

Could My Home be Responsible for this? Adolescents' Reports on Family Situations and Delinquency in Iwo, Osun State, Nigeria

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Abstract: Juvenile delinquency has been a phenomenon sweeping across the entire globe. Researchers have attempted to explain causes of delinquent behaviours, relating them to factors such as peer pressure, biological or genetic traits, as well as family and school environment. The present study however attempted to examine the relationship between family situations and juvenile delinquency as reported by selected adolescents of secondary schools in Iwo, Osun State, Nigeria. The research was carried out using focus group discussions and analyzed thematically. Data from the group discussions revealed that authoritarian and permissive parenting styles did have influence on the adolescent's propensity to engage in delinquent behaviours. Also identified as factors were family types such as divorced or single parenthood families. Participants also explained how much better family situations could have averted their engaging in such delinquent behaviours.

Keywords: Broken home, delinquency, Iwo, family situations, parenting style

Introduction

The inception of juvenile delinquency in Nigeria dates back to the 1920s when youth crimes such as pick pocketing, shop lifting and truancy became predominant issues. This ugly trend led to the establishment of judicial administrative processes by the then colonial rulers to deal with delinquents (Fourchard, 2006).

Interestingly, the problem of juvenile delinquency is not peculiar to Nigeria alone. In Kenya, South Africa and Liberia, the rate of juvenile activity such as "cliquing" has increased about tenfold since the 1990s. Juvenile delinquency was found to be closely related to marital instability and modes of discipline. Researchers have suggested that there exists a significant relationship between family functions and juvenile delinquency in these areas (Fourchard, 2006).

Researchers believe that juvenile delinquency has its root in the kind of home in which a child is brought up (Okorodudu, 2010; Igbo, 2007). It has also been observed that marital instability is on the increase in Nigeria and that increasing acts of crime among the youths might be attributed to this (Muhammed et al, 2009). Furthermore, research has linked family dysfunction with future criminal activities, in part because parents monitor and provide nurturance to children. It is thought that the loosening of bonds between family members may result in acts of delinquency by the children. A study by Demuth and Brown (2004)

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demonstrates that broken homes are not only associated with juvenile delinquency, but also that family arrangements are not just a broken home issue. Overall, they inferred that the lack of supervision and the absence of close relations between the child and his/her parents are causative factors of delinquency.

In addition, the researchers stated that family situations other than intactness may also be important factors that influence delinquent behavior and thus warrant further study. Changes in family arrangements emerge for a wealth of reasons including separations, divorces, sudden death of a parent, unemployment, and effects of substance abuse (Demuth & Brown, 2004).

The family plays a significant role in the socialization of children. Therefore, much attention is focused on the family situations to try to discover why young people become delinquents. Various family factors have been associated with delinquency, but the most important is the quality of relationship between parents and children. In essence, there is less delinquency among those youths whose parents value, love and accept them (Barnes and Farrell, 1992).

The balance of this research reviews the empirical literature regarding the connection between family situations (i.e., the organizational *form* of the family; married, divorced, and the *stability* of the family) and juvenile delinquency. Lack of parental monitoring contributes not only directly to children's anti-social behaviors, but also indirectly as it contributes to exposing them to associate with deviant peers, which is predictive of higher levels of deviant acts (Okorodudu, 2010).

The current study investigates how adolescents in Iwo, Osun State, Nigeria reported the extent to which family situations, particularly incomplete families, had predisposed them to delinquency.

Review of Prior Literature

Robert (2002) stated that children exposed to risk factors such as behavioral problems and family dysfunction, follow a well described and documented path beginning with behavioral manifestations and reactions such as defiance of adults, lack of school readiness and aggression towards peers. This leads to negative short term outcomes including truancy, peer and teacher rejection, low academic achievements, and early involvement in drugs and alcohol. These factors lead to school failure and eventual dropout, leading to negative and destructive attitudes such as delinquency, adult criminality and violence.

Family Situations

Stattin and Kerr (2000) were among the first to perform a rigorous analysis of this question. Using both child and parent reports, they concluded that, contrary to popular thinking, parents' direct control over adolescent behaviour is not as important as adolescents' voluntary disclosure of information about their lives. They suggest that parent-child relationships that facilitate communication are what prevent deviant teen behaviour.

