
Marital status Single Married Free Union Separated Divorced Widowed	<p>A dichotomous variable is designed: the value one is assigned if the person is married or lives in a common law union and zero for others (Single, separated, divorced, widowed). Reference category: single. (Shin, Kyoung, 2018)</p>
Employment status Only working Working and studying and working and seeking to study	<p>A dichotomous variable is designed: the value one is assigned if the person only works and 0 if the person works and studies or works and seeks to study. Reference category: works and studies or works and seeks to study (Shin, Kyoung, 2018).</p>

Variable and Categories	Coding
Financial inclusion Having a credit card Not having a credit card	Dichotomous variable: the value one is assigned if the person has a credit card and 0 does not have a credit card. Reference category: You do not have a credit card (Rahman, Hossain, 2023; Xu et al., 2022).

Data Analysis

Saving Descriptive Results

Table 5 presents the results regarding the financial knowledge that the respondents have regarding savings. In relation to the question “What is savings?” In order of frequency, 22.5 % chose “economic security” as the answer, 21 % chose something for the future, 20 % said that saving means having money for emergencies, and 13.3 % have money available. Regarding the question, What is the main reason why you save or would save? Also, 31.9 % of those surveyed indicated that all reasons are essential to save (Health, emergency, food, education, old age, investment); the reason that stands out is for emergencies; 22.8 % indicated that the main reason for saving is to cover emergencies.

Regarding the question, how do you determine what you save? 43.1 % of those surveyed have the habit of saving, 21.1 % save when they want to buy, 20.8 % save when they have extra, and 15 % responded that they do not have enough. When you have money left over (from your expenses, from your salary, from the money you receive), what do you use it for most frequently? Of the money that you have leftover most frequently, 58.6 % of those surveyed save it, 16.9 % use it to pay debts, and 14.2 % indicated that they do not have any leftovers. What is the main reason you have never had or would not have a savings, deposit or investment account? Regarding having a savings, deposit or investment account, 27.5% responded that, if they have an account, 18.9 % responded that they do not have an account because they cannot afford it, 12.8 % distrust financial services, and 12.2 % do not care interested.

Table 5. Frequency Distribution of Financial Knowledge of Savings

Ask	Response options	Frequency	Percentage
What is savings?	Keep the money	61	16.9
	Have money for emergencies	72	20.0
	Something for the future	76	21.1
	Do not spend	18	5.0
	Have money available	48	13.3
	Money in the bank	4	1.1
	Economic security	81	22.5
What is the main reason why you save or would save?	Health	34	9.4
	Emergencies	82	22.8
	food	6	1.7
	living place	8	2.2
	Education	12	3.3
	When there is no work	10	2.8
	For old age	22	6.1
	Personal expenses	11	3.1
	Look at him	5	1.4
	Investment	18	5.0
	They are all important	115	31.9
	Have to invest when an opportunity appears	17	4.7
How do you determine what	Save what's left	75	20.8
	Save when you want to	76	21.1

Ask	Response options	Frequency	Percentage
you save?	buy or do something.		
	He has the habit of saving	155	43.1
	It's not enough	54	15.0
When you have money left over (from your expenses, from your salary, from the money you receive), what do you use it for most frequently?	Does not save	13	3.6
	There is no leftover	51	14.2
	saves it	211	58.6
	He uses it to pay debts	61	16.9
	Spend on clothes.	9	2.5
	Leisure spending	15	4.2
What is the main reason you have never had or would not have a savings, deposit or investment account?	If I have one	99	27.5
	It's not enough	68	18.9
	Not interested	44	12.2
	Be suspicious	46	12.8
	They ask for many requirements.	11	3.1
	The interest rate is very low	27	7.5
	They charge very high commissions.	15	4.2
	They ask for a very high initial deposit	7	1.9
	They require a minimum balance	10	2.8
	Does not know	33	9.2

Multinomial Logit Model of the Decision to Save and Its Relationship with Sociodemographic Variables and Financial Inclusion

In relation to the research question: Is there a relationship between the decision to save and the sociodemographic characteristics of the respondent and financial inclusion? The objective is established to determine the relationship between the decision to save, the sociodemographic characteristics of the respondent, and financial inclusion. H1 was established as the decision to save is related to the sociodemographic characteristics of the respondent (sex, educational level, marital status, economic dependents – minor children, income, marital status and employment status) and financial inclusion. Below is the resulting econometric model.

Based on the estimation, the results of the six savings categories are presented in relation to sociodemographic characteristics. The reference category is personal savings. From the results for savings motive 2, it is identified that income variable 2 is significant. For the variable income 2 (two minimum monthly salaries), the resulting coefficient has a positive sign (0.687), which indicates that those workers who receive two minimum monthly salaries as income are more likely to save for any reason rather than for personal reasons.

Table 6. Multinomial Econometric Model

Reason: 1 personal savings (base category)	Reason 2: Savings for any reason	Reason 3: saving for emergencies	Reason 4: Health savings	Reason 5: For old age	Reason 6: saving to invest
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Const	0.224	-0.427	-1.894	-21.136	-1.608 ***

Gender					
Female (CF)					
Male	-0.229	-0.334	0.091	1.092	0.993 **
Age					
18 to 25 (CF)					
26 to 30	-0.171	0.345	0.030	-0.390	0.205
30 to 40	-0.030	0.204	0.376	18.420	-0.472
More than 40	0.508	-0.065	0.289	19.784	-0.114
Marital status					
Single (CF)					
Married or Cohabiting	-0.195	0.344	0.112	0.658	0.141
Employment status					
Work and study or work and seek to study (CF)					
Only working	0.546	1.040**	1.048	0.001	0.358
Income range					
1. Monthly minimum wage (CF)					
2. Minimum monthly salary	0.687*	0.019	0.591	0.346	0.987**
3. Minimum monthly salary	0.122	-0.084	2.305**	2.368*	1.826**
Financial inclusion					
Having a credit card (CF)					
Not having a credit card	-0.013	0.177	-0.485	-0.313	0.387

Note: CF indicates reference category; *, **, and *** indicate significance levels of 10 %, 5 % and 1 %, respectively.

From the results for savings reason 3, it is identified that the variable “only working” is significant. For the variable “only working”, the resulting coefficient has a positive sign (1.040), which indicates that those people who work are more likely to save for emergencies compared to those people who work and study or compared to those who work and seek to study. Likewise, it is identified that reason three is not related to financial inclusion.

From the results for savings motive 4, it is identified that the variable only working and three minimum monthly salaries are significant. For the variable only working, the resulting coefficient has a positive sign (1.048), which indicates that those people who work are more likely to save for emergencies compared to those people who work and study or compared to those who work or seek to study. They are more likely to save for emergencies rather than for personal reasons. For the variable three minimum monthly salaries, the resulting coefficient has a positive sign (2.305), which indicates that those workers who receive three minimum monthly salaries as income are more likely to save for health rather than for personal reasons. Likewise, it is identified that reason four is not related to financial inclusion.

From the results for reason 5, for old age, it is identified that the income range variable is significant. For the variable income range 3 (three minimum monthly salaries), the resulting coefficient has a positive sign (2.368), which indicates that those workers who receive three minimum monthly salaries as income are more likely to save for old age rather than for personal reasons. Likewise, it is identified that reason five is not related to financial inclusion.

From the results for savings motive 6 (Investment), it is identified that the variables gender, income range, two minimum monthly salaries and three minimum monthly salaries are significant. For the gender variable (Male), the resulting coefficient has a positive sign (0.993), which indicates that males are more likely to save and invest than women. For men, saving to invest is more important than saving for personal reasons. For variable income 2 (two minimum monthly salaries), the resulting coefficient has a positive sign (0.987), which indicates that those workers who receive two minimum monthly salaries as income are more likely to save to invest compared to those who receive the minimum monthly wage. For income variable 3 (three minimum monthly

salaries), the resulting coefficient has a positive sign (1.826), which indicates that those workers who receive two minimum monthly salaries as income are more likely to save to invest compared to those who receive the minimum monthly wage. Those who receive two and three minimum monthly salaries save to invest more than for personal reasons. Likewise, it is identified that reason six is not related to financial inclusion.

4. Discussion

From the results for savings motive 2 (personal, family savings, welfare, education, etc.), it is identified that income variable 2 is significant. This mirrors the findings of Zeleke and Endris (2019), which showed that household income is an important factor for saving. Likewise, it is identified that reason two is not related to financial inclusion. From the results for savings reason 3 (Emergencies), it is identified that the variable "only working" is significant. They are more likely to save for emergencies rather than for personal reasons, as also found in Njung'e's study (2013).

From the results for savings motive 4 (Health), it is identified that the variable only working and three minimum monthly salaries are significant. The study by Njung'e (2013) found that saving is not related to employment status. The study by Zeleke and Endris (2019) was positive in relation to this result. From the results, the savings motive identifies that gender and income are significant. This agrees with the study by Zeleke and Endris (2019), which found that household income impacted saving for investment. In the studies by Hua and Erreygers (2020) and Zeleke and Endris (2019), it was positively agreed that for reason 5, for old age, it is identified that the income range variable is significant. In the study by Njung'e (2013), there was a positive result in relation to the older the person, and the higher the salary, the greater the possibility of saving for this reason.

From the results for the savings motive, it is identified that the variables gender and income are significant. This agrees with the study by Tadesse (2019), which found that household income impacted saving for investment. In the studies by Hua and Erreygers (2020) and Zeleke and Endris (2019), it was positively agreed that household heads were a determining factor in saving.

5. Conclusion

We can conclude that within the six main savings motives estimated in the econometric model, which were related to the sociodemographic characteristics, we found the following results. In relation to motive 6, it is identified that the gender variable (male) saves more money to invest compared to women. On the other hand, in relation to the income range in reason two and reason 6, the population with an income of two minimum monthly salaries is more likely to save for all reasons and for investment, which is not related to financial inclusion.

In the same idea, it is found that reason four and reason five, in relation to the income range of three minimum monthly salaries, have a greater probability of saving for health and old age. Therefore, it was identified that reason 3, saving for emergencies, coincided with reason 4, saving for health. That is, according to employment status, those who are only working are more likely to save than the rest of the population.

6. Declarations

Ethics approval and consent to participate

This study is carried out in accordance with the recommendations of the Code of Ethics of the National Technology of Mexico. The Research Ethics Committee of the Division of Graduate Studies and Research approved the protocol. In accordance with the Declaration of Helsinki, all workers gave their consent for participation in the study.

Consent for publication

Not applicable.

Availability of data and materials

Data and materials associated with this study are available upon request.

Conflict of interest statement

The authors declare no conflict of interest.

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Author contributions

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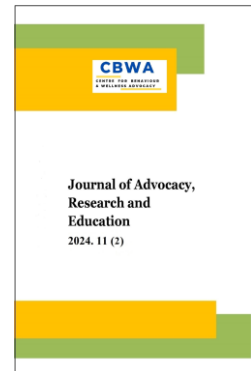
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Voices and Visions: An Appreciative Inquiry into International Master's Students' Ideal Learning Experience at a Southern Ontario University

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Abstract

In this study, the researcher used the Appreciative Inquiry's dream phase to investigate international master's students' ideal learning experiences at a Canadian university. The research question was, "How do international students describe their ideal experience in terms of quality and learning experiences in a master's program?" Findings revealed a strong desire for an education that blended theoretical knowledge with practical skills. Key themes included the importance of fair tuition fees, meaningful interaction with local students, and comprehensive career development opportunities. These conditions were identified as pivotal to a transformative educational journey. The study findings urge educators and policymakers to focus on international students' well-being and future employability and highlight the multifaceted benefits for students, institutions, and broader international relations. The insights gathered underscore the potential of a student-centered academic approach in shaping an educational landscape that responds to the aspirations and needs of international graduate students.

Keywords: Academic Integration, Appreciative Inquiry, Dream Experience, Educational Policy, Experiential Learning, International Students, Master's Programs.

1. Introduction

In this paper, I build on my previous work that explored the factors that made international master's students (IMS) happy and engaged, especially during the onset of the COVID-19 pandemic (Ankomah, 2022a; Ankomah, 2022b). This study also uses data from the same doctoral research nested in the Appreciative Inquiry (AI) methodological and theoretical framework (Cooperrider, Srivastva, 1987; Cooperrider, Whitney, 2005). For this current paper, I focus on the *dream* phase of AI's 4-D cycle (discovery, dream, design, and destiny). Specifically, I explore the quality experiences IMS hope for in their academic journey. The key question I investigated was, "How do international students describe their ideal experience in terms of quality and learning experiences in a master's program?"

There has been a notable increase in international students relocating to Western countries, including Canada, for higher education (Guo, Guo, 2017; Hou, Lu, 2017). This trend has been growing since the start of the new millennium and over the last ten years (Knight, 2012; Li et al., 2012). The pull towards foreign education is strong worldwide. As a former international student, I, like the participants in this study, was drawn to the idea of obtaining a "prestigious degree" from abroad

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(Ammigan, 2019; Canadian Bureau..., 2018) and the opportunities for international work experience (CBIE, 2018). The chance to improve my English skills was also a big reason (Ankomah, 2022b).

However, this journey is not easy. International students face challenges like adapting to a new academic environment (Ammigan, Jones, 2018; Calder et al., 2016), dealing with academic uncertainties (Alqudayri, Gounko, 2018; Chen, Zhou, 2019), and overcoming language barriers (Burel et al., 2019; Chen, 2017). I know these challenges well because my first days in Canada were filled with culture shock (Ammigan, 2019; Burel et al., 2019). Financial issues (Stevenson, Bland, 2017), worsened by high living costs and limited job opportunities on campus (Calder et al., 2016), were big obstacles. My experiences echo what many studies show about the difficulties international students face.

Despite these challenges, there were also moments of victory and happiness. Some of my best memories include receiving a book award for excellence and a kind gesture from a domestic student who gave me warmer clothes for my first winter in Canada. However, such positive stories are often glossed over in academic studies, which tend to focus more on the problems international students face (Ankomah, 2022a; Ankomah, 2022b). This shows a gap in the existing research. While there are some examples of positive experiences, like supportive supervisors (Gao, 2019) or finding a job (Ammigan, 2019), there is not much in the extant literature about international students being encouraged to dream. Some AI scholars (e.g., Cockell, McArthur-Blair, 2012; Cooperrider et al., 2008) emphasize the crucial role of positive dreaming in shaping future outcomes. They advise policymakers and practitioners to inspire the development of policies, programs, and practices that encourage positive dreams about the future, as these hopeful visions can drive the actions and investments needed to achieve meaningful and desired change. In my doctoral research, I wanted to fill this gap. Using AI, I aimed to give IMS a chance to dream about the kind of international graduate student experience they think is possible. This research sheds light on the hopeful views of these students, seeking to influence policies and programs at Canadian universities. By focusing on what motivates international students even in tough times (Ankomah, 2022a; Ankomah, 2022b) and giving them space to dream and imagine a bright future, I aimed to find positive moments that are important for policy and practice, thus adding to the literature on international students. The main goal is to encourage institutions to consider the dreams and positive voices of IMS to develop policies and practices that support international students in their academic paths.

To sum up, my own experiences as a former international student greatly influenced my research. While recognizing the struggles international students face, I also want to celebrate their moments of joy, success, and the power of dreams. Through this study, I hope to improve our understanding of the international student experience, highlighting the importance of focusing on positive experiences, including the dreams these students have about what is possible in enhancing their schooling experience.

2. Literature Review

Some research has briefly mentioned the assistance that educational institutions offer to international students, such as providing airport welcome services or creating chat groups (Ammigan, 2019; Chen, Zhou, 2019; Klodt, 2019; Zhang, Zhou, 2010; Zhou et al., 2017). However, there is limited discussion about these students' positive experiences. This review focuses on four key positive aspects: enhanced thinking skills, job training, forming friendships, and enjoyment of classes.

Cultivating Critical Thinking Skills Through Engaging Learning

Many international students appreciate the innovative learning methods they encounter abroad, which often enhance their critical thinking skills (Alqudayri, Gounko, 2018; Ankomah, 2022a; Ankomah, 2022b; Clerehan et al., 2012; Zhou et al., 2017). Research describes critical thinking as involving in-depth analysis, questioning, and understanding diverse perspectives to inform decision-making (Ankomah, 2022a; Ankomah, 2022b; Sensoy, DiAngelo, 2017). For instance, Saudi Arabian students in some studies appreciated their courses for challenging and encouraging critical thinking (Alqudayri, Gounko; 2018; Clerehan et al., 2012). This experience was notably different from their previous education in Saudi Arabia. Similarly, participants from China studying in Canada appreciated these new learning methods (Zhou et al., 2017). They found them challenging but rewarding for deepening their understanding and enhancing their active participation in their own learning.

Career-Readiness Training

Although there is limited research in this area, some noteworthy studies are available, including an investigation of a unique course at a Canadian university designed to teach international students presentation and teaching skills, which participants appreciated (Guo, Chase, 2011), and another study that highlighted an international student who greatly valued a course that included work experience, which helped her understand the Canadian work environment (Zhou et al., 2017). These job-readiness courses can be crucial in preparing IMS for future employment and may provide opportunities to earn income while studying. The positive narratives from these experiences are crucial in advancing international education, and it is vital that scholars emphasize how students appreciate and feel about these programs to better inform policy.

Forming Friendships and Building Belonging

Relocating to a new country is challenging, but many international students manage to form friendships and find a sense of belonging abroad (Ammigan, 2019; Ammigan, Jones, 2018; Amos, Lordly, 2014; Ankomah, 2022a; Ankomah, 2022b; Gao, 2019). Simple acts like sharing meals can foster closeness and reduce homesickness (Amos, Lordly, 2014), thereby building strong bonds. Personal narratives, including my own, underscore the significance of these friendships. I argue that to advance international education and enhance the experience of IMS, researchers should adopt strength-based approaches like AI to reveal what keeps IMS excited and focused on their studies despite the challenges.

Embracing the Learning Journey

Many students pursue overseas education for a prestigious degree (Ankomah, 2022a; Ankomah, 2022b; CBIE, 2018). Yet, they often discover that they also enjoy the overall learning experience in a resource-rich academic setting, including access to quality library facilities, advanced research labs, and high-speed internet access. A study found that international students in Australia cherished the entire educational journey, not just the final degree (Arkoudis et al., 2019). This indicates that for many, the experience of studying abroad encompasses more than just the end goal; it is also about enjoying the journey with access to excellent resources such as state-of-the-art technology, diverse cultural programs, and supportive academic services (Ankomah, 2022a, 2022b).

Final Thoughts: Highlighting Positive Experiences

While many studies emphasize the challenges faced by international students, few acknowledge their positive experiences, which, unfortunately, are often overlooked. My previous research (Ankomah 2022a, 2022b) has shown that international students experience many joyful moments, including financial and emotional support from family, responsive instructors, employment opportunities, the satisfaction of learning, and engaging in extracurricular activities with colleagues and friends at university events. However, these positive experiences are not sufficiently discussed in the literature. This study aims to fill this gap. Using the AI approach and building on my previous work (Ankomah, 2022a, 2022b), this paper provides a platform for international students to share their dream quality IMS experience. Through this study, I encourage policymakers and practitioners to consider how they can incorporate participants' positive dreams into policies and programs, thereby enhancing the international student experience.

3. Methods

Theoretical and Methodological Framework

This study is part of my broader research, builds on a 2022 paper that explores the positive experiences of international master's students at a university in Southern Ontario, and employs Appreciative Inquiry (AI) as its methodological and theoretical framework. AI is a strengths-based approach that focuses on identifying and amplifying what works well within a given context. It was originally developed by Cooperrider and Srivastva (1987) and later refined by Cooperrider and Whitney (2005) and many other AI scholars, including David Bushe (2011). AI was chosen for this study because of its unique ability to shift the focus from challenges to positive experiences, allowing for a deeper exploration of what motivates international master's students, even during challenging times such as the COVID-19 pandemic. The framework's emphasis on envisioning an ideal future aligns with the study's goal of uncovering and highlighting the dreams and aspirations of these students, to inform policy and practice in international higher education. The study is guided by the research question: How do international students describe their ideal experience in terms of quality and learning experiences in a master's program?

Research Design

The research design follows the AI 4-D cycle: discovery, dream, design, and destiny (Cooperrider, Whitney, 2005; Cooperrider et al., 2008). The discovery phase involves identifying what is working well; the dream phase, on which this study focuses, explores the ideal experiences that participants envision. Design is about co-creating actionable plans to achieve these ideals, and destiny involves implementing and sustaining those changes. While my previous work addressed the discovery phase, this study focuses on students' dreams. Future publications will discuss the design and destiny phases.

Participant Recruitment and Sampling Strategy

Participants were recruited using snowball sampling, where initial participants referred others with relevant experiences (Creswell, 2013; Tilley, 2016). This study, conducted at a Southern Ontario university, involved 17 international master's students from seven different programs. While snowball sampling was effective in reaching a specific group of international students, it posed a risk of selection bias (Cohen, Arieli, 2011). To mitigate this, efforts were made to diversify the participant pool by declining several interested applicants from a single program and encouraging referrals from underrepresented programs. Despite its limitations, snowball sampling proved to be an economical and efficient approach, particularly during the COVID-19 pandemic (Ankomah, 2022a; Ankomah, 2022b).

Data Collection Procedures

Data collection was conducted online using the Microsoft Teams platform due to COVID-19 restrictions, providing flexibility, cost-effectiveness, and participant familiarity (Ankomah, 2022a, 2022b; Creswell, 2013; Salmons, 2012). Two primary methods of data collection were used: semi-structured individual interviews and focus group discussions.

Semi-Structured Individual Interviews: Fourteen semi-structured interviews were conducted, each guided by open-ended questions designed to explore participants' ideal learning experiences. From the primary research question, the following secondary questions were asked: (1) *What would be your dream international master's student experience in your program?* (2) *What kind of educational experience should a Master's program offer international graduate students?* and (3) *How would you describe exceptional/quality learning experiences in a Master's program?* Prompts such as "Please, tell me why this experience will be important for the development of students" and "Please, tell me more about what you mean when you say that ..." were used to encourage participants to share their stories in greater depth. These questions were shared via PowerPoint during the sessions to ensure clarity and focus. Interviews were recorded, transcribed, and subjected to member checking to ensure accuracy (Cope, 2010; Flynn et al., 2016).

Focus Group Discussions: Three focus group discussions were conducted with a total of 16 participants, including 13 who had previously participated in the individual interviews, and an additional 3 who joined specifically for the focus groups. Scheduling conflicts prevented the 14th individual interview participant from joining the focus group discussions. Each session lasted approximately 90 minutes. The same questions used in the individual interviews were repeated in the focus groups to validate the consistency of responses across different settings and to foster a collaborative environment where participants could elaborate on their thoughts through group dialogue. These discussions provided a space for participants to build on each other's ideas, aligning with AI's emphasis on collective knowledge creation (Cooperrider, Whitney, 2005; Flores, Alonso, 1995). Debriefing sessions followed each focus group to summarize discussions and address any concerns (Sim, Waterfield, 2019). During the interviews and focus groups, video cameras were initially used to establish rapport before being turned off to protect confidentiality. The consistent use of the same questions in both settings ensured that data was triangulated effectively, providing a comprehensive understanding of the participants' experiences and aspirations.

Data Analysis Process

The data analysis process involved several steps to ensure a thorough and systematic interpretation of the collected data. After each interview and focus group session, transcripts were downloaded from Microsoft Teams for editing. I reviewed and edited each transcript to ensure accuracy, particularly given the challenges posed by different accents and the limitations of automatic transcription software. The cleaned transcripts from the individual interviews were then sent back to participants for member checking. All interviewees participated in this process, with only one participant making minor corrections to two grammatical errors. Focus group transcripts

were not sent for member checking because the aggregated data were reviewed and refined during debriefing sessions, where participants provided necessary additions and revisions.

To organize and analyze the data, I used NVivo, a qualitative data management software. Familiar with the software, I coded the data to identify keywords, patterns, and similar terms (Cope, 2010; Welsh, 2002; Williams, Moser, 2019). NVivo was instrumental in managing and organizing the data efficiently, allowing for easy retrieval and merging of related codes. Through this process, six key themes emerged, which were then further refined and analyzed outside of NVivo in Microsoft Word. This approach aligns with a study which emphasized that while software aids the process, it does not replace the researcher's role in interpreting data (Basis, 2003). Throughout the analysis, I cross-referenced the themes with relevant literature and participant first-hand accounts to provide a rich, contextually grounded interpretation and to connect the findings with broader educational policy and practice (Bergmark, Kostenius, 2018; Kottler, Sharp, 2018).

Ethical Considerations

Ethical considerations were a top priority in this study. Adhering to the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (Panel on Research Ethics, 2018), I ensured that participants' confidentiality, privacy, and rights were protected at all stages of the research. Pseudonyms were used for all participants and the institution to maintain anonymity. Due to COVID-19 restrictions, the Research Ethics Board granted clearance for me to obtain verbal consent from participants. Throughout the study, participants were reminded of their right to withdraw at any time without penalty. To further protect confidentiality, all personal data and audio recordings have been deleted, and paper documents have been shredded. The transcripts, marked only with pseudonyms, are being securely retained as electronic files on a password-protected computer to which only I have access. These electronic files will be retained for 7 years before being confidentially destroyed.

Researcher Reflexivity

As a former international student, my personal experiences have likely influenced my research focus, the way I interacted with participants, and how I interpreted their narratives. My background in navigating similar educational environments gave me insights into the challenges and opportunities faced by international students, which may have shaped the study's design and outcomes. I acknowledge that this positionality may have introduced biases, but it also provided me with a unique perspective to deeply understand the participants' experiences and aspirations. To control for potential bias, I employed strategies such as member checking, where participants reviewed their interview transcripts to ensure accuracy and authenticity. Additionally, I engaged in continuous self-reflection throughout the research process, regularly questioning how my own experiences might influence the interpretation of data. These measures helped to ensure that the findings were grounded in the participants' voices, rather than being overshadowed by my own perspectives.

4. Findings

In this section, I present the findings derived from both the individual interviews and focus group discussions. Six key themes emerged, each corresponding to the research question, which sought to understand participants' ideal international student experience in terms of quality and learning.

Equitable Tuition and Enhanced Funding: A Stand for Justice

A significant concern expressed by participants was the disparity in tuition fees between domestic and international students. Many voiced a strong desire for more equitable tuition structures, reflecting the financial strain that these fees impose on them and their families. Sahas, an individual interview participant, shared, "the learning here is great, but the much higher tuition fees for international students feel unfair. We're looking for equal chances." This sentiment was echoed by participants in Focus Group 2, with one expressing their frustration: "to be honest, I don't really understand why we're getting the same kind of education as domestic students, but we have to pay tuition over and above what they pay. It will be a dream come true for many international students when they finally get the chance to pay what domestic students pay for the same quality education." In the same group, another participant articulated a similar aspiration, saying, "my dream would be for international students to pay the same tuition as domestic students. However, if that is not possible, the tuition should be reduced to lower the financial burden on students who are already far from home. The ideal situation or dream would be paying the same as domestic students."

The issue of funding was also a major concern. Amogha expressed her dissatisfaction: “many international students, including me, are not satisfied with the amount of tuition we pay in comparison to those paid by domestic students for the same service. With such higher tuition, I expected better care and assistance from the program and institution. Therefore, even if they will not reduce the fees, they should give us significant funding, scholarship, or bursary opportunities to help us cover food, rent, and other living expenses.” In addition to these concerns, participants also emphasized the importance of expanding scholarship opportunities. A Focus Group 3 participant captured the feelings and dreams of the group: “I wish that international students were given the same opportunity as our domestic counterparts to compete for external scholarships such as SSHRC and OGS. In some cases, international students don’t qualify at all, and in other instances, there are only one or two slots for international students.” The desire for equitable tuition and expanded funding opportunities was a consistent theme across all discussions. Participants called for an education system that recognizes their financial contributions and provides them with the necessary support to succeed. As Sahas succinctly put it, “it is a bigger challenge we face; hopefully, our leaders can hear our cry for financial support.”

Bridging Theory and Practice: The Pursuit of Experiential and Practical Learning

Participants consistently expressed a strong desire for a balanced integration of theory and practical application in their courses. They emphasized the importance of experiential learning, which they believed was essential for their academic and professional development. In an individual interview, Jaival, an MBA student, articulated this need clearly: “I wish the theoretical aspect of our instruction were matched with practical content. Things have to be hands-on, so we can graduate with knowledge and skills that will help us become productive from day one on the job.” This sentiment was shared across various disciplines, with participants expressing a common aspiration for more opportunities to apply their learning in real-world contexts. Education students, in particular, highlighted the gap between theory and practice in their program. A participant from Focus Group 2 shared her dream experience:

In my program, we don’t have co-op and internship opportunities, so my dream experience in this master’s program would be to receive better career development support. It doesn’t have to be complicated. My Master of Education program could arrange with local schools for us to visit to see how things are done in the Canadian classroom. There, we can observe how teachers are practicing some of the theories we have been learning in our lectures.

This need for hands-on experience was echoed by another participant, an MA in Sociology student in the same focus group, who added: “we need experiential learning to be very successful in our academic and professional development. The program should prioritize getting international students industry experience, which will compensate for the higher fees we pay.”

The stories about hands-on experience emerging during the dream phase of the data collection were rich and varied, with every participant sharing this aspiration. It was evident that international students, being new to the institution and the industries far and near, felt the classroom should always have a practical component to build their confidence and develop industry-ready skills for their future professional and educational endeavours within the Canadian context. Vihas, another participant in the MBA program, emphasized the importance of balancing theory and practice from the beginning of the program. In his individual interview, he stated,

My first dream is that the courses are challenging in both theory and practice. I found the first semester courses too theoretical, which did not help many students enjoy the program. I understand that the theoretical aspect is critical. Still, at the same time, it becomes boring when all that students are doing is trying hard to cram a lot of theoretical information with no practical component to stimulate the other side of the brain.”

Professional Development: A Call for Comprehensive Support

Participants highlighted the urgent need for enhanced professional development, particularly in acquiring soft skills essential for career success. In Focus Group 3, a participant emphasized, “developing comprehensive soft skills, including resume writing and interview preparation, in workshops sanctioned by the program and institution could be the key to helping international students compete effectively in Canada.” Many participants felt that the current support was insufficient, lacking depth and regularity. Another participant in Focus Group 2 expressed similar concerns: “I wish the program gave international students more soft skills training to help remove the fear most of us have in putting resumés and cover letters together. We’re often left with

unanswered questions, unsure if we'll succeed in interviews." This comment highlights the anxiety many international students feel due to unfamiliarity with the Canadian job market and the lack of tailored guidance. Deng, an interview participant from China, shared how a specialized workshop had boosted his confidence in speaking English, noting, "I wish such workshops were organized daily." This underscores the value of targeted professional development, particularly for non-native speakers. Amogha, another participant, stressed the importance of industry-related workshops, noting that these opportunities are often reserved for co-op students, leaving others without access: "It's painful for students who can't afford co-op fees to miss out on these critical opportunities. Employers are interested in hiring students familiar with their organizations through these workshops." Overall, participants stressed the need for more frequent, tailored professional development opportunities to better prepare them for the competitive Canadian job market and help them build valuable industry connections.

Extracurricular Activities: A Pathway to Inclusivity and Connection

Participants emphasized the importance of extracurricular activities in enhancing their sense of belonging and connection to the broader community. A Focus Group 2 participant shared, "I want to experience new things and share more of mine. Music, dance, sports—they're ways to connect, right? I want to use them to get to know Canadian students and share my world." The group suggested regular social events, like games and sports, to bring international and domestic students together and make international students feel more integrated into the Canadian community. In the individual interview, Abhas echoed this sentiment, saying, "My dream international student experience would be for the program to effortlessly organize social events that can connect international students to domestic students and local community members." He proposed activities like regular visits to Canadian families and cross-cultural events to foster deeper connections and mutual understanding. Participants also highlighted feelings of social isolation. One participant from Focus Group 1 noted, "Even though we're on the same campus, it feels like there's a wall between us. I'm around other MBA students, but I hardly talk to students from other programs. We're close, but it feels like we're worlds apart." This was supported by another Focus Group 1 participant who added, "There are no mixed social events for undergraduate and graduate students, which I believe doesn't promote well-being. My dream is to participate in events that bring all students together to socialize and enjoy student life." Abhas summed it all up in an interview:

I envision the creation of several extracurricular activities that promote interactions between domestic and international students and local community members. I believe that studies are not just about what happens in the classroom but also about building excellent rapport among everyone involved in the school. Our satisfaction and success are very important, and as an international student, I think feeling a part of the community is crucial to my happiness in the program.

Empowering the Student Voice in Academic Trajectories

Participants also expressed a strong desire for more control over their educational choices and for their voices to be heard in institutional decision-making processes. Eve, an individual interview participant, emphasized this need, saying, "We aren't here to just receive; we aim to shape, direct, and forge our own paths. The master's journey should be a partnership, where our voices guide our academic and professional paths." A participant in Focus Group 1 also noted, "As international students, we bring diverse perspectives that can enrich the academic environment. I dream of an institution where our voices are not just heard but are integral in shaping policies and programs that affect us directly." Another participant, Ranajay, articulated his vision during an interview, stating, "My dream is to see a system where students are genuinely involved in decision-making processes. We are the ones experiencing the challenges and opportunities firsthand, so it makes sense for our voices to be central in discussions about our education." In addition, participants also expressed the need for their feedback to be actively sought and valued. They dreamt of an academic environment where regular consultations with students are the norm, allowing them to contribute to the continuous improvement of their programs. As one participant put it during a focus group discussion, "If we are to succeed, our leaders must recognize that we are not just recipients of education; we are active contributors. Our insights should be used to tailor our academic trajectories better to fit the evolving demands of the global job market."

Balancing the Books and the Budget: The Importance of Employment Opportunities for International Graduate Students

Participants highlighted the importance of employment opportunities, particularly on- and off-campus jobs, as essential for their financial sustainability and professional development. Vihas, reflecting on the financial stress faced by international students, shared,

International students spend a lot of money on tuition and other expenses. Therefore, to reduce the financial stress on us, it would be appreciated if the program and institution could help international students find on-campus employment, such as teaching, research, and graduate assistant positions. I know that these positions would not generate much money, but they may help offset accommodation costs.

Praful also shared his vision for strengthening career services to support international students better:

I dream of a day when the career zone is revitalized better to help us with resumé and cover letter preparations. As international students, we are new to the area and the country, and so we are unfamiliar with the employment landscape. I hope that institutions will work collaboratively to assist us in finding on and off-campus jobs. It would be a significant step toward helping us get our job application documents sorted and ready to go.

The desire for fairness and equal opportunities was also a recurring theme in the dreams of participants. Jaival expressed his frustrations about the difficulties in securing on-campus jobs, saying:

I dream of a system where international master's students have equal opportunities for on-campus employment and co-op positions, competing fairly with domestic students. We are new to the institution, locality, and culture, and it would be a dream to have leaders advocate for us every step of the way. So far, most of my friends and I have struggled to secure on-campus employment. We've applied repeatedly, but it seems like international students in MBA programs are often overlooked, which is why many of us end up working in department stores in the city.

These dreams reflect the participants' deep need for institutional support in accessing employment opportunities, which they see as vital not only for financial stability but also for gaining relevant Canadian work experience in their areas of expertise to enhance their future career prospects significantly.

5. Discussion

In this discussion section, I contextualize the findings within the international higher education literature and analyze their implications for policy and practice.

