

Determinants of Teachers' Choice of Coping Strategies to Witchcraft Belief in Rural Public Primary Schools in Nzega Districts, Tanzania

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Abstract

This study examined the determinants influencing public primary school teachers' choice of coping strategies in response to witchcraft beliefs in rural Tanzania, with empirical evidence from Nzega District. A cross-sectional research design was employed, drawing on survey data collected from 330 public primary school teachers selected through random sampling across five rural wards. A Multivariate Probit (MVP) model was applied to analyse the simultaneous adoption of multiple coping strategies. The findings reveal that teachers' demographic and contextual characteristics significantly influenced strategy selection. Specifically, spiritual and religious coping was shaped by household size, marital status, distance to school, residence with villagers, and teaching experience; traditional ritualistic coping by age of household head, residence with villagers, and teaching experience; symbolic marking by sex of household head, witnessing witchcraft incidences, and residence with villagers; animal-based protection by years living in the community and residence with villagers; and seeking social support by household size, years living in the community, and religious affiliation. The results highlight that witchcraft beliefs continue to exert a meaningful influence on teachers' well-being and decision-making in rural contexts. The study underscores the need for targeted psychosocial support, culturally sensitive community engagement, and strengthened institutional strategies to promote constructive coping and enhance teachers' resilience. By applying a multivariate analytical approach within a culturally embedded rural setting, this study extends empirical and theoretical understanding of occupational stress and coping in education, offering context-specific insights relevant to policy and practice in the context of developing countries.

1.0. Introduction

The rural primary school teachers in Tanzania work in social contexts in which the formal system of education exists alongside strong cultural practices, such as witchcraft. These beliefs are still prevalent and powerful driving social relations, conceptualizations of unfortunate events, and daily interactions in communities (Mesaki, 2009; Nyakweba et al., 2022). Teachers, as open and comparatively educated members of the community, are exceptionally vulnerable to the fear, mistrust, and social unease related to the belief in witchcraft. The coping strategies that teachers use so as to address these pressures include spiritual and religious aspects, traditional ritualistic, symbolic marking, animal-based protection, and social support that have direct effects on their mental health and performance within the teaching field.

The significance of these coping strategies lies in the fact that the fears associated with witchcraft may destabilize the emotional state of the teachers, undermine the confidence in the community members, and destabilize the family and social life. Anxiety, social isolation, and fear of accusations have a detrimental impact on job satisfaction, commitment, and the possibility of teachers to work successfully in rural postings, which is proven by empirical evidence (Gershman, 2022; Nyakweba et al., 2022). In that regard, coping strategies can be considered as effective strategies that allow teachers to stay resilient, socially legitimate and carry on with their teaching functions despite the chronic cultural stressors.

The choice of coping strategies by teachers is driven by personal, family and social-based causes. On the personal level, coping responses are utilized to deal with stress and perceived threats; on the household level, they assist in guarding the family members against the perceived harm; and on the community level, they assist in social conformity and reduce conflict. Studies show that unsuccessful coping intensifies emotional distress and raises the intentions of teachers to leave rural service, with adaptive coping being the key to professional survival in rural settings (Schluter *et al.*, 2019; Gershman, 2022).

The coping strategies used among teachers differ greatly because of the demographics. There are age, gender, marital status, household size, teaching experience and length of residence in the community, which influence exposures of teachers to stressors associated with witchcraft, perceived vulnerability and access to social and cultural resources. Such demographic disparities affect the application of spiritual, traditional, symbolic, social, and protective strategies by teachers, which means that it is necessary to conduct disaggregated analysis with assumptions about teachers being generalized (Faisal and Mutiah, 2020; Lestari *et al.*, 2020).

The theoretical explanation of the relationship between demographic factors and coping strategies is possible with the help of the Transactional Model of Stress and Coping that considers coping to be a dynamic product of the interaction of personal properties and environmental needs. In that context, demographics affect the process of evaluating stress that comes with witchcraft and the choice of coping strategies, which are key factors of adaptive functioning (Ashforth, 2005; Ter Haar and Ellis, 2006). Nevertheless, this model has not been used often to socio-cultural stressors like the belief of witchcraft in the workplace.

In Africa, empirical researchers have found that demographic factors have a severe influence on the way people react to the social belief, which in most instances acts as an explanation of misfortune and as a means of social regulation in the environment where inequality and competition exists (Peacey *et al.*, 2022; Gershman, 2021; Burabari and Grace, 2023). Gender, age and socio-economic position are confined as among the characteristics contributing to vulnerability to witchcraft accusations and dictate the strategies individuals employ in coping, which demonstrates the demographic and contextual specificity of the coping behavior. The case of Mauritius indicates that the process of reinforcing social norms, envy, and informal enforcement mechanisms escalates the accusation of witchcraft and the influence of reactions on individuals (Willard *et al.*, 2023). Likewise, the practice of witchcraft in rural Uganda has been associated with violence and social marginalization, and religious and traditional structures of authority have been critical in determining how individuals perceive and address such threats (Rukundo, 2020).

In Tanzania, especially in rural areas like Nzega, beliefs in witchcraft still influence the work of teachers, social relationships, and well-being, but to date, little attention has been given to how demographic factors can influence the coping decisions of teachers (Mesaki, 2010; Kavishe, 2018). Furthermore, the stress-coping theory has had little application in this socio-cultural setting. This study fills these gaps by

empirically investigating the demographic factors influencing the coping strategies among the rural primary school teachers in Tanzania. This study further presents policy-relevant evidence to support psychosocial support, teacher retention policies through witchcraft beliefs fear eradication, and community involvement in the sector of Tanzanian education.

2.0. Theoretical underpinning of the study and the hypothesis development

2.1. Theoretical underpinning of the study

The theoretical basis of this study is the transactional model of stress and coping introduced by Lazarus and Folkman (1984) that offers the theoretical framework of analysis of factors influencing teachers who coped with beliefs regarding witchcraft. This theory is suitable for this study, due to its emphasis on how individuals identify stress related to any circumstance and decide the appropriate coping strategies based on their personal and contextual situations or resources, which are often shaped by demographic factors like age, gender, education, and marital status (Folkman and Lazarus, 1985). Other theories explained coping strategies in different contexts have been identified. Conservation of resource theory which focuses on how individuals cope on materials and social resource loss (Hobfoll, 1989). The socioecological model focused on environmental interactions coping strategies (Golden, *et al.*, 2015). These two theories underpinned coping related strategies, but do not related to stresses.

The strength of the stress and coping theory in this study is that, it directly answers the question on how teachers perceive stress or threats associated with witchcraft or determine which of the many available options can be effectively used as emotion-focused coping strategies in their unique situation. This theory is more relevant to this study since stresses socio-cultural and psychological stressors; and not focused purely on economic or structural ones (Surachman and Almeida, 2018). The stress and coping theory, has been more used in describing relationships in health, occupational stress, and in general life challenges (Travers and Cooper, 2024; Schwarzer and Reuter, 2023). The theoretical gap identified as this theory has rarely been extended to witchcraft beliefs context, where stress is deeply rooted in cultural worldviews, fear, and other social dynamics. The gap is bridged by applying this theory to witchcraft related stress through integrating demographic influences with culturally specific coping strategies to witchcraft beliefs in the community specifically to teachers in rural areas. The study has enriched both the scope of the theory and the contribution of the study.