Changes in family arrangements emerge for a wealth of reasons including separations, divorces, sudden death of a parent, unemployment, and sequel of substance abuse (Demuth and Brown, 2004). Divorce is fast becoming a commonality in the Nigerian society. When parents do not get along together and possibly later divorce, the consequence can cause direct stress to a child (Amato and Cheadle 2008). Children may blame themselves for the conflict, leading to feelings of guilt and low self-esteem. The conflict between parents may also spill over and decrease the quality of parenting, weakening the bonds between the child and the parents. With these bonds weakened, self-control decreases, causing the adolescent to act out and engage in deviant behaviors. Jekayinfa (2007) has asserted that children from divorced homes are more likely to be maladjusted in the society. She suggested that when a marriage collapses, men and women alike often experience a diminished capacity to parent. Thornberry et al., (1999) stated that for family disruption and delinquency, the composition of families is one aspect of family life that is consistently associated with delinquency. Children who live in homes with only one parent or in which marital relationships have been disrupted by divorce or separation are more likely to display a range of behavioral problems including delinquency, than children who are from two parent families. Further they stated that for family disruption and delinquency, the composition of families is one aspect of family life that is consistently associated with delinquency. Parental monitoring has been consistently found to moderate delinquent peer influences on children's subsequent delinquent behaviors by buffering the effects (Metzler, et al., 1994; Pettit et al., (1999). Azoro (2010) has asserted that children whose parents are divorced have a higher risk of indulging in delinquent acts than children from stable families. As a result of that, children from divorced families suffer from what he sees as attachment disorder. Siegel and Welsh (2008); Jekayinfa (2007); Alfrey,(2010) have argued that divorce may influence children's misbehavior through its effects on parental misbehavior. In agreement with the above statement, Uwaoma and Udeagha (2007) have also stated that children who are from divorced families have been found to have multiple behavioral problems which impel them to engage in delinquent behavior. They further explained that this occurs because the warmth, direction, love and protection which the parents would have provided for them are lost and sought in anti-social behaviors such as drug abuse theft, and prostitution.

Another survey into the influence of family structure on juvenile delinquency by Murry, William and Salekin (2006) using a sample size of 442 juveniles in a borstal institution found out that 53% of the sample came from one parent households. The findings of the research indicate that proportionately, more juvenile offenders come from family arrangements other than the two-parent family home. However, the researchers explained that family arrangements combined with other factors such as environmental factors, situational factors, and functional factors may provide more insight into juvenile delinquency.

Demuth & Brown (2004) have posited that single parent families and, in particular, mother-only families produce more delinquent children than two parent families. The assumption is that the presence of a father figure in the stable two parents' family helps to stabilize the male children who are more at risk of engaging in delinquency (Okeke, 2005; Schroeder, Osgood and Oghia, 2010). Two-parent families provide increased

supervision and monitoring of children and property, while single parenthood increases the likelihood of delinquency and stigmatization simply by the fact that there is one less person to supervise adolescent's behavior (Kimani, 2010). Furthermore, Sweeney (2002) suggests that single parent families, especially, single mothers, expect less of their children, spend less time monitoring them and use less effective techniques to discipline them. In addition, it is harder for a sole parent to find time to monitor, supervise, and discipline children because they find it hard to "prioritize their children's needs above other live demands" (Mack, Michael, Richard and Maria, 2007:53). Overall, this means that children in single parent families have greater opportunities and motivation to participate in delinquent acts than those living in a two-parent family (Fry, 2010). An observation by Alfrey (2010) was that the very absence of a two-parent family makes gang membership more appealing. Hence, children residing in single-parent families are at a greater risk of joining gangs than children from two-parent families. In support, Reed and Decker (2002) observed that the gang can serve as a surrogate extended family for adolescents who do not see their own families as meeting their needs for belonging, nurturance and acceptance. To Alfrey (2010); Anderson, (2002), single parent families often are financially vulnerable as compared to two-parent families and such economic circumstances frequently draw these families into more affordable but socially disorganized neighborhoods where children are prone to learning delinquent behaviors.

Methods

A total of forty male respondents from three different community secondary schools in Iwo participated in this study. The participants were final year students (Senior Secondary 3 class). To determine adolescents that had engaged in delinquent behaviours, the records of students who had reported cases of delinquency were obtained, with permission, from the head of each school. The researcher ensured the students understood the purpose and method of the research and after their consent was sought, with assurances of anonymity, fourteen students were selected from each school to participate in a focus group discussion. Groups A and C each had thirteen participants while group B had fourteen participants. Each group discussion ran for approximately seventy (70) minutes. Participants were entertained with snacks and drinks and also presented with two note books each for their respective class lessons. The discussions centered on themes that included the most perpetuated delinquent behavior; the styles of parenting they had been exposed to, relationships of the adolescents with their parents; and their perception of family situations influence on their delinquent behaviour.

Results

Data from the focus group discussions were transcribed and went through several phases of analysis. A preliminary analysis was conducted in order to get a general sense of the data and reflect on its meaning. Next, a more detailed analysis was performed and data was divided into segments or units that reflected specific thoughts, attitudes, and experiences of participants. At the conclusion of this process of analysis a list of topics was generated. Data from all focus groups was again analyzed so it could be organized into categories. These categories were analyzed to determine the interconnectedness of issues and conditions

that may have given rise to the categories. Data from each group were analyzed for major themes, and data from each participant group were also analyzed separately to determine trends unique to each group. Additionally, there were high levels of agreement about these issues and significant consistency in how the issues were talked about among groups. In instances where an issue was addressed by all groups but talked about differently by different groups, these differences in talk are identified and explained.