Equitable Tuition and Enhanced Funding: Implications for Fairness and Inclusion

The financial disparity between domestic and international students is significant, with international students often paying three times more in tuition than their domestic counterparts ([Statistics Canada, 2020](#)). This substantial difference is frequently justified by institutions as necessary to compensate for the lack of government subsidies available to international students and to make up for cuts in government funding for higher education ([Usher, Balfour, 2023](#)). However, research indicates that these tuition fees far exceed the actual cost of education for international students, raising serious concerns about fairness and equity ([Ankomah, 2022a](#); [Calder et al., 2016](#); [Klodt, 2019](#)). Participants in this study consistently advocated for a more equitable tuition structure that reflects the true costs of their education. From this study's data, a reduction in international tuition fees to levels comparable to those of domestic students – adjusted to exclude government subsidies but covering the operational costs – would be a significant step toward addressing these disparities. This approach would not only alleviate the financial pressure on international students but also foster a more inclusive academic environment, enabling all students to thrive without the burden of excessive financial costs imposed to compensate for funding gaps in host institutions and governments.

The reliance on international students as a primary revenue source has become a global trend, driven by reductions in public funding for higher education ([Qureshi, Khawaja, 2021](#); [Sanchez-Serra, Marconi, 2018](#)). In Canada, as government funding per full-time student declined by 19 % between 2009–2010 and 2015–2016, revenue from international students nearly doubled, effectively offsetting the shortfall caused by the reduction in public funding ([Usher, Balfour, 2023](#)). This pattern is not unique to Canada, as similar trends have been observed in Europe and the

United Kingdom, where institutions increasingly rely on international students to fill funding gaps (Cantwell, 2019; Qureshi, Khawaja, 2021; Sanchez-Serra, Marconi, 2018). However, this commercialization of education, where international students are viewed primarily as revenue generators, undermines the principles of equity and fairness in higher education. Congruent with the participants' dreams of tuition cuts and increased funding opportunities, addressing these disparities is crucial for creating a fairer, more inclusive educational landscape that acknowledges the contributions and needs of international students.

Bridging Theory and Practice: The Need for Experiential Learning

The participants' desire for a curriculum that integrates theory with practical application is echoed by scholars who advocate for experiential learning models (Arnesson, Albinsson, 2017; Radović et al., 2021). The demand for practical, hands-on experiences reflects a global trend towards education that prepares students for real-world challenges. Several studies emphasize how international students crave a balance between theory and practice (Ankomah, 2022a; Ankomah, 2022b; Calder et al., 2016; Gao, 2019; Guo, Chase, 2011). Research on Chinese international graduate students similarly found that these students yearned for a curriculum that gave equal weight to theoretical and practical learning (Li, Tierney, 2013). This aligns with existing literature, which highlights that international students often seek education abroad specifically to gain access to experiential learning opportunities that may be lacking in their home countries (Ankomah, 2022a, 2022b; Calder et al., 2016; CBIE, 2018; Klodt, 2019). Participants from MBA and material physics programs, for example, expressed appreciation for the experiential components already embedded in some of their courses, but they also articulated a collective dream for every course to include a practical element. Conversely, the lack of such opportunities has been linked to negative outcomes. Some international students withdrew from their PhD programs due to the absence of practical applications of the theories they were studying (Gao, 2019). Participants in this study consistently emphasized the importance of experiential learning, viewing it as crucial for enhancing employability and ensuring that graduates are equipped to navigate complex professional environments (Ankomah, 2022a; Ankomah, 2022b). Addressing these aspirations and integrating experiential learning across all courses is a necessary response to the evolving needs of an increasingly diverse and global student body, making it a crucial pedagogical improvement. By doing so, institutions can enhance the academic experience for international students while better preparing them for the professional challenges they will face after graduation.

Professional Development: Addressing the Skills Gap

While participants appreciated the sparse workshops that offered professional development and skill training on resume writing, interview preparation, and other career-related skills, they expressed a strong desire for more comprehensive and consistent support. In the context of this study, soft skills refer to essential non-technical abilities such as effective communication, networking, adaptability, and the ability to navigate the Canadian job market. These skills are crucial for international students, many of whom come from educational systems and labour markets where securing employment did not require the same level of rigorous resume crafting or interview preparation needed in Canada. This gap highlights the importance of tailored professional development programs that can equip international students with the tools they need to succeed in a new cultural and professional environment. The findings align with existing literature that underscores the critical role of professional development in bridging the gap between academic achievements and professional aspirations. For example, Guo and Chase (2011) highlight how targeted courses at Canadian universities have been effective in equipping international students with the necessary presentation and teaching skills, enhancing their confidence and competence. Similarly, Zhou et al. (2017) document the value of internships and work-integrated learning opportunities in helping international students understand the Canadian work environment. The participants' dreams of more robust and accessible professional development opportunities underscore the need for institutions to expand these offerings. By doing so, institutions can better prepare international students for the challenges of the Canadian workplace, thus contributing to the broader efforts to improve the quality and inclusivity of international education (Ankomah, 2022a; Ankomah, 2022b; Guo, Chase, 2011; Zhou et al., 2017).

Extracurricular Activities: Enhancing Integration and Community Building

The desire for extracurricular activities that facilitate cultural exchange and community building reflects a broader recognition of the importance of social integration for international students.

Participants, particularly those in international student-only programs, expressed a strong need for activities that bridge the gap between them and their domestic counterparts, given that their programs often segregated them from domestic students. They dreamt of participating in sports, music festivals, potlucks, and other social events that would not only allow them to forge friendships but also foster cultural exchanges and a sense of belonging (Ammigan, Jones, 2018; Ankomah, 2022a, 2022b; Klodt, 2019). The literature reveals that a strong sense of belonging is closely linked to the mental health and overall well-being of international students (Chen, Zhou, 2019), and also highlights the importance of extracurricular activities in creating a more inclusive and cohesive campus environment (Zhou et al., 2017; Zhou, Zhang, 2014). The findings of this study underscore the importance of creating spaces where international students can engage meaningfully with their peers and the broader community, thereby enhancing their academic and social experiences.

Participants in this study also highlighted the limitations of relying solely on relationships with fellow nationals, noting that such connections, while valuable, do not provide the full breadth of experiences they sought in their international education. Instead, they advocated for structured, institution-led events that would allow them to interact with a wider range of individuals, including undergraduates, PhD students, and local community members. These activities, they argued, are essential for reducing feelings of loneliness and for helping international students feel welcomed and accepted within the institution and the local community. Higher education institutions must intentionally create a sense of belonging for international students through year-round programming and outreach initiatives (Ammigan, 2019). By prioritizing such initiatives, institutions can significantly enhance the overall satisfaction and well-being of their international student population, ultimately contributing to their academic success and personal development.

Empowering the Student Voice: Implications for Institutional Decision-Making

Empowering students by involving them in decision-making processes is critical for fostering a sense of ownership and partnership in their educational journey. Participants in this study expressed a strong desire for their voices to be heard and their input to be integrated into decisions that directly affected their academic and professional paths (Ankomah, 2022a; Ankomah, 2022b). They dreamt of a more inclusive and collaborative educational environment where their needs and aspirations were not only acknowledged but actively considered by institutional leaders. This dream is underscored by a powerful argument: “The most important way for universities to discover how to serve international students best is by seeking the information directly from the students” (Klodt, 2019, p. 98). Such an assertion aligns with the participants’ call for enhanced involvement in decision-making processes, emphasizing that the integration of student voices is not merely beneficial but essential for the development of effective and responsive educational policies.

The literature confirms the importance of student-centered approaches in higher education and how “student outcomes will improve, and school reform will be more successful if students actively participate in shaping it” (Mitra, 2004, p. 652). This study’s findings resonate with Mitra’s (2004) perspective, as participants articulated a deep-seated need for their voices to guide institutional decisions, especially those affecting their academic and professional trajectories. The participants’ dreams for a more participatory role in institutional governance reflect a trend towards the democratization of education, where student input is seen as vital for fostering a sense of belonging and enhancing overall student satisfaction (Ankomah, 2022a; Ankomah, 2022b; Klodt, 2019; Mitra, 2004). Moreover, participants proposed practical strategies to ensure their voices are heard, such as informal visits by leaders, designated office hours for student consultations, and direct communication channels like email. These suggestions are consistent with the literature, which advocates for the use of diverse methods to capture and incorporate student feedback into institutional decision-making processes (Ammigan, Jones, 2018; Ankomah, 2022a; Bergmark, Kostenius, 2018).

Employment Opportunities: Supporting Financial and Professional Needs

The importance of employment opportunities for international students is well-documented in the literature (Ankomah, 2022a, 2022b; Ammigan, Jones, 2018; Calder et al., 2016). For many international students, securing on- and off-campus jobs is essential for their financial survival and plays a critical role in their professional development and integration into the host country’s workforce. Participants in this study highlighted how employment opportunities provided them with much-needed financial support and a sense of independence, as well as valuable Canadian work experience that could enhance their future employability (Ankomah, 2022a; Ankomah, 2022b). Despite the gratitude expressed for the opportunities they received, participants also dreamt of more structured

and accessible employment pathways, emphasizing the need for institutions to prioritize the creation of meaningful employment opportunities that align with their academic and career goals. The literature supports the participants' dreams, as scholars emphasize the challenges international students face in securing employment and the resulting stress, anxiety, and depression when these opportunities are limited (Altbach, Knight, 2007; Ammigan, 2019; Calder et al., 2016).

Additionally, participants in this study expressed the desire for their institutions to take a more proactive role in facilitating employment opportunities, echoing the calls in the literature for institutions to retool career services, create more on-campus jobs, and collaborate with local businesses to offer part-time employment (Calder et al., 2016; Zhou et al., 2017). These suggestions are consistent with findings that indicate international students who can support part of their cost of living through employment experience greater satisfaction and a stronger sense of agency (Ankomah, 2022a; Ankomah, 2022b; Stevenson, Bland, 2017). The findings of this study also align with the research on the benefits of employment for international students, suggesting that by addressing these employment needs, institutions can significantly enhance the overall well-being and success of their international student population.

6. Recommendations and Implications for Enhancing International Higher Education and Student Experience

To provide a top-quality educational experience for international master's students, the findings of this study highlight several key recommendations that can guide policy and practice. Educational institutions and policymakers should first recognize international students as valued members of the academic community, rather than merely as revenue sources. This recognition should be reflected in equitable tuition fees and expanded scholarship opportunities, which can alleviate the significant financial burden these students often face. The implication here is that by addressing financial barriers, institutions can move away from a model where high tuition disproportionately disadvantages academically capable students who are priced out of the prestige of international higher education. This change will not only support student well-being but also foster a more inclusive academic environment that will attract a diverse and talented student body.

Incorporating hands-on learning into the curriculum is another critical recommendation, as it allows students to apply theoretical knowledge to practical situations, thereby enhancing their employability and overall educational experience. This approach has broader implications for how institutions design their programs, emphasizing the need for curricula that bridge the gap between academic theory and real-world application. By doing so, international higher education institutions can better prepare international graduates for the complexities of the modern workforce, making them more competitive and adaptable in global job markets.

Furthermore, institutions should prioritize comprehensive professional development, including the teaching of essential soft skills such as cultural awareness, time management, and problem-solving. These skills are crucial for international students to navigate and succeed in competitive job markets like Canada's. The implication is that by equipping students with these competencies, educational institutions not only enhance individual student success but also strengthen their own reputation as providers of well-rounded, job-ready international graduates.

In addition, extracurricular activities play a vital role in fostering connections and a sense of belonging among students. International higher education institutions should actively promote and organize regular events that encourage cultural exchange and interaction between international and domestic students. The implication is that such initiatives will help build a more integrated and cohesive campus community, reducing feelings of isolation among international students and bridging the knowledge gap between international and domestic students. This will, in turn, promote a more inclusive, collaborative, and supportive academic and social environment.

Also, empowering students by giving them a voice in their educational journey is crucial. Institutions should seek student input in curriculum design and decision-making processes. This will enhance the relevance and engagement of academic programs and also strengthen the relationship between students and their institutions. The broader implication is that when students feel heard and valued, they are more likely to succeed academically and contribute positively to the university community.

Finally, enhancing access to on- and off-campus employment opportunities, such as teaching and research assistant positions, is essential for supporting the financial and professional needs of

international graduate students. This recommendation has the implication of addressing both financial pressures and the need for relevant work experience, which are critical for the long-term success of international students in their host countries.

7. Conclusion

In answering the research question—“How do international students describe their ideal experience in terms of quality and learning experiences in a master’s program?”—this study, rooted in Appreciative Inquiry, has highlighted the aspirations and ideal experiences of international master’s students at the University of Southern Ontario in Canada. These students seek a more hands-on, integrated, and practical education, where classroom learning connects directly with real-world applications. Their stories reveal the strong potential of an education system that truly prioritizes students’ needs, emphasizing the importance of equitable tuition for all students, regardless of nationality, alongside fair funding and meaningful cultural exchanges. The insights from this study present both a challenge and a clear direction for academic institutions, policymakers, and practitioners. There is an urgent need to reshape the academic environment to be more welcoming, responsive, and aligned with the unique aspirations of international master’s students. This change will not only improve individual student experiences but also strengthen global connections, foster mutual respect, and advance academic research. As we move forward, it is essential to listen to and amplify the positive voices and dreams of international graduate students. Their visions offer a blueprint for a more inclusive, innovative, and forward-looking era in international higher education.

8. Strengths and Limitations

This study has several strengths that contribute to its overall value and relevance. Building on my previous dissertation research and a related study that covered the discovery phase, this study provides a well-rounded exploration of international master’s students’ experiences. The focus on the dream phase of the Appreciative Inquiry framework allows for an in-depth understanding of the ideal educational experiences these students envision. This approach is part of a broader, ongoing investigation that also touches on the design phase in another manuscript (in preparation), ensuring continuity and depth in exploring international student experiences. The combination of individual interviews and focus group discussions enhances data richness and triangulation, providing a comprehensive perspective on the aspirations of international students at a specific Canadian university.

However, the study also has its limitations. The use of snowball sampling, while effective in reaching a targeted group of international students, may have introduced selection bias, potentially limiting the diversity of perspectives represented. Additionally, since the study is focused on a single institution, the findings may not be fully generalizable to other contexts. Furthermore, while this study emphasizes the dream phase, which explores students’ aspirations, it does not fully address the challenges they face or the implementation of these dreams, as would be covered in the design and destiny phases of AI. Future research should aim to include a broader range of institutions to enhance the generalizability of the findings. Additionally, exploring the complete AI 4-D cycle, including the design and destiny phases, would provide a more comprehensive understanding of how international students’ aspirations can be realized and sustained in practice. Longitudinal studies that track the impact of these ideal experiences on student success and institutional practices over time would also be valuable in assessing the long-term effectiveness of the recommendations derived from this research.

9. Declarations

Ethics approval and consent to participate

The Research Ethics Board of the University of Southern Ontario, Canada, granted ethics approval. All participants provided informed consent.

Consent for publication

Participants consented to the publication of any results arising from their participation in the research.

Availability of data and materials

All data are available in a password-protected file maintained by the researcher.

Conflict of interest statement

The manuscript's author declares no conflicts of interest and confirms that all consulted literature is duly credited in the text and reference list.


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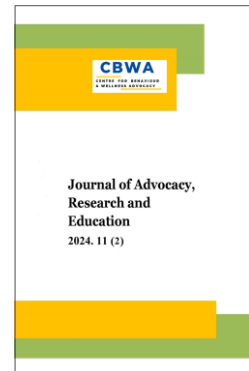
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Impact of Financial Inclusion on Human Development Indicators for Women in Mexico

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Abstract

Financial inclusion has become a strategic factor to reduce poverty and income inequality and achieve sustainable economic growth. The objective of this work was to study the impact of financial inclusion (access, owning, and usage of financial services dimensions) on women's human development indicators (health, education, and standard of living) in the Federal States of Mexico. The study sample was made up of 448 observations during the 2007-2020 period, that is, 14 units of analysis per Federal State. The econometric results showed that access to financial services increases the Human Development Index [HDI] and the education sub-index for women. The owning of financial products improved the HDI and its education, health, and standard of living components for women; credit financial instruments, in particular, enhanced human development indicators for women. The usage of the financial services component increased the HDI as well as the education and standard of living sub-indices. This study has practical implications for those responsible for designing and approving public policies and regulations in Mexico regarding financial inclusion and human development from a gender perspective.

Keywords: Financial Inclusion, Gender, Human Development, Inequality, Mexico.

1. Introduction

Financial inclusion has become the dynamic driving force for sustainable economic growth, inequality and poverty reduction (Banerjee, 2020; Dai-Won et al., 2018; World Bank, 2021). Financial inclusion constitutes a fundamental pillar for achieving the United Nations Millennium Development Goals (Chibba, 2009). A higher access to formal financial services reduces the financial vulnerability of the population living in poverty conditions and contributes to smoothing consumption (Chen, Jin, 2017; Tita, Aziakpono, 2017); therefore, financial inclusion is a means to reduce inequality gaps in health, poverty and unemployment (Arner et al., 2020). Furthermore, financial inclusion provides increased resilience by offering an avenue to insure against negative economic shocks (Sakyi-Nyarko et al., 2022).

Financial inclusion is defined as access to different financial products and services or as the proportion of companies and people that use these services (Kim, 2016). By contrast, financial

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exclusion reflects the inability of some social groups to access the financial system of a country, which leads to lower levels of investment due to the absence of credit and the consequent need for people to resort to the informal sector to obtain loans with very high interest rates (Carbó et al., 2005).

The COVID-19 health crisis has generated disruptions in economic and social dynamics, which has led to an increase in the gender gap that already existed in terms of financial inclusion. According to figures from Global Findex (2020), 57.4 % of men have a bank account, compared to 51.4% of women, which means that 304 million women in Latin America do not have an account. The factors that generate this financial gap based on gender refer to the fact that women have lower levels of financial education compared to men (Grohmann, 2016), or because of cultural differences (Organisation for Economic..., 2012).

Despite the fact that Mexico is one of the 15 largest economies in the world and has a medium-high level of human development, the country has a significant lag in terms of financial inclusion, given that more than half of its population does not have access to financial services, placing it in the 4th lowest position in Latin America, only above countries such as Haiti, Nicaragua and El Salvador (World Bank, 2021). This situation is even more critical in the semi-urban and rural areas of the country, that is, 75 % of municipalities in Mexico do not have physical access points to financial services within a radius of 2 kilometers, while 95 % have fewer than 500 pesos daily purchases are made in cash (United Nations..., 2021). In addition, the Mexican population has a preference for the use of cash over other financial instruments, which is why Mexico is considered a country with a high level of financial exclusion (Demirgüç-Kunt et al., 2018b).

Regarding the gender gap in Mexico, 65 % of women have at least one financial product, while men register 72 %. In addition, the largest gap is registered in rural populations, where only 36 % of women have a savings account, and only 0.7 % participate in investment funds (National Institute of Statistics and Geography [INEGI], 2018). According to recent data from the National Survey of Financial Inclusion [ENIF] 2021, between 2018 and 2021, the COVID-19 pandemic had significant effects on the gender gap, which increased by 11.2 %, particularly the owning of a formal savings account: it registered 56.4 % for men and 42.6 % for women in 2021. The same effect was observed in having insurance, which fell from 23.1 % to 16.0 % in women and from 28.0 % to 26.1 % in men (INEGI, 2022).

Women still earn less, learn less, own less, and exercise less economic power compared to men. This leads to negative consequences that affect their health, schooling, job prospects, and economic independence (Hendriks, 2019). Women also face greater barriers in searching for sources of financing to carry out their entrepreneurial projects (Marlow, Patton, 2005), although the gender gap in having a formal credit showed progress between 2018 and 2021, decreasing by 2.1 % in favor of women (INEGI, 2022).

The objective of this research is to analyze the effect of financial inclusion in the dimensions of access, ownership, and usage of financial services in relation to human development indicators (health, education, and standard of living) of women from the Federal States of Mexico. The study sample is made up of 448 observations during the 2007–2020 period, that is, 14 elements of analysis per State in Mexico. This paper establishes a general research hypothesis: *“the greater financial inclusion on its dimensions of access, owning and usage, the higher indicators of human development for women in the States of Mexico”*.

There are few studies addressing the Mexican context; for example, Masino and Niño-Zarazúa (2020) conclude that the change from cash payments to electronic payments has a favorable effect on savings decisions, the reception of remittances, which in turn, generated important implications for household consumption and risk management decisions. Niño-Zarazúa and Copestake (2008) argue that the variation in the usage of financial services in a low-income region of Mexico City is attributed to differences in socioeconomic variables, such as gender, employment, education and housing situation.

Although the causal relationship between financial inclusion and social and economic development has been approached comparatively between countries and regions, there is no literature with a gender perspective at sub-national level for the case of Mexico. This study is a pioneer in addressing the impact of financial inclusion on the dimensions of the HDI at sub-national level, in a context characterized by high levels of inequality. Mexico has one of the most diverse and robust financial industries in Latin America and a strong presence in the Fintech sector; in 2018 the Fintech Law was enacted and in 2019 the CoDi payment platform began

operations, which are promoters of financial inclusion in Mexico. However, progress in attracting financial services is limited, while the credit penetration of GDP reached just 36.9 % in 2019, a lower figure than its peers in the region. The challenges the country faces in terms of financial inclusion refer to poor connectivity infrastructure, economic informality, and high service costs. In addition, the high rate of informality in the economy promotes the usage of cash, while around half of the employed population has an informal job (Deloitte, 2021).

A balanced panel data and the Generalized Method of Moments [GMM] technique are adopted to perform the econometric analysis. The results show that access to financial services, such as the number of mobile banking contracts, increases the HDI of women, while the number of correspondents and ATMs favor the education sub-index. Regarding the owning of financial services, the results suggest that savings deposits increase the HDI and the dimension of education; the number of time deposits has a positive impact on the health sub-index for women. Access to a mortgage loan increases the HDI and the education sub-index for the female gender. For their part, group credits have a positive effect on the HDI, as well as the education and health index for women. Women who have personal loans or payroll loans increase the HDI and the standard of living dimension. Car loans favor the standard of living indicator and the health index. In particular, credit instruments are the ones that favor human development indicators for women the most.

In relation to the usage dimension, it is evident that the number of savings deposit contracts increases the HDI for women, as well as the education and standard of living sub-indices; the number of debit card contracts has a positive impact on the education sub-index. These results lead to partial acceptance of the general research hypothesis.

This research contributes to different aspects of financial inclusion and human development. First, strategies and recommendations are identified to increase financial inclusion with a gender perspective. The rate of financial exclusion in Mexico remains one of the highest among OECD countries (Fozan et al., 2017). Second, as far as we know, it is the first comparative study in Mexico at the sub-national level during the 2007–2020 period, which analyzes the impact of financial inclusion dimensions (access, owning and usage) on strategic indicators of human development at the sub-national level. Third, the study has practical implications for those responsible for designing and approving public policies and regulations in Mexico regarding financial inclusion and presents a series of recommendations for the financial sector and local governments themselves to promote financial inclusion and human development from a gender perspective.

This paper is structured as follows. Section 2 develops the theoretical background and the study hypotheses. Section 3 describes the data, measures, and empirical methods employed. Section 4 reports and discuss the findings. The study concludes with a discussion of the implications and limitations of the research.

2. Theoretical Development

In 2015, the new 2030 agenda of the United Nations highlighted the importance of access to financial services in seven of the seventeen Sustainable Development Goals [SDGs], since it constitutes a mechanism to increase the formal economy, reduce banking risks and costs, create more jobs, increase financial stability and the effectiveness of monetary policy, and reduce poverty and inequality (Demirgüç-Kunt et al., 2018a). Previous literature shows that there is a positive relationship between banking and economic growth and the social welfare of the population of a country. However, when half of the population is not banked or does not have the knowledge or access to formal financial systems and services to save or request financing, economic growth and the eradication of poverty and inequality could be compromised, and this is a more distressing scenario in developing or emerging countries (Sharma, 2016).

For the World Bank, financial inclusion is the key factor to reducing poverty and inequality, so it is necessary to develop strategies to increase financial literacy, guarantee the protection of the consumer of financial services and face the challenges of digital finance (Romero-Álvarez et al., 2020). According to Reddy (2017), the goal of financial inclusion is to transform the lives of vulnerable groups by providing access to financial services.

Jong-Hee (2016) refers to financial inclusion as access to financial products and services (credit, savings, payments and insurance) or the proportion of companies and individuals that use these services. Financial inclusion refers to the access and usage of quality, sustainable financial services that comply with the security elements for the population (Cabeza-García et al., 2019),

contributing to greater socioeconomic equality by reducing poverty and enabling the development of financial services and the banking sector infrastructure (Shrivastava, Satam, 2015). The absence of financial inclusion leads, in turn, to financial illiteracy and the emergence of the informal financial sector that generates enormous costs for the people who attend this market (Angadi, 2003).

The gender gap in the formal financial system exacerbates inequality and reinforces the economic subordination of women. This has repercussions for growth and sustainable development, which is why the SDGs – as part of the 2030 Development Agenda – endorse in each of their goals the importance of financial services as key elements to combat poverty, promote productivity, innovation and economic growth, guarantee people’s well-being, and reduce inequalities (including gender), and act as “catalysts” of development (Girón et al., 2018).

Research Hypothesis

Financial inclusion contributes to economic growth through the creation of value for companies and has positive effects on human development, inequality and poverty indicators (Nanda, Kaur, 2016; Sethi, Sethy, 2019). In recent years, financial inclusion has been adopted as a dynamic tool to achieve multidimensional macroeconomic stability, sustainable and inclusive economic growth, job creation, poverty reduction and income equality, both for developed and emerging countries (Omar, Inaba, 2020; Bruhn, Love, 2014).

Burgess and Pande (2005) show that opening bank branches reduces poverty in rural areas of India. Financial inclusion is positively associated with economic growth, economic stability, and human development level (Sahay et al., 2015). People who cannot access conventional financial services are exposed to different risks, such as social exclusion, inequality and lack of opportunities to invest or start a business (Sha’ban et al., 2020).

From a gender perspective, Swamy (2014) found that the participation of women in financial inclusion programs increases the level of income and improves family well-being in India. Financial inclusion generates transformative effects for women. For example, when women actively participate in the financial system, they strengthen their skills to manage risk better, smooth consumption in the face of crises, or finance household expenses such as education (Dupas, Robinson, 2013). Women who have the tools to make savings and credit decisions have a positive impact on their economic empowerment, which affects poverty reduction (Holloway et al., 2017).

Financial inclusion increases access to financial opportunities, which motivates women to start a business and earn an income. In the case of women who are heads of households, the additional income is used to cover medical care expenses, which translates into higher health indicators, reduced school desertion, and increased educational levels. Therefore, financial inclusion and human development are mutually related (Datta, Singh, 2019). Women’s access to the financial system increases their negotiating and decision-making power and generates greater opportunities to acquire durable goods (Ashraf et al., 2006). Duflo’s study (2003) showed that the delivery of targeted cash transfers to women in a digital way improved the dietary diversity and nutritional status of children living in poor households compared to those made up of men. In the context of Nepal, free savings accounts were offered to female heads of households living in slums, which boosted spending on education and food and increased health-related spending (Prina, 2015). In Kenya, the introduction of mobile money reduced the number of households in poverty, particularly those headed by women (Suri, Jack, 2016).

In the Latin American context, Dabla-Norris et al. (2015) found that financial inclusion strategies increased economic growth and reduced inequality indicators in Latin America and the Caribbean. In the particular case of Mexico, Salazar-Cantú, Jaramillo-Garza and Rosa (2015) researched the effect of financial inclusion on inequality in income distribution, showing that higher financial inclusion initially leads to higher income inequality, but as financial inclusion increases, income inequality decreases significantly at the municipal level. The discussion above leads us to establish the following research hypotheses:

H1. *The greater financial inclusion in its access dimension, the higher the level of human development for women in the States of Mexico.*

H2. *The greater financial inclusion in its owning dimension, the higher the level of human development for women in the States of Mexico.*

H3. *The greater financial inclusion in its usage dimension, the higher the level of human development for women in the States of Mexico.*

3. Materials and Methods

The study sample is made up of 448 observations during the 2007-2020 period, that is, 14 elements of analysis per State in Mexico. The study variables were obtained from secondary data sources, particularly the databases issued by the National Banking and Securities Commission [NBSC] (2021), the Global DataLab-Subnational Human Development Index 5.0 (2021) and the National Institute of Statistics and Geography [INEGI] (2021). The Subnational Human Development Index [HDI] is a translation of the HDI developed by the UNDP at the state level (GlobalDataLab, 2021). The financial inclusion variables are divided into three categories: access, owning and usage of financial products and services.

The sub-national HDI is an average of the sub-national values of three components: education, health and standard of living, which contain aggregated indicators from household surveys and census data. For the health dimension, life expectancy at birth is adopted as an indicator. For the standard of living, the logarithm of the gross national income per capita, measured with purchasing power parities [PPP] in 2011 US dollars, is used. The educational dimension is measured with two indicators. The first average years of schooling for adults over 25 years of age reflects the current situation with respect to education in society. The second, expected years of schooling, indicates the future level of education of the population. Like the original HDI, the sub-national HDI takes values between 0 and 1; that is, the lowest possible value is 0, and the maximum level is 1 (Smits, Permanyer, 2019). Finally, the control variables referring to the size of the population and level of debt per State were obtained from the INEGI (2021) and the CNBV (2021).

Econometric Model and Definition of Study Variables

Various descriptive and econometric analyses are carried out to discuss the results of the research. The Generalized Method of Moments [GMM] technique is used since the number of cross-sectioned units is greater than the number of available time periods. This technique is parametric in nature and takes into account the endogeneity of the variables. According to Banerjee (2020), economic development reduces poverty levels, and an increase in the human development level increases the demand for financial services. At the same time, reducing income inequality can lead to greater financial inclusion. To overcome these possible problems of causality between the variables, a dynamic panel based on the GMM method with robust standard errors for the states is adopted (Neaime, Gaysset, 2018).

To analyze the relationship between the financial inclusion dimensions and the human development indicators by State, the study variables have been classified into three groups: 1) financial inclusion: access (financial infrastructure), financial products owning and usage of financial products; 2) sub-national human development index and its education, health and standard of living components; and 3) control variables (population size, economic growth, public debt by state, region to which the State belongs, and year of study). The operationalization of the study variables is based on the methodology applied by national and international institutions that issue information on financial inclusion and human development indicators (CNBV, 2021; Global DataLab Subnational Human Development Index 5.0, 2021). The econometric models are proposed as follows:

$$IDH_{i,t} = \alpha_0 + \Sigma\beta_1(IDH_{i,t-1}) + \Sigma\beta_2(Access_{i,t}) + \Sigma\beta_3(Control_{i,t}) + \mu_{i,t} \quad [1]$$

$$IDH_{i,t} = \alpha_0 + \Sigma\beta_1(IDH_{i,t-1}) + \Sigma\beta_2(Owning_{i,t}) + \Sigma\beta_3(Control_{i,t}) + \mu_{i,t} \quad [2]$$

$$IDH_{i,t} = \alpha_0 + \Sigma\beta_1(IDH_{i,t-1}) + \Sigma\beta_2(Usage_{i,t}) + \Sigma\beta_3(Control_{i,t}) + \mu_{i,t} \quad [3]$$

Where:

i represents i -nth cross-sectional unit (federal State); t for the n th period of time (year); *access*, *owning* and *usage* are the dimensions of financial inclusion; *Control* is a vector for the control variables of population size and public debt. HDI is the sub-national human development indicator and consists of components of health, standard of living, and education. $\mu_{i,t}$ is the error term.

4. Results

Descriptive Analysis

Table 1 shows the descriptive statistics referring to the evolution of financial inclusion in the regions of Mexico by comparing the years 2011 vs. 2020. In the infrastructure of the financial sector

dimension (access), a decrease of 10.3 % is observed in the number of commercial banking branches for every 10,000 inhabitants, going from an average of 1.45 in 2011 to 1.30 in 2020. The regions with the highest number of bank branches in 2020 are Mexico City (2.58) and the Northeast region (1.69), while the region with the lowest number of bank branches is the South (1.22).

The number of correspondents per 10 thousand inhabitants has shown a significant increase of 103.2 % comparing 2011 (2.82) vs 2020 (5.73). The regions with the highest number of correspondents in Mexico in 2020 are the Northeast (7.34) and the Northwest (6.95). There is also an increase in the number of ATMs per 10,000 inhabitants by 31.2 %, the number of sale terminals per 10,000 inhabitants (115.9 %), and it is the Northeast, Northwest and Mexico City regions that register the highest averages in 2020. It is important to highlight that the number of mobile banking contracts per 10,000 inhabitants has shown an exponential growth of 60,080 % in 2020 vs. 2011, this increase being more evident as of 2014, derived from the intensive adoption of technologies applied to the financial sector and owing to the confinement measures imposed by the COVID-19 pandemic. Mexico City registered an average of 14,827 mobile banking contracts per 10,000 inhabitants in 2020, followed by the Northwest (4,847) and Northeast (4,352) regions.

Table 1. Access to financial services by regions in Mexico

Banking Service/2011	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National
Number of commercial banking branches	2.7590	.73655	3.2590	.73655	3.7515	.72212	3.2560
Number of correspondents per 10 thousand inhabitants	2.8679	1.07412	3.8120	1.09666	3.8610	1.07260	3.5154
Number of ATMs per 10,000 inhabitants	3.8940	.67652	4.3060	.52241	4.0560	.61776	4.0853
Number of sale terminals per 10,000 inhabitants	2.6320	1.28720	3.1120	1.25363	3.5431	1.15498	3.0953
Number of mobile banking contracts per 10,000 inhabitants	3.5990	.78161	4.0870	.76229	4.5020	.49849	4.0613

Table 1. Access to financial services by regions in Mexico (Continuation...)

Banking Service/2020	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National	Var (%)
Number of commercial banking branches	2.7590	.73655	3.2590	.73655	3.7515	.72212	3.2560	3.2560
Number of correspondents per 10 thousand inhabitants	2.8679	1.07412	3.8120	1.09666	3.8610	1.07260	3.5154	3.5154
Number of ATMs per 10,000	3.8940	.67652	4.3060	.52241	4.0560	.61776	4.0853	4.0853

Banking Service/ 2020	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National	Var (%)
inhabitants								
Number of sale terminals per 10,000 inhabitants	2.6320	1.28720	3.1120	1.25363	3.5431	1.15498	3.0953	3.0953
Number of mobile banking contracts per 10,000 inhabitants	3.5990	.78161	4.0870	.76229	4.5020	.49849	4.0613	4.0613

Source: CNBV (2021).

Table 2 describes the results obtained for the indicators of owning financial products (deposits and credit) for the years 2011 vs. 2020. As for this dimension, a decrease is observed in the usage of: savings accounts (-43.18 %), number of credit cards (-9.39 %), usage of personal loans (-13.06 %) and usage of payroll loans (-14.58 %). On the other hand, the financial products that register an increase in their usage in 2020 vs. 2011 are: time deposits (4.62 %), debit cards (11.21%), mortgage loans (15.61 %), group loans (1.59 %) and automobile credits (21.12 %). It is evident that the regions with the highest usage of financial services in 2020 are Mexico City, the Northeast and the Northwest.