2.2. Hypothesis Development

2.2.1. The role of teachers' demographic factors on coping strategies against witchcraft beliefs in rural communities.

Over the past few years, there has been an increasing trend of scholarly debate on the issue of how sociodemographic factors can influence psychological coping processes. It focuses on the effect of

sociodemographic variables, including age, household size, level of education, teaching experience, sex, and marital status, on psychological coping strategies especially social support and spiritual/religious coping. Based on the definition of coping developed by the Transactional Model of Stress and Coping (TMSC), coping is seen as an evaluative process that is dynamic and prompted by personal traits (Gold et al., 2011). It has been established in previous research that age influences preferences of coping (Reevy and Deason, 2014), larger households tend to use shared coping (Yuksel and Yilmaz, 2020), higher education increases the capacity to find social support (M and AA, 2017), and teaching experience influences coping in school settings (Meulenbroek and Jong, 2010). Sex and marital status have also been observed to be associated with a variation in help-seeking and participation in spiritual coping (Tamres et al., 2002; Green et al., 2011). Nonetheless, little studies research the combined effects of these variables on social support and spiritual or religious beliefs in the TMSC model. This gap will require testing the following hypothesis empirically: H_0 : *The independent variables (age, household size, education level, teaching experience, sex, and marital status) do not influence the dependent variables (social support, spiritual and religious beliefs).*

The connection between demographic attributes and coping behavioral patterns to witchcraft beliefs is not well studied, but existing literature may indicate that years of living in an area, physical proximity to school, and exposure to incidents of witchcraft can influence coping approaches, including the use of animals as protection, folk rituals, spirituality, and social support. Staying longer tends to increase assimilation into the belief systems of locals, strengthening the existing coping strategies (Kimpinde, 2025), and observing acts of witchcraft might increase the dependence on social protective practices (Ofori et al., 2016). Coping can also depend on distance to school because the more distant to modern education, the less contact with other views and reinforcement of the traditional ones (Reynolds et al., 2014). These trends are consistent with the Transactional Model of Stress and Coping according to which people evaluate stressors and select coping strategies depending on the environmental conditions and perceived resources (Ranjbar and Sadeghi, 2018), and social support is one of the moderators (Tao et al., 2022). In spite of these observations, little empirical studies have focused on the interaction between these demographic elements to influence coping behaviors in witchcraft susceptible environments, which should be empirically studied. In line with this, the research formulates the following hypothesis: H_a : *Independent variables (Years of living with community, Distance to school, Witness of witchcraft incidences) have an impact on the dependent variables (Animal based Protection, Traditional Ritualistic, Spiritual and Religious Beliefs, Seeking Social Support, Symbolic Marking)*

2.3. Conceptual Framework

The theoretical and empirical literature reviews have guided the study to come up with a diagram presentation of variables. The conceptual framework (Fig. 1) designed to present the study's flow by connection its variables. The framework suggests that, the demographic factors have an influence on teachers' choice of witchcraft beliefs coping strategies. These coping strategies are many, among them have portrayed effectiveness in managing the power of witchcraft in the rural areas.

3.0 Methodology

3.1 Study Area and Design

The study adopted cross-sectional design. Hunziker and Blankenagel, (2024); Creswell and Plano Clark, (2023); argued that, the design allows all quantitative data related to the study's observable variables to be obtained from the field once in a particular time. This design offers strong methodological rigor in social science studies and allows multiple factors and outcomes to be examined within a single study (May & Perry, 2022; Favril *et al.*, 2022). Nzega district was purposively selected due to its history of recording a significant number of witchcraft related episodes that have caused distress among teachers in the rural areas (Mesaki, 2009; Obwaya, 2024). Therefore, the pinpointed study area is considered as ideal representatives for examining socio-cultural issues, such as witchcraft beliefs and its coping strategies, particularly within the Tanzanian context.

3.2 Instrument and Measures

Questionnaires validation was done in two different stages. It was first pre-tested using experts in the field of indigenous knowledge, socio-cultural related studies specifically witchcraft. Secondly, the tools were tested through pilot study after involving the public primary school teachers. This stage gave the final decision for the tools to be used for data collection and analysis. Under this study, there are seven proposed coping strategies against witchcraft beliefs among rural public primary school teachers. Gershman, (2022a); Gershman, (2022b); Halim *et al.*, (2021); Owusu, (2023) have identified these strategies as; spiritual and religious beliefs, traditional ritualistic, psychological and behavioral adjustment, symbolic marking, animal-based protection, seeking social support, and leveraging existing community support systems. These observable coping strategies have been adopted by this study to explore their short term protection against witchcraft beliefs among teachers. These observable variables measured by "YES" or "NO" responses from the respondents as measuring scales.

3.3 Sampling procedures, sample size and data collection

Multi-stage sampling method was used in the study. Primarily, purposive sampling was chosen to identify wards that would be important to attain goals of the study. The simple random sampling method was then used to sample the wards and each respondent separately. Out of the five wards, there were 66 teachers randomly selected, which made the survey sample 330 teachers. The uniform sub-sample of 66 teachers per ward was adopted, as a result of the relative homogeneity of the study population, which included rural teachers in primary schools. When working with such homogeneous populations, a randomly chosen minimal sub-sample of 66 units is deemed adequate to give a strong representation and to be able to perform strong statistical analysis (Martinez-Abbrain, 2014). Moreover, since the population was homogeneous and the sampling was conducted using simple random sampling, which is known to be methodologically rigorous, the fixed sub-sample size of the wards was appropriate. Such a

method helped to reduce the unnecessary spending of resources that could occur due to proportionate sampling approaches that increase the size of the sample depending on the stratum population differences (Mgoba & Kabote, 2020). Teachers' sample size was calculated using the sample size determination formula proposed by Cochran, (1977): $n_o = \frac{Nz^2pq}{Ne^2+z^2pq}$ for the known population.

Through considering catering the possible cases of non-response, the study decided to adjust the sample size. Thus, 580 questionnaires were distributed to the rural public primary school teachers, 413 were collected while 330 were adequately filled by the respondents.

3.4 Data processing and analysis

Both descriptive and inferential statistical methods have been used to analyze the data. Descriptive analysis was used to generalize the coping strategies that were adopted by teachers in rural public primary schools, factors that affected their adoption using measures like frequencies, percentages and means. On the inferential analysis, the study used a multivariate probit (MVP) econometric technique, which at the same time estimates the impacts of several explanatory variables on the various coping strategies and also provides the ability to correlate the unobserved components (error terms) across equations (Belderbos et al., 2004; Lin et al., 2005). STATA version 16 estimated the MVP model. The framework suggested by Lin et al. (2005) informed functions of model specification and estimation.

The study specified animal-based protection, traditional ritualistic practices, spiritual and religious beliefs, seeking social support and symbolic marking as five binary dependent variables. Each coded as one if a rural public primary school teacher adopted the respective coping strategy and zero otherwise. The reason behind the use of a multivariate probit (MVP) model was that these coping strategies are not mutually exclusive; a single teacher can be capable of more than one strategy in reaction to witchcraft-related beliefs. Moreover, the MVP model should be used to examine the results of a decision that has multiple nominally measured dependent variables when the explanatory variables comprise both continuous and dummy variables (Wuensch, 2014). This choice was based on the utility maximization theory, which states that individuals act rationally and under different choices, they will select the one that offers the most expected utility. In line with this, the adoption of a specific coping strategy is theorized as a product of the anticipated utility of the said strategy (Fishburn, 1969).