Table 1: Demographic Characteristics of Male Adolescents (N = 40)

	Count (%)
Age	
15 years	20
16 years	37.5
17 years	32.5
Above 17 years	10
Place of residence	
Both parents married and living together	75
Parents separated	12.5
Parents divorced never remarried	10
Parents divorced but remarried	7.5
Single never-married parent	2.5
Number of siblings	
0 – 2	17.5
3 – 5	52.5
6 – 8	27.5
Above 8	2.5
Parent-adolescent relationship	
Very intimate	12.5
Somewhat intimate	10

Not so intimate	30
Not intimate at all	47.5

Demographic characteristics of the respondents are shown in Table 1. The mean age was 16 years, with 10% of the adolescents being older than 17 years of age. A total 52.5% were from homes that had a relatively average size, with number of siblings ranging from 3 to 5. A rather large number of the adolescents (47.5%), as against a mere 12.5% (who had intimate relationship with parents), admitted to having a rather strained relationship with their parents. According to them, they could not discuss personal issues at home, as their parents were not open to such discussions and so they would rather discuss with and confide in friends

Table 2: Most commonly perpetuated delinquent behaviour (N = 40)

	Count (%)
Stealing	20
Bullying	12.5
Truancy	17.5
Fighting	12.5
Destruction of public property	5
Sex-related	7.5
Examination malpractice	15
Other	10

Table 2 shows the distribution of most commonly perpetuated delinquent behaviour over a period of 4 weeks prior to the research. Approximately 20% of the sample had stolen one item or the other during the preceding 4 weeks, and this was the most highly perpetuated delinquent behaviour. More adolescents reported engaging in truancy more than destruction of public property (17.5% vs. 5%), bullying and fighting both were reported having the same occurrence (12.5%) Of the adolescents who reported delinquent behaviours in the 4 weeks prior to the study, only 7.5% reported that they had engaged in sex-related

behaviours such as molestation, intimidation and actual intercourse. A total 10% did report perpetuating other offences ranging from being rude to teachers, abuse of substances such as indian hemp and alcohol, to disorderliness in dressing.

Delinquent behaviours

Focus group participants defined delinquency generally and referred to different types of delinquency, which include truancy, fighting, stealing and sex-related offences among other. For instance, when asked what forms of sex-related offences entail, participants in each of the groups provided specific examples such as “molesting a female student in the junior class”, “pulling her clothes roughly”, “giving catcalls” and “making indecent remarks about girls”. Among the adolescents, stealing was most frequently reported. For example, one participant said,

“I stole items such as textbooks to pens continuously over a period of nine days before I was caught ...”

He stated that he would take the items home and try to “sell” to students from other schools. He especially went for fanciful pens, or pens that had some rare designs. Another form of stealing, described by some other participants, involved stealing pocket money of students from their bags, lockers or even from their pockets.

Parenting styles

Participants in all of the groups made reference to some style of parenting which they had been exposed to at home. Several adolescents described occasions when their parents were overly strict, “taking no nonsense ...” indicating authoritarian parenting style. In one such example, an adolescent told of a time he got home just 2 minutes after the curfew he was given and his father gave him eight strokes of the cane, each stroke representing every fifteen minutes for which he was late. Another adolescent simply responded to afore mentioned:

“You are even lucky. I leave school 4:40pm every day. If I get home a minute after 5pm, my dad locks me out of the house till 7pm!”

While these participants painfully acknowledged the experiences with their parents, one looked at them in wonder and said:

“With me, my parents don’t even know when I get home, neither do they bother to ask me. I get to spend time gisting with my friends ...” . . .

Relationship with parents

Not being able to discuss personal issues, afraid of expressing feelings, preferring to be alone in the room when in some “low moods” were mentioned by focus group participants as forms of “non-intimate relationships” with parents. One participant said in outlining the relationship with his parents, “... there are

times I have asked myself whether my parents were actually my real biological parents ...” One participant noted, “I also have similar feelings...”

Another participant however said:

“When you try to tell my dad something that happened in school, he always said he was busy and should talk to mum instead...”

Another participant explained:

“I never knew my dad. He died before I was born. And so coupled with taking care of the family, and going to work, my mother wasn't always around and r relationship with my mother is therefore not good at al ...”

Perception of family situation as factor responsible for delinquency

The adolescents also reported several reasons they considered were responsible for their delinquent behaviours. Interestingly, not all attributed their misbehavior to the fault of “problems” at home. For example, one participant described how he constantly wanted his parents to know and understand what he was going through as a developing adolescent but that the more his parents talked to him in condescending tones, the more he drifted to friends, whose influence eventually got him in trouble. Other participants told of how the “fear” of their father made them “to be more secretive in all” they did, particularly at home.