Table 2. Owning of financial services dimension by regions in Mexico

Banking Service/ 2011	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National
Savings accounts	7.95	6.80	2.65	5.50	36.33	6.58	0.88
Fixed-term deposits	331.23	191.50	206.04	341.06	663.70	273.51	327.87
Debit cards	9,567.01	11,732.53	8,635.29	11,760.83	33,302.65	7,783.10	12,572.38
Credit cards	2,371.98	2,661.42	2,008.30	2,801.88	11,607.55	2,062.55	2,997.63
Mortgage loans	104.45	134.23	78.44	152.34	495.32	68.05	135.71
Group loans	202.20	313.30	530.19	354.40	85.91	515.65	303.01
Personal loans	742.46	815.68	892.69	1,409.44	1,083.11	931.51	1,280.26
Payroll loans	460.71	614.25	465.92	581.54	663.43	394.49	588.12
Automobile credits	73.59	69.35	79.71	95.99	150.29	61.88	77.74

Regarding indicators of the usage of financial services in Popular Savings and Credit Entities [EACP], Table 3 shows the comparison between the years 2011 and 2020. A significant increase of 72.6 % in the number of transactions in POS terminals is shown for every 10 thousand inhabitants in 2020 vs 2011. The regions with the best performance are Mexico City and the Northwest. There is evidence of a 62.8 % increase in the number of savings contracts per 10,000 inhabitants, from an average of 659 in 2011 to an average of 1,074 in 2020. The regions that have most adopted the usage of this service are the West and Bajío, Northeast and South. The number of term deposit contracts has increased by 129.3 %, as has the number of debit cards per 10,000 inhabitants, which

registered an increase of 218.9 % in 2020 vs. 2011. The most favored regions in these two indicators are the West and Bajío and Mexico City.

Table 2. Owning of financial services dimension by regions in Mexico (Continuation...)

Banking Service/ 2020	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National	Var (%)
Savings accounts	0.02	0.05	0.01	0.02	8.02	1.25	0.50	-43.18
Fixed-term deposits	321.16	195.92	196.31	846.72	1,001.47	244.91	343.02	4.62
Debit cards	13,339.52	14,086.70	11,593.16	16,677.01	43,502.34	10,803.78	13,981.92	11.21
Credit cards	2,803.85	2,809.90	1,945.17	2,776.62	9,536.09	2,228.19	2,716.19	-9.39
Mortgage loans	169.09	191.22	120.56	208.42	316.16	87.78	156.89	15.61
Group loans	185.40	295.85	382.73	273.75	201.68	436.02	307.82	1.59
Personal loans	1,050.97	866.80	1,274.80	938.90	1,522.03	1,301.48	1,113.08	-13.06
Payroll loans	486.25	565.13	437.09	623.76	761.81	413.08	502.37	-14.58
Automobile credits	92.68	105.03	77.87	125.01	190.30	67.67	94.16	21.12

Source: CNBV (2021).

The usage dimension has been reduced in some financial services, such as ATM transactions per 10,000 inhabitants (-20.3 %), consumer credit contracts (-10.5 %) and housing credit contracts (-56.1 %). The regions with the greatest usage of these services are Mexico City, the Northeast, Northwest, South and West, and Bajío.

Table 3. Usage of financial services by regions in Mexico

Banking Service/ 2011	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National
POS transactions per 10,000 inhabitants	8,423.99	14,881.47	8,148.64	11,970.43	32,520.87	5,931.55	10,373.05
ATM transactions per 10,000 inhabitants	17,072.69	21,349.57	14,940.10	24,663.26	34,850.64	13,744.35	18,396.43
Consumer credit contracts per 10,000 inhabitants	1,622.68	237.24	351.18	654.37	121.53	249.90	659.42
Fixed-term deposits contracts per 10,000 inhabitants	179.96	38.18	44.21	39.26	18.34	22.36	71.49
Debit card contracts per 10,000 inhabitants	49.82	0.02	1.62	12.69	0.02	1.13	14.61

Banking Service/ 2011	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National
Consumer credit contracts per 10,000 inhabitants	939.00	158.09	177.13	301.52	43.90	208.89	381.37
Mortgage loan contracts per 10,000 inhabitants	27.33	4.17	4.75	6.49	0.50	2.78	10.00

Table 3. Usage of financial services by regions in Mexico (Continuation...)

Banking Service/ 2020	West and Bajío	Northwest	South	Northeast	Mexico City	Central South and East	National	Var (%)
POS transactions per 10,000 inhabitants	13,529.17	25,461.35	9,763.20	23,740.82	100,719.92	7,998.34	17,906.78	72.6
ATM transactions per 10,000 inhabitants	15,117.79	16,344.98	11,449.50	19,514.65	22,293.50	11,619.26	14,663.33	-20.3
Consumer credit contracts per 10,000 inhabitants	2,474.65	437.48	644.89	808.24	417.49	629.49	1,073.86	62.8
Fixed-term deposits contracts per 10,000 inhabitants	348.76	57.51	116.99	118.30	241.58	96.08	163.92	129.3
Debit card contracts per 10,000 inhabitants	95.45	21.01	9.57	78.73	80.44	23.15	46.59	218.9
Consumer credit contracts per 10,000 inhabitants	770.49	165.64	184.25	321.04	117.64	179.79	341.50	-10.5
Mortgage loan contracts per 10,000 inhabitants	11.29	1.93	2.67	2.52	0.29	1.60	4.39	-56.1

Source: CNBV (2021).

Table 4 shows the evolution of the sub-national human development index by regions in Mexico for the years 2007 vs 2020. The HDI increased from 0.73 in 2007 to 0.77 in 2020, which represented 5.5 %. The health component decreased by 2.3 % (from 0.87 in 2007 to 0.85 in 2020), the standard of living dimension shows a decrease of 3.8 % (from 0.78 in 2007 to 0.75 in 2020), while the education component improved by 22.8 %, going from 0.57 in 2007 to 0.70 in 2020. The highest human development levels and its three dimensions are registered in the regions of

Mexico City and Northwest, while the South, Central South, and East and West regions and Bajío registered a lower performance.

Table 4. Human development index by regions in Mexico

Sub-national human development index								
Region/ Year	Human development index		Education sub-index		Health sub-index		Standard of life sub-index	
	2007	2020	2007	2020	2007	2020	2007	2020
West and Bajío	0.73	0.77	0.55	0.69	0.87	0.85	0.80	0.77
Northwest	0.76	0.79	0.59	0.74	0.88	0.85	0.82	0.77
South	0.69	0.74	0.59	0.67	0.86	0.85	0.72	0.71
Northeast	0.75	0.78	0.58	0.72	0.87	0.86	0.81	0.77
Mexico City	0.81	0.83	0.70	0.84	0.89	0.86	0.83	0.80
Central South and East	0.71	0.76	0.57	0.69	0.86	0.85	0.74	0.73
Mexico	0.73	0.77	0.57	0.70	0.87	0.85	0.78	0.75

Source: GlobalDataLab 5.0 (2021).

Table 5 describes the human development indicators comparing their evolution between women and men (2017 vs 2019). A lower sub-national HDI was observed for women at 0.75 in 2019 compared to that of men, which registers an indicator of 0.78; an increase of 3 % was observed in this indicator for both women and men comparing 2007 vs 2019. As for the education sub-index, it shows a better performance in 2019 for women, while the health sub-index decreased 1 % for women in 2019, compared to 2007 (0.87 vs 0.86) and for men, it remained at 0.85. The largest gap for women is reached in the standard of living sub-index, which has decreased from 0.71 in 2007 to 0.70 in 2019, while men reached an index of 0.83 in 2007, and decreased in 2019 at 0.80. The previous results suggest that despite the fact that women have higher academic preparation, the standard of living indicator is lower than that of men in Mexico.

Table 5. Evolution of the human development index in Mexico (women vs men)

Sub-national development index								
Region/ Year	Human development index		Education sub-index		Health sub-index		Standard of living sub-index	
	2007	2019	2007	2019	2007	2019	2007	2019
Women	0.72	0.75	0.60	0.71	0.87	0.86	0.71	0.70
Men	0.75	0.78	0.60	0.70	0.85	0.85	0.83	0.80
Mexico	0.73	0.77	0.57	0.70	0.87	0.85	0.78	0.75

Source: GlobalDataLab 5.0 (2021).

Correlation Analysis

A correlation analysis between the access to financial services dimensions and the poverty, inequality and human development variables was made. Significant and positive correlations were obtained between the number of bank branches, the number of ATMs and the number of POS terminals and the HDI and its three components (health, education and standard of living) for men and women ($p=0.01$): the number of mobile banking contracts, has a positive effect on the HDI and

its education component for men and women ($p=0.01$). Positive and significant correlations are identified between the number of term deposits and the number of debit cards on the HDI and its components of education and standard of living ($p=0.01$) in men and women; between the number of credit cards, mortgage loans, payroll loans and car loans on the HDI and its three dimensions of health, education and standard of living ($p=0.01$) for men and women; the number of personal loans correlates favorably with the HDI and its education component for men and women ($p=0.10$). The number of group credits is negatively correlated with the HDI and its dimensions ($p=0.01$). Negative correlations were obtained between the number of housing contracts and the HDI ($p=0.10$) and the education sub-index for women and men ($p=0.05$); between the number of POS transactions and the HDI for women ($p=0.01$) and the HDI for men ($p=0.10$), as well as with the education and standard of living sub-indices ($p=0.05$); the contract number for consumer credit is negatively correlated with the HDI for men ($p=0.05$) and with the education sub-index for men and women (0.05).

Econometric Analysis

Table 6 shows the econometric analysis between the access dimension and the human development indicators, aiming to respond to hypothesis **H1**, which establishes that the greater financial inclusion in its access dimension, the higher the level of human development for women in the States of Mexico. Through the GMM method with robust standard errors, two lags are adopted for each dependent variable and are introduced as instrumental variables in the econometric models.

The dimension of access to financial services refers to the number of commercial banking branches, number of correspondents, number of ATMs, number of POS terminals and number of mobile banking contracts, for every 10,000 adult inhabitants. The control variables included in the models are the size of the adult population and the level of public debt. The dependent variables are: 1) human development index [columns 1 and 2], 2) health component [columns 3 and 4]; 3) standard of living [columns 5 and 6], and 4) education component [columns 7 and 8].

The results show that the number of mobile contracts increases the HDI of women ($p=0.01$), while for men, there is no significant relationship; POS terminals lower the HDI for women and men. It is evident that the number of correspondents decreases the health sub-index for women ($p=0.01$) and increases the education sub-index ($p=0.01$). The number of ATMs increases the education sub-index for men and women ($p=0.05$). On the contrary, the number of POS terminals has a negative impact on the HDI and its components, regardless of gender ($p=0.01$). The size of the population increases the health sub-index in women ($p=0.01$). These results are confirmed by Banerjee (2020) in South Asia.

According to the results obtained, the **H1 is partially accepted**. It is observed that the access to some financial services, such as commercial bank branches, the number of co-responsible, and mobile banking contracts favor the HDI and its components.

Table 6. The effect of financial inclusion (access) over human development indicators (by gender)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HDI women	HDI men	Health women	Health men	Education women	Education men	Standard of living women	Standard of living men
L1 (first lag dependent variable)	-0.239 (-1.12)	0.065 (0.52)	0.136 (0.61)	0.025 (0.05)	0.701*** (9.47)	0.685*** (6.30)	-0.239 (-1.12)	0.065 (.052)
L2 (second lag dependent variable)	-0.411*** (-2.78)	-0.593*** (-5.30)	0.023 (0.22)	-0.269** (-2.14)	-0.134** (-2.22)	-0.215*** (-5.45)	-0.411*** (-2.78)	-0.593*** (-5.30)
Commercial banking branches	0.003 (0.31)	0.009 (1.07)	0.010* (1.67)	-0.003 (-0.50)	0.037*** (2.61)	0.012 (1.05)	0.003 (0.31)	0.009 (1.07)

Correspondents	0.000	0.001	-0.002 ***	0.001	0.005 ***	0.003*	0.000	0.001
	(0.40)	(0.81)	(-1.55)	(1.09)	(2.44)	(1.63)	(0.40)	(0.81)
Number of ATMs	0.000	-0.000	-0.002	-	0.006**	0.006**	0.000	-0.000
	(0.10)	(-0.05)	(-0.83)	(-2.52)	(2.02)	(2.30)	(0.10)	(-0.05)
Sale terminals	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000*	-0.001**	-0.000 ***	-0.000***
	(-4.48)	(-2.72)	(-2.68)	(-2.64)	(-1.61)	(-2.04)	(-4.48)	(-2.72)
Mobile banking	5.690 ***	1.840	2.220*	1.020	0.000 ***	8.810***	5.690***	1.840
Contracts	(3.77)	(1.29)	(1.76)	(0.96)	(4.85)	(3.06)	(3.77)	(1.29)
Size of population	-1.250	-9.070 **	1.570***	8.240	6.420	1.400**	-1.250	-9.070**
	(-0.21)	(-2.07)	(3.69)	(1.18)	(1.16)	(2.06)	(-0.21)	(-2.07)
Public debt	-0.047	-0.187 **	0.054	-0.054	0.008	-0.086	-0.047	-0.187***
	(-0.37)	(-2.36)	(0.87)	(-0.66)	(0.07)	(-0.92)	(-0.37)	(-2.36)
Constant	1.178***	1.241 ***	0.719***	1.076***	0.173***	0.284***	1.178***	1.241***
	(4.96)	(8.39)	(3.91)	(2.60)	(2.72)	(3.79)	(4.96)	(8.39)
Wald Chi ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of instruments	22	22	16	19	20	20	22	22
Observations	228	228	228	228	228	228	228	228

Table 7 shows the econometric analysis to answer research hypothesis **H2**, which establishes that a greater financial inclusion in its owning dimension, the higher level of human development for women in the States of Mexico. The independent variables refer to the dimension of ownership of financial products [number of savings accounts, number of time deposits, number of debit cards, number of credit cards, number of mortgage loans, number of group loans, number of personal loans, number of payroll loans and number of automobile credits]. The control variables included in the econometric models are: population size and level of public debt by State.

It is observed that the number of savings accounts increases the HDI ($p=0.01$) and its education component ($p=0.01$), both for men and women, and only has a positive impact for the standard of living component in the case of men ($p=0.01$). The number of term deposits increases the health component for women ($p=0.01$) and for men ($p=0.05$). The number of credit cards favors the HDI of men ($p=0.01$), although in the case of women, its effect is not significant; it has a negative effect on health ($p=0.01$) and standard of living indicators ($p=0.10$) regardless of gender. Having mortgage loans increases the HDI for women ($p=0.01$), although it decreases the health component ($p=0.01$), while it increases the education sub-index ($p=0.01$) for both. Group credits increase the HDI ($p=0.01$) and the education index ($p=0.01$) for men and women, increase the health index ($p=0.10$) and decrease the standard of living indicator ($p=0.05$) for the case of men.

Having personal loans has a positive effect on the health index ($p=0.01$) in the case of men, it decreases the education component for women ($p=0.10$) and for men ($p=0.01$), and increases the standard of living indicator for women and men ($p=0.01$). Payroll credits increase the HDI for women ($p=0.05$), although there is a reduction in its health ($p=0.01$) and standard of living ($p=0.01$) components, and an increase in the education component ($p=0.01$). Although car loans increase the standard of living indicator ($p=0.01$) and the health index ($p=0.01$) for both men and women, they decrease the education indicator for men ($p=0.10$). Regarding the control variables, it is observed that public debt has an unfavorable effect on the components of education and standard of living, while the size of the population decreases the component of the standard of living. These results lead us to **partially accept H2**.

Table 7. The effect of financial inclusion (owning) over human development indicators (by gender).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HDI women	HDI men	Health women	Health men	Education women	Education men	Standard of living women	Standard of living men
L1 (first lag dependent variable)	0.456 *** (4.95)	0.364 ^{***} (4.54)	0.351 ^{**} (1.90)	0.026 (0.08)	0.673 *** (6.80)	0.546 ^{***} (4.91)	0.388 *** (3.77)	0.447 ^{***} (3.52)
L2 (second lag dependent variable)	0.340 *** (5.75)	0.281 ^{***} (5.77)	0.104 (0.84)	-0.065 (-0.45)	0.357 *** (3.01)	0.245 ^{***} (2.72)	-0.010 (-0.11)	-0.150 (-1.38)
Saving accounts	0.001 *** (2.90)	0.001 ^{***} (2.48)	-0.000 (-0.79)	0.000 (0.89)	0.001 *** (3.04)	0.001 ^{***} (2.85)	0.000 (1.33)	0.001 ^{***} (2.82)
Fixed-term deposits	-3.440 (-0.26)	-0.000 (-1.24)	0.000 *** (2.69)	9.830 ** (2.17)	-0.000 (-1.36)	-0.000 (-1.48)	-2.270 (-0.21)	0.000 ^{**} (2.05)
Debit cards	-2.410 (-0.84)	-2.770 (-1.59)	-3.070 (-1.14)	-1.340 (-0.63)	-1.700 (-1.54)	-7.720 (-0.97)	-8.730 (-1.49)	-1.060 *** (-4.63)
Credit cards	1.050 (1.49)	1.340 ^{***} (2.71)	-1.050 [*] (-1.81)	-1.860 [*] (-1.75)	1.410 (0.70)	1.330 (0.99)	-3.180 *** (-2.35)	-3.580 *** (-3.88)
Mortgage loans	0.000 *** (2.36)	0.000 (0.81)	-0.000 *** (-2.97)	-0.000 (-1.37)	0.000 *** (2.46)	0.000 *** (4.47)	-0.000 (-1.33)	-9.190 (-0.51)
Group loans	0.000 *** (2.40)	0.000 *** (3.22)	-9.680 (-1.25)	5.490 [*] (1.80)	0.000 *** (2.34)	0.000 *** (3.71)	-6.580 (-0.80)	-0.000 ** (-2.23)
Personal loans	2.760 (0.79)	4.250 (1.56)	5.200 (1.41)	5.050 *** (3.63)	-7.770 [*] *** (-1.62)	-5.140 *** (-1.51)	1.100 ^{**} (1.89)	1.750 ^{***} (8.00)
Payroll loans	0.000 ** (1.84)	0.000 (1.43)	-0.000 *** (-3.12)	-0.000 ** (-2.27)	0.000 *** (3.47)	0.000 *** (4.33)	-0.000 [*] (-1.66)	-0.000 *** (-4.36)
Automobile credits	0.000 (0.52)	0.000 (1.01)	0.000 *** (7.48)	0.000 ** (2.02)	-0.000 (-0.76)	-0.000 [*] (-1.71)	0.000 *** (4.50)	0.000 *** (4.95)
Size of population	3.800 (0.96)	1.310 ^{**} (1.89)	-2.310 (-1.02)	4.010 (1.39)	5.320 (0.81)	1.340 ^{***} (2.35)	-1.560 ^{**} (-2.23)	-1.800 *** (-3.20)
Public debt	-0.070 (-1.18)	-0.071 (-1.09)	0.038 (0.74)	-0.074 (-0.96)	-0.183 ** (-2.21)	-0.177 ^{**} (2.33)	-0.171 ^{**} (-1.94)	-0.165 *** (-2.58)
Constant	0.123 (1.44)	0.244 ^{***} (2.97)	0.471 ^{**} (2.27)	0.880 *** (3.08)	-0.045 (-0.81)	0.103 ^{***} (2.97)	0.457 ^{***} (4.29)	0.600 *** (4.02)
Wald Chi ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Number of instruments	32	32	23	27	29	29	32	31
Observations	259	259	259	259	259	259	259	259

The empirical results show that the number of savings deposit contracts increases the HDI for women ($p=0.05$) and men ($p=0.01$); as well as the education and standard of living sub-indexes for women ($p=0.01$), and the standard of living dimension in the case of men ($p=0.01$). The number of debit card contracts increases the education sub-index for men and women ($p=0.01$), although it has a negative impact on the standard of living indicator for women ($p=0.01$). The number of contracts for consumer credit decreases the HDI for women ($p=0.10$) and its education and standard of living components ($p=0.05$). The number of housing credit contracts increases the health index for women ($p=0.01$) and decreases the standard of living for men ($p=0.05$). The number of POS transactions increases the HDI for men ($p=0.01$) and women ($p=0.10$); although the standard of living component decreases for both ($p=0.01$). The number of ATM transactions decreases the health and education indicators ($p=0.01$). The level of public debt has a negative impact on human development indicators ($p=0.01$). The above results lead us to **accept H_3 partially**.

The results discussed suggest that financial inclusion goes beyond the ownership of bank accounts. To achieve effective financial empowerment, women need access to a much broader range of financial services, such as loans and lines of credit. Access to credit is an important factor in the economic development of a country, since it increases competitiveness, contributes to growth, stimulates the economy and creates sources of employment (IFC, 2011).

Table 8 shows the GMM analysis to respond to the research hypothesis H_3 that establishes that a more significant financial inclusion in its usage dimension, the higher level of human development for women in the States of Mexico. The independent variables focus on the dimensions of the usage of financial products [transactions at POS terminals, transactions at ATMs, savings contracts, time deposit contracts, debit card contracts, consumer credit contracts and housing credit contracts]. The control variables included are the size of the adult population and the level of public debt.

Table 8. The effect of financial inclusion (usage) over human development indicators (by gender)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HDI women	HDI men	Health women	Health men	Education women	Education men	Standard of living women	Standard of living men
L1 (first lag dependent variable)	0.374*** (3.55)	0.062 (0.77)	0.260* (1.69)	0.613*** (8.13)	0.622*** (11.16)	0.613*** (8.13)	0.360*** (5.62)	0.594*** (7.01)
L2 (second lag dependent variable)	0.354*** (6.04)	0.336*** (4.06)	0.291*** (3.30)	0.406*** (10.02)	0.360*** (7.24)	0.406*** (10.02)	0.116 (1.58)	-0.006 (-0.07)
Saving deposit contracts	1.940** (2.17)	3.410*** (3.53)	-4.690 (-0.73)	2.970 (1.53)	7.310*** (3.39)	2.970 (1.53)	3.990*** (3.01)	4.100*** (5.20)
Fixed-term deposits contracts	-0.000 (-0.90)	5.710 (0.19)	0.000* (1.66)	-7.350 (-0.13)	0.000 (0.35)	-7.350 (-0.13)	0.000 (0.57)	0.000 (1.49)
Debit card contracts	9.010 (1.26)	6.360 (0.91)	2.400 (0.54)	0.000*** (2.45)	0.000*** (2.40)	0.000*** (2.45)	-4.430** (-1.99)	8.620*** (3.78)
Consumer credit	-0.000* (-0.90)	-3.890 (0.19)	7.940 (1.66)	-0.000 (-0.13)	-0.000** (0.35)	-0.000 (-0.13)	-0.000** (0.57)	-0.000** (1.49)

contracts	(-1.75)	(-0.35)	(1.23)	(-0.90)	(-2.09)	(-0.90)	(-1.94)	(-1.98)
Mortgage loan	-0.000	-0.000	0.000***	-0.000*	-0.000	-0.000*	-0.000	-0.000**
Contracts	(-0.55)	(-0.59)	(2.49)	(-1.83)	(-1.29)	(-1.83)	(-0.70)	(-2.12)
POs transactions	3.530*	4.690***	-7.830*	4.030	1.020***	4.030	-1.070***	-1.120**
	(1.76)	(3.37)	(-5.10)	(1.58)	(2.68)	(1.58)	(-5.63)	(-5.12)
ATM transactions	-1.640	-6.430	5.470	-1.180***	-8.500***	-1.180***	5.120	3.260***
	(-1.37)	(-0.61)	(0.81)	(-3.69)	(-3.43)	(-3.69)	(0.48)	(2.65)
Size of population	-1.020*	5.360	1.230***	-2.040	-9.090	-2.040	-1.890***	-7.900*
	(-1.79)	(0.08)	(4.67)	(-0.23)	(-1.15)	(-0.23)	(-3.12)	(-1.74)
Public debt	-0.087*	-0.150***	0.079	-0.215***	-0.256***	-0.214***	-0.104	-0.070
	(-1.81)	(-2.61)	(1.47)	(-2.45)	(-3.19)	(-2.45)	(-1.49)	(-1.15)
Constant	0.213**	0.459***	0.380**	0.011	0.027	0.011	0.409***	0.356***
	(2.27)	(4.76)	(2.26)	(0.20)	(0.59)	(0.20)	(6.34)	(3.95)
Wald Chi ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of instruments	37	37	25	33	33	33	37	37
Observations	291	291	291	291	291	291	291	291

5. Discussion

The study focused on 32 Mexican states, which reached a total of 448 observations during the 2007–2020 period. A dynamic data panel was used using the GMM technique in order to avoid endogeneity problems between the study variables. Although the results show a significant increase in the dimensions of financial inclusion, access, owning, and usage of financial services, there were major gaps in gender. For instance, women face higher barriers to access to financial services (savings and credit instruments), such as the lack of own financial resources, property titles or other assets that can serve as a guarantee of payment, as well as the absence of financial education, higher interest rates compared with men, or long periods of indebtedness (OECD, 2013).

The econometric results show that access to financial services, such as the usage of mobile banking contracts, increases the HDI for women, while the number of correspondents and ATMs increases the education sub-index. Regarding the owning of financial products, the results suggest that the number of savings accounts increases the HDI and its education component for women, while the number of time deposits favors the level of health. Having access to a mortgage loan increases the HDI and the education sub-index for the female gender. Group credits have a positive effect on the HDI, the education index, and the health index of women. Women who have personal loans or payroll loans increase the HDI and the standard of living indicator. For their part, car loans increase the standard of living indicator and the health index.

In relation to the dimension of usage, the results show that the number of savings deposit contracts increases the HDI for women, as well as the sub-indices of education and standard of living; the number of debit card contracts increases the education sub-index. It is concluded that the dimension of owning financial products, particularly credit instruments, are the ones that favor the indicators of human development in women the most.

This work is a reference for legislators and decision-makers who participate in the development of public policies that promote financial inclusion, and whose objective is to reduce inequalities in terms of poverty and human development in Mexico from a gender perspective. Although the global trend is to increase financial inclusion indicators to achieve the SDGs, the adult population in Mexico continues to resort to traditional banking and the usage of cash, although in 2020, transfers sent by CoDi increased considerably in number from 38.3 to 154.4 thousand operations (CNBV, 2021; López-Lefranc, 2019). It is important to promote the adoption of digital finance to reduce the level of financial exclusion, particularly in less favored areas such as the South and Central South and East regions and for women. However, it is necessary to create robust policies and regulatory frameworks that support the adoption of technologies and that guarantee the protection and security of financial services users. Although it is true that Mexico has the leadership in regulatory matters in the Latin American region, with the

recent publication of the FinTech Law of 2018, the infrastructure in terms of communications and the internet, particularly for areas in vulnerable conditions and extreme poverty, is deficient.

6. Conclusion

Financial inclusion is a transversal pillar to achieve the SDG of the United Nations 2030 agenda; it contributes to more equitable economic growth, reduces poverty and promotes income equality by providing access to formal financial services. This study contributed to extending the literature by addressing the impact of women's financial inclusion on the economic and social development indicators in the Mexican context at the sub-national level. Women in Mexico face more barriers to formal financial services, and the cost of credit is higher than in other Latin American countries. The consequences of the high level of financial exclusion in Mexico also affect the entrepreneurial environment, especially for women. Considering this, our results showed that the increase in financial inclusion, mainly through credit products, has a positive effect on Mexican women's human development. This research intends to make a call to policymakers and financial institutions in Mexico by providing evidence that supports the design of strategies and public policies aimed at improving financial inclusion for women and, therefore, better human development indicators. Some strategies to promote women's participation in the economy could include fostering a gender-neutral legal framework for businesses, enforcing equal access to financial services, and pairing targeted financing schemes with other measures such as financial education, professional training and increased access to support programs.

7. Strengths and Limitations

This research identifies strengths and limitations, and based on these, future research lines are proposed in the field of financial inclusion and sustainable development. The strength of the study is that it is a pioneer, at a subnational level, in analyzing the impact of financial inclusion on the human development index from a gender perspective in Mexico. It can be considered a limitation that the study analyzes the 32 Mexican states (including Mexico City), but some of these have a great number of municipalities (like Oaxaca with more than 500), and some have a great disparity (in terms of the economics, social and demographic indicators) within their own municipalities. Therefore, results could be more accurate if the analysis could be carried out at the municipality level. The second limitation of the research is the scarcity of financial inclusion data, from a gender perspective, at a subnational level, so more detailed and updated information generated at the local level could motivate researchers to work on this research line. Based on the above, the following studies are suggested: how financial inclusion motivates women to start their own businesses and how entrepreneurship could affect human development and competitiveness indicators. It would also be interesting to extend the research to other Latin American countries with similar institutional contexts.

8. Declarations

Ethics approval and consent to participate

This study is carried out in accordance with the recommendations of the Code of Ethics of all participating universities: Universidad Autónoma de San Luis Potosí, Universidad Autónoma de Tamaulipas, Universidad Cristóbal Colón and Tecnológico Nacional de México.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Conflict of interest statement


The authors declare no conflict of interest.


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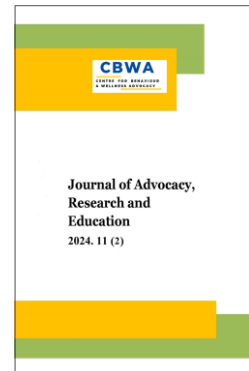
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Staff Promotion and Employee Commitment to Work: A Survey in a Ghanaian University Library

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Abstract

The purpose of this study was to investigate the relationship between job promotion and employee commitment at a Ghanaian University Library. Employing a cross-sectional survey design, primary data was collected through self-administered questionnaires from a sample of 187 Junior and Senior staff within the library. The Census method was used to include all 187 staff for the study. The reliability of the questionnaire was established through Cronbach Alpha coefficient analysis, confirming internal consistency with all items scoring above 0.70. Hypotheses were tested using Spearman's Rank Order Correlation Coefficient. The study findings revealed a statistically significant positive relationship between job promotion and employee commitment among library staff. The study concludes by recommending that university libraries in Ghana prioritize job promotion as a means to foster employees' affective commitment, thereby enhancing organizational effectiveness and employee satisfaction. These insights contribute to a deeper understanding of the dynamics between promotion and commitment within the library community, offering practical implications for organizational management and policy formulation.

Keywords: Employee Commitment, Employee Satisfaction, Ghana, Job Promotion, University Library.

1. Introduction

In today's competitive organizational landscape, the effective utilization of human resources is paramount for achieving sustained success (Beck et al., 2005; Hiromoto, 2019). Human Resource Management (HRM) practices, encompassing theory, policies, and professional approaches, play a pivotal role in harnessing employees' potential to meet organizational objectives (Adillah, Zaky, 2022; Otoo, 2019). These practices extend beyond recruitment and training to include staff promotion, a critical aspect of career development and organizational growth. Promotion within an organization serves as a tangible manifestation of recognition and advancement for employees' contributions (Owodunni, 2022). Promotion not only represents an elevation of job status but also signals validation of skills, expertise, and commitment to the organization's goals. However, the impact of staff promotion extends beyond individual recognition to influence broader organizational dynamics, particularly concerning employee commitment.

Research suggests that promotion is not solely a means of career progression but also a significant motivator that fosters employee engagement and commitment (Anwar, Abdullah, 2021).

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The promise of advancement and the associated rewards can serve as potential incentives for employees to demonstrate dedication, loyalty, commitment and enhanced performance in their roles. Conversely, the absence of clear pathways for promotion or perceived inequities in promotion practices can lead to disillusionment and disengagement among staff, undermining organizational cohesion and productivity (Owodunni, 2022).

Understanding the intricate relationship between staff promotion and commitment is essential for organizations striving to cultivate a motivated and dedicated workforce. Employees who perceive promotion opportunities as fair, transparent, and merit-based are more likely to exhibit higher levels of organizational commitment (Anwar, Abdullah, 2021). Contrariwise, discrepancies in promotion practices or perceptions of bias can erode trust and diminish employee morale, leading to decreased job satisfaction and increased turnover intentions (Owodunni, 2022). In organizational management, the interplay between staff promotion and commitment holds paramount importance. Within academic institutions, such as libraries, this dynamic is crucial for operational efficiency and fostering a conducive environment for learning and research. The Ghanaian universities' library system is generally situated within vibrant academic communities, providing a compelling backdrop for exploring the organizational dynamics and cultural factors that shape staff promotion and commitment.

Academic libraries in Ghana operate within a distinct organizational landscape characterized by a blend of traditional academic values and modern institutional practices. As such, the promotion and commitment of staff within these libraries are influenced by many factors, ranging from organizational structures and leadership styles to cultural norms and societal expectations. Junior and senior staff working in the libraries of Ghanaian public universities are expected to be promoted based on merits. Upon successful achievement of the relevant academic certificate, this category of staff can rise through the ranks of Junior Library Assistant, Senior Library Assistant, Principal Library Assistant and Chief Library Assistant.

Promotion entails transitioning to a higher status with increased responsibilities in an organization (Hasibuan, 2018); while often accompanied by a salary raise, promotions encompass both monetary and status advancements (Hasibuan, 2018). Other key promotion criteria include seniority, job performance, loyalty, and honesty. Promotions primarily benefit employees, reflecting job dynamics and aligning with job descriptions. Monetary compensation is fundamental to employee retention; however, its role alone may not suffice in maintaining a committed workforce. Non-monetary recognition is important and pivotal in fostering employee job satisfaction and commitment (Zaitouni, 2013). The significance of recognition lies in its ability to motivate individuals within the social and organizational context, thereby contributing to positive work outcomes (Gathungu et al., 2015).

In high-level professional positions, recognition is a primary driver for maintaining a sense of involvement and importance within the organization. Studies have consistently shown a positive relationship between recognition and employee commitment, linked to continuance and affective commitment (Gathungu et al., 2015). Acknowledging employees' contributions through praise, appreciation, and positive feedback from managers and peers is crucial in generating job satisfaction and commitment. These non-monetary forms of recognition serve as motivational tools, reinforcing employees' sense of value and significance within the organization (Zaitouni, 2013). Given the established relationship between recognition and commitment, it can be inferred that promotion practices are also likely to influence employee commitment. However, empirical validation of this relationship is necessary, particularly within the context of the Ghanaian Public University Library.

Numerous studies have explored the relationship between employee commitment and promotion strategies. Syed et al. (2020) highlighted the correlation between commitment and HRM practices, indicating that employees' understanding and perception of HRM methods can significantly impact their commitment levels. While monetary compensation remains crucial, non-monetary recognition, such as promotions, fosters job satisfaction and commitment (Zaitouni, 2013). Research by Saharuddin (2016) examined the impact of promotion and compensation on job commitment and productivity, highlighting the significant influence of promotions on employees' commitment and work output. Similarly, Olurotimi et al. (2015) found a positive relationship between promotion and organizational commitment among teachers in public secondary schools. However, it is essential to note the distinction between promotions as a

motivational factor and a moderating variable in the relationship between professional development practices and commitment.

Simanjuntak (2015) and Rahayu (2022) concurred on the positive impact of job promotions on employee performance, suggesting a direct correlation between promotions and enhanced job outcomes. Meanwhile, Sinambela (2016) delved into job satisfaction, describing it as the perception that the rewards received for one's work exceed the labor and costs incurred, ultimately contributing to a fulfilling professional life. Further insights from Haryonoa et al. (2020) emphasized the positive impact of promotions on job motivation and performance, suggesting that promotion opportunities significantly enhanced employee commitment and productivity. Despite these concerns, the literature reviewed largely suggested a connection between promotion practices and employee commitment.