3.5. Multivariate Probit Model Hypotheses Testing

The teacher is assumed to adopt a particular coping strategy when the anticipated utility derived from that option is greater than the expected utility associated with alternative coping strategies, such that:

$$Y^* = Y_i \text{ if } V_i > V_j \dots\dots\dots(1)$$

$$= Y_j \text{ if } V_j \leq V_i$$

In this formulation, Y_i denotes coping strategy i, Y_j refers to an alternative strategy j. The terms V_i and V_j represent the associated expected indirect utility levels of strategy i and its competing alternative j, respectively, and Y^* indicates the strategy ultimately selected. Accordingly, teachers'

decisions regarding the adoption of coping strategies can be conceptualized within a random utility discrete choice framework. This approach is particularly suitable for analyzing discrete choices among alternative coping strategies, as it is based on an indirect utility function whereby individuals with given characteristics assign an expected level of utility to each option within the choice set. Although the utility function is assumed to be defined for each teacher, certain elements of this function are not directly observable to the researcher and are therefore modeled as stochastic components. Consequently, for strategy i the expected indirect utility is specified as the additive combination of observable factors and an unobserved random disturbance term:

$$V_i = \beta^1 i X_i + \epsilon_i$$

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As in Eq. (1), we can write the choice utility of implementing any alternatives as follows:

$$V_j = \beta^1 j X_j + \epsilon_j$$

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In this equation, $\beta^1 i$ and $\beta^1 j$ denote vectors' parameters. Teachers may therefore make concurrent decisions regarding the adoption of one or multiple coping strategies, conditional on the vectors of explanatory variables X_i and X_j . To analyze these interrelated choices, the study employs a multivariate probit (MVP) framework, which is well suited for modeling joint decision-making processes. Based on Equations (2) and (3), the empirical MVP specification is expressed as follows:

$$Y^*_{ij} = V_i = \beta^1 i X_i + \epsilon_{i1}$$

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With $j = 1, 2, 3, 4, 5$

$$Y_i = 1 \text{ if } Y^*_{i1} > 0 \text{ and } 0 \text{ otherwise} \dots \dots \dots (5)$$

In this specification, Y_i^* represents an unobserved (latent) variable capturing the propensity to adopt coping strategy i . The index i corresponds to the different strategy categories, namely: $i = 1$ (Animal based Protection), $i = 2$ (Traditional Ritualistic), $i = 3$ (Spiritual and Religious Beliefs), $i = 4$ (Seeking Social Support) and $i = 5$ (symbolic marking). The empirical form of the model is specified as follows:

$$Y_{i1} = \beta_{i1} X_{ij1} + \epsilon_{i1}$$

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$$Y_{I2} = \beta_2 X_{ij2} + \epsilon_{i2}$$

7

$$Y_{I3} = \beta_3 X_{ij3} + \epsilon_{i3}$$

8

$$Y_{I4} = \beta_4 X_{ij4} + \epsilon_{i4}$$

9

$$Y_{I5} = \beta_5 X_{ij5} + \epsilon_{i5}$$

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Where, $Y_{I1}= 1$, if a teacher chooses the Animal based Protection (0 otherwise), $Y_{I2} = 1$, if the teacher chooses Traditional Ritualistic (0 otherwise), $Y_{I3}=1$ if the teacher chooses Spiritual and Religious Beliefs (0 otherwise), $Y_{I4}=1$, if a teacher chooses Seeking Social Support (0 otherwise), and $Y_{I5}=1$, if a teacher chooses symbolic marking (0 otherwise). X_i = vector of factors influencing the choice of coping strategy (Education level, sex of HHH, age, HH size, job position, other income generating activity, marital status, years of living with community, teaching experience, distance to school, members of teachers' organization and witness of witchcraft incidences). β_j denotes a vector of unknown parameters for $j = 1, 2, 3, 4, 5$ while ϵ represents the error term. Estimation of Equations (6) to (10) allows for the possibility that the error components: $\epsilon_1, \epsilon_2, \epsilon_3, \epsilon_4, \epsilon_5$ are correlated across equations. Consequently, these equations are not estimated independently but are jointly modeled within a multivariate limited dependent variable framework, in which the disturbance terms are assumed to follow a multivariate normal distribution with zero mean and a structured variance and covariance matrix.

Under the multivariate specification, where teachers may adopt multiple coping strategies simultaneously, the joint distribution of the error terms is assumed to be multivariate normal (MVN), with a zero conditional mean and variances normalized to unity for parameter identification. Formally, the disturbance vector $(\mu x_1, \mu x_2, \mu x_3, \mu x_4, \mu x_5) \sim MVN(0, \Omega)$ is a symmetric variance and covariance matrix defined as follows:

$$\Omega = \begin{bmatrix} 1 & \rho \times 1 \times 2 & \rho \times 1 \times 3 & \rho \times 1 \times 4 \\ \rho \times 2 \times 3 & 1 & \rho \times 2 \times 3 & \rho \times 2 \times 4 \\ \rho \times 3 \times 1 & \rho \times 3 \times 2 & 1 & \rho \times 3 \times 4 \\ \rho \times 4 \times 1 & \rho \times 4 \times 2 & \rho \times 4 \times 3 & 1 \end{bmatrix} \dots\dots\dots (11)$$

Of central interest in the variance and covariance matrix are the off-diagonal elements, as they capture unobserved correlations among the random components associated with different coping strategies. Allowing these correlations implies that Eq. (11) defines a multivariate probit (MVP) model that jointly characterizes teachers' decisions regarding the adoption of specific coping strategies. By permitting non-zero covariance, this specification accommodates cross-equation correlation in the disturbance terms of multiple latent choice equations, reflecting unobserved factors that simultaneously influence the selection of alternative strategies. Consistent with the formulation proposed by Cappellari and Jenkins (2003), the corresponding log-likelihood function for the observed sample outcomes is expressed as follows:

$$\ln = \sum \frac{N}{n} \omega_i \ln \Phi (\mu_i, \Omega)$$

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In this expression, ω denotes an optional observation-specific weight i , while Φ_i represents the multivariate standard normal cumulative distribution function evaluated at μ_i with covariance matrix Ω . The vector μ_i is further defined as follows:

$$\mu_i = (k_{i1} \beta_1 x_{i1}, k_{i2} \beta_2 x_{i2}, k_{i3} \beta_3 x_{i3})$$

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$$\Omega_{jk} = \Omega_{kj} = k_{ij} k_{ik} \rho_{jk} \text{ for } j \neq k, k=1,2,3 \dots \text{With } K_{ik} = 2y_{ik} - 1 \dots\dots\dots (14)$$

Table 3.1
List and definition of variables

Variable	Description of Variables
Dependent	
Animal based Protection	Dummy: 1 if a teacher adopted Animal based Protection and 0 if not
Traditional Ritualistic	Dummy: 1 if a teacher adopted Traditional Ritualistic and 0 if not
Spiritual and Religious Beliefs	Dummy: 1 if a teacher adopted a Spiritual and Religious Beliefs and 0 if not
Seeking Social Support	Dummy: 1 if a teacher adopted Seeking Social Support and 0 if not
Symbolic Marking	Dummy: 1 if a teacher adopted Seeking Social Support and 0 if not
Independent	
Age	Total number of years of a teacher from birth to the date of interview
Household size	Total number of family members
Education level	education level of HHH
Teaching Experience	Total number of teaching experience in years
Sex of HHH	Dummy: 1 if a teacher is male and 0 if a female
Marital status	Dummy: 1 if a teacher is married and 0 if not
Years of living with community	Number of years living with community
Residing with villagers	Dummy: 1 if a teacher engages with other economic activity and 0 if not
Distance to school	Distance from home to school in kms
Members of teachers' organization	Dummy: 1 if a teacher is a member of teachers' organization and 0 if not
Witness of witchcraft incidences	Dummy: 1 if a teacher witnessed witchcraft incidence and 0 if not

4.0. Results and Discussion

4.1. Social-economic and demographic characteristics of respondents

Table 4.1 presents a summary of the descriptive statistics of the socio-economic and demographic variables of the respondents within the study area. The statistics show that 53.6% of the participants had a Certificate/Grade "A" qualification in teacher pedagogy. More than 60% of the sample was made up of female teachers. The mean age of respondents was 42 years and above, which counts to 53.3% of the study participants. Besides, approximately half of the teachers (48.2%) had a household of 4–6 members. The majority of respondents were married (75.2%), and 51.5% had 12 years or more of teaching experience. The findings also reveal that 58.8% of the respondents commuted a distance of between 0.5 and 5km to go to their schools. The majorities (94.8%) were members of a teachers' organization, and 88.8% reported having witnessed witchcraft-related incidents in the study area.