One explained:

“My dad is not the sort of person you talk to... he is a no-nonsense man. When I get in trouble, he beats me all the time, not even wanting to hear my own side of the story. To him, I am always the one at fault and I can't seem to please him. So, what's the point in trying to be good when you are already seen as bad even before you do the bad thing?”

Another had explained:

“My parents seem not to care so much, so I can get home after it is dark. We don't talk at home.”

But one participant stated:

‘My parents give me a lot of attention and they do monitor me. But at times, I just want to know how the other boys feel ... how they do it ... so, getting in trouble at times makes you feel like you are a ‘big boy’ ...’

One adolescent puts it clearly:

“My parents are together. I can say that what influenced my dabbling into deviant behaviors are my friends in the area where we live. My friends smoke hemp and drink alcohol.”

Another participant explained:

"I live in a family that is broken due to the death of my father. My mother was unable to successfully cater to her 6 children, go to work and take care of the home all at once. I therefore had all the time to associate with peer groups and this encouraged my involvement in juvenile delinquent acts".

Participants in the focus groups were asked how they had been feeling after realizing their mistakes. One of them said:

"I think that due to the counselling I received from the counselor here I have come to realize that I should be a good child so that my parents can be proud of me."

Another expressed his view:

"It's not because of anything the counselor has told me that can make me change. I believe that only if someone is ready to change deep down in his mind, then the person will change..."

Discussion

This study aimed to examine the influence of family situations on adolescents' delinquent behaviors as reported by selected adolescents from secondary schools in Iwo, Osun State, Nigeria. Previous research (Fourchard, 2006; Robert, 2002) had that found certain risk factors such as dysfunctional families could contribute to a child's propensity to engage in delinquent behaviours. The present study discovered that when there is a persistent strain in the relationship between parents and adolescents, the likelihood of such adolescents to engage in delinquent behaviours increases. Participants who reported low or no level of intimacy with their parents, who were not able to approach their parents on matters they considered personal or sensitive engaged the more in delinquent behaviours. These participants did agree that perhaps if they had experienced some softness or intimacy or some high degree of affection with their parents or if their parents had shown interest in their personal developing lives, they probably would not have thought of engaging in delinquent behaviours. A number of them attributed their closeness with their friends due to the strained relationship they had with their parents as responsible for their having been involved in some form of delinquent behaviour of the other. This has also been reported in the past works of researchers (Hoge et al., 1994); Decker; 2002). Separation and divorce measured in this study also recorded level of significance with delinquent behaviours. A family where only one parent is saddled with the sole responsibility of bringing up children finds the task rather difficult, most especially where such a person still has to struggle with means of livelihood. Monitoring and supervision of children becomes a horrendous task. At times, the parent exhibits transfer of aggression towards the children. From the study, participants from single (never married) parent homes also admitted to being involved in delinquent behaviours. Literature had found the relationship between divorced homes and delinquent behaviours (Uwaoma and Udeagha, 2007; Wardle, 2007; Siegel and Welsh, 2008). The findings also suggested that the parenting styles which participants were exposed to varied. Each style of parenting also affected their propensity to engage in delinquent behaviours. Where parents were overly controlling, more of the adolescents

perpetuated delinquent behaviours. Also when parents were permissive, such traits predisposed the adolescent to misbehaviours. These findings were evident in the studies of Stattin and Kerr, 2000; Cohen et al., 1997; Chambers, Power, Loucks, and Swanson, 2001).

Limitations of the study

This study provides an important comprehensive insight on the relationship between family situations and delinquent behaviours in Iwo, Nigeria; and has a potential to contribute to the limited research literature in Nigeria, by identifying some of the factors predisposing adolescents to delinquency. However, there are some important limitations to consider when interpreting findings of this study. Firstly, the study had a relatively small sample size (N = 40), spread across a relatively wide geographic area in Nigeria. Caution must therefore be exercised when generalizing the findings to all adolescents. Secondly, since the research was based on self-reporting, it is likely that most of the participants provided a subjective perception when responding to the questions during the focus group discussions. Thirdly, only male adolescents and from a particular class level were involved in this research. This does not mean to say females do not engage in delinquent behaviours. It also does not mean that delinquent behaviours are not only limited to those within the class of students involved (only those in their final year).

Recommendations

In future, more studies on family situations and delinquency need to be conducted within Nigeria. Findings from such research can be compared to similar international studies. More family intervention programmes can be adopted in order to help parents and adolescents identify and cope with factors within the learning environment of school, home and peers which could affect their family relationships. Furthermore, more in-depth qualitative studies are required in order to explore the relationships between family situations and delinquent behaviours in Nigeria.