At the organizational level, libraries face unique challenges and opportunities shaping their staff promotion and commitment approach. Limited financial resources and infrastructure constraints, coupled with the ever-evolving demands of academic scholarship, require strategic allocation of resources and effective management practices (Palfrey, 2020). Moreover, the hierarchical structure inherent in academic institutions may impact the promotion pathways available to staff, influencing their perceptions of career advancement and organizational loyalty. In view of this, this study sought to provide a comprehensive understanding of staff promotion and commitment within a Ghanaian public university library. We aimed to uncover the intricacies of organizational practices, cultural norms, and individual perceptions that shape employees' experiences within the library system. By doing so, the findings of the study will not only contribute to the literature on human resource management but also provide practical insights and recommendations for enhancing staff promotion and commitment in universities.

Theoretical Framework

Different frameworks exist for understanding employment relationships and commitment within organizations. One such model adopted for the study is Kelley's Attribution Theory (1967), which clarifies how employees perceive the purpose of HRM systems. According to this theory, individuals can attribute reasons and outcomes to both people and situations when considering their level of commitment. Per this theoretical framework, the perceptions that staff members have about management's goals when executing particular HRM procedures affect their personal attitudes and actions, which in turn affect the overall performance on the job (Rimi, 2013).

Adopting Kelley's Attribution Theory (1967) provides a strong theoretical framework for understanding the relationship between staff promotion and commitment. Kelley's Attribution Theory focuses on how individuals attribute reasons and outcomes to both people and situations, influencing their perceptions, attitudes, and actions. In the context of this study, Kelley's Attribution Theory offers valuable insights into how library staff perceive the purpose of HRM systems, particularly regarding staff promotion practices, and how these perceptions subsequently impact their level of commitment.

Kelley's Attribution Theory suggests that individuals' perception of HRM practices can shape their attitudes and actions. In the context of staff promotion, library staff's perceptions of the promotion process may influence their job satisfaction, motivation, and willingness to invest effort in their work.

3. Methods and Materials

Research Design

The descriptive survey research design was chosen for this study. A descriptive survey design was suitable for the study because it allows for the systematic collection of data from a large sample of respondents, enabling researchers to gather comprehensive information on both independent (promotion practices) and dependent (employee commitment) variables (Koh et al., 2000). As this design allowed for broad data collection, it also ensured a comprehensive understanding of staff perceptions and experiences of promotion and commitment, enhancing the study's validity and generalizability. This approach was deemed suitable as it facilitated gathering data for independent and dependent variables through questionnaires (Siedlecki, 2020).

Population and Sample Size

This study's population was the senior and junior staff of a Ghanaian public university library. We selected 187 senior and junior staff members at the library.

Data Collection Instrument

The study utilized a structured questionnaire comprising closed-ended and open-ended questions to gather data. These questions were designed to elicit specific responses, thereby minimizing bias. Also, the questionnaire underwent validation procedures to assess its reliability and validity. Internal consistency reliability was assessed using Cronbach's Alpha coefficient, with all items scoring above the recommended threshold of 0.70, indicating satisfactory reliability.

Data Collection Procedures

The researchers distributed the questionnaires to available participants in person following acceptable approvals. During the data collection process, the purpose of the study was explained to participants, and we assured them of confidentiality and data protection. A total of 180 questionnaires were received, representing a response rate of 96 %. The data collection lasted between 15th January and 31st January 2024.

Data Processing and Analysis

The study's data was analyzed using the Statistical Package for the Social Sciences. Each received questionnaire was carefully coded to facilitate data entry. In the data processing and analysis section, descriptive and inferential statistics were employed to analyze the various variables at a significance level (α) of 0.05. Means and standard deviations were calculated to understand the central tendency and variability of the variables. Inferential data analysis was also conducted using the Pearson correlation coefficient to examine the relationship between the dependent and independent variables. The correlation coefficient helped determine the direction and strength of the relationship between the variables under investigation. A correlation coefficient (r) between 0.00 and 0.30 indicates a weak correlation; A correlation coefficient between 0.30 and 0.70 indicates a moderate correlation; A correlation coefficient above 0.70 indicates a strong correlation.

4. Results

Support for Employee Promotion

The extent to which the university libraries support employee promotion among senior and junior staff was measured using eight items (see [Table 1](#)). The responses to the questions were graded using a numerical 5-point scale; 5 represented the strongest agreement with the issues, with 1 denoted the least. The primary variables were assessed using descriptive statistics like mean and standard deviation. The statement's mid-point on a scale of agreement or disagreement was 3.00. Therefore, a mean score below 3.00 suggested disagreement with a statement, while a score of 3.00 or higher indicated agreement with the statement.

Table 1. Extent to which the university libraries support employee promotion

Promotion System	Mean	Std. Deviation
There is equal opportunity for all workers to get promoted in this organization.	3.80	1.26
There is a system update that recognizes individuals who qualify for a promotion at every point in time.	2.74	1.04
Promotions in this organization come with higher additional responsibilities.	3.57	1.11
Promotions in this organization go with additional compensation.	3.63	1.31
All workers are critically assessed by a competent body in this organization to verify their qualifications before they are promoted.	3.56	1.14
Management clearly communicates with all workers about the promotions system in this organization.	3.51	1.23
Promotions in this organization go with higher work	3.62	1.21

Promotion System	Mean	Std. Deviation
status/rank.		
Changes in the promotions policy of this organization are communicated to all employees in a timely manner.	2.59	1.00

As shown in [Table 1](#), staff largely agreed with 6 of the 8 questions used to solicit their opinions on senior and junior staff promotions (the 6 means were greater than 3.0). This means that staff working at the university library have equal opportunities to get promoted (Mean = 3.80; Std. Dev. = 1.26). When all employees are given equal opportunities for promotion, they will likely have sufficient alternatives to contribute to the organization's growth. Correspondingly, promotions have higher additional responsibilities (Mean = 3.57; Std Dev = 1.11). They are likely to be motivated and engaged in the additional duties given to them. Compatible with higher responsibilities, promoted staff get additional compensation (Mean = 3.63; Std Dev = 1.31). This additional compensation may enthruse them to continue working with a library in the foreseeable future. It also means that staff are critically evaluated before being promoted (Mean = 3.56; Std Dev = 1.14). This is likely to help employees accomplish both personal development and organizational goals, which will bind them with the organization. Also, management communicates with all workers about the promotions systems (Mean = 3.51; Std Dev = 1.23).

The responses concurred promotions in the library go with higher work status/rank (Mean = 3.62; Std Dev = 1.21). Having a higher rank/ status as a result of being promoted is likely to make them happy and increase their self-esteem in the organization. However, the respondents were unresponsive about whether there is a system update that recognizes individuals who qualified for promotion at every point in time (Mean = 2.74; Std Dev = 1.04). This is likely to reduce the fairness of staff really qualified for promotion as more than one staff member may be qualified, but one is to be promoted. The respondents were indifferent concerning being timely communicated on changes in promotion policies (Mean = 2.59; Std Dev = 1.00). Staff may lack enthusiasm in doing their assignments and will be demoralized if they do not hear and understand the communication policies of the organization.

Satisfaction with the Promotion System

The satisfaction variables were also made up of 8 items. The responses to the questions were graded on a 5-point numerical scale, with 1 denoting the least level of satisfaction and 5 denoting the highest level of satisfaction. The primary determinants were assessed using summary statistics like mean and standard deviation. The results are shown in [Table 2](#). Using the mean values obtained from the five-point Likert scale items, the pertinent mean values shown in [Table 2](#) were interpreted. The statement's mid position on the agreement or disagreement scale was 3.00. Thus, a mean score below 3.00 suggested dissatisfaction with a statement, while a score of 3.00 or higher indicated satisfaction with the statement. [Table 2](#) displays the respondents' perspectives concerning the University of Cape Coast's promotion variables.

According to [Table 2](#), it is clear that, of the seven items used to elicit respondents' opinions on how senior and junior staff are satisfied with the promotion system of the library, the majority of them relatively agreed with four of them (four means were greater than 3.0). By implication, the library staff is satisfied with higher additional responsibilities when promoted (Mean = 3.50; Std. Dev. = 0.97). In that order, they are satisfied with additional compensation (Mean = 3.15; Std Dev = 1.27). In addition, the staff is satisfied with the critical assessment of all qualified workers for promotion at the library (Mean = 3.22; Std Dev = 1.14). Concerning respondents' higher work status/ rank when promoted, they agreed to be satisfied with their work status/rank (Mean = 3.25; Std Dev = 1.11). These could motivate them in their work performance and make them commit to the organization.

Table 2. Extent to which senior and junior staff of a Ghanaian university library are satisfied with the promotion system in the university

Statements	Mean	Std. Deviation
Satisfied with equal promotion opportunity	2.52	1.19
Satisfied with the promotion update system	2.41	1.09
Satisfied with higher additional responsibilities	3.50	0.97
Satisfied with additional compensation	3.15	1.27
Satisfied with a critical assessment of all qualified workers	3.22	1.14
Satisfied with communication of promotion policy	2.49	1.17
Satisfied with higher work status/rank	3.25	1.11
Satisfied with timely communication of changes in promotions policy	2.32	1.14

Source: Field Work, 2017.

Conversely, the respondents were dissatisfied with equal promotion opportunities in UCC (Mean = 2.52; Std Dev = 1.19). Once more, the respondents were discontented with the promotion update system in place (Mean = 2.41; Std Dev = 1.09). Moreover, they were dissatisfied with the communication of the promotion policy (Mean = 2.49; Std Dev = 1.17).

Commitment to Work

The perceived commitment variable was made up of four (4) items. The responses to the questions were also scored on a five-point numerical scale, with one (1) denoting the least agreement with the problems and five (5) denoting the strongest agreement. The primary determinants were assessed using summary statistics like mean and standard deviation. Table 3 presents the outcomes. Using the mean values obtained from the five-point Likert scale items, the relevant mean values shown in Table 3 were interpreted. The statement's mid position on the agreement or disagreement scale was 3.00. Thus, a mean score below 3.00 suggested disagreement with a statement, while a score of 3.00 or higher indicated agreement with the statement. Table 3 displays the respondents' perceptions in relation to the University of Cape Coast's commitment variables.

Table 3. Perceived senior and junior staff commitment at work in A Ghanaian university library

Statements	Mean	Std. Deviation
They are willing to put in great deal of extra effort to help this organization be successful	3.95	1.09
They would accept almost any type of job assignment in other to keep working for this organization	3.50	1.15
They speak highly of their organization to their friends	3.55	1.02
Working in their current profession is important to them	3.70	1.16

Source: field survey, 2017

According to Table 3, staff largely agreed with all four statements made to ascertain their opinions on the level of commitment by senior and junior staff of the University Cape Coast library (all four means were greater than 3.0). The findings indicated that they are prepared to put in much additional work to support the library's success (Mean = 3.95; Std. Dev. = 1.09). Correspondingly, the staff agreed to continue working for the library management, and they would accept almost any type of job assignment (Mean = 3.50; Std Dev = 1.15). In tallying, the staff (both junior and senior) agreed that they speak highly of their organization to their friends (Mean = 3.55; Std Dev = 1.02). Lastly, approved that working in their current profession is essential to them (Mean = 3.70; Std Dev = 1.11).

According to Wallace and Trinkka (2009), the results of employee commitment depicted in Table 3 imply improved productivity, a reduction in turnover, and amplified customer focus. Additionally, the findings suggest that senior and junior staff are more likely to stick with a company even if better-paying jobs are open to them in the private sector (Ahmed, 2015). Further, according to Dixit and Bhati (2012), the library can be at its best with its staff being committed to the management goals and objectives.

Staff Commitment and Promotion

The study conducted a correlation analysis to examine the association between employee commitment and promotion practices, the results of which are presented in Table 4. The findings revealed a positive relationship between promotion practices and employee commitment, as indicated by a Pearson's Correlation Coefficient of $r = 0.291$. This relationship reached statistical significance at the 0.01 level, with a p-value of 0.001, emphasizing its statistical robustness. However, it is worth noting that the strength of this relationship is not considered strong.

Table 4. Correlation Analysis

Variables	1	2
1. Staff Commitment	-	-
2. Staff Promotion	0.291	-

Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient between employee commitment and employee promotion is 0.291 ($r = 0.291$), which indicates a moderate positive correlation between these two variables. This relationship reached statistical significance at the 0.01 level, with a p-value of 0.000, emphasizing its statistical robustness. However, it's worth noting that the strength of this relationship is not considered strong. The positive correlation suggests that there is a relationship between staff promotion and their commitment to work at a Ghanaian University library. Specifically, as employee promotion increases, there is a tendency for employee commitment also to increase. Conversely, when promotion opportunities are limited or perceived as unfair, it may negatively impact employee commitment levels.

This finding underscores the importance of staff promotion strategies in fostering employee commitment within the library. By providing clear pathways for career advancement and recognizing employee contributions through promotions, the library can enhance employee morale and dedication to their work. Furthermore, it highlights the need for transparent and merit-based promotion processes to maintain high levels of employee commitment and organizational effectiveness. Overall, the correlation analysis suggests a significant association between staff promotion and commitment at a Ghanaian University library, emphasizing the importance of promoting employee growth and development to cultivate a committed workforce.

5. Discussion

Staff Promotion

The study was driven by Kelley's Attribution Theory (1967), which accurately reflected the relationship between staff commitment and promotion at a Ghanaian University library. The first objective sought to find out the extent to which a Ghanaian university library supports employee promotion among senior and junior staff. The data indicate a generally positive perception among staff regarding the promotion system, with employees expressing satisfaction with various aspects such as equal opportunities for promotion (Mean = 3.80), additional responsibilities, compensation, and communication from management. The results suggest that when employees perceive equal opportunities for promotion, they are more likely to feel valued and motivated to contribute to the organization's growth.

The recognition of merit-based promotion processes fosters a sense of fairness and encourages employees to actively engage in their roles, knowing that their efforts are recognized and rewarded (Mean = 3.56). Moreover, promotions accompanied by higher responsibilities (Mean = 3.57) and additional compensation (Mean = 3.63) serve as incentives for employees to perform their best. The correlation between promotions and increased job status or rank also contributes to

employee satisfaction and self-esteem within the organization. When employees feel that their hard work is acknowledged and rewarded through promotions, they are more likely to remain committed to their roles and the organization as a whole. However, the findings also highlight areas where improvements are needed to enhance employee commitment. The lack of a clear system for recognizing qualified individuals for promotion (Mean = 2.74) and the timely communication of promotion policies can lead to uncertainty and demotivation among employees. Without transparent promotion processes and effective communication from management, employees may feel undervalued and disconnected from the organization's goals, ultimately impacting their level of commitment.

The extent to which senior and junior staff of a Ghanaian university library are satisfied with the university's promotion system. The findings regarding the satisfaction of senior and junior staff members at a Ghanaian university library with the promotion system reveal a mixed picture, highlighting both areas of contentment and areas of concern. On the positive side, the data indicate that staff members generally express satisfaction with certain aspects of the promotion system. Specifically, employees are content with the higher additional responsibilities that come with promotions, as well as the additional compensation they receive. This submits that employees value opportunities for professional growth and are motivated by the prospect of taking on more challenging roles within the organization. Furthermore, the recognition of qualified workers for promotion and the resulting higher work status or rank are also sources of satisfaction for staff members. This acknowledgment of employees' skills and contributions fosters a sense of value and appreciation within the organization, motivating employees to perform at their best and remain committed to their roles. However, the findings also reveal several areas of dissatisfaction among staff members regarding the promotion system. Notably, employees express discontent with the perceived lack of equal promotion opportunities and the inefficiency of the promotion system. This suggests that there may be disparities in the promotion process, leading to feelings of unfairness and frustration among certain staff members. Additionally, dissatisfaction with the communication of promotion policies further exacerbates these concerns. Without clear and transparent communication from management regarding promotion criteria and processes, employees may feel disconnected and undervalued, ultimately leading to decreased morale and commitment. These findings underscore the importance of addressing issues related to fairness, transparency, and communication within the promotion system. By ensuring equal opportunities for promotion, implementing an efficient promotional system, and improving communication on promotion policies, the organization can enhance employee satisfaction and commitment (Saharuddin, 2016). Addressing these concerns is crucial for maintaining high levels of employee performance and achieving organizational objectives. As highlighted by previous research (Rahayu, 2022; Saxena, Srivastava, 2015; Simanjuntak, 2015), a satisfied and committed staff is essential for organizational success, as it leads to increased productivity, higher levels of engagement, and improved overall performance.

Staff Commitment to Work

The findings regarding the perceived commitment of senior and junior staff at a Ghanaian university library shed light on the dedication and loyalty exhibited by employees towards their roles and the organization as a whole. The data reveal a strong alignment between staff perceptions and organizational goals, indicating a high level of commitment among employees. The results indicate that staff members are prepared to go above and beyond in their efforts to support the success of the library, as evidenced by their agreement with statements indicating a willingness to put in additional work and accept various job assignments (Mean = 3.95). This willingness to contribute demonstrates a deep sense of dedication and investment in the organization's mission and objectives. Moreover, employees express a strong affinity for the organization, as evidenced by their agreement that they speak highly of the library to their friends (Mean = 3.55) and consider working in their current profession important to them. This positive sentiment towards the organization suggests a strong organizational culture and a sense of pride among staff members in being associated with a Ghanaian university library. The findings also have implications for organizational outcomes, with implications for improved productivity, reduced turnover, and increased customer focus. Research indicates that promotion serves not only as a pathway for career advancement but also as a powerful motivator that enhances employee engagement and

commitment (Anwar, Abdullah, 2021). Employee commitment is a key driver of organizational success, as committed employees are more likely to be engaged, motivated, and focused on achieving the organization's goals. Additionally, the findings suggest that committed staff members are more likely to remain with a Ghanaian University library, even in the face of better-paying opportunities in the private sector. Furthermore, the alignment of staff commitment with management goals and objectives is crucial for organizational effectiveness. When staff members are committed to the attainment of organizational goals, they are more likely to work collaboratively towards achieving shared objectives, leading to enhanced performance and outcomes.

Staff Commitment Level

Findings from the correlation analysis revealed a significant and positive relationship between staff promotion and the commitment level of employees at a Ghanaian university library. This result underscores the crucial role that promotion practices play in shaping employee commitment and organizational outcomes. The Pearson correlation coefficient of 0.291 indicates a moderate positive correlation between staff promotion and commitment. This correlation is statistically significant at the 0.01 level, emphasizing the strength of the relationship. While the strength of the correlation is not considered strong, its significance underscores the importance of promotion strategies in fostering employee commitment within the library. This finding supports several findings of other authors (Haryonoa et al., 2020; Olurotimi et al., 2015; Rahayu, 2022; Simanjuntak, 2015).

The positive correlation suggests that as employees are promoted, their commitment to work at a Ghanaian University library tends to increase. This aligns with the expectation that promotions serve as recognition of employees' contributions and provide opportunities for career advancement, thereby motivating employees to remain committed to their roles and the organization. Conversely, limited or unfair promotion opportunities may negatively impact employee commitment levels. When employees perceive promotions as arbitrary or biased, it can erode trust in the organization and diminish their motivation to remain committed to their work. Therefore, it is essential for promotion processes to be transparent, merit-based, and perceived as fair to maintain high levels of employee commitment. The findings highlight the importance of promoting employee growth and development to cultivate a committed workforce. Clear pathways for career advancement and recognition of employee contributions through promotions are essential in enhancing morale and dedication among staff members. Moreover, transparent promotion processes contribute to organizational effectiveness by fostering a culture of fairness and trust.

6. Strengths and Limitations

One significant advantage of this study is its strong methodological approach, which includes the use of a highly reliable questionnaire and a thorough data analysis technique. Cronbach's Alpha coefficient analysis confirmed the questionnaire's internal consistency, with all items scoring above the recommended threshold of 0.70. This demonstrates the validity of the collected data. Furthermore, the researchers used a cross-sectional survey design to collect a large amount of data from a representative sample of 187 junior and senior staff members. This improved the ability to generalise the findings to a larger population. The 96% response rate highlights the accuracy of the results, indicating a high level of participation and enthusiasm among the participants. Furthermore, the use of Spearman's Rank Order Correlation Coefficient provided a rigorous statistical framework for testing the hypotheses, yielding strong evidence of a significant and positive relationship between job promotion and employee commitment. This study provides important insights into the relationship between promotion and commitment in the library community, with practical implications for organisational management and policy development.

Although the study has significant strengths, it is important to recognise its limitations. Initially, the research is limited to a single Ghanaian university library, which may limit the findings' applicability to other settings and institutions. The unique organisational culture and promotion practices observed in the university library under investigation may not be representative of other libraries or institutions, limiting the findings' applicability. Furthermore, the study's cross-sectional design only provides a snapshot of the relationship between job promotion and employee commitment. It does not allow for the analysis of changes over time or

the identification of causal relationships. Another constraint is the reliance on self-reported data, which response biases like social desirability or recall bias may skew. Furthermore, the study's focus on quantitative measures may have overlooked the qualitative aspects of employee experiences and perceptions. These qualitative aspects may provide deeper insights into the complexities of the relationship between promotions and commitment. To improve the findings' thoroughness and applicability, future research should take a mixed-methods approach and include multiple institutions.

7. Conclusions and Implications

The study's findings allow us to draw several conclusions about the relationship between staff promotion and employee commitment in the context of a university library in Ghana. For starters, it was clear that promotion is critical to improving employees' emotional, moral, and long-term commitment. This emphasises the importance of implementing fair and transparent promotion policies to boost employee morale and loyalty. Nonetheless, the findings revealed gaps in communication regarding feedback, promotion procedures, and system updates. If these shortcomings are not addressed, they may have a negative impact on employees' dedication, resulting in a decrease in overall performance, effectiveness, and efficiency.

Furthermore, the study stated that while some aspects of the promotion system, such as equal opportunities, additional responsibilities, and compensation, were viewed positively, there were significant areas that needed to be improved. More specifically, the lack of a well-defined mechanism for identifying eligible individuals for advancement, as well as the timely dissemination of promotion guidelines, were identified as issues that could lead to employee dissatisfaction and low motivation.

The correlation analysis revealed a statistically significant but moderately positive relationship between staff promotion and employee commitment. This discovery emphasises the importance of effective promotion strategies in developing a dedicated workforce. Clearly defined and fair promotion procedures that prioritise merit and are effectively communicated can boost employee morale, foster trust, and increase dedication, ultimately improving the organization's overall effectiveness.

8. Recommendations

Based on the study's findings and conclusions, a variety of policy measures can be proposed to ensure the implementation of effective promotional strategies. These measures are intended to increase staff dedication and assist the library in meeting its strategic goals. The following suggestions are specifically directed at the library's management:

According to the findings, maintaining credibility in promotional practices is critical in order to increase employee commitment. To accomplish this, the library administration must ensure that the institution's systems are regularly updated to accurately identify and acknowledge eligible individuals for advancement. This entails developing transparent and meritocratic promotional standards that are effectively communicated to all staff members. Periodic evaluations of promotion procedures should be conducted to ensure equity and honesty, thereby promoting employee confidence and motivation.

The management should implement a strong communication strategy to keep staff members informed of any changes to the library's promotion policies. This could include regular updates through staff meetings, newsletters, or a dedicated internal online portal solely for HR-related matters. To improve transparency and reduce uncertainty, management can strengthen employee commitment and alignment with organisational goals by keeping employees up to date on the most recent policies and promotion criteria.

The research department should develop a practice of conducting regular research on library staff needs and promotional opportunities, which should be integrated into the management's institutional framework. This proactive strategy entails conducting surveys, focus groups, and feedback sessions to gather valuable information about employees' preferences and concerns about promotions. The findings from these studies can be used to develop tailored initiatives that address specific promotional needs, such as professional growth workshops, mentorship programmes, and leadership development training. By addressing the changing needs of its employees, the library

can create a nurturing environment that promotes professional development and increases overall job satisfaction.

To meet the ongoing promotional needs of the staff, it is recommended that the library implement continuous professional development programmes. These programmes may include specialised training sessions, certification courses, and opportunities for further education. Giving employees access to resources that improve their skills and credentials not only prepares them for advancement but also demonstrates the library's commitment to their professional development. As a result, this can boost employee morale and increase their commitment to the organisation.

Implementing a structured feedback system that allows employees to provide feedback on promotion-related procedures and policies can be beneficial. This could include conducting anonymous surveys or implementing suggestion boxes, where employees can freely express their experiences and make suggestions for improving the workplace. Management can consistently improve promotional practices by actively soliciting and responding to feedback, allowing them to meet the expectations and needs of their employees and increasing their dedication and involvement.

Furthermore, in addition to formal promotions, the library should implement a recognition and reward system that explicitly recognises exceptional performance and valuable contributions. This system may include awards, diplomas, and other forms of recognition to commemorate personnel accomplishments. Recognising and compensating exceptional performance not only motivates employees but also sets a standard of achievement that aligns with the library's strategic goals.

Implementing these suggestions will allow the library's management to create a more transparent, equitable, and supportive promotional environment. This approach will not only increase staff dedication but also improve the library's ability to attract and retain highly skilled individuals who are critical to meeting its strategic goals.

9. Declarations

Ethics approval and consent to participate

The study was conducted following all standards approved for human research.

Consent for publication

All authors have reviewed and approved the final version of the manuscript for publication. They also affirm their accountability for all aspects of the work and commit to addressing and resolving any issues related to the accuracy or integrity of any component of the manuscript.

Availability of data and materials

Data will be made available upon request

Conflict of interest statement

The authors declare that they have no personal or financial conflicts of interest related to this study.

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Authors' contributions


TM conceptualized the study. GTD and EAN, with contributions from TGM, designed the study and conducted the data analysis and interpretation. All authors contributed to drafting the initial manuscript and participated in its revision and finalization.


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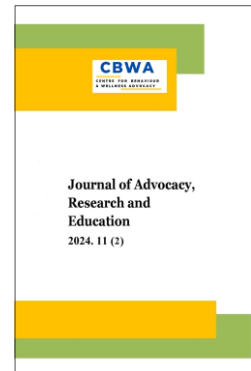
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Climate Change Effects, Multi-Actor Interactions, and Effectiveness of Adaptation Activities on Rice Production in Ghana's Northern Region

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Abstract

The study evaluated the level of interactions and efficacy of climate change adaptation efforts among farmers, agricultural extension agents (AEAs), and researchers in the northern region of Ghana. The study employed a cross-sectional survey design technique. Three hundred and twenty-one smallholder farmers were used for the study. Factor analysis, analysis of variance, frequencies, means, and standard deviations were tools used for quantitative analysis. The results revealed about 68 % variations in the effect of climate change on rice production. The findings also showed that researchers ($\bar{X} = 3.52^a$) interacted significantly more with AEAs ($\bar{X} = 3.16^b$) than farmers ($\bar{X} = 2.81^c$). Farmers stated that the technique and outcome demonstrations were effective in adopting adaption technology, with a mean score of 4.53. Farmers' limited engagement with Agricultural Extension Agents (AEAs) and researchers hinders the development, modification, and dissemination of adaptation technologies for rice production. The study's outcome is crucial for understanding the impact of climate change on rice production. Additionally, it reveals how various actors in rice production interact to address climate change through various adaptive measures. Also, the theoretical implication is embedded in higher levels of interaction by researchers and AEAs, compared to farmers, suggesting potential communication and technology transfer gaps that hinder the successful adoption of adaptation technologies among farmers. The originality of this study lies in the interaction among rice production actors in addressing the climate change effect, which is absent in current climate change literature.

Keywords: Climate Change Effects, Effectiveness of Adaptation Activities, Ghana, Multi-Actor Interactions, Northern Region, Rice Production.

1. Introduction

Climate change continues to have devastating consequences and effects on rice productivity globally due to the crops' sensitivity to changes in climate parameters. Variabilities in parameters, especially temperature and rainfall, negatively impact rice germination, development, and yield (Abbas et al., 2021; Chairan, 2022; Guo et al., 2019). For instance, fluctuations in temperature and rainfall cause flooding, drought or dry spells and increase the incidence of weeds, pests, and diseases (Duchenne-Moutien, Neetoo, 2021; Mahdu, 2019; Skendžić et al., 2021). Extreme changes in rainfall and temperature changes will also present unfavourable growing conditions in the

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cropping calendars, thereby modifying growing seasons, which could subsequently reduce rice productivity. The changing patterns of rainfall and rising temperatures frequently influence the incidence and spread of pests and diseases in rice fields (Ansari et al., 2021). Furthermore, Irawan and Antriyandarti (2021) discovered soil degradation in the rice sector in Indonesia was a result of deforestation, erosion, and unrestricted use of inorganic fertiliser. According to Mahdu (2019), excessive rainfall and heavy winds caused by climate change led rice plants to lodge. Climate change, according to Ma et al. (2021), has the potential to increase pest dispersion and resistance, resulting in crop losses and food security issues.

As a result, climate change adaptation technologies are increasingly being advocated for to adjust farmer practices and compensate for the negative effects of climate change on crop production by strengthening resilience to climate change, thereby increasing yield and, as a result, increasing food security (Ahmed et al., 2019; Onyeneke, 2021).

Communication and collaboration among pertinent parties are critical for the success of climate change adaptation as a whole. The involvement of researchers, extension agents, and farmers is crucial for ensuring that adaptation measures are pertinent to local requirements. This involvement encompasses problem identification, technology development, localisation of technologies, and feedback provision on the implemented technologies (Kokwe et al., 2022; World Bank, 2019). Establishing connections between researchers and agricultural extension agents (AEAs) is crucial for the adaptation of technologies to farmers' demands and requirements while also ensuring that extension agents are well-versed in the technologies they are tasked with promoting (Hamed et al., 2021).

The importance of agricultural extension agents and researchers in assisting farmers with production issues cannot be overstated, particularly in light of climate. As a result, strong interactions among and between farmers, AEAs, and researchers are critical in ensuring that technologies are well adapted to farmer situations and that farmers are familiar with their use. In an analysis of farmers' level of interaction with Agricultural Extension Agencies in Ethiopia, Gebremariam et al. (2021) discovered that farmers had fewer interactions with AEAs. Similarly, Ifejika et al. (2018) reported that interactions between farmers and extension agents were almost non-existent in many local government areas in Nigeria. In a study conducted in Sudan, Hamed et al. (2021) found that most farmers, extension agents, and researchers perceived weak connections between research and extension services. In the same vein, Bereir (2022), in evaluating research-extension-farmer linkages in Sudan, hinted that poor research-extension-farmer linkages were often the results of inadequate budgets for linkage activities, poor infrastructure, continuous transfer of extension agents and different administrations spearheading the activities of extension and research.

Collaboration between farmers, Agricultural Extension Agents (AEAs), and academics is crucial for advancing, adjusting, and spreading adaptive solutions related to climate change. According to Maake and Antwi (2022), an extension was inadequate in providing demand-driven services, including information as well as agricultural technologies, due to poor prioritising of farmers' specifications, which frequently resulted in farmers receiving irrelevant extension services. Jamal et al. (2023) claimed in their study in Bangladesh that researchers are exceptionally proficient in generating climate-resilient rice varieties and approaches that have the potential to boost food security.

Literature using factor analysis to study the effects of climate change on rice production in Northern Ghana is scanty. In addition, the interactions between researchers, AEAs, and farmers in the region regarding adaptation to climate change have not been exhaustively studied. As a result, the purpose of the study was to evaluate the efficacy of multi-actor partnerships in rice production climate change adaptation activities. The study yielded data regarding the stakeholders with the greatest and least amount of interaction, in addition to identifying the most effective adaptation activities carried out by AEAs and researchers.

Specifically, the study:

1. Assessed the effect of climate change on rice production;
2. Analysed the extent of interactions in climate change adaptation among rice farmers, agricultural extension agents and researchers in climate change adaptation activities; and
3. Evaluate the effectiveness of interactions among farmers, AEAs, and researchers in rice adaptation technologies.

Hypothesis tested: There is no statistically significant difference in interaction among farmers, AEAs and researchers.

2. Materials and Methods

The Northern area of Ghana is predominantly Savannah grassland and has boundaries with the Oti, Savannah, and North East regions of Ghana, as well as Togo to the south, west, north, and east. The region is located at latitude $9.660000049942276^{\circ}\text{N}$ and longitude $-0.39437989999999995^{\circ}\text{W}$. The precipitation in the Northern Region follows an unimodal trend, starting in April/May and ending in October. The average annual precipitation ranges from 750 to 1,050 millimeters. The area's relative humidity of 75-76 % worsens the effects of daytime heat (Mabe et al., 2014). The dry season starts in November and ends in March when temperatures peak. The area's principal soils are Voltarian sandstones that easily tolerate slight weathering, resulting in cultivated soils with Guinea savannah vegetation (Obeng, 2000). The primary agricultural products in the region include Bambara groundnuts, maize, millet, rice, yam, sorghum, groundnuts, and cowpeas. The Northern Region Department of Agriculture Extension Services ensures that agricultural extension agents contribute effectively to the region's social and economic development by providing farmers with new information on agricultural practices and scientific research through education (MoFA, 2019). SARI is one of the few research institutes in the Northern Region. It is one of thirteen research institutes in Ghana that fall under the jurisdiction of the Council for Scientific and Industrial Research Institute (CSIR). The main goal of SARI is to provide farmers in Northern Ghana with suitable technologies to improve food and fibre production using sustainable ways while also maintaining and increasing soil fertility. Figure 1 displays a diagram of the research area.

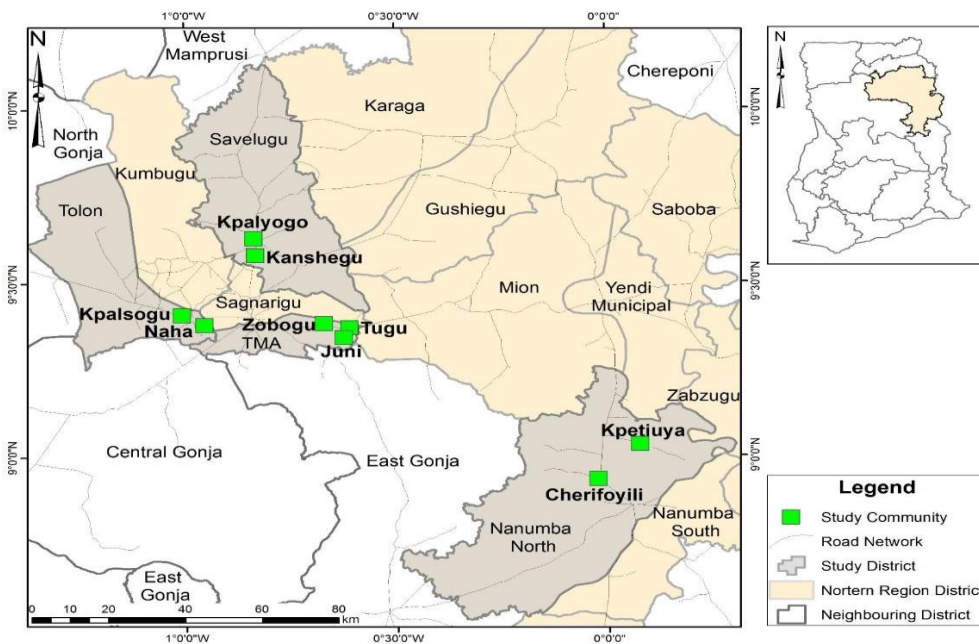


Fig. 1. Map of the Study Area

Source: cartography and Remote Sensing Unit of the Department of Geography and Regional Planning, University of Cape Coast (2019)

A cross-sectional survey design with a quantitative data collection process was used for data collection. The Northern region's rice farmer population is approximately 50,000. Thus, a sample size of 381 was determined using the Krejcie and Morgan table for sample size determination, which is recommended when employing probability sampling methods (Memon et al., 2020). A multi-stage sampling technique was used to select the rice farmers. Tolon, Savelugu, Nanumba North Districts, and Tamale Metropolis were chosen at random from the Northern Region's ten rice-growing districts in the first stage. Following that, two communities from each district and three communities from the Metropolis were picked at random for a total sample size of 381 farmers from the eight communities. A response rate of 85 %, representing 324 rice farmers

utilising an interview schedule, demonstrated reliability (Wu et al., 2022). The data was obtained between June 22nd and August 8th, 2019. Table 1 shows the population and sample size of the study.