Table 4.1
Social-economic and demographic characteristics of respondents (n = 330)

Parameters		Shigamba (n = 66)	Bukene (n = 66)	Itobo (n = 66)	Budushi (n = 66)	Utwigu (n = 66)	Total (n = 330)
Education Level	Certificate	15 (22.7)	57 (86.4)	32 (48.5)	32 (48.5)	41 (62.1)	177 (53.6)
	Diploma	35 (53)	8 (12.1)	24 (36.4)	23 (34.8)	21 (31.8)	111 (33.6)
	Bachelor	16 (24.2)	1 (1.5)	10 (15.2)	11 (16.7)	4 (6.1)	42 (12.7)
Sex	Female	41 (62.1)	39 (59.1)	45 (68.2)	45 (68.2)	31 (47)	201 (60.9)
	Male	25 (37.9)	27 (40.9)	21 (31.8)	21 (31.8)	35 (53)	129 (39.1)
Age of Household head	27–31	15 (22.7)	4 (6.1)	8 (12.1)	10 (15.2)	7 (10.6)	44 (13.3)
	32–36	8 (12.1)	10 (15.2)	6 (9.1)	6 (9.1)	17 (25.8)	47 (14.2)
	37–41	7 (10.6)	20 (30.3)	9 (13.6)	13 (19.7)	14 (21.2)	63 (19.1)
	≥ 42	36 (54.5)	32 (48.5)	43 (65.2)	37 (56.1)	28 (42.4)	176 (53.3)
Household Size	1–3	28 (42.4)	0 (0)	21 (31.8)	21 (31.8)	6 (9.1)	76 (23)
	4–6	34 (51.5)	23 (34.8)	31 (47)	37 (56.1)	34 (51.5)	159 (48.2)
	≥ 7	4 (6.1)	43 (65.2)	14 (21.2)	8 (12.1)	26 (39.4)	95 (28.8)
Marital Status	Single	15 (22.7)	0 (0)	13 (19.7)	8 (12.1)	4 (6.1)	40 (12.1)
	Married	44 (66.7)	59 (89.4)	40 (60.6)	49 (74.2)	56 (84.8)	248 (75.2)
	Divorced	4 (6.1)	4 (6.1)	6 (9.1)	4 (6.1)	3 (4.5)	21 (6.4)
	Widow/widower	3 (4.5)	3 (4.5)	7 (10.6)	5 (7.6)	3 (4.5)	21 (6.4)
NB: Number in brackets indicate percent							

Parameters		Shigamba (n = 66)	Bukene (n = 66)	Itobo (n = 66)	Budushi (n = 66)	Utwigu (n = 66)	Total (n = 330)
Teaching Experience	2–6	15 (22.7)	6 (9.1)	12 (18.2)	13 (19.7)	7 (10.6)	53 (16.1)
	7–11	24 (36.4)	19 (28.8)	18 (27.3)	19 (28.8)	27 (40.9)	107 (32.4)
	≥ 12	27 (40.9)	41 (62.1)	36 (54.5)	34 (51.5)	32 (48.5)	170 (51.5)
Distance to School (Km)	0.5–5	64 (97)	10 (15.2)	49 (74.2)	46 (69.7)	25 (37.9)	194 (58.8)
	6–10	2 (3)	43 (65.2)	17 (25.8)	16 (24.2)	26 (39.4)	104 (31.5)
	≥ 11	0 (0)	13 (19.7)	0 (0)	4 (6.1)	15 (22.7)	32 (9.7)
Members of Teachers Organization		63 (95.5)	63 (95.5)	65 (98.5)	58 (87.9)	64 (97)	313 (94.8)
Witness of Witchcraft Incidences		64 (97)	62 (93.9)	60 (90.9)	53 (80.3)	54 (81.8)	293 (88.8)
NB: Number in brackets indicate percent							

4.1.1. Education level

The observation that 53.6% of the respondents hold a Certificate/Grade A qualification suggests that a substantial proportion of teachers in Nzega District possess only the minimum professional training required. This educational level may influence the ways in which teachers cope with beliefs about witchcraft. Previous studies have shown that lower levels of education are associated with greater adherence to traditional beliefs and reduced capacity for analytical or evidence-based coping responses (Travers & Cooper, 2024; Schwarzer & Reuter, 2023). In many rural environments, where access to more resourceful information is limited, teachers with basic education may be more likely to adopt community-based or traditional approaches when confronting witchcraft-related challenges (Naiga et al., 2023; Spittel et al., 2019). Conversely, research indicates that tertiary education enhances critical thinking, cultural sensitivity, and professional coping skills (Ozoemena et al., 2021; Cheema et al., 2022). This suggests that the predominance of certificate-level teachers highlights education as a key determinant of how teachers perceive and respond to beliefs in witchcraft, emphasizing the need for continuous professional development to strengthen their coping strategies.

4.1.2. Sex of respondent

The fact that 60.9% of the respondents were female has significant implications for understanding the coping strategies of teachers who believe in witchcraft in Nzega District. Biological sex can influence how teachers perceive and respond to sociocultural demands. Studies suggest that female teachers, particularly in rural areas, are more vulnerable to heightened scrutiny and cultural expectations, which can shape their coping strategies (Klapproth et al., 2020; Hussain et al., 2019). Gendered social roles may make women more susceptible to the stigma associated with witchcraft, prompting them to adopt communal or supportive coping strategies rather than individualistic approaches (Klapproth et al., 2020). Additionally, their societal roles as caretakers and custodians of cultural norms can further influence their responses to superstition-related stressors. This indicates that being female is a significant predictor of coping behaviors, highlighting that sex is a key determinant of coping strategies and underscoring the need for targeted professional development that fosters resilience and culturally sensitive coping approaches among female teachers.

4.1.3. Age of household head

The finding that 53.3% of respondents are aged 42 years and above indicates that experienced teachers constitute the majority in Nzega District. This is likely to influence their coping practices regarding beliefs in witchcraft. Older teachers tend to draw on extensive life and professional experience, which may enhance their resilience and shape the ways they manage culturally based stressors (Kuzmin et al., 2021). As custodians of tradition, they may rely on community-based or culturally familiar coping methods while also integrating new approaches acquired through professional exposure (Ivankovic, 2020). Moreover, their age positions them both as bearers of traditional beliefs and as potential agents of change, as perceptions of superstition can evolve with experience and educational attainment (Kuzmin et al., 2021). Consequently, the high proportion of older teachers suggests that age is a significant determinant of coping strategies in the context of witchcraft beliefs.

4.1.4. Household size

The finding that 48.2% of households consist of 4–6 members provides valuable context for understanding the coping behaviors of teachers in relation to beliefs in witchcraft in Nzega District. Household size influences the availability of social support, resilience, and access to emotional and economic resources, all of which directly affect coping strategies. Teachers from larger households may benefit from stronger family networks and collective strategies, enabling them to draw on mutual advice and shared resources when managing witchcraft-related stress. Conversely, teachers from smaller households may lack such support and could feel more vulnerable (Ahmad & Kutty, 2023; Palmes et al., 2021). This suggests that family structure is an important determinant of how teachers navigate cultural pressures associated with witchcraft beliefs, particularly in a context where medium-sized households are predominant.

4.1.5. Marital status

The fact that 75.2% of respondents are married suggests that marital and family support may play a significant role in shaping how teachers in Nzega District cope with the pressures of witchcraft. Studies

indicate that married individuals often have stronger systems of emotional and instrumental support, which enhance resilience and the capacity to manage culturally based stressors (Mori, 2019; Palmes et al., 2021). In rural contexts, where community beliefs such as witchcraft are strongly ingrained, spousal support can provide stability and facilitate joint problem-solving strategies that mitigate psychological stress (Palmes et al., 2021). Furthermore, conventional family roles and expectations may influence the coping strategies teachers adopt, as societal norms often shape responses to cultural pressures (Ahmad & Kutty, 2023). Although limited research has specifically examined the relationship between marital status and coping with witchcraft beliefs among teachers, the predominance of married respondents suggests that family-based support networks are likely a major determinant of coping strategies in this context.