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Household Perceptions on Factors Inhibiting the Adoption of Sustainable Coping Strategies in Chipinge District

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Abstract: Food insecurity is central to the fight against diseases and poverty in Africa. This explains why some governments, particularly in emerging economies, strive to identify the factors that incapacitate households to produce their own food. However, despite the existence of institutions and policies that support smallholder food production, the efforts have fallen short of expectations. This has generated serious anxiety and scepticism concerning the role of existing institutions and preferred policies. Thus, an exploratory study on the factors affecting the adoption of sustainable coping strategies among rural households was conducted in Chipinge district. Multistage random sampling method was used to select the study area and the respondents. Structured interview schedule and/or questionnaire were the methods employed to collect data from 120 household heads and 5 extension officers. Principal component analysis (PCA) and descriptive statistics were the analytical tools used to examine the constraints affecting the adoption of sustainable coping strategies. The PCA results revealed that the main challenges inhibiting the adoption of sustainable coping measures were labour, public and institutional constraints; religious values and land related problems; inadequate information on early warning system; limited employment opportunities and credit facility constraints; and poor rural farming projects and essential services provision constraints.

Keywords: Factors affecting, food deficit, poverty, coping strategies, Chipinge District

Introduction

Food deficit is the most dominant point of discussion in any debate about the global economic growth since the Millennium Development Decade (Maxwell, 2006; Irohibe & Agwu, 2014; Yenesew, 2015). Wilhemina (2008) postulates that efforts of varying magnitudes have been exerted to discover sustainable methods of guaranteeing that people have access to the least possible amounts of food critical to survive a healthy and active lives. This vision culminated into a number of conferences, such as the African Union Maputo Declaration of 2003, that emphasized on the increase of national spending on food to at least 12% of the state budget by 2015 (Adenyi & Ojo, 2013; Abur, 2014). Adugna & Fikadu (2016) argue that regardless of this intent, food deficit remains an obstinate challenge in the Sub-Saharan Africa region.

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Makoti & Waswa (2015) posit that the number of malnourished and hungry individuals in the 2000s rose to 140 million and exceeded 185 million in 2017. In explaining continued increase in food deficit in Africa, Birara *et al.* (2015) argue that policies and initiatives were futile in addressing the fundamental coping threat concerns of insufficient diet, starvation and poverty. Inappropriate policies and interventions have opened up markets to the dumping of farming produce (Adenyi & Ojo, 2013; Asmelash, 2014; Cheema & Abbas, 2016), privatized communal and public natural resources (Maxwell, 2006; Adugna & Fikadu, 2016) and concentrated assets among the rich (Cheema & Abbas, 2016). Babatunde *et al.* (2007) corroborate this assertion by positing that adopted coping strategies are ineffective during manifestation of large covariate challenges. Anselm & Amusa (2010) and Andres & Lebailly (2015) argue that without urgent need to identify the factors inhibiting the adoption of viable coping mechanisms, developing economies will continue to import food from developed nations.

Sub-Saharan Africa has the greatest number of underfed people world-wide (Maxwell, 2006; Tshediso, 2013; Altman *et al.*, 2009). The region harvests insufficient food per individual compared to the amount of food harvested a decades ago (Mulugeta, 2002; Bedeke, 2012; Muche *et al.*, 2014). Yenesew (2015) approximates that two in every five kids below the age of three years are underfed and about 38% are malnourished. These statistics reflect the dire food deficit situation within the African continent due to the failure of preferred coping strategies. There is need to understand the challenges affecting the adoption of sustainable coping strategies, in order to address household food deficit.

The determinants of household food deficit in the region are numerous, diverse and composite. The main aspects that contribute to household failure to adopt sustainable coping options include environmental decay (Omonona *et al.*, 2007; Ellis, 2009; Kuwenyi *et al.* 2014), climatic hazards (Maxwell, 2006; Anwar, 2012; Abur, 2014), population growth surpassing farming output (Makoti & Waswa, 2015), uneven macro-economic atmosphere (Isaboke, 2006; Makoti & Waswa, 2015), inconsistent government policies (Muche *et al.*, 2014) and misdirected food security policies (Campbell *et al.*, 1991). Lemma & Wondimagegn, 2014 and Mengistu & Haji (2015) also argue that food security policies and programs are usually superimposed on the poor farmers without their approval. Yet there is consensus that successful programs and projects are usually achieved through integrated and participatory approaches (Maxwell, 2000; 2006). Furthermore, inadequate access to infrastructure (Altman *et al.*, 2009), shortage of food storage amenities (Isaboke, 2006) and low agricultural production (Babatunde *et al.*, 2007) are some of the causes of food deficit. Thus, this current study examined the dynamics hindering the adoption of viable coping mechanisms in order to address food deficit.