Table 1. Population and Sample Size

Study area	Sampling frame	Sample size
Tamale Metropolitan		
Tugu	55	48
Zoborgu	45	40
Juni	42	38
Tolon District		
Voggu Kpalsogu	36	33
Naha	48	42
Savelugu District		
Kanshegu	31	29
Kpalyogo	35	32
Nanumba North District		
Cherifoyili	37	34
Kpetiuya	30	28
Total	381	324

Source: Field Survey, 2019

A census of 30 AEAs and 30 researchers involved in climate change and rice production was used for the quantitative method. Data from farmers, AEAs, and researchers was collected using questionnaires.

Quantitative data were analysed using means and standard deviations for objectives two and three, while factor analysis was employed for objective one.

Kaiser-Meyer-Olkin sampling adequacy of 0.819 and Barlett test were significant $X^2(55) = 1034.04$, $p < 0.000$, indicating the factorability of the sample. Communalities greater than 0.5 indicated suitability for factor analysis. A three-factor solution with loadings smaller than 0.40 removed explained 67.83 % of the variance in the impact of climate change on rice production in the Northern Region, with eigenvalues exceeding one. The mean scores were interpreted on a scale of: 1= very poor, 2 = poor, 3 = moderate effective, 4= effective, and 5 = highly effective.

3. Results

Effect of Climate Change on the Production of Rice

The results in Table 2 revealed eleven successful climate change effect variables on rice production factor loadings, where lodging of rice plant (0.872) had the highest factor loading followed by withering of seedlings (0.838). In contrast, low rice yields (0.518) had the lowest factor loading out of the eleven.

Factor 1 with five items was named soil, time, and yield effect due to high loadings in soil erosion (0.799), changes in the duration of the rainy season (0.744), loss of soil nutrients (0.697), low yield (0.651) and reduction in length of the growing season (0.620). These factors accounted for 27.3 % of the variability in the impact of climate change on rice output. The washing away of the topsoil has negative implications on soil nutrients, which are essential for the survival and yield of rice crops. Four items were loaded onto factor 2 (grain and seedling effect) due to high loadings in the lodging of the rice plant (0.872), a withering of seedlings (0.838), reduced grain quality (0.714) and poor seed germination (0.599) which explained 24.54 % of the variance.

Table 2. Effect of Climate Change on the Production of Rice

Effects	Factor loadings			Communalities
	1	2	3	
Soil erosion	0.799			0.652
Changing rainfall pattern	0.744			0.632
Loss of soil nutrient	0.697			0.685
Low rice yields	0.651			0.518
Reduction in length of growing season	0.620			0.566
Lodging of rice plant		0.87 2		0.767
Withering of seedlings		0.83 8		0.786
Reduced rice quality		0.714		0.704
Poor seed germination		0.59 9		0.735
Widespread of new crop pests			0.835	0.787
Pesticide no longer effective			0.760	0.631
Eigenvalues	4.83	1.63	1.00	
% of variance	27.38	24.5 4	15.91	

Source: Field Survey, 2019 Loadings ≤ 0.40 are omitted.

These factors generally affect seed and seedling qualities, which have considerable effects on the overall growth and development of the rice plant. Finally, factor 3, also known as pest and pesticide effects, had high loadings in widespread new crop pests (0.835) and pesticides no longer effective (0.760). Pest infestations on rice fields have the potential to negatively impact crop quality and yield, and pesticides are commonly used to manage these pests, which causes the pests to become resistant to pesticides over time and, potentially reduce microbial populations in soils. This component accounted for 15.91 % of the variability in the impact of climate change on rice output. The results demonstrate that the Eigenvalues for soil, time, yield impact, grain and seedling effect, and insect and pesticide effects were 4.83, 1.63, and 1, respectively, indicating the relative importance of these components.

Extent of Interactions in Climate Change Adaptation Activities among Farmers, AEs and Researchers

The assessment of the level of interactions among many parties involved in the development, modification, transfer, and deployment of adaptation technologies was conducted using a five-point Likert-type scale ranging from 1 (extremely bad) to 5 (very effective). Table 3 reveals that farmers and AEs had moderate ($\bar{X} = 2.81$, $\bar{X} = 3.16$) interactions on climate change issues, whereas researchers had substantial ($\bar{X} = 3.52$) interactions and linkages on climate change issues. Researchers indicated that most interactions may have involved multiple interactions with different farmers and AEs during technology development to evaluate these technologies and ensure that they were suitable for farmer needs.

Farmers' perspectives on interactions with other stakeholders indicated effective farmer-AEA interaction ($\bar{X} = 3.64$), but weak interactions with farmer-researchers ($\bar{X} = 2.25$) and poor farmer-AEA-researcher ($\bar{X} = 2.54$). According to AEs and researchers' perspectives, effective interactions existed between AEA-researcher ($\bar{X} = 3.51$) and farmer-AEA-researcher ($\bar{X} = 3.63$) respectively, with AEA-farmer-researcher interactions being poor ($\bar{X} = 2.50$) from the perspective of AEs. In contrast, the researchers discovered no indication of poor interactions with other stakeholders. Specifically, farmers showed a moderate interaction in farmer-AEA-researcher ($\bar{X} = 2.54$) linkages.

Table 3. Extent of Interactions by Farmers, AEAs and Researchers on Climate Change Adaptation Activities

Type of interactions	Farmers		AEAs		Researchers	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Farmer-researcher linkage	2.25	1.52	-	-	3.50	0.51
Farmer-AEA linkage	3.64	2.69	3.48	0.64	-	-
AEA-researcher linkage	-	-	3.51	0.94	3.43	0.57
Farmer-AEA-researcher linkage	2.54	0.76	2.50	0.51	3.63	0.25
Weighted mean (\bar{X}_w)	2.81		3.16		3.52	

Source: Field Survey, 2019

Statistically significant variations were found in the means of farmers, AEAs, and researchers' level of interaction, as indicated by a one-way analysis of variance in Table 4 ($F(2, 376) = 5.95$, $P = 0.003$). The level of collaboration among farmers, AEAs, and researchers in climate change adaptation initiatives differed. An examination conducted after the fact showed that the number of encounters between researchers and AEAs was much higher, with AEAs perceiving a significantly higher level of interaction compared to farmers.

Table 4. Mean comparison of the extent of interactions among farmers

Actors of interactions	\bar{X}	SD
Researchers	3.52 ^a	0.32
AEAs	3.16 ^b	0.48
Farmers	2.81 ^c	1.14
Total	3.19	0.65

Source: Field Survey, 2019 * $P \leq 0.05$

Poor farmer-AEA-researcher interactions in the study were due to commercial farmers who have resources available to them often being chosen for the Research-Extension-Farmer Linkage Committee (RELC) instead of smallholder farmers who felt the impact of climate change more due to resource constraints. Also, due to budget constraints, just a few farmers are normally invited to RELC meetings where farmers, AEAs, and researchers meet to discuss difficulties impacting farmers and present solutions or carry out research into how to remedy the issues.

Rice Farmers' Comparison of the Effectiveness of AEAs and Researchers' Adaptive Activities

Table 5 reveals that generally, farmers perceived interactions on adaptation activities with AEAs ($\bar{X}_w = 3.89$) to be more effective compared to interactions with researchers ($\bar{X}_w = 3.34$). Specifically, information on planting dates ($\bar{X} = 3.84$) and rainfall ($\bar{X} = 3.86$) from AEAs was effective compared to information on planting dates ($\bar{X} = 2.13$) and rainfall ($\bar{X} = 2.45$) from AEAs, which were lowly effective and moderately effective, respectively. On method and results demonstration and varietal selection, it was found that researchers were highly effective ($\bar{X} = 4.53$, $\bar{X} = 4.43$) compared to AEAs ($\bar{X} = 3.91$, $\bar{X} = 3.72$) who were effective. Results from the study also revealed that AEAs were effective in bunding and pest and disease control compared to researchers who were moderately effective in weed control ($\bar{X} = 2.85$) and bunding ($\bar{X} = 3.24$).

Table 5. Comparison of the Effectiveness of AEAS And Researchers' Interactions with Farmers' Adaptive Activities

Adaptive Activities	f	AEAs		f	Researchers	
		\bar{X}	SD		\bar{X}	SD
Information on planting dates	25	3.84	0.73	6	2.13	0.42
Information on rainfall	22	3.86	0.58	8	2.45	0.66
Method and results demonstration	28	3.91	1.24	6	4.53	1.10

Adaptive Activities		AEAs			Researchers	
Pests and disease control	25	4.11	0.82	12	2.85	0.72
Bunding	30	4.33	0.61	8	3.24	0.90
Fertiliser application	18	3.44	0.92	13	3.21	0.54
Varietal selection	15	3.72	1.21	13	4.45	0.82
Rice-legume intercrop	9	3.91	1.13	12	3.88	0.86
Weighted mean (\bar{X}_w)		3.89	0.92		3.34	0.75

Source: Field Survey, 2019

4. Discussion

Effect of Climate Change on the Production of Rice

The paper effectively highlights that soil erosion (0.799) causes the topsoil, the most nutrient-rich layer, to be scraped off, which is linked to soil nutrient loss (0.697), whose resultant effect is reduced rice yields (0.651). This is consistent with the findings of Irawan and Antriandarti (2021), who found that soil erosion damages the soil, resulting in low yields.

The changing rainfall pattern (0.744) has significant effects on rice production, typically resulting in altered planting and harvesting dates, which might affect management strategies. Changing rainfall patterns also fosters an atmosphere conducive to the spread of pests and diseases (0.835). Ansari et al. (2021), Duchenne-Moutien and Neetoo (2021) and Skendžić et al. (2021) findings are consistent with this study, who discovered that altering rainfall patterns increases the prevalence of diseases and pests. With changes in temperature and rainfall, there is a possibility of increasing pest pressure, which would result in increased pesticide application frequency. This situation leads to the development of pesticide resistance, where pesticides are no longer effective (0.760). This result is in line with Ma et al. (2021), who explained that the increase in pest populations often resulted in pesticide resistance. Floods and drought cause plant lodging (0.872), seedling withering (0.838) and poor seed germination (0.599), respectively, which is consistent with Mahdu's (2019) findings that floods weaken plants, causing them to lodge.

Extent of Interactions in Climate Change Adaptation Activities among Farmers, AEAs and Researchers

Farmers' reports of inadequate contact with researchers may be due to researchers' failure to include farmers in the creation and testing of climate change adaptation solutions. This is consistent with the findings of Hamed et al. (2021), who reported that in Sudan, interactions between researchers and farmers were low to non-existent. The effective linkages between AEAs and farmers, according to farmers in the study, can be attributed to AEAs' presence in farmers' communities to conduct normal extension work, which translates into discussions on climate change adaptation activities such as the development, modification and use of adaptive technologies. This is in contrast to studies in Ethiopia by Gebremariam et al. (2021) and Nigeria by Ifejika et al. (2018), which found farmers had fewer and almost no interactions with AEAs, respectively. Additionally, Bereir's (2022) findings stated that poor research-extension-farmer links were frequently the result of insufficient resources for linkage operations.

4.3 Rice Farmers' Comparison of the Effectiveness of AEAs and Researchers' Adaptive Activities

Researchers' low effectiveness in providing information on rainfall and planting dates may be due to the fact that these are not within their mandate, and information on planting dates and rainfall is not readily available to them, resulting in their inability to do so. The result is parallel to that of Maake et al. (2022), who indicated that extension agents were inadequate in providing information to farmers.

Interactions on varietal selection with researchers were more effective than with AEAs because they are often the developers of these varieties and thus are able to explain vividly to farmers the requirements of each variety of rice compared to the AEAs who have limited knowledge of the varieties. This is congruent with the findings of Jamal et al. (2023), who state that researchers are highly specialised in developing climate-resilient rice varieties.

Farmers agreed that pest and disease control, as well as bunding, were more effective when performed by AEAs rather than researchers because, while researchers were the developers of

technologies, their feedback loop was longer because they would need to experiment on the geographical location before advising farmers. In the case of AEAs, responses on pest and disease control and bunding were nearly instant in the event of pest and disease outbreaks or in anticipation of dry spells or drought.

5. Conclusion and Recommendation

The study determined that soil quality, time constraints, and yield variability are the primary challenges encountered by rice growers in the Northern region. Farmers' limited engagement with Agricultural Extension Agents (AEAs) and researchers could hinder the development, modification, and distribution of adaptation technologies tailored to farmers' needs. The study found that farmers responded better to researchers' methods and results demonstrations as well as varietal selection compared to that of AEAs. On the other hand, farmers were more receptive to AEAs' information on rainfall, planting dates, pest and disease control, bunding, fertiliser application, and rice-legume intercrop. The Department of Agriculture and CSIR-SARI should offer workshops for farmers on adapting to the impacts of climate change on soil, crop yield, seeds, seedlings, pests, and insecticides. To increase farmer involvement in climate change adaptation efforts, researchers and Agricultural Extension Agents (AEAs) should arrange local community engagements with farmers to ensure that the technologies created align well with farmers' requirements.

For AEAs to enhance their effectiveness in conveying adaptation knowledge to farmers, the Department of Agriculture and CSIR-SARI should offer training in teaching methodologies and rice varietal selection. This study is distinctive for its comprehensive analysis of the impact of climate change, interactions among several actors, and the effectiveness of adaptation efforts on rice production in the Northern Region of Ghana.

6. Strengths and Limitations

The study had the following strengths: Farmers possessed extensive knowledge of the effect of climate change on rice production in the Northern region. Researchers and agricultural extension agents provided valuable insights into the linkages and interactions for climate change adaptation activities.

The limitations were as follows: Farmers' information was based primarily on recollection, which resulted in the omission of critical facts. Heavy farm work made it difficult to get farmers to answer all questions. Farmers also answered questions quickly in order to continue with farm work, which could have resulted in false replies.

7. Implication of the Study

The study's results show a significant difference in how climate change affects rice production in various parts of Ghana's northern region. Regional differences highlight the necessity of developing adaptation techniques tailored to individual regions to tackle the various challenges encountered by small-scale farmers in different locations. The study's findings highlight the significance of enhancing collaboration and communication channels among farmers, AEAs, and researchers at the national level. National agriculture policies and programs should focus on promoting initiatives that improve the distribution of adaptation technology and best practices to strengthen farmers' ability to adapt nationwide. The study highlights the importance of demonstration methods in encouraging the use of adaptation technologies, emphasising the significance of participatory approaches and farmer-led innovation in promoting sustainable farming practices.

The study's findings on the efficacy of climate change adaptation initiatives among farmers, AEAs, and researchers in Ghana's northern region have significant implications for global endeavours to mitigate climate change effects on agriculture. The results emphasise the significance of promoting interdisciplinary collaboration and knowledge sharing among agricultural stakeholders worldwide. International organisations and donor agencies engaged in agricultural development and climate resilience projects may need to assist in enhancing collaborations and capacity-building programs at the local level. Ghana's experience could provide valuable insights for developing global strategies to promote climate-smart agriculture and improve food security in the context of climate change.

8. Declarations

Ethics approval and consent to participate

The researchers requested ethical approval from the University of Cape Coast Institutional Review Board (UCCIRB/CANS/2019/02). The research was granted approval to be conducted responsibly and ethically, resulting in approved data collecting for good effects.

Consent for Publication

Not applicable

Availability of data and materials

Data and other relevant documents to this manuscript are available upon request.

Conflict of interest statement

The authors declare no conflict of interest.

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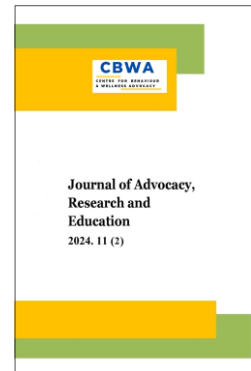
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Teachers' Strategies in Embracing Curriculum Change: A Case of Lesotho Urban Teachers

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Abstract

Curriculum reforms involve changing organisational structures, administration, resource distribution and allocation, communication links, stakeholders' practices, beliefs, and attitudes. They could devastate the consequences of teaching and learning to teachers as curriculum implementers. They could further affect teachers' cognitive stability and psychological and social well-being. This study explores the teachers' experiences in implementing curriculum reforms at the primary school level in Lesotho. An interpretive paradigm and appreciative inquiry framework guided this qualitative study. Thirteen teachers were selected purposively from three primary schools in Maseru. Semi-structured interviews and focus group discussions allow for the collection and interpretation of data. Their experiences with curriculum change and the coping mechanisms they utilised to survive the demands and challenges surfaced. The thematic findings highlighted how teachers' resistance to change, inadequate training, and increased workload pressured most participants. To survive the pressure, challenges, and demands of educational change, teachers highlighted the need to form subject panels and schemes, accessibility and the use of technology and the Internet, and support from school management and the Ministry of Education and Training. Educational change can positively and negatively affect teachers as curriculum implementers. Therefore, teachers need to improvise appropriate coping mechanisms.

Keywords: Coping Mechanisms, Curriculum Change, Lesotho, Teachers' Experiences, Urban Teachers.

1. Introduction

Individuals, organisational or institutional policies sometimes need a paradigm shift or change to calm them in the rapidly and continuously changing world. Research has revealed that curriculum reforms are influenced by various factors, which include philosophical perspectives (Irez, Han, 2011), economic developments (Akala, 2021), social orientation (Simmons, 2009), globalisation (Gleeson et al., 2020), technological advancement and artificial intelligence (Thurzo et al., 2023) or political profile (Balarin, Saavedra, 2021; Zajda, 2020). In a rapidly and continuously changing world, countries are indulging in existing professions in the evolving world, and new professions are generated by the education sector (Kunnari, 2018). Therefore, the role of the education system is to allow teachers to implement educational policies at the grassroots level (schools). Gouédard et al. (2020) point out that curriculum reforms or paradigm shifts are difficult

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because they involve a change in organisational structures, resource distribution and allocation, communication links, practices, beliefs, and attitudes of the implementers and policymakers.

In the 1990s, curriculum reforms in sub-Saharan Africa were a complex issue influenced by, but not limited to, societal, socioeconomic, and political variance due to internal and external heterogeneous forces (Chisholm, Leyendecker, 2008). Post-2010, Lesotho (also situated in sub-Saharan Africa) was floundered by the winds of educational change. The Ministry of Education and Training (MoET) introduced the integrated and continuous assessment policy, and the first enrolment was carried out in 2011. It has been developed and published as the first comprehensive, integrated curriculum and continuous assessment policy after more than four decades of Lesotho's independence (Raselimo, Mahao, 2015). The intention was to do away with the adopted Cambridge curriculum policy, which has existed for over two decades. The integrated education policy is localised for content comprehension and assessment to respond to Lesotho's educational needs, socioeconomic status, and development prospects (Raselimo, Mahao, 2015). In providing this background, the present study investigated the coping mechanisms of Lesotho primary teachers who are arrayed to survive the challenges posed by educational change.

The present article emerged from one of the authors' dissertations investigating the psychosocial implications of curriculum change on primary school teachers' performance. However, this article focuses on determining the coping mechanisms of any teachers who are deployed to survive the challenges posed by curriculum change. As a new education innovation in Lesotho, the integrated curriculum lacks documented information on its effects on how teachers embraced, appreciated, and orchestrated the survival mechanisms to cope with the changes in education.

Despite the rapidity and need for educational change across the African continent, it is disturbing to see how research interacts with the effects of educational changes and coping mechanisms that teachers use to survive the challenges posed by such changes. This leaves teachers in despair, isolated, and disgruntled in their careers. Many teachers view educational change as a risk, a threat, or an insult to school traditions, norms, and teachers' autonomy and status quo (Caponi, 2022; Jorgenson, 2006). Therefore, this study intends to identify and determine the effectiveness and efficiency of the coping mechanisms teachers employ while implementing educational changes. The outcomes of this study may stimulate extensive discussion on the effects of educational change and the effectiveness of the mechanisms that teachers apply to survive the challenges of such changes. Hypothetically, the study may reveal valuable information and insights to policymakers on formulating suitable coping mechanisms for teachers and educational changes. This study's findings may prompt other researchers to undertake further studies on various issues relating to the implications of educational change and coping mechanisms in Lesotho and beyond the Southern African Development Community (SADC) region. The objective of this study was to identify teachers' psychosocial coping mechanisms during the implementation of curriculum changes.

Teachers' Response to Educational Change

As front-line workers in educational change and curriculum implementation, teachers are viewed as the first victims of the negative effects of education and continuing change Mutereko and Chitakunye (2014). Kurata, Selialia, and Mokhets'sengoane (2022) indicate that teachers operate under duress due to the shortage of working aids, increasing service demands, poorly clarified organisational goals, and ever-changing performance goals. Teachers usually use their managerial autonomy and discretion to devise coping mechanisms or survival skills to manage the compulsion. Fernández-Batanero et al. (2021) observe that educational changes appear threatening while simultaneously bringing anxiety, discontent, and suspension to teachers. Olsen and Sexton (2009) assert that educational reforms can jeopardise teachers' confidence, leaving them in despair, disrupted, and confused. Hence, McLaren and Dunn (2016) concluded that curriculum change affects not only teachers' knowledge and beliefs but also their effectiveness and self-efficacy in delivering quality education.

Educational change is dynamic and complicated; hence, teachers' responsibility and participation are crucial and sensitive. Alsubaie (2016) proposes that curriculum reform and development can be challenging. It is, therefore, vital to involve all stakeholders, especially those directly involved in student instruction. Bascia et al. (2014) indicate that role-players involved in curriculum development include teachers, parents, educationists, principals, students, and curriculum specialists. However, teachers are central in designing, developing, and implementing

educational changes. They play a critical role in determining the type of curriculum that benefits students and how to benefit from such changes (Jadhav, Patanka, 2013).

Teaching is one of the best available jobs in our society, but it is also the most stressful job a person can have. Clipa (2017) indicates that teaching under stress can be more profound than working in other related jobs. This causes the highest occupational stress in teaching the job. Researchers concede that the main source of teachers' psychosocial stressors is based on the workload of educational reforms (Redín, Erro-Garcés, 2020; Xhelilaj et al., 2021). They include heavy workload, problems in co-operation with colleagues, poor administration and management, multiple roles, constantly changing requirements, lack of support, lack of autonomy, pupils' problematic behaviours, deprived working conditions and lack of time and learner assessment, time pressure, being evaluated by others and coping with change. Admittedly, the success or failure of educational changes depends primarily on whether teachers are sufficiently conversant with change and have a suitable coping mechanism to allow them to be a significant part of the reform process (Lingam et al., 2017; Stacey et al., 2023).

The change in educational policy can positively or negatively impact teachers' psychological state in and outside of the classroom and their social welfare regarding their relations and patterns. However, in curriculum change and implementation of new content, application of new teaching methods, and assessment procedures, the question is, "*How do teachers survive and cope with the emerging challenges in their daily teaching endeavours.*" The researchers comprehended that primary school teachers' psychological, social, and working lives had been affected since the integrated education policy was introduced in Lesotho schools. Avidov-Ungar and Eshet-Alkabay (2011) report that unfamiliar practices, multiple and simultaneous innovations, abbreviated timelines, and external impositions negatively affected teachers' working lives.

Teachers' Coping Mechanisms During Educational Change

The various reforms that education systems across the globe are experiencing are bound to have a profound impact on teachers' professional work. Several large or small-scale reforms that occur in modern days throughout the world necessitate well-trained teachers, with their roles and functions becoming more challenging and demanding as they must respond more effectively to the radically changing nature of the learners in the 21st century (Lingman et al., 2017) and demands of the fourth industrial revolution. The success or failure of these education changes depends primarily on whether teachers have suitable coping mechanisms, such as skills and knowledge, to play a significant role in the reform processes.

In a rapidly and continuously changing education environment, some teachers experience change as a threat, while others perceive it as an opportunity to develop their skills (Kunnari, 2018). As agents of educational change, Brown et al. (2023) propose that teachers must be learners during the educational change, allowing them to participate in learning activities and reciprocally contribute to implementing education policy. This enables teachers to develop coping mechanisms that will allow them to survive and manage the challenges posed by educational changes. To implement education changes, teachers too must learn to learn (Lingman et al., 2017) to sharpen their skills and acquire relevant knowledge, which may allow them to keep pace with the ever-changing work demands in case educational organisations fail to achieve their professional expectations (Butt, Gunter, 2005).

Educational policy change brings about unforeseen and stressful experiences for teachers and other stakeholders. However, the stressful experience of a particular teacher is unique to that individual and depends on the complexity of interaction amid their personalities, values, beliefs, skills, and circumstances (Harnova Research Report, 2015). Conversely, teachers can utilise various coping mechanisms to survive the challenges and demands of curriculum change. If teachers are aware of the negative mechanisms they use (which do more harm than good), exploring more positive ways of managing change in their schools' work is empirical.

Various researchers describe coping mechanisms as "survival skills" that people use to deal with stress, pain, or the changes they experience (Algorani, Gupta, 2023; Smith, 2012). There are learned behavioural patterns that other people use to manage stress and external pressures. There are negative and positive coping mechanisms that many people use to benefit themselves in a positive way (Feltoe et al., 2016). Nevertheless, Smith (2012) points out that teachers coping mechanisms include distancing themselves from stressful situations, adopting problem-solving tactics and help-seeking skills, and accepting failure and dependence on a social support network.

Tummers and Bekkers (2014) indicate that teachers' coping mechanisms in policy implementation remain a critical refrain.

In contrast, Mutereko and Chitakunye (2014) illustrated that teachers adopt diverse coping mechanisms when implementing such policies. In this regard, each teacher can adopt a suitable mechanism depending on the prevailing situation and context. The Hanover Research Report (2015) reveals that teachers can rely on their strategies for stress management, as opposed to systematic or formalised programmes provided by their respective schools. In this regard, Aulén et al. (2021) contend that teachers working in stressful environments must develop coping strategies to be resilient to the various stressors because some can be more effective than others.

Theoretical Framework

This study is restricted to inclusive education from the perspective of positive psychology to determine the coping mechanisms teachers employ to survive the demands and challenges posed by educational changes. An Appreciative Inquiry (AI) was engaged to establish how educational change affects teachers psychosocially and how teachers accept, embrace, and appreciate such changes. The aim of engaging AI in this study was to search for the best in people and their organisations. For this reason, Cooperider et al. (2008) assert that organisational life must be viewed as a universe of strength rather than a place to solve problems. The application of AI in this study is determined by its relevance as a collaborative process that engages people to discover the best in their context. AI is also applied to understand how teachers appreciate, embrace, and cope with educational change as individuals or groups. As a capacity-building approach, AI seeks to locate, highlight, and illuminate life-giving forces among teachers (Kaminski, 2012) and to demonstrate how they can apply the coping strategies that can enable resilience and survive the challenges posed by educational changes.

Significance of the Study

In determining the implications of curriculum change on teachers, the study thus allows teachers to embrace change, when curriculum change is appropriate, and why curriculum change is necessary. Many teachers regard change as a risk, threat, or insult to the school's traditions, norms, and teachers' autonomy (Jorgenson, 2006). Therefore, the study also intends to determine the effectiveness and efficiency of coping mechanisms teachers use to survive threats and psychological implications brought by curriculum change.

2. Methods and Materials

Research Approach

This qualitative study engaged the interpretive paradigm to determine teachers' views, principles, and beliefs (Thanh, Thanh, 2015) regarding the implications of curriculum change and appropriate coping mechanisms that teachers employ to manage and survive the challenges of implementing educational changes. A brief teacher profile was adopted from the teachers' demographic information. All participants and their schools were given pseudonyms to warrant confidentiality and anonymity (Silverman, 2017). This qualitative study has dualistic foci: teachers' duress and challenges during the implementation of curriculum change and the coping mechanisms teachers employ to survive any foreseen and unforeseen dares while implementing educational changes.

Research Design

A qualitative research design was used to discover teachers' underlying factors, motives, and desires regarding curriculum reforms. Indu and Vidhukumar (2019) illustrate that a research design constitutes the blueprint for collecting, measuring, and analysing data. This study was framed within the instrumental case study design due to its descriptive nature (Thomas, 2017) to establish teachers' experiences and coping mechanisms toward implementing the integrated curriculum. The instrumental case study is used to provide insight into a phenomenon and understand a particular case under study (Kekeya, 2021). This design facilitated the researchers' exploration of teachers' experiences and the coping mechanisms that they used to survive the demands and challenges of curriculum change. The urban primary school teachers were the case under study, and their coping mechanisms during curriculum change were regarded as the phenomenon to be investigated.

Research Site

Two schools were sampled as the research sites. The first school, Maseru Primary School (MPS), is a public school that has been operating for over forty years (40). This school comprised fourteen (14) teachers, a principal, and two office assistants. The school had grades one to seven. From 2018 to 2021, the learner enrollment ranged from 600 to 630. This enrolment exceeded the teacher-learner ratio of 44 % on average. During its roll-out, the MPS was identified as a pilot site for the integrated curriculum. The second school, Union Private School (UPS), is privately owned and has been operating for over 25 years. UPS is situated eight kilometres north of Maseru city centre. It also has seven grades, starting with grade one. In the foundation phase (one, two, and three), each grade has three classrooms, while grades four, five, six, and seven have two classrooms each. Since introducing the integrated curriculum, UPS has admitted learners with different learning disabilities. The teacher-learner ratio in this school is 1:42. Seven teachers were interviewed. At the same time, the other six participated in group discussions to exchange thoughts, ideas, and opinions to understand and learn from each other (Mogea, 2023).

Participants

Thirteen primary school teachers (four males and nine females) who teach grades 1 to 7 in two schools were interviewed, while six teachers participated in the focus group discussion in one of the schools. All the participants were snowball sampled due to the tight research budget and because no research has been conducted on this issue. The interviews and group discussion instruments were used for crystallisation, triangulation, credible outcomes (Creswell, 2018), and data verification from different sources (Gilbert, Stoneman, 2016). Both primary schools were conveniently sampled due to their accessibility, recruitment, and cost-effectiveness in terms of monetary, time, and effort (Thomas, 2017).

Data Collection Processes

Data collection processes were conducted on the respective school premises during the teachers' spare time. One-on-one semi-structured interviews were conducted to obtain a description of the coping mechanisms that were used to interpret the meaning of the gathered data (Brinkmann, Kvale, 2015). The interview guide had space for open-ended comments to allow the interviewees a degree to share their thoughts and explain their views about educational change and the coping mechanisms used while implementing a new curriculum. While assembling the focus group, the researcher, with the backup of the research assistant, took into consideration the size, purpose, composition, participants' feelings, and reactions of the participants (Krueger, Casey, 2015; Sarfo et al., 2021). The researcher kept detailed written field notes before and during the data collection processes on the school premises and about participant interaction and reactions. The interview proceedings and focus group discussions were tape-recorded with the consent of the participants and for analysis and interpretation purposes.

Data Analysis

The researchers engaged the thematic data analysis process interactively across both data collection sources. The data analysis process is conducted systematically and is transparently communicated to the reader (Nowell et al., 2017). The researchers used the inclusion and exclusion criteria before and during data analysis. The inclusion criteria are used to pre-define and characterise the subjects that can be included in the data analysis. In contrast, the exclusion criteria selected the subjects or applied the eligibility criteria to rule out certain subjects in the research study (Velasco, 2010). The inclusion criteria were also optimised to enact the sub-themes and describe the conditions a subject had to meet to be included in the study (Porzolt et al., 2018). Some subjects from verbatim quotations were eligible to be included in the analysis process, while others were not. The gathered data were categorised into sub-themes for conciseness, accuracy, and simplicity (Javadi, Zerea, 2016).

3. Results

Biographic results

Table 1 outlines the profile of the teachers interviewed in this study. Teachers' pseudonyms, gender, age, teaching experience, and the grade taught constituted their profiles.

Table 1. Biographic results of teachers in School A

Participants	Gender	Age	Teaching experiences	Grade levels
Nake	Female	31-40	5-10	7
Mokhotsi	Female	31-40	5-10	6
Ngoaneso	Female	31-40	5-10	5
Khaitsele	Female	31-40	5-10	4
Motho	Male	31-40	10-15	3
Nana	Female	41-50	15-20	1

Table 2. For teachers in school B (UPS)

Participants	Gender	Age	Teaching experiences	Grades levels
Ouma	Female	41-50	10-15	1
Sisi	Female	51-60	10-15	2
Anti	Female	51-60	Above 20	3
Chomi	Female	31-40	5-10	4
Cousi	Female	21-30	5-10	5
Mama	Female	51-60	15-20	6
Ausi	Female	41-50	15-20	7

Thematic Findings

As discussed below, the manifestation of teachers' experiences in implementing curriculum reforms emerged in three dimensions: increased workload, inadequate teacher training and teachers' resistance to change. The teachers' coping mechanisms are presented as another subsection of the findings. The dimensions are the formation of teachers' subjects' panels and schemes, the use of technology and the Internet, and stakeholders' support.

Teachers' Duress and Challenges During Curriculum Reforms Implementation ***Increased Workload***

The increased workload may result in teachers' duress and the challenges caused by the process followed when implementing curriculum reforms in their respective workstations (primary schools). Most teachers mentioned that implementing educational changes was difficult to cope with in many instances, as reforms required adopting new teaching practices. The changes comprised lesson plans, reporting, teaching and learning approaches, accommodating learners with special needs, a high teacher-learner ratio, and learner assessment. Some teachers had this to say about the increased workload.

"There is a lot of work that needs to be done by the teacher, especially when the teacher-learner ratio is too high" (Anti).

"There was too much work in terms of preparation and planning, which is a challenge of teaching approach since I am used to a teacher-centred approach, and now I have to use a learner-centred approach" (Mama).

Based on the teachers' concerns, there was a need for teachers to develop suitable strategies that enable them to survive the challenges brought about by educational change. The coercion and ambiguity experienced by most teachers required them to improve their coping mechanisms to stay and manage educational changes during the implementation phase.

Inadequate Teacher Training

Nearly all the participating teachers indicated that the Ministry of Education conducted a one-week orientation training workshop about the changed curriculum. The workshop was conducted once in January 2013, a few weeks before the new academic year commenced. In this regard, most teachers emphasised that the training workshop was too short for them to grasp the

vast amount of content delivered in five days. This is what participants had to say about the training workshop.

“We attended a one-week workshop since this curriculum was introduced; I went to the workshop once, and we never had training from the Ministry of Education” (Mama).

“Sir, be aware that the one-week training was supposed to happen over two years” (Koko).