4.1.6. Teaching Experience

The finding that 51.5% of the sampled teachers have more than 12 years of teaching experience suggests that most teachers in Nzega District draw on their professional and community experience to manage challenges associated with witchcraft. Experienced teachers are more likely to employ adaptive, problem-solving strategies, demonstrate higher self-efficacy, and leverage their respected status within the community to cope with stress and stigma (Palmes et al., 2021; Buczak, 2024; Adinkrah, 2004). This highlights the critical role of professional experience in fostering resilience and culturally competent coping behaviors.

4.1.7. Distance to school

The finding that 58.8% of respondents commute between 0.5 and 5 kilometers to school suggests that most teachers live off-site, likely due to the limited availability of staff housing which is a common challenge in rural areas. Although this distance is relatively short, commuting teachers are exposed to community interactions, local narratives, and potential stigmatization, all of which can influence their mood and coping mechanisms. Daily travel may introduce additional stressors; however, it can also provide opportunities to build strong community connections that enhance resilience in culturally sensitive contexts (Kuzmin et al., 2021; Palmes et al., 2021). Therefore, commuting patterns reflect both infrastructural limitations and socio-cultural dynamics that shape how teachers cope with the pressures associated with witchcraft beliefs.

4.1.8. Members of Teachers organization

The finding that 94.8% of teachers are members of professional organizations suggests that membership in such groups is an important component of their coping strategies, potentially strengthening their resilience against pressures related to witchcraft in Nzega District. Participation in professional organizations fosters a sense of solidarity, collective identity, and access to collaborative spaces where teachers can share culturally informed coping techniques, thereby reducing isolation (Madsen et al., 2025; Patel et al., 2024). Studies indicate that teachers who engage in positive professional communities are better equipped to manage cultural strains through both emotional and practical support (Reed et al., 2020; Alam et al., 2023; Doong et al., 2014; Nosetti et al., 2020). The high

rate of membership may reflect the critical role these organizations play in fostering resilience, promoting culturally sensitive practices, and helping teachers navigate fears and community expectations related to witchcraft (Nair et al., 2018; Eccles et al., 2020; Donmez *et al.*, 2025).

4.1.9. Witness of witchcraft incidences

The finding that 88.8% of respondents have experienced cases of witchcraft highlights the ubiquity of witchcraft in the socio-cultural context of teachers in Nzega District and its significant influence on their coping strategies. Such exposure may increase fear, anxiety, and emotional burden, thereby affecting the processes through which teachers cope with stress (Ashforth, 2005; Osei, 2018). Teachers who have directly experienced witchcraft-related incidents are often more reliant on communal and peer support, as collective coping is typical in rural settings where social networks serve as a primary source of psychological strength (Palmes et al., 2021). Repeated exposure can also normalize certain coping behaviors within schools and communities, shaping teachers' professional identity and responses to cultural pressures. Thus, the high prevalence of exposure indicates that direct experience is a major determinant of coping strategies, underscoring the need for professional support tailored to teachers' individual socio-cultural contexts.

4.2. Teachers' coping strategies against witchcraft beliefs

In response to the negative effects of witchcraft beliefs, teachers in the study areas employed a range of coping strategies, namely; animal-based protection, traditional rituals, spiritual and religious practices, seeking social support, symbolic marking, psychological and behavioral adjustments, utilization of existing community systems, as well as the use of salt and special plants (Fig. 4.1). Many of these approaches have long-standing roots and have historically been applied in various parts of Nzega District to address witchcraft-related incidents. According to the findings illustrated in Fig. 4.1, more than half of the teachers reported using five out of the nine identified strategies. These included animal-based protection (91%), traditional rituals (82%), spiritual and religious practices (71%), seeking social support (60%), and symbolic marking (57%).

4.2.1. Animal based Protection

The high prevalence of Animal-Based Protection (91%) indicates that rural teachers rely heavily on culturally grounded coping strategies to manage the fears and stigmatization associated with beliefs in witchcraft. Animals such as geese, dogs, and black cats are culturally perceived as spiritually protective, allowing teachers to conform to community expectations while safeguarding their psychological well-being. This finding aligns with the views of Palmes et al. (2021) and Buczak (2024), who argue that stigmatized individuals often adopt coping strategies that help preserve self-esteem. It also resonates with Palmes et al. (2021), who emphasize the importance of understanding local belief systems when designing support interventions. In this study, the results suggest that cultural norms, rather than formal knowledge or professional training, strongly influence the coping strategies of teachers. This underscores the need for culturally informed support programs for teachers and highlights the

importance of implementing policies that address the intersection between professional practice and local belief systems.

4.2.2. Traditional Ritualistic

The finding that 82% of teachers in Nzega District use traditional ritualistic practices as a coping strategy highlights the significant role of cultural identity in shaping how rural teachers manage fears related to witchcraft. These rituals serve as culturally sanctioned sources of protection, helping teachers cope with socio-psychological stress while maintaining a sense of belonging within the community, a pattern consistent with the observations of Ozoemena et al., (2021) and Cheema *et al.*, (2022). Such practices also foster personal agency and strengthen social bonds, enabling teachers to safeguard their professional identities against the stigma and isolation associated with witchcraft beliefs, as noted by Klapproth et al., (2020) and Hussain et al., (2019). The study's findings suggest that cultural frameworks, rather than institutional directives, primarily influence teachers' coping strategies, underscoring the central role of culture in their adaptive behaviours. This emphasizes the need for educational stakeholders to integrate cultural awareness into teacher training and support programs, as recommended by Palmes et al. (2021) and Buczak (2024), in order to enhance teacher resilience and promote a more culturally responsive school environment.

4.2.3. Spiritual and Religious Beliefs

The finding that 71% of rural teachers use spiritual and religious beliefs as a coping strategy against witchcraft highlights the central role of faith-based systems in managing the psychological and social stresses associated with accusations of witchcraft. In communities that are deeply rooted in cultural and spiritual traditions, teachers often turn to prayer, religious leaders, and worship to gain reassurance and maintain emotional stability (Klapproth et al., 2020; Hussain et al., 2019). This reliance not only helps teachers feel a sense of control but also reinforces their spiritual identities, illustrating the overlap between religious and cultural belief systems in guiding their responses (Ivankovic, 2020). In the context of this study, the results suggest that teachers' coping strategies are heavily shaped by spiritual worldviews. Consequently, support mechanisms and policies should recognize and incorporate these beliefs. Promoting holistic well-being approaches that integrate spirituality can enhance teacher resilience and strengthen the support climate within rural schools (Owusu, 2022)

4.2.4. Seeking Social Support

The finding that approximately 60% of rural teachers rely on social support as a coping strategy against witchcraft beliefs underscores the crucial role of interpersonal relationships in alleviating the stress and anxiety associated with such cultural pressures. In environments where beliefs in witchcraft are prevalent, teachers seek reassurance and understanding by discussing their experiences with colleagues, family members, and local community members (Owusu, 2020; Palmes et al., 2021; Spittel et al., 2019). This collaborative approach not only strengthens resilience by affirming that teachers are not alone in their experiences but also provides access to shared wisdom and practical coping strategies (Ahmad and Kutty, 2023). In the context of this study, the reliance on social support indicates that

effective coping is reinforced through community-based networks. This highlights the importance of academic policies that promote the formation of collaborative networks and peer-support groups among teachers. Such systems can enhance teacher well-being and contribute to a more supportive and effective school environment (Palmes et al., 2021).