Environment, political and socio-economic constraints are the major drivers of food insecurity (Makoti & Waswa, 2015). Rural areas in Zimbabwe are characterized by poverty, persistent drought, rising population growth ratio and ecological decay (ZimVAC, 2016). Nevertheless, a number of studies in the area give more importance to the urban centres. Limited studies hide the major factors inhibiting the adoption of sustainable coping strategies in rural areas. The undertaking of this study at the rural household level is

important because the results give insights to stakeholders concerning the challenges affecting the livelihoods of the rural people.

About 80% of Chipinge's environment is semi-arid (ZimVAC, 2017a), with restricted and unreliable rainfall. ZimVAC (2017a) notes that food security is inevitable due to predictable high herd mortality and harvest failure. ZimVAC (2017b) notes that the land assets such as the vegetation and soils are extremely degraded. This is due to the interaction between ecological and anthropological aspects such as pressure on available natural resources (Mango *et al*, 2014), climate (Dube, 2016), deforestation and the subsequent over-utilization of the land resources (Nyikahadzoi *et al.*, 2012). The study area is more susceptible to food deficit because the economy heavily depends on the farming sector, where environmental hazards are the major determinants of farming productivity.

Despite increasing awareness of the failure of preferred coping strategies, existing literature have focused on the factors deterring farming production rather than those affecting coping strategies. Mombeshora *et al.* (1995) point out that analytical studies that examine factors that inhibit adoption of viable options are at best scanty. The analysis of challenges constraining the success of preferred coping strategies has received limited focus notwithstanding its growing importance for the vulnerable communities. Thus, this study sought to explore the challenges affecting adoption of sustainable coping strategies in Chipinge district in order to identify interventions that assist in addressing the limitations or alleviate the adverse impact of household food deficit.

Material and Methods

Chipinge rural district is located in the south western part of Manicaland province in Zimbabwe and it covers an area of 36,459 square kilometers. The climate is dry and hot for the greater part of the year with an estimated annual average temperature of 25°C. The western part of Chipinge is normally desiccated, particularly the low lying areas of Chipangayi, Chibuwe and the Sabi valley. These areas usually receive very low rainfalls which range between 400mm and 600mm per year. The western part of the district experiences recurrent droughts which regularly result in food deficit and loss of livestock. The rainy season is experienced between November and March (ZimVAC, 2018). In most parts of the study area, soils are sandy, with very low fertility and are subjected to erosion. According to ZimVAC (2018), the population density in Chipinge rural is 32 people per square kilometer. This makes the study area one of the least inhabited areas in the district. Both qualitative and quantitative data were collected in 2018. A sample of 120 households and 10 government and non-governmental agencies was obtained using simple random sampling and purposive sampling respectively. Structured questionnaire and focus group discussions were the major data collection methods used to gather both quantitative and qualitative data.

The study employed both descriptive analysis and Principal Component Analysis (PCA) to analyse data. PCA was used to establish the factors inhibiting the adoption of sustainable coping strategies in the study area. PCA is a method commonly used to extract data from a set of variables. Using PCA, data was reduced

by combining a big number of indicators into limited comparable groups. Each group defined the core aspects of the contributing factors forming the sets. An eigen value was a coefficient attached to eigenvector arranged in sliding order of the eigen value to come up with the principal component in order of importance. Thus, the eigen values measured the covariance of the data. PCA was run on factors inhibiting the adoption of sustainable coping measures in Chipinge district. The PCA extracted five (5) components with eigen values bigger than one (1), explaining a total variance of 51.2 percent. The extracted 5 components explained 11.9%, 11.4%, 10.7%, 9.6% and 7.6% of the total variations as shown in Table 1.