The emphasis made by these teachers regarding the length of the training workshop is that the workshop was too short. This led to uncertainty and unclear application of teaching approaches and assessment procedures and the relevance of other operating concepts. The findings reveal that it was difficult for some teachers to manage and survive the challenges of implementing educational changes. Many of them emphasised that sufficient training and refresher training are essential to equip teachers with appropriate skills and to help them appreciate and embrace change in the education system.

Teachers’ Acceptance and Resistance to Change

The findings reported in this sub-section illustrated teachers’ resistance towards educational change while others accepted, embraced, and appreciated it. Teachers who embraced and appreciated change indicated that the curriculum had pros and cons. Those in denial and with resistance whined and nagged about its shortfalls and poor implementation. For instance, they complained about inadequate teaching resources, unclear concepts, and improper implementation by the Ministry of Education and Training. These two teachers had this to say;

“The curriculum is too abstract due to lack of material; it is irrelevant to learners in preparing them for the future” (Sisi).

“Integrated curriculum is not suitable for our country due to its demands, this curriculum was poorly introduced and implemented, and there is a poor merging of private and public schools, so imposing this curriculum on teachers is not a good idea” (Anti).

Teachers’ resistance to change resulted in poor classroom lesson planning and content teaching, a negative attitude towards change, poor learner assessment, and bad relationships among the teachers, the school management, and the learners. Resistance also resulted in unbearable stress and pressure on such teachers. However, those teachers who accepted the change embraced it and appreciated it, were grateful and enjoyed their work with less stress. They were willing to learn with the learners. Their acceptance and appreciation of change propelled impressive learners’ performance and positive outcomes.

Coping Mechanisms

Participants disclosed their opinions and experiences on what worked best for them to survive the challenges posed by educational changes. This refers to any coping mechanisms utilised by teachers. Teachers’ coping mechanisms indicate the formation of subject panels and schemes, the importance and use of technology, the Internet, and stakeholders’ support.

Formation of Teachers’ Subject Panels and Schemes

The interviews and focus group discussions revealed that teachers had to orchestrate some strategies to survive the challenges posed by implementing curriculum changes. Therefore, teachers decided to work in pairs or groups to advise and assist each other. Participating teachers emphasised how they formed panels and schemes. These two teachers share the same views. They say:

“To survive demands and challenges, we formed teacher schemes with other schools and shared ideas and advice” (Cousi).

“We assisted, supported, and advised each other as teachers, and we also formed panels from our school and schemes as teachers from different schools” (Khaitsele).

One participant from the discussion group exemplified how teachers formed a panel and how they collaborated on their efforts as teachers. In his own words, Thaha had this to say:

“... we formed subject panels as teachers from our school and other schools. We collaborate efforts and ideas. For instance, there is a Maths panel, a Science panel, an English panel and others” (Thaha).

Most participating teachers referred to the subject panels and schemes as another strategy teachers use to manage the challenges and demands of curriculum change. Teachers formed groups, schemes, and subject panels to coordinate their concerns and challenges regarding

implementing the integrated curriculum. Teachers from different schools formed subject panels such as the Mathematics, Science or English panel. Teachers supported each other from the same or different grades, same or different learning areas, and same or different schools.

Importance and Use of Technology and the Internet

The change in curriculum introduced many unfamiliar concepts that brought uncertainty to many teachers. They used the Internet as a social coping mechanism to implement the changed curriculum and to familiarise themselves with the new concepts and their application in the classroom. Teachers had to browse most of the information from the Internet and do much research and reading. Two participants shared their views about the use of the Internet in assisting them to plan and prepare lessons and as another way to cope with the demands of the curriculum change:

“I searched for the concepts on the internet and researched for books which can give me information...” (Nake).

“We have access to the internet on the school campus to browse unfamiliar concepts” (Sisi).

The findings from the group discussions and interviews also indicated that teachers had to use the Google search engine to browse most of the information for research and reading. The findings show that internet use assisted teachers in teaching what is correct through appropriate teaching methods. Responses have emphasised the importance of technology and the Internet’s use in helping teachers download graphics or pictures. For this reason, the Internet assisted teachers in managing challenges posed by the curriculum change. Technology use also empowered teachers to become co-learners with the learners during the trying times of implementing educational changes.

Support Offered to Teachers by Stakeholders

Teachers believe they cannot face change independently; they expect different stakeholders, such as the school governing bodies, the principals, curriculum designers, assessment package designers, parents, teachers’ unions and other bodies to support them. According to the interviews and focus groups, teachers illustrate that any form of support would be vital to implementing curriculum changes effectively. Participants indicated they received little or no support from the curriculum or assessment package designers. However, Chomi voiced out the form of support received.

“Ministry of Education offered textbooks and teacher’s guides for effectiveness, but there are no follow-ups on how we are working with the learners and whether we are using the materials correctly”.

Mokhotsi, like other participants, shared the same concerns. Like Nana, lower graders also illustrate how they wished to receive support from District Resource Teachers (DRTs) or school inspectors. This is what Nana said:

“.., no follow-ups on how we are working with learners and using the materials correctly... we, in the lower grades, were not offered any support. There are no assessment packages, follow-ups or inspections on how we deliver the concepts” (Nana).

Teachers were expecting material support from the Ministry and school management or parents for emotional and professional support. Most teachers indicate that they received encouragement only from their principals. According to other participants, school inspectors and curriculum designers did not bother to make surprise visits to their schools. School inspectors only visit when they have a specific interest or personal agenda against a particular individual, such as humiliating them or a group of teachers. Support (either emotional or professional) offered by the school principals enabled most teachers to survive the challenges posed by educational changes. It motivated and inspired most of them to tackle each challenge as it came.

4. Discussion

In perfecting the outcomes of this academic research work, the article explored teachers’ compulsion and the forms, as well as the effectiveness of the coping mechanisms employed to survive the challenges posed by educational changes in Lesotho. The negative attitude to educational change prompted resistance to change for some teachers. This steered teachers to experience frustration and pressure while implementing such changes. The unbearable and increased workload was deemed to be one factor that required teachers to orchestrate strategies to survive all sorts of challenges posed by educational change. Another factor is inadequate

orientation and training on the integrated curriculum and continuous assessment, which required teachers to improvise coping mechanisms to survive any challenges posed by curriculum change.

The following section discusses how mechanisms enabled teachers to accept, embrace, appreciate, and survive challenges posed by educational changes. Teachers' increased workload during the implementation of educational changes became a concern for most participating teachers. Teachers revealed that lesson planning, reporting, application of teaching and learning approaches, learners' assessment, and high teachers-learner ratio are some factors that contributed to the unbearable and increased workload. Most participating teachers mentioned that shifting from a teacher-centred to a learner-centred approach amplified their workload. These findings reverberate with Mutereko and Chitakunye's (2014) findings, which showed that some teachers complained that the increased workload made their work difficult and demanding. The study's findings in Japan revealed that about 87% of teachers in lower secondary schools mentioned that the heavy workload during curriculum reforms hindered their participation in professional development (Gouëdard et al., 2020). It is the teachers' call and responsibility to orchestrate mechanisms to manage and adjust to the expected and unexpected workloads and challenges posed by educational changes.

During the interview sessions with teachers, it was revealed that a one-week training workshop was inadequate and that the facilitators who conducted the workshops were unclear about other concepts and teaching approaches. They could not explain other assessment procedures. Consequently, the lack of training or poor training contributed negatively to the attitude problems of teachers. The findings of this study resonate with the findings of a study conducted by Indoshi et al. (2010), which revealed that teachers' lack of in-service training towards a new curriculum had left many teachers with negative attitudes. Despite that, they had to use their acquired skills and knowledge. Bantwini's (2010) study also revealed that some teachers had mixed feelings due to limited orientation and lack of support from the Ministry of Education officials. Some teachers felt optimistic about educational changes and were willing to accept, appreciate, and celebrate change.

The researchers observed different reactions among teachers towards curriculum change, but the study revealed that few teachers accepted and embraced the initiated educational changes. Teachers' acceptance of educational change is based on their reactions and understanding of the need for change in Lesotho's education curriculum. These findings resonate with Mutch's (2012) study findings, which reveal that teachers who accept and embrace curriculum change do not mindlessly or stubbornly resist change as portrayed by others, but such teachers become innovative. They embraced, accepted, and appreciated such initiated changes as they unfolded. These teachers also said there was a need for educational change; therefore, they possess a positive attitude as a token of appreciation.

The negative attitude observed among other teachers triggered resistance to this educational change. The present study's findings indicate that this led to the teacher's frustration and resistance to implementing educational changes. They are like findings by Wagah et al. (2009), which revealed that teachers who display negative attitudes in other learning areas resist adopting new teaching approaches and assessment procedures. When people develop a positive attitude and appreciative inquiry, they appreciate and embrace change by the simple assumption that change can result in something positive that works well and that some strengths and capabilities can make a positive change in education (Cooperrider et al., 2005).

The findings revealed that as teachers are curriculum implementers, coping mechanisms are essential to managing educational changes. Through the gathered data and other findings in the literature (Boyle, 2012), peer support was revealed to be one strategy teachers used to manage the challenges posed by educational changes. Teachers supported each other from the same or different grades in the same or different learning areas at the same or different schools. They also formed groups or schemes and subject panels where they discussed their concerns or challenges regarding properly implementing an integrated curriculum. It is essential for teachers to support each other as colleagues and to use appropriate strategies to find the methods and approaches that work best in the classroom (Boylor et al., 2012). Teachers' tendency to support each other provides clear evidence that the teacher's partnership includes planned opportunities for peer coaching to create a stimulus for professional development. Daily interaction, metaphors, and teachers' discourse with each other is a co-construction of what they embrace and appreciate (Bushe, 2011).

Teachers' interaction and support are mutual, and they assist each other in managing, surviving, accepting, embracing, and appreciating educational change as it unfolds.

This section focuses on teachers' use of the Internet and technology as a coping mechanism to overcome the challenges posed by curriculum changes. Teachers use smartphones with the Internet to browse through the concepts, teaching, and assessment procedures and apply them appropriately in their classes when teaching. Technology empowers teachers by building new experiences for deeper content exploration to enhance teaching and learning (King, South, 2017). Most teachers use the Google search engine and e-dictionaries to search for the meaning of concepts, teaching approaches, and learner assessment. The Internet was also used to translate some concepts into English for academic purposes (Dogruer et al., 2011). Internet use assists teachers in managing and overcoming the challenges posed by curriculum change. Technology and internet use also empower teachers to become co-learners with their learners, collaboration engineers, designers of learning experiences, leaders, guides, and catalysts of educational change.

The findings reveal that teachers cannot do the work alone; they expect and believe that stakeholders, including the school management and principals, curriculum designers, assessment package designers, parents, teachers' unions, and other authorities, should provide the necessary support. The interview and focus group outcomes illustrate the support teachers expect from concerned stakeholders. They illustrated that any form of support during that difficult time is vital to cope with any possible challenges posed by educational changes. The findings also reveal that the school management and principals support teachers in properly implementing educational changes. The findings reported in the previous literature confirmed that teachers and principals work together as a team to enable teachers to cope with the challenges posed by educational change (Habbegger, 2008). As part of school leadership, the principals are engaged in different things to facilitate the successful implementation of change (Yuen, 2004), and teachers must be supported by school leadership to monitor all school activities and buffer staff against distraction while working (Habbegger, 2008). Against the above-revealed findings, the literature indicates that heads of departments fail to support teachers when they are overburdened and burnt out with administrative and teaching work (Govender, 2018). However, participating teachers mention that they never receive support from the curriculum or assessment package designers. In collaboration with the school governing bodies, the school principal managed to provide constant support to teachers to appreciate and embrace education and to survive the challenges posed by educational changes. The support provided to teachers is meant to implement curriculum changes effectively and innovatively in schools.

5. Conclusion

Educational change can affect teachers as front-line workers in implementing curriculum changes. The findings show that teachers can be victims of adverse effects of educational change and continuing assessment. Such changes leave teachers in despair, anxiety, and discontent. They are disrupted, confused, and threatened. The study has enhanced researchers' knowledge and thoughtfulness on how inadequate teachers' training, resistance to change, and increased teaching workload can harm teachers' effectiveness in implementing curriculum changes. This has crucial implications for their psychosocial life and well-being. As shown in the findings, this academic work has revealed that, regardless of teachers' experience and competence, teachers encounter duress and foreseen and unforeseen stressful moments while implementing curriculum changes.

This research work also reveals that, regardless of one's experience and competence, teachers had to orchestrate strategies that should enable them to survive any foreseen and unforeseen demands and challenges posed by the implementation of curriculum changes. The study reveals that most teachers decide to form schemes and subject panels that enable them to address their concerns and advise each other. Teachers' interaction was also meant to improve appropriate coping mechanisms for embracing, accepting, and appreciating educational changes. Teachers' need to use the Internet was seen as another strategy to cope with the demands of academic changes, including the appropriate application of integrated teaching methods, assessment procedures, and the use of concepts.

Relevance and application of appreciative inquiry allow teachers the opportunity to value and understand the need for change and how important it can be to improve teaching and learning. As curriculum implementers, teachers are responsible for creating, embracing, and appreciating

the best in the changed education policy. By improvising appropriate coping mechanisms, teachers can mobilise change and reaffirm their teaching role and ability to pursue what is best for the education system. The positive attitude of teachers towards educational change can also minimise duress and stress. However, it is assumed that every teacher is unique in bringing effective and positive changes in the system, allowing and valuing their strength, capabilities, and worthiness. Lastly, most teachers regard support from different stakeholders as an important strategy that enables them to embrace, accept, and appreciate educational changes instead of nagging about their shortfalls and weaknesses. Using other coping mechanisms for curriculum implementation may allow teachers to shape their cognitive aptitudes and acts instead of abandoning the work during times of uncertainty.

6. Declarations

Ethical considerations

The researcher received consent from the Ministry of Education and Training for school access. The University of the Free State endorsed the ethical clearance to allow the researcher to interact with the participants. Ethical clearance was essential when conducting this study to uphold research integrity, honesty, fairness, intellectual property, and participant protection. While ethical clearance is integral to protecting human and animal participants, it is also meant to protect the researcher against the ethical issues of a research process. By embracing the various principles of justice, non-maleficence, confidentiality, autonomy, transparency, and beneficence, the outcomes of this study can contribute to positive outcomes in education research (Sywelem, Mahklouf, 2024; Udo-Akang, 2013).

Consent for publication

Not applicable.

Availability of data and materials

Data and materials associated with this study are available upon request.

Conflict of interest statement

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Author's notes


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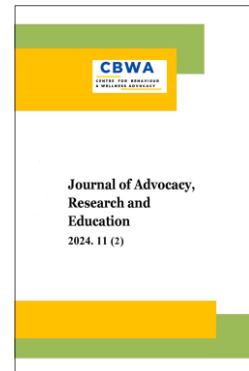
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Capacity Building in Ghana's Decentralised Health System: A Qualitative Study

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Abstract

Capacity building is a crucial management tool used to enhance and sharpen the competencies of staff in health facilities. The core objective of this study is to assess how health performance in decentralised health systems can improve through capacity building. The study adopted a descriptive-exploratory design with a qualitative approach. A semi-structured interview guide is the primary tool for data collection in this study. The purposeful sampling technique was used to sample eight respondents from selected hospitals in Accra, Ghana. A one-to-one interview process was conducted, and sampling continued until saturation was reached. Thematic content analysis is the method employed for data analysis. The results of the study showed that though Ghana's health system is implementing the decentralisation reform, to some extent, some core functions like human resources, procurement, logistics, and recruitment are still centralised, with the majority of the actions taken at the top management level. Again, capacity building is reported to be carried out in all health facilities, but in some cases, the frequency with which they are organised is the issue, as sometimes they are initiated by the specific department and not by the organisation. All respondents were of the view that the more capacity-building programs are organised, the greater the chance of increased performance as accountability is improved.

Keywords: Decentralisation, Decision Space, Capacity Building, Health.

1. Introduction

Most health system strengthening and implementation surveys agree that building capacity is crucial for any policy to work effectively (Abor, 2013; Bossert et al., 2015; Crisp et al., 2014). Capacity relates to the talent mix, skills, know-how, and institutional capacities, which involve financing, administrative practices, and information and logistics arrangements, among others. Literature from developing countries suggests that strengthening management and leadership skills, such as setting priorities and problem-solving abilities, could be significant in improving the performance of healthcare organisations and health systems more generally (Bossert et al., 2015; Sakyi et al., 2011).

Capacity building through human capital development is essential for the workforce capability of any sector, and thus, health officials should be equipped with the necessary skills through periodic in-service training and adequate resources (Boohene, Amita, 2017a; Boohene, Amita, 2017b). This will foster a positive environment for nurse education and the implementation of performance execution practices (Barnes, Boohene, 2024). Specifically, in the health sector,

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it has become fundamental to the development of health systems, particularly in low-income countries. For better health outcomes, organisations are required to invest financial resources and ensure sufficient local capacity to utilise those resources effectively. One way to enhance the effective allocation of resources is to roll out a decentralised governance system.

The concept of decentralisation dates back to the period before Ghana attained its independence in 1957. Frantic efforts were, however, made in the post-independence era to institutionalise decentralisation as the preferred governance strategy, which led to the promulgation of the Local Government Act, Act 54 (1961). The Local Government Act 54 (1961) was built on the foundation of ordinances that sought to establish towns and municipalities, sustained peculiarity amongst local government and central government arrangements and operated dual hierarchical structures in parallel with central government structures (Atkinson, Haran, 2004; Sumah, Baatiema, 2018).

The health sector at the local levels is accorded delegated authority from the Ministry of Health to the Ghana Health Service (GHS) and Teaching hospitals, resulting in a deconcentrated Ghana Health Service as enshrined in ACT 525. This has influenced the creation of Ghana Health Service at the national, regional, district and sub-district levels, resulting in a 5-tier (national, regional, district, sub-district, and community-based health planning and services zones) control structure as is evident in the existing practice in the GHS. The variation in the forms of decentralisation exercised by the political local government system and the health sector has generated a mixed model of both devolution and deconcentration, leading to unclear and, in some cases, opposing transformation efforts (Abimbola et al., 2015; Diana et al., 2015; Sumah et al., 2016; Liu et al., 2006).

Thus, the issue of capacity building in the health system, which has the propensity to enhance healthcare delivery at the local level, has not received much attention and focus from researchers, thereby creating a literature gap in the case of Ghana. This study aims to examine the effects of capacity building at the decentralised level on health system performance using selected health facilities in the Greater Accra Region of Ghana.

2. Theoretical Framework

The concept of decentralisation is an ideology that has been adopted by Ghana and advocated over the years. The concept is extended to all parts and sectors of the Ghanaian economy. This study adopted and applied the decision space framework to discuss the various aspects of capacity building in the decentralised health system. A model of the relationships adopted by Bossert et al. (2015), as shown in Figure 1, indicates that there are different measures for evaluating the performance of a health system. Bossert et al. suggest a complex set of objectives, including ultimate objectives of improved health status, citizen satisfaction with the services, and financial protection to cover costs of care. These objectives all contain an equity concern. Intermediate objectives of improved access, efficiency, and quality of services are also considered performance measures that, in empirical studies, have been found to be related to the ultimate objectives (Bossert et al., 2015).

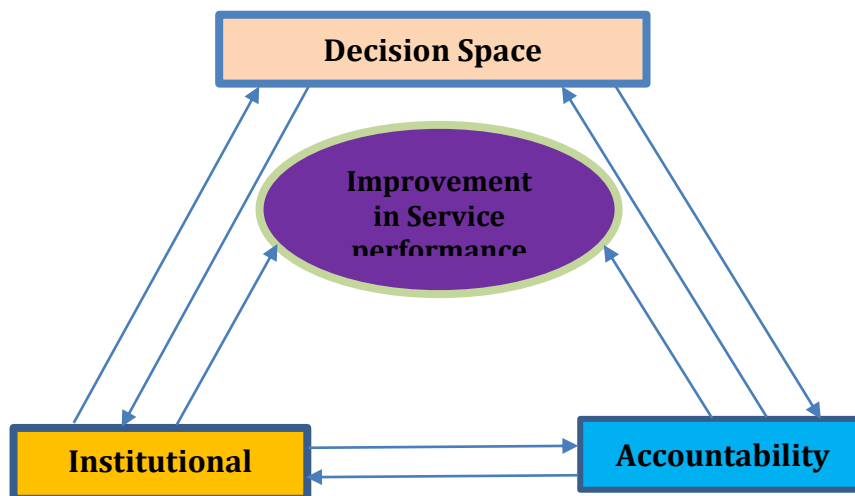


Fig. 1. Decision Space Analysis Framework
Source: Bossert et al. (2015)

2. Method and Materials

Approach and Design

The study adopted a descriptive-explorative design with a qualitative approach. Qualitative research is a research approach that enables the researcher to explore and understand the sense of a group of individuals' attributes to a societal issue and rely on the fact that human experience is the way knowledge about human beings can be described. This is described, lived, and defined by the individuals involved (Schneider, Whitehead, 2016).

Sampling and Sampling Procedure

The study was conducted in four organisations under the public health sector of the Ghana Health System; due to the bounded nature of this study, facilities are given coded names. Specifically HA, HB, HC and HD. The purposeful sampling method was employed to recruit eight respondents from the selected organisations. Four respondents were drawn from the Korle-Bu Teaching Hospital, specifically from the sub-BMCs (Budget Management Centers), namely the Obstetrics and Gynecology (O&G) Department, the Orthopaedic and Trauma Unit, and the National Reconstruction and Burns Units. Two of the remaining four respondents were drawn from the Accra Regional Hospital and two from the Police Hospital and Catholic Hospital. These were either administrators, heads of departments, or directors with at least three years experience in their current role as the study explored the extent of decentralisation and the role of capacity building in improving the performance of the health system in Ghana, and such respondents could offer detailed accounts and in-depth information about the subject matter based on their experience.

Data Collection Tool and Procedure

One-on-one interviews by means of a semi-structured interview guide, which was designed based on the objectives of the study, was used for the data collection. The tool was structured in three sections. The first section, Section A, explored the demographic data of respondents, and Section B assessed the concept and levels of decentralisation and decision-making in resources management, such as finance, service organisation, human resources, and governance. The third part, Section C, focused on capacity building, such as training and development, as well as logistics and infrastructure. The interview was conducted at the convenience of the respondents. This method of data collection was deemed more suitable for this study as it offered respondents the chance to express their opinion about the concept freely and also enabled the researcher to probe further for clarifications and to gain in-depth knowledge of the phenomenon (Creswell et al., 2007; Sarfo et al., 2021). Interviewees were made aware of the fact that the interviews were being recorded, and they were further assured of anonymity after the purpose of the study had been explained. Their consent to engage and participate in the study was sought after, and a day was scheduled for the interview. The study was conducted from September 2020 to October 2022.

Data Analysis

Data was analysed using thematic content analysis. Audio-recorded interviews were in English and transcribed verbatim by the researcher. Audio-recorded interviews were transcribed verbatim, and transcripts were read over again to ensure the researcher familiarised herself with the data, and thereafter, coding and generation of themes were done (Creswell et al., 2007).

3. Results

Based on the information in Table 1, eight respondents were recruited from four hospitals, coded as HA, HB, HC, and HD for anonymity. The respondents are labelled individually and numbered from 1 to 8. Respondents 1 to 4 were from HA, a teaching hospital, with 18 years, four years, 18 years, and four years of experience in their respective roles and departments. Respondents 5 and 6 were from HB, with 6 and 20 years of experience, respectively. Respondent 7 was from HC, identified as the Police Hospital, and had 20 years of experience. Respondent 8 was from HD, identified as Catholic Hospital, and had ten years of experience. The variety of highly experienced and moderately experienced professionals across various departments in different facilities added depth and richness to the study.

Table 1. Demographic Summary

Hospital	Department	Role	Years of Experience	Interviewee
HA	Nursing Administration	Director Nursing Services	18	1
	National Plastics & Burns,	Administrator	4	2
	Maternity Unit and Obstetric, Gynaecological Theatre	Head of Department	18	3
		Medical Director	4	4
HB	General Administration	Hospital Administrator	6	5
	Human Resource Department	Deputy Director	20	6
HC	Maternity Unit and Obstetric	Specialist	20	7
HD	Gynaecological theatre	Medical Doctor	10	8

Source: Field Data 2022

Concept and Current State of Decentralisation

To answer the first research question about the current state of decentralisation of the health system in Ghana, three major themes emerged from the data collected. Respondents described their understanding of decentralisation and the current state by defining decentralisation from their perspective and outlining the levels of decentralisation. They also detailed the decision space of staff concerning financial autonomy and human resource (HR) decisions. Additionally, respondents discussed leadership, governance, and accountability, highlighting the bureaucracies and lines of authority within the organisation.

Understanding of Decentralisation

Respondents understood the concept of decentralisation and provided definitions from their perspectives, using their hospital structure as examples. A common understanding that emerged was the notion of power being devolved to the operational or local levels, allowing them to make their own decisions regarding the management of their unit or facility:

“Decentralisation is the transfer of power from the centre to the periphery”. “You know transfer, so you have the power to plan your department and manage your budget, etc.” (Interviewee 1).

“Decentralisation is the health sector, which is the process of shifting various administrative and service functions from a central location to regional, district, and sub-district levels, thereby improving efficiency and bringing healthcare services closer to the community.” (Interviewee 7).

Levels of Decentralisation

Knowledge about the level of decentralisation elicited varied responses. Some respondents felt that their level of decentralisation was sufficient and an improvement over the previous level. However, others believed that while their health system was decentralised to some extent, certain major aspects remained centralised to maintain consistent standards.

“Yes, it is decentralised enough that we are able to do the basic planning for the facilities. We cannot handle infrastructure provision, facilities cannot put up hospitals themselves, and in terms of HR, certain functions cannot be decentralised, like training needs. If decentralised, you can have differentiation in standards”. (Interviewee 6).

“Not enough; there is still some aspect of centralisation; this facility does not follow the typical Ghanaian health system.” (Interviewee 7).

Decision Space

Regarding the level of decision-making space, which addresses the second research question, staff are allowed in their respective hospitals, based on indicators such as finance, service organisation

and human resources, as well as leadership and governance, the study revealed variability depending on the facility and type of decision involved. Some simple decisions are made at the facility or sub-BMC level, with reports submitted afterwards. However, major decisions, such as procurement, require approval from top management or headquarters as per established protocol:

Level of Human Resource Decision-Making

The Interviewee highlights the challenges of operating in a restrictive environment where significant decisions must be authorised by headquarters, limiting local autonomy. This includes issues with recruitment, selection, training, and other human resource activities, where local input is minimal, impacting the efficiency and effectiveness of healthcare service delivery.

“The way this system is structured, it doesn’t follow the typical Ghana Health Service, and it is a restrictive environment. We do not have full autonomy; headquarters must authorise everything you do, so it makes the autonomy half. So when you want to make decisions based on your health background, they do not understand it that way, and they will not take it that way, especially in terms of recruitment, selection, training, and human resource activities; we don’t have the latitude”. (Interviewee 7).

The above response was further buttressed by other respondents who indicated that:

“Let’s take appointments. The bureaucratic process required to appoint senior officers highlights the need for regional approval and multiple levels of justification. Despite decentralisation, significant bureaucratic obstacles remain, particularly for higher-level appointments, while casual appointments face fewer restrictions but still require oversight”. (Interviewee 5).

Financial autonomy

The respondent lamented that, in terms of autonomy and decision-making, the hospital solely manages revenue generation, but there are limitations regarding salaries, which are controlled by the government. This necessitates financial clearance before employing any staff, especially senior-level staff, thus limiting the workforce in terms of numbers. Contract staff are paid from the hospital’s Internally Generated Funds (IGFs). Additionally, procurement processes and budget approvals for expenditures remain centralised.

Revenue generation: We generate a lot, but there is a limit to what we do with our money, such as how much you can spend as a facility. Money goes to designated accounts. For instance, there are general accounts, pharmacy accounts, and procurement accounts. Still, the level of control is minimal. In terms of expenditure, if HR wants to spend some money internally, you come up with a budget approved by my immediate supervisor, who is the administrator, and the Medical Director, who is the final authority. The amount will be released, but if it has to do with employment at senior levels and a certain amount of money, then the Director has to confirm that with the Regional Director for auditing purposes. (Interviewee 5).

“The government generally pays salaries for staff, but those on contract and some officers are paid from Internally Generated Funds (IGF), with spending limits in place. For hiring, approvals are needed for contract duration and payment amounts. Government-paid staff require a complex process for financial clearance involving regional offices, IPPD, and finance, which can delay payment and lead to complaints despite HR’s efforts”. (Interviewee 5).

Autonomy in service organisation

“Though we can plan and organise programs, many are driven by regional or national initiatives. Any new program we propose requires approval from headquarters because of limited funds, which constrains our ability to innovate and initiate new service delivery methods”. (Interviewee 5).

Leadership, governance and accountability

The theme highlights the existing bureaucracies and lines of authority within the organisation. Respondents note that bureaucratic structures persist, and appointments to certain positions are still controlled by top management and, in some cases, the government. Furthermore, all staff members are accountable to top management through their department heads or managers, who report on activities annually as part of the accountability process. Below are some responses related to this observation.

“Appointments at the facility level are based on recommendation, but for senior appointments, it is done at the highest level, which is affecting the system and service delivery”. (Interviewee 5).

“The problem has to do with who authorises what you do, when and how. So, the bureaucracy is still there irrespective of the decentralisation. With the award of contracts and procurement, all these go through the Director and then to the authorities. In everything, there is a final approval from the top”. (Interviewee 6).

“The Sub-BMC run the hospital at the operational level and reports to the central administration” Interviewee further indicated that the central administration sits there as a supervisory entity or body. (Interviewee 4).

Institutional Capacity Building

To address the third research question, the study examined the institution’s capacity for efficient and effective service delivery. Key thematic areas included capacity building programs and their focus areas, as well as capacity building as a core function of Human Resource Management (HRM).

Capacity Building Programs and Areas of Focus

Respondents classified capacity-building activities as training programs conducted both within and outside the hospital or country. The basic theme that emerged focused on the types, frequency and funding mechanisms for capacity-building programs. In-country and in-organisation programs include in-service training, unit meeting presentations, and workshops organised by companies or institutions that benefit the staff. These workshops may or may not be sponsored by the hospital. Additionally, specialist training based on the hospital’s needs assessment is also considered a form of capacity building. The following responses are in line with the theme.

“Yes, it is very key, and we do organise for our staff; we have a clinical meeting every Wednesday, and I view that as capacity building; the nurses also have a program they organise, which is also good; apart from these, I don’t know of any other again”. (Interviewee 7).

The respondent highlighted that while capacity-building efforts exist, they are insufficient and often biased towards nurses due to their higher representation and willingness to share knowledge.

“Paramedics have received little training over the past four years compared to nurses. Funding constraints also affect training opportunities, with resources being limited and sometimes prioritised for doctors. Currently, some officers are pursuing health administration at GIMPA, but financial limitations restrict the number of people who can be supported. There is a lack of recognition and support for paramedics’ training needs, contributing to these challenges”. (Interviewee 5).

“As HR, when we come out with our need’s assessment from appraisal and observation, and we come out with our training plan, you realise for nurses’ side we don’t have a problem, but for paramedics and administrative staff, it requires more money, and when you come up with the budget it is a bit discouraging. I acknowledge the fact that areas like accounting and security need continuous training”. (Interviewee 6).

The study respondents discussed various capacity-building activities and their frequency, including those involving functional units and supporting staff. Opinions were mixed; for example, in some facilities, training programs were concentrated on specific professionals, leaving others underserved. Additionally, the extent of capacity building often depended on the facility’s characteristics and the level of decentralisation.

“Capacity building is carried out frequently in the Catholic Hospital to empower participants or staff. “The HR is frequently invited to educate directors and managers on their roles and responsibilities; once they know their roles and responsibilities, you can hold them accountable”. (Interviewee 8).

“Plastic surgery, we do a lot of training for our team, our staff, our administration, our doctors and nurses. As I speak with you, one of our doctors is in the UK, London, who is training on breast cosmetics”. (Interviewee 3).

“Yes, it mostly favours nurses and doctors; the paramedics are out of it, and the administrative staff. At least every department must get at least one training in a year will be the best”. (Interviewee 5).

Leadership training was cited to be organised for lower, middle and upper-level managers and the hospitals emphasise building teams, most attested that the team approach is the way to enhance service delivery:

“The last time was several years ago. We haven’t had anything like that in a long time; last time, we went to GIMPA for some training, and we were awarded some certificates; I think we were the last batch. Now people build themselves”. (Interviewee 7).

The respondent explained that despite initial training, staff may still struggle to perform effectively in their roles. To address this, they provide ongoing support to help general nurses develop specialities within the department, as a respondent cited.

“For administration, leadership training has been offered to all staff categories. For example, under Bukle’s leadership, staff attended a four-day leadership training at GIMPA, followed by additional training at Korle-Bu for nurses, supporting staff, doctors, and other personnel. Currently, strategic planning is also being conducted for staff development”. (Interviewee 1).

Another respondent added that “Health Administration and Management (HAM) programs are organised for health administrators. Initially, these programs were designated for senior nurses who were being considered for positions such as Deputy Director of Nursing Services (DDNS) or Chief Nursing Officers (CNOs), preparing them for these advanced roles. (Interviewee 3).

Capacity building as a core function of Human Resource Management (HRM)

This theme generated sub-themes on capacity-building being a core mandate of HRM, and for that reason, HRM should spearhead the planning, organising, and evaluating capacity-building programs. Most respondents cited that planning programs are done at the top management level and implemented at the operational level; sometimes, when a new program or activity is to be introduced in the hospital then, department heads are briefed on the agenda and the plan of action prior to implantation:

“Not on a regular basis and as and when something is to be introduced, then facility heads and administrators are engaged before implementation”. (Interviewee 2).

“It depends on the activities, but a planning workshop is done yearly for managers”. (Interviewee 6).

In many instances, respondents felt that the Human Resource Department should lead the organisation of workshops for all staff within facilities. They emphasised the need to identify training needs and outline structured program activities regularly to enhance staff capacity. However, some believed this responsibility could be managed at the departmental level, and in cases where there is no HR department, such activities fall to the hospital administrator:

“Yes, now we have come far, so HR is to lead the process and bring everybody on board. Those days, there were no HR Directorates, and hospitals were doctor-centred, so now that we have HR, they can assess and train in terms of quality and others; this has made the work easier”. (Interviewee 6).

“We don’t have a human resource department; we have the administrator, staff officer, and a medical director. The administrator does everything”. (Interviewee 7).

Performance is assessed using specific targets, which provide a clear method for measurement and help health facilities achieve their goals effectively. Respondents noted that their facilities have performance targets that are reviewed annually. Some set departmental goals and evaluate them to determine if they have been met, while others view these evaluations as a mere formality with limited benefits:

“Nothing like performance target for the whole hospital, but departmentally, we submit our program for the year, and nothing comes out of it; it’s just a formality, no feedback, and you will wait for a long time, everything comes from the top”. (Interviewee 7).

“Yes, we have performance targets and review meetings are organised half yearly and at the end of the year, so we have an annual review every year for every department present. We critique and make recommendations, and we assess progress. GHS, one thing they are trying to do is assign performance contracts, but that is up there, so that the Director General appraises all regional directors, and all regional directors appraise all facility heads, and then it goes down to the operational level. A performance target is assigned to all facilities, and there is an annual review. This year, I can attest that my Director was appraised by region, and we were supposed

to replicate this here such that he will appraise all his heads, but we haven't been able to do that; we hope it comes to pass. I am pushing that agenda". (**Interviewee 6**).