4.2.5. Symbolic Marking

The finding that 57% of rural teachers use symbolic marking as a coping strategy highlights the significant role of culture-based protective behaviours in communities where witchcraft beliefs are prevalent. These practices may include physical signs, objects, or small rituals such as charms, saint medals, holy books, protective beads, herbal bundles, powders, salt, and charcoal. Symbolic marking represents a tangible method for teachers to manage fear, strengthen their personal agency, and adhere to local cultural expectations (Yoder et al., 2021). Yoder et al., (2021) further demonstrate that such culturally grounded practices are crucial for managing psychological trauma related to witchcraft and for fostering resilience in local contexts. The implication of this finding is that teacher-support programs must be culturally informed, recognizing symbolic marking as a legitimate coping mechanism. Integrating knowledge of such practices into training and support programs can enhance teacher self-confidence, improve community relations, and contribute to the creation of more supportive learning environments in rural areas where witchcraft beliefs remain influential (Naiga et al., 2023; Spitzer *et al.*, 2019).

4.3. Factors Influencing Choices of Coping Strategies Adopted by public primary school Teachers

This section presents the results of the Multivariate Probit (MVP) model analysis. The likelihood ratio test for the independence of error terms across the coping strategy equations was highly significant ($\chi^2(44) = 343.061, p < 0.001$), leading to the rejection of the null hypothesis of independence (Table 4.2). This finding indicates that the adoption of multiple coping strategies by teachers is interdependent rather than mutually exclusive, confirming the appropriateness of the multivariate modeling approach for capturing these joint decisions. The model exhibited strong statistical significance ($p = 0.000$), demonstrating its robustness in explaining the observed coping behavior. Furthermore, assessment of multicollinearity showed that the average variance inflation factor (VIF) for the independent variables was 1.19, comfortably within the acceptable range of 1 to 10, suggesting that the predictors do not suffer from multicollinearity (Lee & Yang, 2024). Collectively, these results imply that teachers' choices of coping strategies are interconnected, and any interventions aimed at influencing one strategy may simultaneously affect the adoption of others.

4.3.1. Spiritual and Religious Beliefs

Findings from the study (Table 4.2) indicate that household size, marital status, distance to school, residing with villagers, and teaching experience were the key factors influencing public primary school teachers' adoption of spiritual and religious beliefs as a coping strategy in the study areas.

Size of Household

The findings indicate that household size is a significant predictor of the use of spiritual and religious coping strategy ($\beta = 0.543$, $p = 0.002$), with teachers from larger households being more likely to rely on spiritual beliefs to navigate difficulties. This observation aligns with the study by Green et al., (2011), which found that larger family units are associated with collective spiritual practices; helping migrant women with HIV/AIDS in Belgium manage stress. Likewise, Tao et al., (2022) reported that extensive family networks promote spiritual engagement as a coping strategy among elderly individuals experiencing mental health challenges. Together, these studies underscore the importance of extended family structures in enhancing spiritually oriented coping strategies.

Marital Status

The results indicate that marital status is a significant predictor of spiritual and religious coping strategies ($\beta = 0.874$, $p = 0.018$), with married teachers being more likely to rely on spiritual beliefs to manage challenges. This finding aligns with Tao et al., (2022), who found that marital relationships positively influence spiritual engagement among patients with advanced cancer, underscoring the importance of family relationships in addressing spiritual needs. Similarly, Ahmad and Kutty (2023) emphasize those personal relationships, such as marriage, foster environments that support faith-based coping strategies. Collectively, these studies highlight marital status as a key determinant of spiritually oriented coping behaviors.

Distance to School and residing with villagers:

The findings indicate that distance to school ($\beta = 0.321$, $p = 0.001$) and residing with villagers ($\beta = 1.911$, $p < 0.001$) are strong predictors of engagement in spiritual and religious coping strategies. This suggests that the greater the distance between the school and teachers' homes, the more likely teachers are to reside within local communities and rely on spiritual beliefs to cope. This relationship may be explained by limited access to staff housing, which increases teachers' interaction with community members and exposure to faith-based coping practices. Consistent with this observation, Yuksel and Yilmaz (2020) found that community spiritual resources are vital for supporting individuals in remote educational settings who experience stress and trauma. Similarly, Reynolds et al., (2014); Ofori et al., (2016) observed that populations living at greater geographical distances, particularly during disasters, were more likely to depend on religious coping mechanisms to manage mental health challenges.

Teaching Experience

The results indicate that teaching experience is a significant predictor of adopting spiritual and religious coping strategies among public primary school teachers ($\beta = 0.197$, $p < 0.001$). More experienced teachers are better able to manage challenges related to beliefs in witchcraft, as they have acquired practical knowledge and adaptive skills over time. This finding aligns with Kuzmin et al., (2021), who observed that experienced teachers effectively integrate indigenous knowledge into their practice,

enhancing resilience. Similarly, Ahmad and Kutty, (2023); Palmes et al., (2021) found that professional experience enables teachers to apply spiritual and religious beliefs more effectively as coping strategies.

4.3.2. Traditional Ritualistic

The results indicate that the age of the household head, residing with villagers, and teaching experience significantly influence the adoption of traditional ritualistic coping strategies among rural public primary school teachers. Specifically, the age of the household head ($\beta = 0.211$, $p < 0.001$) is positively associated with the use of traditional methods, suggesting that older individuals, with their stronger social networks and deeper cultural knowledge, are more inclined to employ these practices (Yu *et al.*, 2016; Zhang *et al.*, 2019). Residing with villagers ($\beta = 1.528$, $p < 0.001$) emerged as the most predictive variable, highlighting the importance of community integration, shared identity, and social support in facilitating the use of traditional rituals as communal coping strategies in rural settings (Aziz *et al.*, 2019; Duale *et al.*, 2025). Additionally, teaching experience ($\beta = 1.053$, $p = 0.014$) enhances teachers' ability to utilize culturally embedded coping strategies, as professional experience enables them to integrate community and traditional practices into their stress-coping repertoire (Ntumi *et al.*, 2025; Petiluna & Naparan, 2024). Overall, these findings underscore the central role of socio-cultural embeddedness and experiential knowledge in shaping the adoption of traditional ritualistic coping strategies among rural teachers.

4.3.3. Symbolic Marking

The findings (Table 4.2) indicate that the sex of the household head, witnessing witchcraft incidences, and residing with villagers significantly influence the adoption of symbolic marking as a coping strategy among rural public primary school teachers. Specifically, sex of the household head ($\beta = 0.674$, $p < 0.001$) may shape household decision-making and the dissemination of culturally sanctioned coping strategies, as gender roles in many rural communities determine authority, beliefs, and responses to perceived paranormal threats (Klapproth et al., 2020; Hussain et al., 2019). Exposure to witchcraft incidences ($\beta = 0.528$, $p = 0.003$) increases personal salience and perceived vulnerability, heightening the reliance on symbolic actions for protection. This aligns with studies showing that direct exposure to witchcraft-related events reinforces believers' engagement with culturally ingrained coping behaviors (Yoder et al., 2021; Naiga et al., 2023). Additionally, residing with villagers ($\beta = 0.132$, $p < 0.001$) facilitates community integration and adherence to local norms, increasing participation in communal practices such as symbolic marking. This is consistent with evidence indicating that close community residence fosters social capital and encourages group-based coping strategies in contexts where shared belief systems prevail (Klapproth et al., 2020; Hussain et al., 2019; Owusu, 2022). Overall, these results illustrate how household power structures, experiential exposure, and community embeddedness interact to shape culturally based coping mechanisms in rural communities.