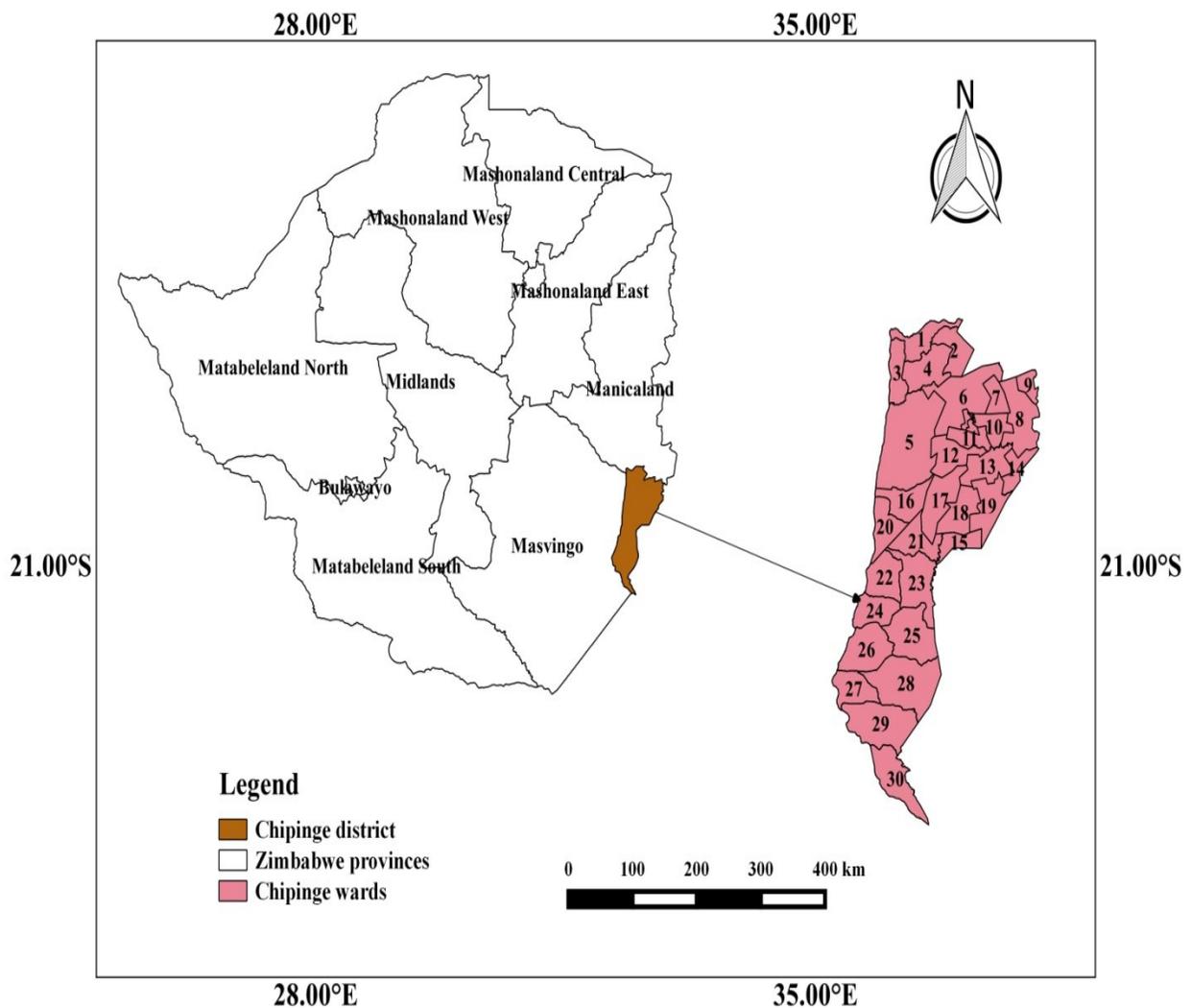


Figure 1: Zimbabwe's provincial map showing the location of Chipinge district

Results

Principal component analysis of constraints affecting adoption of viable coping strategies in Chipinge district

Table 1 below shows the Varimax-rotated principal component analysis of challenges affecting the adoption of sustainable coping strategies in Chipinge district. Five factors were extracted from the findings based on feedback from participants. The Kaiser criterion (1960) was adopted for choosing the total number of principal factors explaining the data. In this current research, the total number was determined by leaving out factors with matching Eigen values which was below 1. Only variable with significant loading of plus or minus 0.345 and above at ten percent overlapping variance were utilised in describing variables and significant at one percent level of probability. The factors that loaded below plus or minus 0.345 were not utilised. The communality shown in table 1 represents the squared multiple relationship between the item and all other items (Ozor *et al.*, 2010). The factors include, Factor one (Institutional, public and labour challenges); Factor two (religious values and land related constraints); Factor three (ICT and exorbitant cost of farming inputs); Factor four (off farm employment opportunities, loan constraint and the distance from the market challenges) and Factor five (ineffective rural farming projects and programmes and socio-economic service delivery challenges)

After rotation, institutional, public and labour challenges (factor one) accounted for 11.9 of the variance, religious values and land related constraints (factor two) accounted for 11.4, ICT and exorbitant cost of farming inputs (Factor three) accounted for 10.7 and off farm employment opportunities, loan constraint and the distance from the market challenges (Factor four) also accounted for 9.6. The fourth factor also accounted for 7.6. In this current study, the factors that were taken explained 48.5 percent of the total variance in all the 22 inhibiting variable components. Table 1 shows the results of the PCA of factors that inhibit the adoption of sustainable coping measures in Chipinge district.

Institutional, public and labour challenges (Factor 1)

The factors integrated inadequate government policies to empower households (0.753), insufficient access to weather forecasting technologies (0.755), absence of institutional facilities (0.654) and insufficient household access to awareness information on climate change adaptation (0.567), lack of household labour (0.486), and state irresponsiveness to climate hazards. The absence of farming information and viable institutions poses serious problems to households in Chipinge district. Interviews revealed that households are not sentient of the new trajectories regarding climate change and the necessary readjustments required in order to address household food insecurity. These findings corroborate Mengistu & Haji (2015) who

discovered that as household access institutional and public amenities, the probability of choosing viable options increases by 0.052 at $p < 10\%$ (holding the value of other variables constant). Furthermore, these findings corroborate Enete *et al.* (2010) who posit that lack of public and institutional amenities to support household coping capacity affect their adaptation ability in Southern Nigeria.