"Yes, we have every unit draw an action plan that is the performance target, and at the end of the year, we check to see if you have been able to achieve them and if you could not meet the target, what were the challenges and how we can help to address it. This has made the hospital what it is today, but there is still room for improvement". (**Interviewee 1**).

The role of capacity building for improving the health system performance

The above theme generated sub-themes discussing the benefit of capacity building to the organisation and whether they are deriving the full benefit. For most study respondents, their hospital is deriving the full benefit of investing in capacity building and that has improved the performance of the hospital, while others are of the view that not much is being achieved:

"No, there is more to be gained once we build the capacity of our staff and encourage speciality in all critical areas so one area does not dominate as that will not improve service delivery". (**Interviewee 3**).

"The little that has been organised, we have seen the benefit from the work output of staff, and So yes, but more can be done". In contrast, **Interviewee 8** indicated, "Yes, that is the aim and with what we have started definitely it will impact the performance of the hospital as a whole, that we can see that". (**Interviewee 6**).

Study respondents generally believe that it is worth decentralising the health system in Ghana and building capacity as this would increase efficiency and effectiveness in operations.

"Yes! If we really decentralise well and the hospital has autonomy in certain issues and reports to headquarters, it will be better, and it will improve service delivery". (**Interviewee 7**).

"... health still has maintained its decentralisation status. It has made health systems better; we just need an efficient system to manage activities. We have to decentralise fully to minimise some delays and inefficiencies in our health system. In terms of healthcare, each qualification should be at the highest level. There should be clear lines of duties and responsibilities. Why can't a nurse move up to become Medical Director of a facility when we say capacity building? We should make sure we put the right people in the right place rather than allowing doctors to dominate the health sector. How can a doctor manage a transport unit when we have transport officers who can manage affairs? We underutilise our staff. Please stress that capacity building does not mean take others roles and responsibilities as though you can do a better job". (**Interviewee 8**).

Generally, respondents most cited that capacity building in health facilities in Ghana is key to improving the efficiency of health services once all service areas are considered and leadership, as well as staff, are granted some decision space:

"Capacity-building should be done across the board, but not one professional body dominating and taking other people's roles as though they are better than anyone. Let's get people with the experience and training into the right places, not just because they are medical directors". (**Interviewee 6**).

"My advice is that if we build the capacity of all your staff, you're looking at the end, the output, and efficiency. Once the capacity is built, as I said earlier, then you can actually expect much cause you've given out much. So, you can expect a lot once you think you've given a lot to your staff. But if you don't do that and we do our own capacity building, then you can't expect a certain standard from us. I think Korle-Bu should think about improving capacity. (**Interviewee 1**).

4. Discussion

Concept and Current State of Decentralisation

The study explored the concept and current state of decentralisation within Ghana's health system. Findings suggest a nuanced understanding of decentralisation among respondents, highlighting a shift of power from central to local levels, which theoretically empowers local units to manage their own affairs. Respondents described decentralisation as the process of transferring decision-making authority to regional, district, and sub-district levels to enhance efficiency and bring services closer to the community (Interviewee 1; Interviewee 7). This understanding aligns with the broader literature, which emphasises decentralisation has significant impacts on health sector planning and financial management (Tsofa et al., 2017).

The study evaluated the current state of decentralisation within Ghana's health system and the impact of capacity building on system performance. The findings indicate that Ghana's health system is partially decentralised, with most organisations having moderate autonomy in decision-making related to financing, expenditure, human resources, logistics, and procurement. These results align with Bossert et al. (2015), who noted that Ghana's approach to autonomy is quite limited.

Decision Space

The study revealed variability in decision-making autonomy across facilities. Local staff generally have the authority to make minor decisions related to operational matters, but major decisions, particularly in procurement and human resources, still require approval from higher management or central headquarters (Interviewee 5; Interviewee 7). This centralised control limits the potential for local units to respond swiftly to their unique challenges and needs, impacting overall efficiency and service delivery. This finding is consistent with Bossert's (2015) analysis of how decision space in decentralised systems affects operational efficiency and a study by Chen et al. (2021), who examined whether the decentralisation of health systems leads to a corresponding decentralisation of authority.

For instance, significant human resource decisions, such as recruitment and training, are highly centralised, constraining local autonomy and affecting operational effectiveness (Interviewee 7). Financial autonomy is similarly restricted, with central oversight on salary payments and procurement processes, which complicates the management of internally generated funds and delays in hiring senior staff (Interviewee 5). These constraints echo concerns raised by Cavaliere and Ferrante (2016) about the impact of centralised financial controls on health system performance. Thus, decision space available to local managers in decentralised health systems plays a crucial role in determining operational efficiency. By balancing autonomy with adequate oversight and support, health systems can enhance their responsiveness and effectiveness in meeting the health needs of a population.

Leadership, Governance, and Accountability

The theme of leadership, governance, and accountability highlighted the persistence of bureaucratic structures despite decentralisation. Respondents noted that while local facilities have some operational autonomy, significant appointments and approvals still rest with central management or governmental authorities (Interviewee 5; Interviewee 6). This hierarchical structure creates layers of accountability but also contributes to delays and inefficiencies, as all significant decisions must pass through multiple levels of approval (Interviewee 4; Interviewee 6). This observation supports Faguet's (2014) discussion on how bureaucratic structures can persist even in decentralised systems, affecting governance and accountability.

Institutional Capacity Building

Regarding capacity building, the study identified several key themes: the nature and frequency of capacity-building programs, the focus areas of these programs, and the role of Human Resource Management (HRM) in organising and evaluating these efforts. Capacity-building activities include both in-country and international training programs, workshops, and specialised training based on needs assessments (Interviewee 3; Interviewee 5). However, there are concerns about the adequacy of these programs, with some staff, particularly paramedics, receiving less attention compared to their nursing counterparts (Interviewee 5; Interviewee 6). This is consistent with findings by McCoy et al. (2012) on the disparities in capacity-building efforts across different workforce groups.

Capacity building is recognised as essential for improving service delivery and staff performance, yet challenges remain in ensuring that all staff categories benefit equally from training opportunities. The frequency and focus of capacity-building programs often depend on available resources and facility-specific needs (Interviewee 7; Interviewee 8). This reflects the challenges noted by Robins (2008) regarding the effective implementation of capacity-building programs.

Capacity Building as a Core Function of HRM

Respondents generally agreed that capacity building should be a core function of HRM, with HR departments ideally leading the planning, organisation, and evaluation of training programs (Interviewee 6; Interviewee 7). Despite this, some facilities still rely on administrators to manage these activities due to the absence of dedicated HR departments. Effective capacity building requires a structured approach to identifying training needs, setting program goals, and assessing outcomes, which is often challenging due to resource constraints and the lack of systematic implementation (Interviewee 2; Interviewee 6). This aligns with the observations of the World Health Organization (2006) and Robins (2008) on the critical role of HRM in supporting capacity-building efforts.

Role of Capacity Building in Enhancing Health System Performance

The study confirms that capacity building is crucial for improving health system performance. Effective training programs equip staff with the necessary skills to enhance job performance, which, in turn, positively influences hospital performance and service delivery (Interviewee 1; Interviewee 6). Respondents highlighted that while capacity-building efforts are beneficial, there is a need for ongoing support and structured training programs to realise their potential impact on the health system fully. This supports the broader literature on the importance of continuous capacity building in achieving improved health outcomes (Boohene, Amita 2017a; Leatherman et al., 2010).

5. Conclusion and Recommendations

Capacity building is a fundamental management approach designed to enhance the skills and capabilities of staff within health facilities. This study reveals that while decentralisation has been largely adopted in Ghana's health system, crucial functions such as human resource management, procurement, logistics, and recruitment remain centralised. Despite this, decentralisation has provided health institutions with a substantial degree of autonomy, particularly in financial and human resource decisions. However, bureaucratic constraints and the necessity for top management approval for key decisions continue to be challenged within the current decentralisation framework. Strengthening the capacities of these healthcare institutions through capacity building can improve performance and accountability. To further enhance the efficiency of health services, the study recommends implementing more frequent, extensive, and inclusive capacity-building programs. It is suggested that health facilities and departments develop a comprehensive and ongoing professional development plan that includes all healthcare staff, including administrators and paramedics. Additionally, policymakers are encouraged to create a standardised framework for skill enhancement in the healthcare sector, incorporating regular training sessions and competence assessments.

6. Declarations

Ethics approval and consent to participate

Ethics approval: IRB KBTH/MD/G3/19; Institutional approval: KBTH/MD/G3/2020

Consent for publication

Not applicable.

Availability of data and materials

Please contact the corresponding author for data and materials associated with this study.

Conflict of interest statement

The authors declare that there is no conflict of interest

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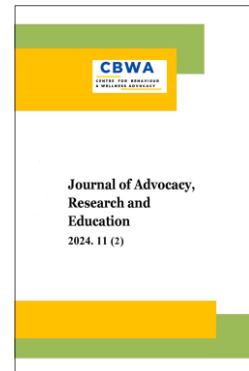
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Unemployed Graduates' Business Cooperative Formation Prospects and Challenges in Response to Unemployment: A Descriptive Study of a South African Municipality

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Abstract

The study investigates unemployed graduates' cooperative formation prospects in response to unemployment in Ntabankulu Local Municipality. The study's main objective is to explore unemployed graduates' cooperative formation prospects and challenges in response to unemployment. The study adopted a theory of People-Centred Development, which entails the cooperation of individuals from a community upping their own institutional abilities to mobilise resources as well as managing them to create a sustainable and equal distribution thereof. The study followed a quantitative research approach, where a survey instrument was employed to collect relevant data from the sample, and a descriptive tool was used to analyse and present the data. This study made use of a sample of 120 participants drawn through a stratified random technique from the unemployed graduate population in Ntabankulu Local Municipality. Among other prospect criteria, the study found graduates having an idea of how to form a cooperative and the realisation that the communities of this study are the right target for the formation of cooperatives. Therefore, unemployed graduates' willingness to form cooperatives is the most important pointer. Furthermore, the findings of the study revealed the obstacles to start-up cooperatives, including lack of capital and limited resources. The critical challenges faced by the cooperatives, which result in closures within a very short period after establishment, are the unavailability of financial support from relevant agencies, limited resources, and the absence of desired support from the government. The study concludes from these findings that they should form the basis for the design and implementation of viable policy and practice towards the formation of unemployed graduates cooperatives in response to unemployment in the South African context.

Keywords: Challenges, Cooperatives, Graduates, Prospect, Unemployment, Willingness.

1. Introduction

Graduate unemployment is a global, serious problem that deserves much attention ([African Economic Outlook, 2012](#); [Baldry, 2013](#); [International Labour Organization \(ILO\), 2013](#); [Farooq, 2011](#); [Filmer et al., 2014](#); [Hanapi, Nordin, 2014](#)). Unemployment among graduates was 6.6 % in 1995 and increased to 9.7 % in 2005 in South Africa. This percentage was relatively low from the general unemployment rate in South Africa. However, it rose by 50 % between these years and is the most increasing category of joblessness in South Africa ([MacGregor, 2008](#)). The unemployment

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rate in South Africa increased to 35.3 % in the last quarter of 2021, increasing from 34.9 % in the previous period. The number of jobless individuals increased by 278 thousand to 7.9 million, employment increased by 262 thousand to 14.5 million, and the labour force increased by 540 thousand to 22.5 million (Statistics South Africa, 2021). The reality from a research finding indicates that a majority of graduates do not have the requisite skills in demand by prospective employers and the labour market (Sotshangane, Obioha, 2022). The Department of Education has received many investments from public and private individuals to help boost the quality of Education in South Africa; hence, it is crucial and necessary to study graduate unemployment (Moleke, 2003).

Given this rising rate of unemployment, various adaptation strategies, including business cooperatives, have been designed and put forward to cushion the effect of the harsh conditions. Globally, the formation and promotion of cooperatives are regarded as the answer to the unemployment and youth unemployment problems that are challenging the world's economic development, especially in developing countries (Guliwe, Venter, 2018). Also, in South Africa, various societies are encountering socio-economic issues such as high unemployment rates, poverty, and civilisational collapse. To deal with such problems, community members unite as cooperatives to achieve more than they could achieve as individuals. Cooperatives have become an economical alternative to meet the needs of people within communities through their cooperation.

The ILO (2012) and Cooperatives Act (Act No. 14 of 2005) define a cooperative as a relationship of people that are joined intentionally and directed by a group of moral qualities that incorporate trustworthiness, transparency, social obligation, and caring for others, outfitted towards meeting their regular financial, social and cultural necessities and desires through jointly owned and equitably controlled venture. However, so much intervention is needed because empirical evidence shows a high mortality rate in these cooperatives associated with a poor connection. Guliwe and Venter (2018) further found that the support systems fail to cover some of the costs of some cooperatives. Many cooperatives in South Africa are collapsing, but only some survive and provide economic development in their communities (Mohlala, 2020). In the country, the endurance rate of cooperatives is 12 %, and the mortality rate is 88 %. The statistics are shocking, notwithstanding the numerous endeavours being made as regulations and methodologies to help boost the cooperatives to be sustainable. Some cooperatives are not organised and engage in poor activities, which has caused the death of other cooperatives (Department of Trade and Industry, 2012).

Unemployment among graduates in South Africa is a current crisis that needs to be addressed with sustainable solutions. This is in the spirit of the National Youth Development Policy (2001), which believes that young people are the foundation of any society because they are active, have inventive ideas, and have features and knowledge that enforce the development and security of any Nation. Youth is a foundation of the Nation's population, and they are the most sensitive, active, and productive beings. Therefore, the urgency and necessity to turn the youth's energy to more productive activities like the cooperatives will bring the desired solution to the unemployment crisis among this group, notwithstanding that cooperatives are surviving at 12 % in South Africa. This is due to a number of reasons, but more importantly, people accepted the concept of cooperatives without complete comprehension of the concept. Other reasons for failure include a lack of education and abilities among managers and leaders, which leads to poor management of conflicts and business technicalities (Khumalo, 2014). In spite of the precarious situation involved, it is not certain from literature in South Africa whether unemployed graduates venture into grouping and organising themselves in the form of cooperatives in response to their situation. More importantly, there is a dearth of information from the scholarly literature on the inspirations and aspirations of unemployed graduates to help themselves, their situation and their community towards business cooperatives. In other words, the prospects and challenges of a business cooperative formation among unemployed graduates, specifically in rural areas of South Africa in general, are yet to be determined.

This study was therefore informed by the Theory of People-Centred Development by Davids et al. (2009), which demonstrated that people turned into the focal point of development, where the idea of People-Centred became the trendy expression of the 1990s and early 21st century. It entails people responding to a particular situation through home-grown, insourced solutions to the problem, such as unemployment among the youth. This approach sees public cooperation as a need and democratic rule

right. In testing and validating the essence of the above assumption, this study investigated the prospects and challenges of forming cooperatives among unemployed graduates in Ntabankulu. In consonance, the study sought to address the following research questions.

RQ1: What are the main determining prospects of unemployed graduates' cooperative formation?

RQ2: What are the main obstacles to unemployed graduates' cooperative formation start-ups?

RQ3: Which factors are the most critical challenge to the sustainability of unemployed graduates 'cooperatives'?

2. Methods and Materials

Study Area and Target Population

The study was conducted in Ntabankulu Local Municipality, under Alfred Nzo Municipality in the Province of Eastern Cape. Ntabankulu is situated between Mount Frere and Mount Ayliff, consisting of 18 wards and 154 locations (StatisticSA, 2011), with a population of 123,976 people, among which are 99.4 % Black Africans. The area is populated by isiMpondo, isiXhosa, Sesotho-speaking people, and others from India, Ethiopia, Zimbabwe, and other countries. While the youth unemployment rate was 60.7 %, and the working-age between the ages of 15-64 was 52.64 %, the economically active population, including employed and unemployed looking for work, accounted for 13 766.

Sample Size and Sampling Procedure

The study employed a quantitative research approach and a positivist approach that are more scientific to a large population to get more reliable and trustworthy findings (Johnson, 2020). The study targeted unemployed graduates in Ntabankulu Local Municipality, given the interest in knowing the length of unemployment, the challenges of unemployment, and the alternatives that these graduates have opted for as a means of survival. A stratified random sampling procedure was used to select 120 unemployed graduates from 15 locations in Ntabankulu LM for the survey.

Data Collection and Analysis

The required data were collected from the sample through a multiple-sectioned, close-ended survey instrument designed to elicit information from respondents in various formats, mainly the Likert Scale. More importantly, the required ethical considerations were followed in this study, such that the researchers received an institutional ethical clearance certificate (Protocol Number: REC/09/Xvii/2022), informed consent was obtained, and no participant was forced to participate in the study. The researcher ensured that anonymity and confidentiality were maintained. A descriptive-analytical tool in the Statistical Package for the Social Sciences (SPSS) was used to analyse the data and present the findings.

3. Results

Socio-Demographic Profile of Respondents

The findings in Table 1 indicate that 59.2 % of respondents are females and 40.8 % are males. The researcher struggled to convince males to participate in the study because they were bored by the fact that participating in the study would not benefit them in terms of offering them employment or giving them the funding that they needed. Regarding age, 48.3 % are aged 26-30 years, and 35.8 % represent those aged 21-25 years. Few respondents (15.0 %) are aged 31-35 years, while 0.8 % of participants are aged 36-40 years. The majority of respondents are aged 26-30 years and 21-25 years. These fresh graduates had just graduated and were still hoping to get employment.

Graduates are likely to be unemployed at those ages because they are still fresh graduates who lack some employability skills and experience to be employed. The minority graduates still hope to get employment, while some have opened their businesses. The graduates that the researcher could reach are those who went to a higher institution of learning at the same time as the researcher and those that the researcher knew who referred the researcher to others. Few graduates are aged 31-40 years because they are the ones who graduated a long time ago and have fears of moving to search for employment because they lost hope of getting one because of their age.

Table 1. Socio-Demographic Profile of Respondents

Sex of respondent	Frequency	Percentage
Male	49	40.8
Female	71	59.2
Total	120	100.0
Age of respondents		
21-25	43	35.8
26-30	58	48.3
31-35	18	15.0
36-40	1	0.8
Total	120	100.0
Marital status of respondents		
Never Married	113	94.2
Widowed	3	2.5
Divorced/Separated	1	0.3
Married	3	2.5
Total	120	100.0
Race of respondents		
Black African	120	100.0
Total	120	100.0
Highest qualification obtained		
Undergraduate Degree	59	49.2
Post Graduate Degree	53	44.2
Masters	7	5.8
PhD	1	0.8
Total	120	100.0
Period of unemployment		
0-1 year	43	35.5
2-5 year	66	54.2
6-9 year	7	5.8
10 years and above	5	4.2
Total	120	100.0

The researcher also surveyed marital status and found that 94.2 % of respondents never got married, while 2.5 % were widowed. The minority (2.5 %) of respondents are married, and the few (0.8 %) represent those who are divorced/separated. Most respondents are those that are still not financially stable to be able to afford marriage. Males are not financially ready to afford lobola, and every marriage cost. At the same time, females are not financially stable and do not want to depend on their husbands while they are educated.

Also, 49.2 % of respondents have undergraduate degrees, while 44.2 % have postgraduate degrees. Few (5.8 %) of respondents have master's degrees, while 0.8 % of respondents have a Ph.D. The respondents with undergraduate degrees obtained degrees and hoped to get employment soon after graduation. Those with postgraduate degrees decided to further their education because they were unemployed and did not want to stay home and do nothing. Clearly, the people of Ntabankulu are educated and believe that education is the key to success.

In terms of the period of unemployment, the majority (54.2 %) of respondents have been unemployed for a period of 2-5 years, while 35.8 % have been unemployed for 0-1 year. The minority (5.8 %) of respondents have been unemployed for 6-9 years, and 4.2 % represented those unemployed for 10 years and above. The majority of respondents are those who have been unemployed for a period of 2-5 years, and they are those who are aged 21-30 years. Those who have been unemployed for one year or less have just graduated. Those who have been unemployed for 6-9 years are those aged 31 and above who have been unemployed since graduation. People from Ntabankulu believe in the success brought by education; hence, they rely entirely on getting employment rather than starting a cooperative or a small business.

Prospects of Organising Local Business Cooperatives

The section presents the prospects of organising cooperative formation. The results of the analysis are presented in [Table 2](#). Regarding the availability of organised cooperatives in the area of study, 47.5 % of respondents disagree that there are any available cooperatives, and 15.0 % strongly disagree. A minority of respondents (32.5 %) agree, with 5.0 % strongly agreeing. The majority of respondents disagree, while the minority agree. There are few cooperatives, and respondents seemed to be unaware of cooperatives, but there are cooperatives in some areas.

Table 2. Descriptive Results on Prospects of Organising Local Business Cooperatives

Prospects	Strongly disagree	Disagree	Agree	Strongly agree	Total	Mean	SD
There are organized local cooperatives in my area	18 (15.0)	57 (47.5)	39 (32.5)	6 (5.0)	120 (100)	2.28	.777
The organised local cooperative in my area would address the socio- economic problems	3 (2.5)	23 (19.2)	75 (62.5)	19 (15.8)	120 (100)	2.92	.668
The formation of a cooperative in my area would address the dependence on the SRD SASSA grant	3 (2.5)	14 (11.7)	70 (58.3)	33 (27.5)	120 (100)	3.11	.696
Unemployed graduates in my area might be willing to form a cooperative	2 (1.7)	7 (5.8)	65 (54.2)	46 (38.3)	120 (100)	3.29	.653
The market in my area is perfect for the formation of a cooperative, I inspire to form	7 (5.8)	15 (12.5)	61 (50.8)	37 (30.8)	120 (100)	3.07	.817
I have the idea of the cooperative that I intend to form		7 (5.8)	59 (49.2)	54 (45.0)	120 (100)	3.39	.598
My community is the right target for my cooperative initiative	2 (1.7)	10 (8.3)	67 (55.8)	41 (34.2)	120 (100)	3.29	.667
I am willing to mobilise resources to form a cooperative	2 (1.7)	5 (4.2)	76 (63.3)	37 (30.8)	120 (100)	3.23	.604
I am aware of the reasons for the failure of other cooperatives	3 (2.5)	16 (13.3)	69 (57.5)	32 (26.7)	120 (100)	3.08	.705
I am willing to invest in forming a cooperative	2 (1.7)	6 (5.0)	69 (57.5)	43 (35.8)	120 (100)	3.28	.604

The researcher confirmed from stakeholders that there are cooperatives in Ntabankulu, although some are funded, and some are not funded. The majority of respondents agree, while the minority of respondents disagree on the possibility of an organised local cooperative in the area of the participant to address the socio-economic problems. The majority believe that the cooperatives in their areas have the potential to address socio-economic problems because the success of a cooperative would guarantee job creation, alleviation of poverty, access to health facilities and well-being of all, and address crime in societies. The minority disagreed because they did not see the development brought by existing cooperatives; instead, they were the ones who benefited from their families. Some cooperatives spent the money they received on their issues and did not go

through with the cooperative. These respondents believe that forming cooperatives would also not address the socio-economic problems.

Existing cooperatives have the potential to address socio-economic challenges in Ntabankulu. They have the potential to address unemployment and poverty and decrease dependence on substance abuse and drugs. There is hope that the formation of cooperatives in the area of respondents might address the dependence on the Social Relief Distress (SRD) from the South African Social Security Agency (SASSA) grant, and the majority (58.3 %) of respondents agree, supported by 27.5 % of respondents who strongly agree. Most respondents are inclined to agree because they believe many individuals would benefit from cooperative formation because they would generate employment. The people who applied for the SRD SASSA grant are the ones who are unemployed and lack a source of income. They were accepted because they met all the requirements that made them seem to live in poverty. The minority disagree because they are of the perspective that cooperative formation would not guarantee them employment and would not offer people employment. Having decent jobs can help people reduce their dependency on the SRD SASSA grant. There is a possibility that dependence on social grants might end through the involvement of cooperatives that would create job opportunities for the unemployed. The people who qualify to get the grant are those who are not working and have no income above R150. Being employed would automatically remove them from benefiting the SRD grant (R350) from SASSA.

The formation of cooperatives has the potential to address unemployment, as evidenced by 50.8 % of respondents who agree and 42.7 % of respondents who strongly agree. Most respondents generally agree because they have seen existing cooperatives by older people, youth, and women generating employment, and they believe that the graduate cooperative would generate employment as well. The minority do not have hope that cooperatives will generate employment because they see them as failing and lacking funding from stakeholders. They wonder how this cooperative formation addresses unemployment while still needing funding to function in a stable manner.

There was an inquiry on the likelihood that unemployed graduates in the area might be willing to form a cooperative. The majority agree that some graduates would like to join the cooperative because they understand the frustration of unemployment and that unemployed people jump to any opportunity available. Unemployed graduates are looking for any opportunity to utilise their employability skills, so they would be interested in joining. The minority disagreed because they could not be sure about other graduates, and some have tried cooperatives. Also, membership was an issue because few members were interested. Youth and unemployed graduates are not interested in joining cooperatives even though stakeholders provide them with information about cooperatives and funding.

A majority of the respondents agree that the market in their area is perfect for the formation of cooperatives they inspire to form. Most respondents believe that they are inspired to form cooperatives that they see relevant in their areas, and they are sure that the market will be perfect. These are the individuals who know society's needs, and they desire to form cooperatives that could address those needs.

While a majority of respondents agree that they have an idea of the cooperative they intend to form, the minority are not sure. Therefore, most respondents agree because they know what they want to invest their time, soul, spirit and money in, and they have researched that cooperative. The existing cooperatives influenced some, but the point is that they do have an idea. The minority does not know the cooperative they desire to form because they are not exposed to the cooperatives, and there are no cooperatives in their area. Similarly, most respondents are of the understanding that their communities were the right target for the formation of the desired cooperative, which was opposed by a few. Most respondents agree because they believe that their communities need their products and services and deserve a break from socio-economic issues. The minority of respondents disagree because they think the desired cooperative would be successful in other communities, not their communities. The target market is not their community but other communities.

With regards to the willingness of graduates to mobilise resources to form cooperatives, it is indicated that the majority of respondents are willing to mobilise resources. Most respondents agree that they are willing to mobilise resources because they are keen to see their cooperatives survive. They are aware that there is funding for cooperatives, and they are willing to go through all steps to get funding and resources. The minority of respondents disagree because they do not trust the success of the cooperative, and they are just waiting for the government to give them the

resources. Funding information is usually shared by officials from Ntabankulu LM, Social Development and the Department of Agriculture to councillors and ward councillors. Few funding applications are received yearly, so most graduates are unwilling to form cooperatives but are waiting to get employment.

About the awareness of the reasons for the failure of other cooperatives, the majority of respondents agree that they are aware of the reasons, while a minority generally disagree with this awareness. Most respondents agree that they know the reasons for failure because these cooperatives have failed in front of them, and the news of the failure has spread in the community. Some know the reasons because they heard them from stakeholders while seeking funding. The minority of respondents are unaware because they have not heard the reasons for the failure. In the same vein, a majority of the youth participants agree they are willing to invest in forming a cooperative. Their willingness to invest in forming cooperatives is because they are interested in the desired cooperative. They are willing to invest their all in forming the cooperative because they want to see it grow and become big. The minority of respondents disagreed because they did not give their all in forming the cooperative.

Comparatively, [Figure 1](#) depicts the mean scores of the results of the prospects of an organised local cooperative initiative in the study area. The essence of the mean scores is to ascertain the relative importance of various perspectives. From the means scores in the graph, it can be concluded that having the idea of the cooperative intended to be formed is the most important prospect for cooperative formation, with a mean score of (3.39). This is followed by the youths' understanding that their community is the right target, a place to form a cooperative, and the fact that the youths in the area will be willing to join a cooperative.

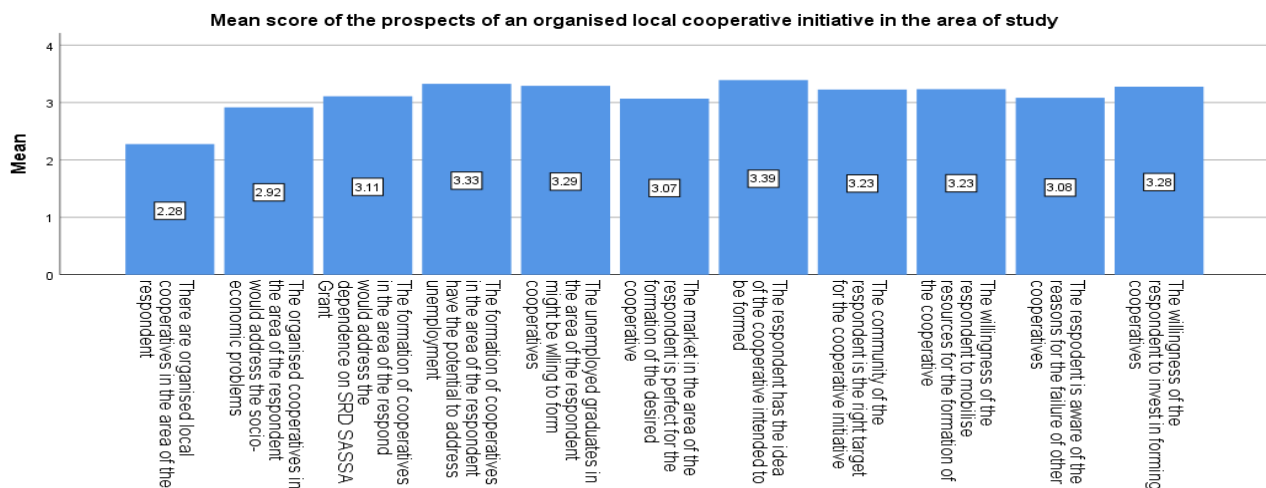


Fig. 1. Mean Score of the Prospects of an Organised Local Cooperative Initiative in the Area

Respondents are aware of the cooperatives they aspire to form, and they observe the type of cooperative succeeding in some areas. Hence, they believe in the success of that cooperative. The least essential prospect is the presence of cooperatives in local areas of respondents, with a mean score (2.28).

Challenges in Organising Cooperatives

Behind all aspirations are envisaged setbacks, as such groups encounter numerous challenges in their bid to form cooperatives. Formation of cooperatives generally encounters challenges that include a lack of capital, limited resources, no support from the government, few members with interest, principles and standards from big businesses and a lack of managerial skills. Respondents' responses ranged from strongly disagree, disagree, agree and strongly agree. The findings ([Table 3](#)) perceived that lack of capital is the biggest challenge for the cooperative start-up, with over half of the respondents inclined toward this. This is followed by no support from the government as the main challenge for cooperative start-ups, according to the respondents. The availability of a few members with interest is a concern but not as important an issue as others.

Table 3. Challenges for the Cooperative Start-Ups

The most challenges	Frequency	Percent
Lack of capital	82	68.3
Limited resources	14	11.7
No support from the Government	19	15.8
Few members with an interest	5	4.2
Total	120	100.0

The findings suggest that many individuals are willing to form cooperatives, but they are limited by the issue of the lack of capital to start a cooperative. Capital is the vital asset needed to purchase various tools for starting a cooperative, so the lack of capital is the biggest challenge because resources are bought using capital.

Similarly, the challenges to the formation of a cooperative are presented in Table 4. These include no financial support, limited resources, no support from the government, principles and standards from big businesses, few members with interest and untrained management. Respondents were requested to express the degree of their disposition, which ranges from strongly disagree, disagree, agree and strongly agree.

Table 4. Factors that are Challenging to the Cooperatives

Factors	Strongly disagree	Disagree	Agree	Strongly agree	Total	Mean	SD
No financial support	2 (1.7)	1 (0.8)	41 (34.2)	76 (63.3)	120 (100)	3.59	.601
Limited resources	1 (0.8)	3 (2.5)	43 (35.8)	73 (60.8)	120 (100)	3.57	.590
No support from stakeholders	3 (2.5)	6 (5.0)	57 (47.5)	54 (45.0)	120 (100)	3.35	.694
Principles and standards from big businesses	6 (5.0)	30 (25.0)	54 (45.0)	30 (25.0)	30 (100)	2.90	.834
Few members with an interest	10 (8.3)	26 (21.7)	55 (45.8)	29 (24.2)	30 (100)	2.86	.882
Lack of managerial skills	9 (7.5)	25 (20.8)	52 (43.3)	34 (28.3)	30 (100)	2.93	.890

The findings revealed that 97.5 % of respondents agree that lack of financial support is challenging in forming a cooperative, while 2.5 % disagree. Most respondents agree because they had tried to form cooperatives before and failed because of a lack of financial support. Some are aware of the reasons for the failure of other cooperatives. Resources are bought using finances, and no financial support from stakeholders means a challenge to forming a cooperative. The respondents who disagree are of the perspective that when people start a cooperative, they should not depend on others for finances. However, they should be prepared financially to sustain the cooperative.

There is financial support for cooperatives in Ntabankulu, such that the graduates running cooperatives were supported by NYDA with an amount of R50 000 and received eight computers from the local municipality; an agricultural cooperative received the financial support of R100 000 from Ntabankulu LM and R50 000 from NYDA. These cooperatives were financially supported at the start, from the cooperatives, from the writing of the business plan to the operation of the cooperative, but this opportunity seems not to be known by many youth groups.

The study further found that 96.6 % of respondents agree that limited resources are challenging to the cooperative start-up. The minority (3.4 %) of respondents disagree. Most respondents agree because they understand that resources are essential to forming a cooperative. Now, when they are limited, that becomes a challenge. That cooperative can either not produce the desired products and services or fail. It is imperative for the cooperative to have the resources it needs to meet the needs of the market. The respondents disagree that limited resources are not a challenge to cooperative start-ups; as long as there are limited resources, products can be produced.

Regarding the lack of support from stakeholders as a challenge to the cooperative start-ups, the majority (92.5 %) of respondents agree that no support from stakeholders is a huge challenge to forming the cooperative. In comparison, the minority (7.5 %) disagree. Most respondents agree with this because they understand that cooperative start-ups are formed primarily by unemployed people who need support from stakeholders so that the cooperative cannot fail. They need to be supported in terms of being provided with funding, resources and ideas for cooperatives. Not having that kind of support from stakeholders, such as the ward councillor, councillor, social development, Department of Agriculture, Local Municipality and others, guarantees that such a cooperative will not have a future. Support from these stakeholders can also help the cooperative with the right market and attract investors to ensure that the cooperative runs with financial stability. The respondents who disagree are of the perspective that cooperatives can function without the help of stakeholders when group members are committed and have all the resources. Relatives, with regard to the principles and standards from big businesses as a challenge to cooperative formation, 70.0 % of respondents agree that this is a challenge to cooperative formation, while 30.0 % disagree. The majority of respondents agree because they are aware that big businesses require principles and standards in order for the cooperative to be their supplier. Some big businesses require certificates from cooperatives, and these cooperatives lack such paperwork. Cooperatives intend to become suppliers of big businesses but are challenged by these principles. The minority of respondents may believe that big businesses' principles and standards are not a challenge to cooperatives. Big businesses are willing to purchase vegetables from agricultural cooperatives and have bought them before without following any principles and standards. Existing cooperatives supply schools with uniforms and vegetables, and no principles and standards limit the selling and buying of goods and services.