4.3.4. Animal based Protection

Findings from the study (Table 4.2) indicate that years of living in the community and residing with villagers are the primary factors influencing the adoption of animal-based protection as a coping

strategy among public primary school teachers. Specifically, years of community residence ($\beta = 0.694$, $p = 0.032$) and living with the community ($\beta = 0.092$, $p = 0.004$) significantly affect teachers' use of animal-based protection strategies to manage fears associated with witchcraft beliefs. Prolonged residence in the community increases familiarity with local cultural practices and strengthens social connections, which facilitates the adoption of these coping strategies (Palmes et al., 2021; Buczak, 2024). Similarly, living within the community enhances teachers' involvement in local coping practices, consistent with findings that highlight the importance of community integration and social capital in effective coping (Owusu, 2020; Palmes et al., 2021; Spittel et al., 2019).

4.3.5. Seeking Social Support

The results from the Multivariate Probit (MVP) model (Table 4.2) indicate that household size, years of residence in the community, and religious affiliation are key factors influencing teachers' adoption of social support as a coping strategy in rural primary schools. A larger household size ($\beta = 0.114$, $p = 0.020$) increases the availability of immediate emotional and instrumental support through extended family networks, consistent with literature showing that larger families strengthen informal support systems and collective coping (Owusu, 2020; Palmes et al., 2021). Similarly, years of living within the community ($\beta = 0.063$, $p < 0.001$) reflects long-term integration, promoting trust, reciprocity, and access to community-based coping resources. This reinforces the role of prolonged residence in enhancing social capital and reliance on communal coping mechanisms (Spittel et al., 2019; Ahmad & Kutty, 2023). The strongest predictor was religious affiliation ($\beta = 1.797$, $p < 0.001$), highlighting the central role of faith-based networks in providing emotional, moral, and social support, particularly in rural areas where formal assistance is limited (Palmes et al., 2021). Collectively, these results demonstrate that social embeddedness through family, long-term community residence and religious networks is critical in shaping teachers' reliance on social support as a coping strategy.

Table 4.2

Factors influencing the choices of coping strategies adopted by public primary school Teachers

Coping Strategies Vs Demographic factors	Coef. (β)	Std.Err.	z	P > z	[95%Conf.	Interval]
Spiritual and Religious Beliefs						
Sex of the Teacher	-.904873	.375534	-2.41	0.016	-1.640906	-.1688399
Age of the Teacher	-.1905319	.0391468	-4.87	0.000	-2672583	-.1138055
Size of Household	.5430631	.1788256	3.04	0.002	.1925713	.8935548
Marital status	.8744155	.368753	2.37	0.018	.01516728	1.597158
Years living with community	-.0107454	.0305636	-0.35	0.725	-070649	.0491583
Witness of witchcraft incidences	-.36272	.6272222	-0.58	0.563	-1.592053	.8666129
Distance to school	.3210482	.1000224	3.21	0.001	.125008	.5170884
Residing with villagers	1.910606	.5464726	3.50	0.000	.8395396	2.981673
Teaching experience	.1966243	.0528193	3.72	0.000	.0931004	.3001482
Religious affiliation	.3814678	.3996599	0.95	0.340	-.4018513	1.164787
Traditional Ritualistic						
Sex of the Teacher	-.0740987	.3086139	-0.24	0.810	-.6789707	.5307734
Age of the Teacher	.2108768	.0521667	4.04	0.000	.1086319	.3131216
Size of Household	.0554222	.0832321	0.67	0.505	-.1077098	.2185541
Marital status	-.9801794	.4087573	-2.40	0.016	-1.781329	-.1790297
Years living with community	-.0642982	.0213025	-3.02	0.003	-.1060503	-.022546
Witness of witchcraft incidences	-.5530029	.4638812	-1.19	0.233	-1.462193	.3561875
Distance to school	-.0482422	.0383785	-1.26	0.209	-.1234627	.0269783
Residing with villagers	1.527939	.4028403	3.79	0.000	.7383863	2.317491
Teaching experience	1.052714	.4294024	2.45	0.014	.2111007	1.894327
Religious affiliation	.4882976	.4434599	1.10	0.271	-.3808678	1.357463
Symbolic Marking						
Sex of the Teacher	.6741918	.1780829	3.79	0.000	.3251559	1.023228

Coping Strategies Vs Demographic factors	Coef. (β)	Std.Err.	z	P > z	[95%Conf.	Interval]
Spiritual and Religious Beliefs						
Age of the Teacher	.0226927	.019745	1.15	0.250	- .0160068	.0613922
Size of Household	- .2563323	.0580951	-4.41	0.000	- .3701966	- .142468
Marital status	- .6249062	.2335268	-2.68	0.007	-1.08261	- .167202
Years living with community	- .0049505	.0143236	-0.35	0.730	- .0330242	.0231232
Witness of witchcraft incidences	.5282171	.1757172	3.01	0.003	.1838177	.8726164
Distance to school	.0027618	.0229701	0.12	0.904	- .0422588	.0477824
Residing with villagers	.1320075	.0359809	3.67	0.000	.0614861	.2025288
Teaching experience	.0229133	.02523	0.91	0.364	- .0265366	.0723633
Religious affiliation	- .7201367	.2166733	-3.32	0.001	-1.144809	- .2954648
Animal based Protection						
Sex of the Teacher	- .4447203	.2608198	-1.71	0.088	- .9559177	.0664772
Age of the Teacher	- .0937623	.3315448	-0.28	0.777	- .7435782	.5560535
Size of Household	.0178101	.0784768	0.23	0.820	- .1360016	.1716217
Marital status	.0768906	.3577389	0.21	0.830	- .6242648	.7780459
Years living with community	.6944428	.324033	2.14	0.032	.0593497	1.329536
Witness of witchcraft incidences	.004838	.4000807	0.01	0.990	- .7793058	.7889818
Distance to school	- .013289	.0325327	-0.41	0.683	- .077052	.050474
Residing with villagers	.092194	.0318312	2.90	0.004	.029806	.154582
Teaching experience	- .0958182	.0384101	-2.49	0.013	- .1711006	- .0205358
Religious affiliation	.0266931	.0206681	1.29	0.197	- .0138157	.0672019
Seeking Social Support						
Sex of the Teacher	- .4216268	.1737599	-2.43	0.015	- .7621899	- .0810637
Age of the Teacher	- .0447977	.0174356	-2.57	0.010	- .0789708	- .0106246
Size of Household	.1143492	.0490467	2.33	0.020	.0182194	.210479

Coping Strategies Vs Demographic factors	Coef. (β)	Std.Err.	z	P > z	[95%Conf.	Interval]
Spiritual and Religious Beliefs						
Marital status	-.1844663	.2228536	-0.83	0.408	-.6212513	.2523186
Years living with community	.0629813	.0154504	4.08	0.000	.032699	.0932636
Witness of witchcraft incidences	-.4237925	.3113043	-1.36	0.173	-1.033938	.1863527
Distance to school	-.0146437	.0247899	-0.59	0.555	-.063231	.0339437
Residing with villagers	.3332366	.1985164	1.68	0.093	-.0558485	.7223217
Teaching experience	-.0141056	.024395	-0.58	0.563	-.0619189	.0337077
Religious affiliation	1.796616	.4523082	3.97	0.000	.9101081	2.683124

Source: Developed by the authors based on MVP output

5. 0. Conclusion

This research examined the determinants of the choice of coping strategies by teachers in reaction to witchcraft beliefs in rural public primary schools in Nzega District. The analysis did not accept the null hypothesis that the independent variables under analysis, which are factors influencing the selection of coping strategies, do not have any influence on the dependent variables. As a result, the alternative hypothesis, which states that these factors play a major role in influencing the coping behaviors of teachers, was confirmed. The five strategies that were most used among the teachers were animal-based protection, traditional ritualistic practices, spiritual and religious beliefs, search of social support and symbolic marking. Findings of the multivariate probit model also indicate that the probability of adopting the said strategies is largely influenced by the following variables; household size, marital status, distance to school, co-residence with community members, teaching experience, age, sex, exposure to witchcrafts, length of stay in the community, and religious affiliation. The results indicate that coping strategies used by the rural public primary school teachers are a necessity and inevitability as a response to the pressures of the high beliefs of witchcraft.