Table 1: Principal Component Analysis of Challenges Affecting Adoption of Sustainable Coping Strategies in Chipinge District

	Challenge affecting sustainable adoption	Components*					Communality
		F 1	F 2	F 3	F4	F5	
1.	Inadequate weather forecasting	0.756					0.644
2.	Absence of government policies	0.753					0.613
3	Absence of supporting institutional amenities	0.655					0.591
4.	High cost inputs			0.669			0.561
5.	Household religious norms		0.591				0.441
6.	Communal land ownership		0.587				0.400
7.	Lack of collateral security		0.401				0.482
8.	Customary belief systems		0.457				0.512
9.	High cost of irrigation facilities			0.488			0.425
10.	Poor early warning systems			0.428			0.461
11.	Subsistence farming		0.769				0.645
12	Land inheritance		0.743				0.644
13.	Distance from the market				0.613		0.548
14.	Participation in off-farm jobs				0.580		0.412
15.	Poor access to farm land		0.791				0.697
16.	Lack of government intervention	0.417					0.285
17.	Lack of farm labour						
18.	Lack of credit facilities				0.467		0.333
19.	Effects of climate change				0.452		0.314
20.	Poor extension amenities					0.746	0.621
21.	Poor farming service delivery					0.774	0.653
22.	Inadequate storage facilities**			0.630	0.405		0.644
	Percentage of total variance	11.9	11.4	10.7	9.6	7.6	

*Factor 1: Institutional, public and labour challenges; Factor 2: Religious values and land related constraints; Factor 3: ICT and exorbitant cost of farming inputs; Factor 4: Off farm employment opportunities, loan constraint and the distance from the market challenges; Factor 5: Ineffective rural farming projects and programmes and socio-economic service delivery challenges.

** Challenges that loaded under more than 1 factor

Religious values and land related constraints (Factor 2)

The variables that loaded high were poor access to land resources (0.783), high cost of farming land (0.791), communal land ownership system (0.743), customary norms and values against adoption of scientific farming methods (0.655), spiritual beliefs of the household head (0.591), lack of deposit requisite to secure credit (0.402). These results agree with Mjonono *et al.* (2009) who also suggest that inadequate land for agricultural activities in rural areas is the major factor inhibiting the adoption of sustainable coping strategies. These findings also confirm Ozor *et al.* (2011) who exposed that high input cost is also a key barrier to the adoption of viable coping options. Furthermore, Bedeke (2012); Irohibe & Agwu (2014) and Adimassu & Kessler (2016) concur that religious values affect the adoption of coping strategies. In a study among the Oromo ethnic group in Ethiopia, Adimassu & Kessler (2016) discovered that food insecurity affected Muslims more than Christian communities due to their strict choice of coping strategies.

Poor information on early warning systems and ineffective communication and technology challenges (Factor 3)

Factors that loaded high included high expenditure on irrigation amenities (0.487), illiteracy of household members (0.487) and inadequate information disseminated on early warning systems (EWS). The finding on EWS agrees with Mengistu & Haji (2015) who posit that as households access EWS, the probability of them selecting viable coping strategies increase by 0.542 at a $p < 1\%$, holding the value of other variables constant. These findings concur with Mengistu & Haji (2015); Makoti & Waswa (2015) and Ahmed *et al.* (2015) who also noted that access to EWS is a major factor that determines adoption of coping strategies. Preceding studies (Ziervogel *et al.*, 2006; Bryana *et al.*, 2009; Hunnes, 2015) reveal that households with better access to information through farming extension workers invest more in devising sustainable strategies for coping with food deficit.

Off-farm employment opportunities, loan constraint and the distance from the market (Factor 4)

Distance to the market (0.613), participation in off-farm employment (petty trading, artisans, civil service (0.580), subsistence food production (0.517), lack of credit facilities (0.451) were the variables that loaded high. These findings corroborate Bedeke (2012); Abur (2014) and Adenyi & Ojo (2013) who discovered that inadequate rural credit facilities militate against adoption of sustainable coping options. Mengistu & Haji (2015) and Dube (2016) further confirm that limited access to credit facilities and inadequate information on market products are major factors which inhibit the adoption of sustainable coping options. Furthermore, Adimassu & Kessler (2016) reported negative correlation ($p < 0.10$) between access to the market and access to credit. This means that households with access to markets have a better chance of adopting viable coping options. Conway & Schipper (2011) also argue that households closer to the markets are prone to migrate in order to carry out off-farm activities.

Ineffective rural farming programmes and socio-economic service delivery challenges (Factor 5)