Few members with interest were a factor that was found to be a challenge for cooperative start-ups by 70.0 % and was denied by 30 % of respondents. Most respondents agree because they understand that the cooperative needs members to be called a cooperative. It also needs five members to qualify for funding. There can never be a cooperative with no members with interest. Besides having members with interest in the cooperative, their skills in managing the cooperative are also important but, at the same time, maybe challenging. Most respondents (71.6%) agree that lacking managerial skills is a challenge to cooperative formation, while 28.4% of respondents disagree. The majority of respondents agree because they understand that a cooperative without management skills is likely not to succeed. It is given that the manager needs to gain the skills that can help shape the future of the cooperative. The minority of graduates disagrees because they argue that managerial skills do not matter as long as members of the cooperative share the best interests of the cooperative.

Comparatively, various factors that challenge the formation of cooperatives by unemployed graduates do not have equal weights. In terms of ranking and relative importance of these challenges, as indicated in Figure 2, using the mean scores, the fact that the cooperatives have no financial support from respective stakeholders topped the list as the most pressing and critical challenge. A condition of limited resources follows this, while the fewness of members with interest is the least among all concerns.

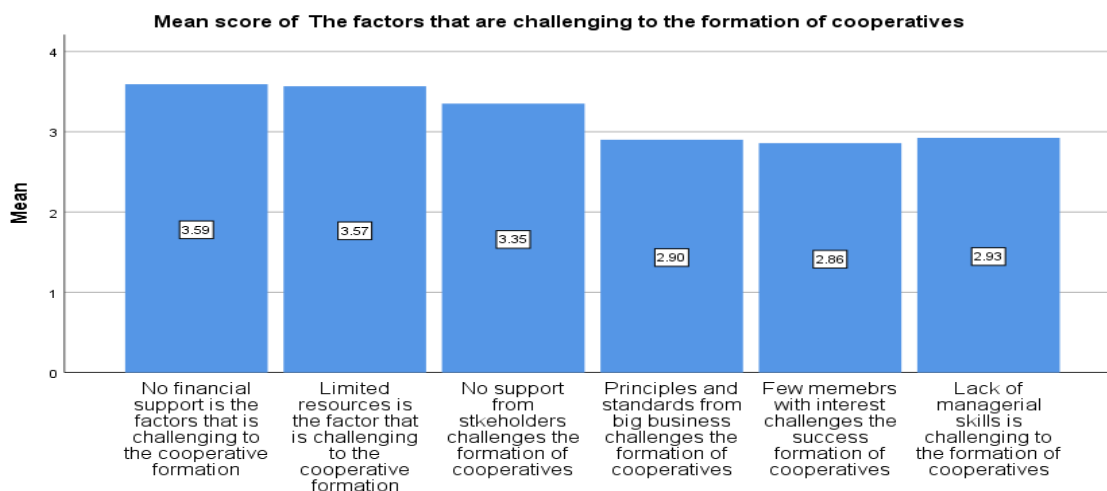


Fig. 2. Mean Scores of the Challenging Factors to Cooperative Formation

4. Discussion

The prospects of forming a cooperative body for groups of unemployed youths in Ntabankulu depend on a number of conditions and contexts. Among other positives, the study found that the youths' having a clear idea of what they intend to do is the most important element and deciding condition in any aspiration to the formation of cooperatives. Business inspirations come from positive ideas and feasibilities. Although previous studies have not highlighted this as an important aspect that drives cooperative formation among youths, it is important to take this important finding into consideration, among other elements that have been consistently reported in related literature in this field of study. The inspirational ideas of the youths in having an idea of what to do regarding forming a cooperative is intricately linked to other possibilities, which include their perfect understanding of the available market. This connects to the reality that unemployed graduates in the areas of study are willing to form cooperatives against the above background. Previous studies have shown, as this present study corroborates, that cooperatives have the potential to reposition any community socio-economically, hence the unemployed youth's willingness and inspiration to organise a viable cooperative. For example, Mohlala (2020) revealed that organised local cooperatives have the potential to address socio-economic problems, such as the Motloulela farming cooperative in Limpopo, which worked to improve socio-economic issues in the community. It addressed unemployment and improved social networks in the community. Even though some stakeholders had highlighted based on their wrong preconceived notion that there could not be a guarantee that unemployed graduates might be willing to form cooperatives because they are not interested and lazy, this study, in line with the previous ones, is consistent in what prospects could be in the formation of a cooperative among unemployed youths. The findings revealed another important prospect of forming a cooperative, being that the youths perceive their communities as the right target for the cooperative initiative. Given the economic situation in the study area, where poverty and youth unemployment are rife, the formation of youth cooperatives will receive a positive nod because of the potential towards employment. The findings of the current study align with those of Moller, Davila and Esim (2019), who found that cooperatives can create decent work for community members, including youths. It is also consistent with Harmse (2009), who has a firm conviction that cooperatives can contribute to the creation of employment for the disadvantaged group who did not participate in previous formal employment vacancies.

Unarguably, from this study, graduates know how to form a cooperative, and it is clear that some challenges, such as a lack of capital and limited resources, limit the start-up. Looking further into factors challenging the formation of cooperatives, which may also contribute to their failure, the study found no financial support from various sources to be a huge obstacle. The findings of the present study resonate with the previous works of Bhuyan, Leistriz and Cobia (1998) on the problem of lack of capital for non-farming cooperatives. More importantly, our findings support Gala (2013), who found that financial problems are a huge challenge to the cooperative start-up. On a more strategic level, Shava (2019) found that the factors that hinder the success of cooperatives as a strategic local economic development include the lack of funding by the government and relevant stakeholders. Similarly, this study found limited resources as one of the next critical challenges to cooperative formation. Observably, the stakeholders may offer resources to support cooperatives, but the important point is the limited availability and insufficient capacity for meaningful project start-ups, as previously alluded to by Gala's (2013) findings about cooperative start-ups. For instance, the Ntabankulu LM and the Department of Social Development and Agriculture offer funding for cooperatives but obviously on a very limited scale and scope. The support from the government and relevant stakeholders for cooperatives, as found in the present study, is dismal and inadequate to hold up a viable cooperative initiative. The importance of support to cooperatives to avoid early closure, as is the case in Ntabankulu LM in the present study, is supported by what exists in literature (Kanyane, Llorah, 2015), which maintains that lack of support leads to the early death of the cooperative formed. These supports go beyond finances to advisory and counselling services, including the provision and sharing of information to the cooperatives. The study found that a lack of managerial skills among aspiring cooperative members is a huge challenge for cooperatives. This important finding validates the principle of 'know-how' and 'know-what' in the success of every business venture, including the cooperatives. In a previous study, Khumalo (2014) substantiated that the formation of a cooperative would be unsuccessful without the corresponding managerial skills of the members

who would be entrusted with running the cooperative. Some scholars, including Dube (2016), have argued that lack of interest from members may actually be the main problem, which is least supported in the present study, rather than other challenges that have been highlighted. The unemployment rate in the Ntabankulu location may differ from the unemployment rate in the Amajuba District in Kwazulu Natal; hence, unemployed graduates in Ntabankulu may be more interested in forming cooperatives. These people are looking for anything that could help them escape unemployment and poverty.

5. Limitations of the Study

This study is limited by the number of participants who were unwilling to participate in the study in Ntabankulu. Even though the findings of the study may be used as a prototype for understanding what is obtained in other jurisdictions, they are mostly applicable to the study area.

6. Implications of the Study and Recommendations

The findings of this study validate some of the scholarly conclusions from previous studies but, at the same time, dispute some preconceived notions about unemployed graduates in South Africa. Contrary to the common belief of some stakeholders that unemployed graduates are lazy and unwilling to help themselves, including in start-up businesses in cooperative form, this study has shown that the unemployed are not only willing but also have some ideas about what they want to do. Capital and financial resources were consistently found to be the major obstacles to cooperative start-up and continuity. Even where financial resources and support are available from the government and relevant stakeholders, these are of a limited scale. Besides the above, this study has implications for further research, where the focus should be on studying and identifying characteristics of unemployed graduates that will be most willing to start a cooperative and what are the specific types of cooperatives they would want to establish. Based on the findings of this study, there are further implications for policy. Future focus on the development and sustainability of cooperative formations among unemployed graduates should consider the following:

- Conduct a scoping review to know what type of cooperative the unemployed would want to form rather than impose a stakeholder-determined structure on the youths. In this regard, the ideas of the unemployed graduates should be paramount.

- Provision of capital and financial resources is necessary for the various ideas that unemployed graduates may have. Support from the government and interested stakeholders should be tailored towards the ideas of the youth.

7. Conclusion

This study set out to determine the prospects and challenges in the formation of business cooperative organisations among unemployed graduates. Among arrays of conditions, having the idea of the cooperative intended to be formed, youths understanding that their community is the right target of a place to form a cooperative, and the fact that the youths in the area will be willing to join a cooperative is the most important and prominent pointers to prospect of the formation of cooperatives in Ntabankulu LM, in that order. This study found that having ideas about cooperative formation, coupled with the willingness of the unemployed to jump-start such organisations, is not enough ground for sustainability. While lack of capital and limited resources are the major obstacles to cooperative start-ups, the realisation that there is no financial support and the reality of limited resources hinder the unemployed graduates from continuing with cooperatives. Hence, starting a business cooperative among youths is a mission that is riddled with obstacles that lead to the closures of such entities. The findings of this study, both from the perspectives of prospects and challenges, in some ways validate what exists in the literature, but with some exceptions, where new insights have been put forward. In other words, while the findings of this study corroborate previous studies, they present novel ideas in the subject matter of this study. This study, therefore, stands as a platform upon which recommendations could be drawn, as its findings have specific and general implications for the body of knowledge in youth studies and economic development.

8. Declarations

Ethics Approval and Consent to Participate

While the researchers applied and obtained Ethics Clearance (Protocol Number: REC/09/Xvii/2022) from Walter Sisulu University Research Ethics Committee of the Senate, Informed consent was obtained from each participant in this study.

Consent for Publication

The authors have read and agreed to the published version of the manuscript.

Availability of data and materials

The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

Conflicts of Interest Statement

The author declares no conflict of interest.

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Author Contributions


Y. Sotshangane carried out the research as part of her Master's dissertation under the supervision of E.E. Obioha. Both authors made contributions to various sections of this manuscript, from inception to completion.

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The authors acknowledge the support of Nedbank South Africa through the office of Nedbank Chair in Sustainable Rural Development at Walter Sisulu University, Prof EN Ciske. We, Yonela Sotshangane and Emeka E. Obioha hereby declare that this manuscript on unemployed graduates' cooperative formation prospects and challenges in response to unemployment is an extract of an original research carried out in the study. As such, we have references as a means of acknowledging all the sources that we used in the study. We also affirm that this research work has never been submitted to any other journal or outlet for publication.

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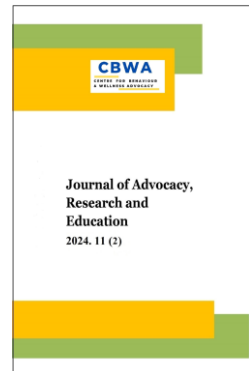
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Attitudes and Social Norms Influencing Adolescents' Contraception Utilisation in Bongo District, Ghana

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Abstract

Adolescent pregnancy poses a significant global challenge, with Ghana experiencing high rates contributing to annual maternal deaths. Effective contraception utilisation can prevent both pregnancy and sexually transmitted infections among adolescents. This study examines attitudes and social norms influencing adolescents' contraception utilisation in Bongo District, Ghana, employing a quantitative self-report cross-sectional design. Convenience sampling was used to recruit 379 adolescents, with data collected using a standardized questionnaire. Analysis conducted using SPSS Version 21 revealed a 100 % response rate, predominantly comprising females (66.8 %, n=253), with a mean age of 17.4. Approximately half of the respondents (53.3 %, n=202) reported using contraception, and adolescents' attitudes towards contraception use were mainly positive (n=229, 60.4 %). Furthermore, subjective norms positively affected contraception use. A majority of participants (n=233, 61.5 %) reported experiencing social pressure or support to use contraception, with the highest level of support coming from healthcare providers (n=237, 62.5 %). The study underscores the critical role of midwives, public health nurses, and healthcare providers in educating and promoting contraception use among adolescents.

Keywords: Adolescents, Contraception, Utilisation, Attitude, Subjective Norm.

1. Introduction

Adolescent reproductive health is an important concern as many adolescents are typically at risk during this stage of life (Berhe et al., 2024). Most adolescents in this phase engage in unhealthy behaviours such as unprotected sex, which leads to unwanted pregnancies, unsafe abortions, and sexually transmitted infections (Bukenya et al., 2020; Hkansson et al., 2018; Krugu et al., 2017).

Adolescent pregnancy is a major problem worldwide (Mathewos, Mekuria, 2018) and affects the education and well-being of families, communities and society at large (United Nations Children's Fund, 2008). Globally, an estimated 12 million adolescent girls become pregnant annually, with approximately 21 million of these pregnancies occurring among girls between the ages of 15 and 19 in low- and -middle-income countries (LMIC), particularly in East Asia and West Africa due to their large young populations (World Health Organization, WHO, 2018), poverty,

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inadequate education, and contraceptive dissemination, among others (Akanbi et al., 2021; Indongo, 2020; Kaphagawani, Kalipeni, 2017).

Despite several measures taken by both government and non-government agencies in Africa to address this phenomenon (Gunawardena et al., 2019), adolescent pregnancies continue to persist as a public health concern in numerous sub-Saharan African countries. In Ghana, adolescent pregnancy is a major contributor to maternal deaths (Engelbert Bain et al., 2019), with Bongo district recording the highest prevalence of teenage pregnancy in the country (Campus, 2018). The Annual District Health Report (2017) for Bongo District showed a decrease in 2015 from 20.1 % to 19.8 % in 2016 and an increase to 20.8% in 2017. However, this phenomenon can be counteracted by the effective and timely use of appropriate contraceptives, which not only prevent pregnancy but also sexually transmitted infections.

Contraception is a natural or artificial means or technique used worldwide to prevent pregnancy temporarily or permanently. The choice of a contraceptive method depends on individual choice, safety, effectiveness, and availability, including accessibility, affordability, and acceptability (Adjei et al., 2014a; Adjei et al., 2014b; Chernick et al., 2019). It is lifesaving and an essential element of reproductive health care (Nanda et al., 2020), improving women's reproductive autonomy, reducing unwanted pregnancies and unsafe abortions among adolescents, and having a profound impact on their physical, economic and psychological well-being (Adjei et al., 2014a; Adjei et al., 2014b).

Although there is a high level of knowledge (approximately 90 %) of contraceptive use among adolescents worldwide, its use among adolescents is low (James-Hawkins, Broaddus, 2016), particularly in sub-Saharan Africa (Blackstone et al., 2017; Casey et al., 2020; Ochako et al., 2015) highlighting a gap between knowledge and use, but a study in Kenya found an increase in the use of long-acting reversible contraceptives (18 %) among adolescents aged 15 to 19 years (Kungu et al., 2020).

In a Ghanaian study, it was discovered that despite a significant level of awareness among adolescents regarding contraception (95 %), only 18 % of them utilised it (Agyemang et al., 2019a). Usage is low due to myths and misconceptions, inaccessible service locations, and financial constraints, religious beliefs, cultural norms, provider training, and poor attitudes (Blackstone et al., 2017; Shahabuddin et al., 2017; Subedi et al., 2018; Ochako et al., 2015).

Several measures have been taken to curb this problem in Ghana. The Ministry of Health and its agencies and support partners launched the Youth Corner concept to help youth find reproductive health services, which include contraceptive services. These facilities also provide post-abortion care and counselling to reduce abortion stigma and misunderstandings about contraception (Hkansson et al., 2018). Although tremendous work has been done in the area of policy implementation and advocacy for adolescents' right to reproductive health, including contraception and postpartum women (Adjei et al., 2014a; Adjei et al., 2014b), there is little data on the factors that influence uptake among young people. Hence, the study aimed to examine the attitudes and social norms affecting the use of contraceptive methods among adolescents in the Bongo district in the Upper East Region of Ghana.

2. Methods and Materials

Approach and Design

The study was a descriptive cross-sectional survey. It was conducted in the Bongo district in the Upper East Region of Ghana. The total number of adolescents in the district is approximately 28494 (Ghana Statistical Service, 2021). The district has educational institutions, including a private university and seven Senior High Schools. Additionally, it has a district hospital, seven health centres, and thirty-six Community-based Health Planning and Services compounds, all rendering family planning services (Ghana Districts, 2006). Bongo district faces significant challenges, particularly the highest teenage pregnancy rates among the eight districts in the region, hence the decision for its choice.

Sampling and Sampling Procedure

The convenience sampling method (Sarfo et al., 2022) was used to recruit 379 adolescents aged 10-19. To be eligible, respondents had to have resided in the Bongo District for a minimum of one year and express a willingness to take part in the study. Adolescents with hearing, speech, or writing

difficulties were excluded from the research. The sample determination for this study was done using Krejcie and Morgan's pre-calculated sample determination table (Krejcie, Morgan, 1970).

Data Collection and Analysis

Data on various variables was collected in the Bongo district using the measurement scale initially developed by Richardson et al. (1997) to explore factors influencing condom use among high school students in Nova Scotia using the theory of planned behaviour. The focus of this study was adolescent contraception utilisation and a modified instrument with two subscales was used: attitude and subjective norms. A 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") was used in the study. The Cronbach's Alpha of the scale measuring attitude was 0.82, and the subjective norm was 0.53. Descriptive statistics were obtained from SPSS version 21 to comprehensively understand the characteristics of the major variables of interest to the research work.

Ethical Consideration

Prior to data collection, ethical approval from the Noguchi Memorial Institute for Medical Research Institutional Review Board (NMIMR-IRB) (certificate number: NMIMR-IRB CPN 050/22-23) was obtained from NMIMR-IRB, and permissions were secured from regional health and education authorities as well as community leaders. Detailed briefings about the study were provided to all respondents, with opportunities for questions. Verbal or written consent was obtained from participants aged 18 and above, while parental consent was sought for those below 18. In boarding schools, teachers acted as guardians for minors. Respondents were informed about the study's benefits and potential risks. Anonymity and confidentiality were assured, and participants were informed of the voluntary nature of their participation.

3. Results

Socio-Demographic Characteristics of the Participants

Table 1 depicts socio-demographic data of respondents aged 13-19: mean age 17.4 (SD=1.54). Overall, participants included 66.8 % females and 33.2 % males.

Table 1. Socio-Demographic Characteristics

Variable	Frequency (n=379)	Percentage (100%)
Age		
10-13	6	1.6
14-16	93	24.5
17-19	280	73.9
Mean age=17.4		
Sex		
Male	126	33.2
Female	253	66.8
Religion		
Christian	334	88.1
Islamic	36	9.5
Traditionalist	9	2.4
Marital status		
Never married	343	90.5
Married	36	9.5
No. of Children		
0	358	94.5
1	13	3.4
2	8	2.1
Level of education		
Uneducated	7	1.8
Basic	158	41.7
Secondary	213	56.2
Tertiary	1	0.1

Variable	Frequency (n=379)	Percentage (100%)
Occupation of Participant		
Student	327	86.3
Unemployed	43	12.1
Employed	9	2.3
Parent's educational level		
Uneducated	187	49.3
Basic	100	26.4
Secondary	48	12.7
Tertiary	44	11.6
Occupation of parent		
Formal employment	48	12.7
Informal employment	191	50.4
Unemployed	140	36.9
Number of family members		
3-5	98	25.9
6-8	176	46.4
9+	105	27.7
Participants' position of birth		
1-2	188	49.6
3-4	122	32.2
5+	69	18.2

Contraception Utilisation (Behaviour)

Table 2 showed that the majority (n=202,53.3%) of the adolescents indicated that they use contraceptives.

Table 2. Contraception Utilisation

Do you use contraceptives?		
Responses	Frequency	Percentage
Yes	202	53.3
No	177	46.7
Total	379	100.0

Table 3 revealed a positive attitude towards contraception. Acceptance of partner-suggested contraception scored highest, while perceiving contraceptives as inconvenient scored lowest.

Table 3. Comprehensive Item Response Attitude of Adolescents Towards Contraception Utilisation

Variable	Frequency (n=379)	Percentages
Contraceptives are too much trouble		
Agree	147	38.79
Neutral	96	25.33
Disagree	136	35.88
Contraceptives are unreliable		
Agree	183	48.28
Neutral	61	16.09
Disagree	135	35.62

Variable	Frequency (n=379)	Percentages
I just don't like the idea of using contraceptive		
Agree	161	42.42
Neutral	56	14.78
Disagree	162	42.74
I would avoid using contraceptives if at all possible		
Agree	179	47.23
Neutral	52	13.72
Disagree	148	39.05
Contraceptive ruin the sex act		
Agree	132	34.83
Neutral	98	25.86
Disagree	149	39.31
Contraceptives are uncomfortable for both partners		
Agree	149	39.31
Neutral	97	25.59
Disagree	133	35.09
I do not think contraceptives interfere with the enjoyment of sex		
Disagree	142	37.47
Neutral	90	23.75
Agree	147	38.79
I would have no objection if my sexual partner suggested that we use a contraceptive		
Disagree	133	35.09
Neutral	52	13.72
Agree	194	51.19
Status of attitude		
Positive Attitude score	229	60.42
Negative Attitude score	150	39.58
Total	379	100.00

Table 4 shows subjective norms measure the influence of those within the social circles of adolescents specifically. Family, friends, sexual partners and significant others and the impact they have on the adolescents' contraception use. The results indicated that the majority of participants (n=233, 61.5 %) had experienced social pressure or support to use contraception, with the highest support being health care providers (n=237, 62.5 %).

Table 4. Comprehensive Item Response of Adolescents Towards Contraception Utilisation

Variable	Frequency (n=379)	Percentages
If I was sexually active and told my doctor, he/she would encourage me to use contraceptive		
Disagree	95	25.07
Neutral	47	12.40
Agree	237	62.53
My sexually active friends use contraceptives		
Disagree	106	27.97
Neutral	101	26.65
Agree	172	45.38
If I told my parents/guardians/siblings that I was sexually active, they would approve of my use of contraceptive		
Disagree	175	46.17

Variable	Frequency (n=379)	Percentages
Neutral	67	17.68
Agree	137	36.15
I think that my current or future partners would be willing to use contraceptive		
Disagree	173	45.65
Neutral	66	17.41
Agree	140	36.94
Most people in my community would approve of the use of contraceptives by sexually active teens.		
Disagree	174	45.91
Neutral	62	16.36
Agree	143	37.73
Most guys I know don't like to use contraceptive		
Agree	233	61.48
Neutral	43	11.35
Disagree	103	27.18
To most girls, a guy who uses a contraceptive is sexier.		
Disagree	111	29.29
Neutral	54	14.25
Agree	214	56.46
Status of subjective norms		
Negative	146	38.52
Positive	233	61.48
Total	379	100

4. Discussion

Demographic Features of Participants

The socio-demographic data of the study provides an essential point for understanding the participants in the study. It highlights the diversity of the sample, which includes participants from diverse religious backgrounds, marital statuses and family structures in the study setting. The mean age of the study participants was 17.4 years, indicating that the majority of the participants were below 18 years old and were very vulnerable to teen pregnancy (Dunn et al., 2019). Though the study did not measure the age for sexual debut, some studies have indicated that most adolescents start sexual activity between the ages of 10 and 17 (Harrington et al., 2021). This finding is consistent with previous studies on the socio-demographic features of adolescents concerning contraception utilisation (Kilmer et al., 2022). Also, the majority of the participants were females (66.8 %). This high proportion of female participants in this study is consistent with the fact that the majority of adolescents in Ghana are females (Ghana Statistical Service, 2021). Moreover, the study indicated that many of the participants (88.1 %) were Christians, probably because it was a Christian-dominated district.

The results of this study have implications for the design and implementation of interventions for adolescents in Ghana. For example, the fact that the majority of the participants were students suggests that interventions should be designed to be accessible to students. Also, a larger proportion of participants' parents were uneducated, which suggests that interventions on contraception use should be designed to be culturally appropriate and sensitive to the needs of out-of-school adolescents and families who are illiterates.

Furthermore, the higher proportion of never-married participants in the study is likely due to the fact that the majority of participants were under the age of twenty (20). Also, the majority of uneducated parents in the study point to the fact that the district is deprived, which contributes to low levels of education in the district. Moreover, many of the participants' parents were employed in the informal sector, which is consistent with the economic conditions in most communities in sub-Saharan Africa, where the majority of people are employed in the informal sector (World Bank, 2018). The high proportion of participants from families with 3 to 5 members in the study is indicative of the average family size in Ghana (Ghana Statistical Service, 2021).

Though the socio-demographic data of participants was pertinent to understanding the diversity of the sample and family structures of the participants, the study had an unexpected finding, which indicated that none of the socio-demographic characteristics had a significant relationship with contraception utilisation. The finding is contrary to previous studies that suggested that adolescents' contraception use was associated with socio-demographics such as age, gender, marital status, number of children, and educational status, among others (Amoah et al., 2023; Ojoniyi et al., 2022; Oppong et al., 2021).

Contraception Utilisation

The findings of the study suggest that a little over half of the adolescents (53.3 %) are using contraception. Though not many studies have cited increased contraception utilisation among adolescents, the finding is consistent with few studies which indicated that contraceptive use among adolescents is increasing (Amoah et al., 2023; Kilmer et al., 2022; Senders, Horner-Johnson, 2022). For instance, a study conducted in the southern part of Ghana, which assessed the prevalence and determinants affecting contraception uptake among young females, found that contraceptive use among sexually active young women in the study setting was significantly higher (n=211,76%) than the national contraceptive prevalence rate (Amoah et al., 2023).

The study further cited the availability and accessibility of emergency contraception and condoms at vantage points such as restaurants, drug stores and supermarkets as contributors to the high adolescent female contraception use. Relatedly, a trend analysis done from 2006 to 2017 among adolescents and young adults in the USA revealed an increase in the usage of emergency contraceptives, citing easy access to emergency contraceptives from over-the-counter as a contributor to the increased use (Mehta et al., 2022). Another systematic review conducted in 29 low- and middle-income countries revealed that there was an increasing demand for contraception by adolescents in these countries (Deitch, Stark, 2019). The study further postulated that the high demand for contraception among adolescents was associated with knowledge of sexual and reproductive health topics. This implies that initiatives such as increasing sex education programmes, availability of contraceptives and the provision of free or low-cost contraceptives in areas accessible to adolescents have the potential to improve adolescents' contraception utilisation.

Another likely explanation for this finding is that there has been an allocation of school nurses to all the secondary schools in the Bongo district. These school nurses provide services, including contraception services, which makes it easier for the adolescents in the schools to have access to the services, and this might have increased the high contraception use reported. School-based health centres operated by experienced healthcare providers have been cited in other studies as one of the ways of improving contraception access among adolescents (Bersamin et al., 2018; Fisher et al., 2019; Sullivan et al., 2022; Wang et al., 2018).

Also, the District Director of Health in Bongo indicated during the researcher's visit to the health directorate that the district had intensified their engagement with adolescents through the organization of adolescent health clubs. During their meetings, varied health education topics, including contraception, are given in their quest to reduce teenage pregnancy in the district. This was evident during the data collection, which was collected from adolescents during these club meetings.

Moreover, the descriptive analysis of the study indicated that adolescents had positive attitudes toward their contraception use. Also, adolescents had social pressure to use contraceptives, suggesting a positive influence of social norms on contraception use. Concurrently, adolescents had positive intentions to use contraception. Lastly, the majority of the adolescents had the confidence to use contraception, hence the reported good percentage of contraceptive use among adolescents in the study setting. It is also worth noting that though there was a reported high use of contraception among adolescents in the study, a significant minority (46.7%) of the adolescents in the study reported not using contraceptives. This is similar to previous studies that have reported low contraception use among adolescents (Issah et al., 2022; Kawuki et al., 2022; Marimirofa et al., 2022). This suggests that there is still a need to increase adolescents' awareness of contraceptive use as well as tackle other factors that contribute to high contraception uptake among adolescents.

Adolescents' Attitudes Towards Contraception Use

Despite available literature from previous studies that cited various negative misconceptions and beliefs such as stigma, contraceptive is a means used by the white race to eradicate the black

race, infertility in the future, and fear of the side effects, among others (Marshall et al., 2021; Mulubwa et al., 2021; Mwaisaka et al., 2021), this study identified that adolescents generally had a positive attitude towards contraception use. However, this is consistent with studies previously done by other researchers (Cederbaum et al., 2022; Masonbrink et al., 2023; Montoya et al., 2022).

The greatest attitude score of (n=229, 60.42 %) suggested that adolescents were willing to accept and use contraceptives even if proposed by a sexual partner. For instance, a study done in Malawi on adolescent girls and young women's contraceptive conversations with significant others revealed that almost all the study participants indicated that contraceptive conversation with a sexual partner yielded positive results with regard to contraception use (Bhushan et al., 2021). Similarly, a study carried out in Nigeria alluded that adolescent women's sexual partners had a positive influence on their contraception uptake (Sanchez et al., 2020). This suggests that adolescents are more likely to use contraceptives if they have a supportive partner. This also implies that it is important to encourage adolescents to talk to their partners about contraception and to make sure that their partners are supportive of its use. Also, the lowest attitude score indicated that participants generally viewed contraceptives as an easy and reliable means of preventing unintended pregnancies as well as preventing Sexually Transmitted Infections.

This indicates that adolescents are willing to use contraceptives. Relatedly, a study conducted in Kenya found that adolescents' contraception use was associated with the desire to avoid pregnancy (Harrington et al., 2021). There is, therefore, the need to provide adolescents with more accurate information on contraception and its benefits, as well as address any negative perceptions they have regarding contraception use, which will encourage a more positive attitude towards contraception, which may translate to actual utilisation.

Subjective Norms of Adolescents Towards Contraception Utilisation

The results of this study highlighted that subjective norms had a positive influence on adolescents' contraception uptake. This suggests that participants are generally open to using contraception. However, the difference in perceived expectations across different social groups elucidates that some adolescents may be more likely to use contraception if they perceive that their family or sexual partners approve of it. Similarly, previous studies have linked adolescent contraception use to family support and sexual partner approval (Bhushan et al., 2021; Harrington et al., 2021).

In support of the above findings, a study by Nyanta et al. (2023) reported high contraception use, and this was attributed to information obtained from immediate family members increasing their awareness of contraception. Regarding sexual partners influencing adolescents' contraception use, the finding of this study is in line with a study done in Ethiopia, which suggested that discussing contraception use with intimate partners influenced adolescents (Babore, Heliso, 2022). Other studies that concurred with the findings of this study identified partner communication, peers, family and community to influence adolescent contraception use (Chernick et al., 2019; Sanchez et al., 2020).

Though the current study did not ascertain the role family and a sexual partner play in the influence on their contraception use, the finding is encouraging because a plethora of studies have indicated that adolescents in Ghana and the sub-region in general are less likely to even talk about contraception use or their sexual reproductive needs with family members and sexual partners as a result of stigma, fear of being disowned by parents and discrimination against them due to their age, gender or both (Coast et al., 2019; Dioubaté et al., 2021; Rehnström Loi et al., 2019; Rizvi et al., 2019). Likewise, few studies have been done in the area of adolescent partner support in contraception use (Crawford et al., 2021). Where there is partner support, for instance, it is usually limited to married couples, and in some cases, conversation on contraception use among adolescent couples is seen as inappropriate in some cultural settings (Do et al., 2020).

Additionally, the findings of the study suggest that healthcare providers play a significant role in encouraging adolescent contraception use. Adolescents require support, adequate counselling, encouragement and provision of adequate information regarding contraception use from health providers to make the right decision concerning contraception. The actions and perceptions of health care providers can either affect adolescents' contraception use positively or negatively. It is, therefore, imperative for healthcare providers who provide reproductive health services to adolescents to be knowledgeable, approachable and trained to be able to handle them. This finding

is supported by a study that was conducted in Kenya, which alluded that healthcare providers influenced adolescents' contraception use positively (Velonjara et al., 2018). The study also found that adolescents perceived that their sexually active friends were using contraception. This suggests that peer influence had a crucial role to play in adolescent contraception use.

Finally, the finding of the study demonstrates that the family, health care providers, peers, intimate partners and the community all have a vital role to play in promoting adolescents' contraception use. It is, therefore, necessary to consider these stakeholders when designing interventions for adolescents. Parents or guardians should be educated on the benefits of contraception and should be encouraged to support their adolescents in that regard. Health providers should also be trained to deliver contraceptive information and services to adolescents in a professional and friendly manner. This can be done through school-based health education programmes and community-based outreach programmes, as well as by ensuring the privacy and confidentiality of adolescents. Sexual partners and peers should also be encouraged to support their contraceptive use. This can be achieved through individual counselling, group education sessions, adolescent health durbars, club meetings and public awareness campaigns.

Moreover, in promoting positive social norms towards contraception uptake among adolescents, it is imperative to create a supportive environment. This can be done by promoting positive portrayals of contraception in both the traditional and social media, by providing access to contraception in schools and community health centres and by making it easy for adolescents to talk to health care providers about contraception without being afraid of discrimination. This will help to ensure that all adolescents have access to the right information and resources they need to make informed decisions about their sexual health.

5. Study Limitation

The study employed a cross-sectional study design; thus, the causal relationship between the study variables was not established. A longitudinal study is therefore required to establish this causal effect.

6. Conclusion and Implication for Nursing/Midwifery Knowledge

The study showed that the respondents were predominantly young, Christian and female participants, with the majority of participants' parents being uneducated. The study further suggested that a high proportion (53.3 %) of participants were using contraception, reflecting an increasing trend as compared to the reported low contraception use of contraception among adolescents established in other studies. Possible factors contributing to this included school-based initiatives, positive attitudes and subjective norms. Adolescents generally exhibited positive attitudes toward contraception use, especially when supported by intimate partners. Likewise, subjective norms influenced by family, peers and healthcare providers had a positive impact on adolescents' contraception use.

Despite the significant increase in the percentage of adolescents' contraception utilisation, a substantial minority (46.7 %) were not using contraception, indicating that there may be other factors influencing contraception utilisation among adolescents that need to be explored. Again, due to the significant minority that are still not using contraception, stakeholders must provide accurate information on the benefits of contraception as well as address misconceptions to encourage more positive attitudes. Moreover, a supportive environment which involves all stakeholders, including opinion leaders, parents, healthcare providers, intimate partners, and peers, among others, will contribute greatly to promoting social norms towards contraception utilisation among adolescents. The study, therefore, seeks to remind midwives, public health nurses and healthcare givers providing reproductive health care to adolescents of the vital role they play in promoting contraception use among adolescents. There are, therefore, implications for future research, such as the need for a longitudinal study to examine the causal relationship between the variables.

7. Declarations

Ethics statement

Ethical clearance was obtained from NMIMR-IRB (CPN 050/22-23).

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Author's contributions

This study was designed by R, A. CB, and E.A. Data was collected by RA and analysed by RA, CB, EA, and BCA. All authors wrote and reviewed the manuscript. All authors have read and approved the manuscript.

Conflict of interest statement

All authors have declared no conflict of interest, and all reference materials have been duly acknowledged.

Consent for publication

Not applicable.

Availability of data and materials


Data and materials associated with this study are available upon request.


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