5.1. Theoretical Contribution

The beliefs about witchcraft were explored in various academic fields, such as political processes (Geschiere, 2013), social violence (Ashforth, 2005), stress and coping processes (Osei, 2018), and the killings related to witchcraft (Mesaki, 2009). Although this literature is increasing, there is still a dearth of empirical research examining how rural public primary school teachers experience the witchcraft beliefs and the coping strategies they use in their settings. To fill this gap, the current study looked at the factors

affecting the choice of coping strategies by teachers in relation to the belief in witchcraft among rural teachers in the public primary schools in developing countries, specifically in Tanzania. Placing the concept of witchcraft beliefs into occupational stress paradigms, the study also offers context-specific information on how teachers have shaped culturally based stress factors within rural educational settings. The study adds to the theoretical knowledge by developing a list of short-term coping styles used by teachers as spiritual and religious beliefs, traditional rituals, symbolic marking, animal protection, and social support search. These coping behaviors were conceptualized as the outcome variables that are determined by a set of demographic and contextual variables, which determine how teachers perceive stress and their ensuing coping behavior. The results highlight the importance of socio-demographic factors in defining the choices and adoption of culturally based coping strategies in rural context, thus indicating the interplay between individual factors and socio-cultural conditions in the stress management.

Theoretically, the study contributes to the utilization of the Transactional Model of Stress and Coping (TMSC) by extrapolating its use to the panic of witchcraft-related stresses in rural settings of developing nations. The results show that teachers have cognitive evaluation of witchcraft beliefs as stressors and use the problem-focused and emotion-focused coping styles to deal with the threat in the short-run. The study also proposes that future studies need to investigate long-term adaptation strategies and determine the extent to which coping and adaptive strategies play a role in technical efficacy of teachers, their job performance, and stability at workplace. By using more econometric methods, including multivariate probit models (MVP) to assess more adaptation strategies in response to demographic predictors, they would better understand the effectiveness of coping strategies in reducing stress related to witchcraft in the long term. In general, this study is theoretically enriching in relation to the literature on stress and coping because it frames TMSC within cultural-specific belief systems and workplaces in rural Africa.

5.2. Practical Implication

Based on these findings, the study recommends that the government, particularly through the Ministry of Education, strengthen investment in programs that enhance teachers' resilience to witchcraft-related challenges and develop targeted policies to support rural teachers in effectively adopting appropriate coping strategies. Such policies and investments should focus on supporting education and awareness regarding coping strategies, including animal-based protection, traditional ritualistic practices, spiritual and religious beliefs, social support, and symbolic marking, to strengthen teacher resilience and promote effective teaching in rural communities.

5.3. Limitation and future research direction

The limitation of this study is that it has a cross-sectional design and uses self-reported data, which can limit the causality interpretation and create bias in the response. The next study ought to adopt the longitudinal and mixed method research to further study the long-term adaptation strategies, and

determine the impact of coping and adaptation strategies on the effectiveness and well-being of teachers in different rural areas.

Authors Contributions'

Dismas Nziku contributed on the conceptualization of the research topic, methodological issues, writing the original draft, reviewing and editing of the entire manuscript. Both Neema Kumburu and Gideon Sikawa contributed to the supervision of the research and the review of the manuscript.

Declarations

Ethical approval and consent to participate

The study was conducted in full compliance with the ethical guidelines of Moshi Co-operative University (MoCU). Ethical approval to conduct the research and publish the manuscript was formally granted by MoCU. All participants provided informed consent prior to their involvement in the study. The research adhered to key ethical principles, including confidentiality, voluntary participation, and respect for participants' rights. The purpose and significance of the study were clearly explained to all respondents, who were given complete freedom to decide whether to participate without any risk of negative consequences. Consequently, all participants took part willingly, without any form of pressure or coercion. Furthermore, all authors made substantial contributions throughout the research process and remained actively engaged through to the final revision of the manuscript.

Consent for publication

Authors agreed to let the paper published when considered for publication

Competing interests

The authors declared that, there is no any competing interest.

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Author Contribution

Dismas Nziku contributed on the conceptualization of the research topic, methodological issues, writing the original draft, reviewing and editing of the entire manuscript. Both Neema Kumburu and Gideon Sikawa contributed to the supervision of the research and the review of the manuscript.

Data availability

Data is provided clearly within the manuscript. The data supporting study's findings are available from the corresponding author upon reasonable requests.

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Figures

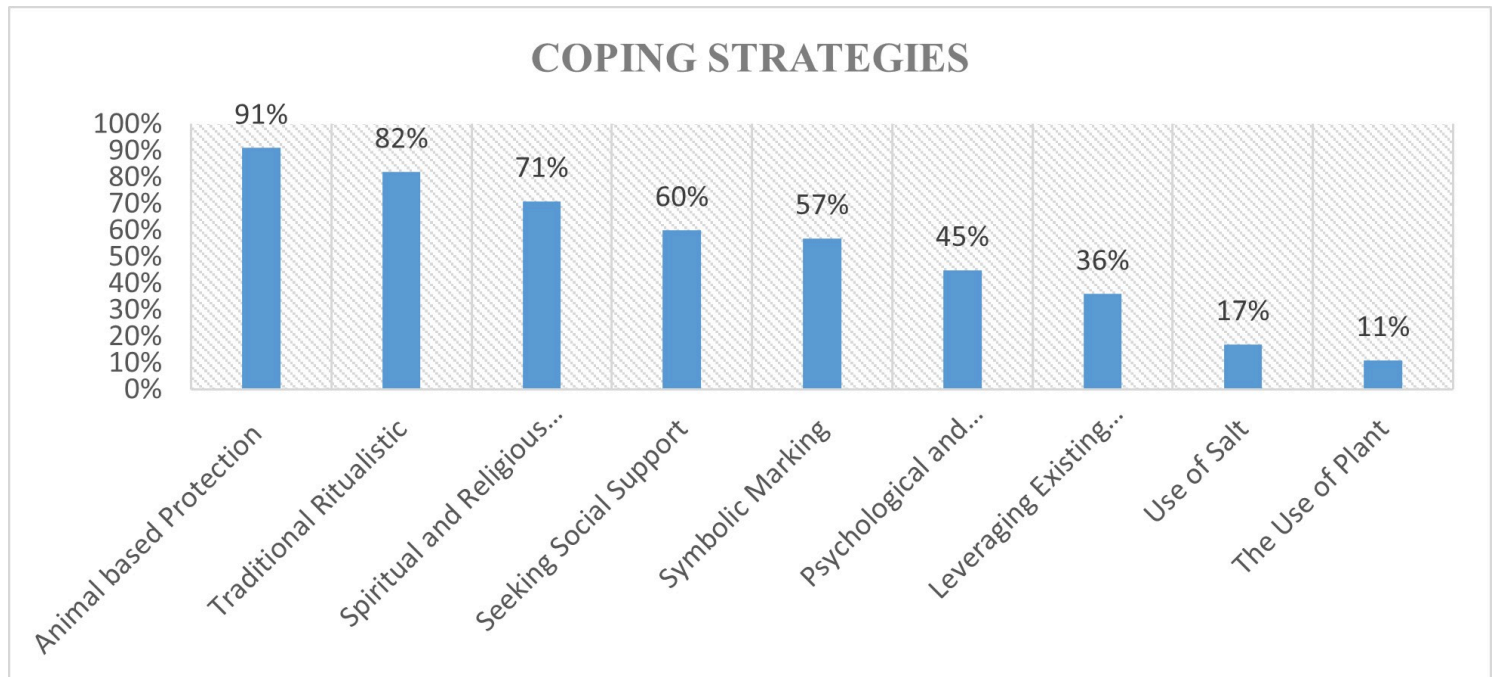


Figure 1

Figure 4.1: Coping strategies