NATIONAL CRIME RESEARCH CENTRE


PRELIMINARY REPORT ON 2022 NATIONAL CRIME MAPPING: PUBLIC PERCEPTIONS AND EXPERIENCES OF CRIME PREVALENCE IN KENYA


Dickson Gitonga
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## NATIONAL CRIME RESEARCH CENTRE



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## OPERATIONAL DIFINITION OF TERMS

Crimes: an action or omission which constitutes an offence and is punishable by law.
"For example stealing by servant is crime"
Criminal Causation: Causation refers to the enquiry as to whether the defendant's conduct (or omission) caused the harm or damages.

Crime mapping: is the process through which crime analysts and researchers use location information about crime events to detect spatial patterns in criminal activity. Early crime mapping efforts typically involved placing physical markers, such as pins, on maps to designate the locations where crimes occurred. Patterns of criminal activity were determined primarily through visual inspection of these maps.

Crime perpetrator: is a person who committed a crime. In the instance of a joint crime (if more than 2 persons are involved in a crime) it is necessary to clarify the criminal liability and punishment among the defendants.

Offence

Means an act, attempt or omission punishable by law.

## Victim

A person harmed, injured, or killed as a result of a crime, accident, or other event or action.

|  | ABBREVIATIONS AND ACRONYMS |
| :--- | :--- |
| ACLED: | Armed Conflict Location and Event Data |
| AG: | Attorney General |
| CCTV: | Closed Circuit Television |
| FGM: | Female Genital Mutilation |
| KIPPRA: | Kenya Institute for Public Policy Research and Analysis |
| KNBS: | Kenya National Bureau of Statistics |
| NCRC: | National Crime Research Centre |
| NGAO: | National Government Administration Officers |
| NPS: | Uverseas Security Advisory Council |
| OSAC: | United Nations |
| UN: | United Nation Office on Drugs and Crime |
| UNDP: | World Health Organization Development Programmed |
| UNODC: | Corona Virus Disease |
| WHO: | Global Initiative against Transnational Organized Crime |
| COVID-19: | Gross Domestic Product |
| GI-TOC: | South African Police Service |
| GDP: | National Police Service |
| SAPS: | NPS: |

## FOREWORD

The Government of Kenya plays a cardinal role in the protection against internal and external threats to Kenya's territorial integrity and sovereignty, its people, their rights, freedoms, property, peace, stability and prosperity, and other national interests. It is on this note that National Crime Research Centre (NCRC) undertook a survey on National Crime Mapping, 2022 to map out; crime prevalence and trends in the country; establish the victims and perpetrators of crimes; factors contributing to crime; the modus operandi of crime; consequences of crime; and crime prevention measures and strategies.

The study was undertaken in all forty-seven (47) counties and proposed a raft of policy recommendations towards enhancing crime prevention measures and strategies in the country. The study also recommended further biannual research in all counties on emerging crimes and trends. Using the basis of 2020, National Crime Mapping survey, this study seeks to examine the current crime situation in the country with the aim of proposing further interventions.

The findings of this study indicates that crime prevalence and trends in the country continue to pose a major security challenge in all the counties. For instance, the most prevalent crimes identified in 2020, National Crime Mapping including usage of narcotic drugs and psychotropic substances, house breakings, general stealing, robbery with violence and burglary continue to be in the current dispensation. The major perpetrators of these delinquencies are the youths, males, females, children, the elderly, spouse/partners and also boda boda riders. In essence therefore, there is need for strategic multi-agency initiatives and efforts towards addressing the recurring dynamics of crimes. This study provides realistic basis upon which the initiatives can be anchored.

I applaud the significant efforts made by the Government of Kenya and all other stake holders in crime prevention. This publication brings to fore milestone findings which if properly utilized and rightly adopted offer a good advisory framework in policy formulations and essential actions for strengthening crime prevention measures and strategies in the administration of criminal justice in the country.

Finally, I call upon the duty bearer agencies and stakeholders in the administration of criminal justice to take cognizance and utilize the findings and recommendations of this study in their strategic measures in crime management.

## HON. J.B.N MUTURI, EGH <br> ATTORNEY GENERAL/CHAIRMAN GOVERNING COUNCIL NATIONAL CRIME RESEARCH CENTRE

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VINCENT.O. OPONDO<br>Ag. DIRECTOR/CEO<br>NATIONAL CRIME RESEARCH CENTRE

## EXECUTIVE SUMMARY

The National Crime Mapping study was designed in order create a profile of types and prevalence of crimes across the county. Crime occurs at different times and places in the country with different crime patterns and treads being experienced. Through crime mapping analysis it is possible to understand places that require high allocation of preventive resources and places which just needs limited or few resources to manage crime. In addition crime mapping helps identification of crime hot spots areas for purpose of resource allocation and planning. It also through crime mapping that authorities are able to prioritize areas that need more financial allocation.

National Crime Research Centre (NCRC) conducts national crime mapping survey after 2 years since 2016. The 2020 national crime mapping survey sought to examine crime prevalence and trends; establish the perpetrators of crimes; examine the factors contributing to crime; establish the perpetrators of crime; establish the consequences of crime and examine crime prevention measures and strategies in Kenya.

This study adopted both social disorganization and strain theories of crime that play a major in understanding crime patterns and trends in Kenya. A mixed method research design was utilized in this study which entailed both quantitative and qualitative data collection methods. Data collection was carried out in the 47 counties. This study interviewed a total of 5119 sample respondents. In addition, 11 Focus Group Discussions were conducted key informant interviews were held with representatives of key stakeholders in security management in the country.

## Key Findings

## Crime Prevalence and trends

This study established that majority of the respondent's perceived usage of narcotic drug/ psychotropic substances $(60.0 \%)$ as the leading in crimes and offences in the country. This is followed by house breakings ( $56.2 \%$ ) and petty theft ( $50.1 \%$ ) as the most perceived crimes. Also, robbery with violence ( $38.6 \%$ ) and burglary ( $38.6 \%$ ) were reported by the most of the respondent as crimes committed within their areas.

As identified in the study, crimes that were mostly witnessed by the respondents were usage of illicit drugs ( $43.5 \%$ ), house breakings ( $30.1 \%$ ), petty theft ( $24.4 \%$ ), stealing from person ( $22.8 \%$ ), Theft of stock (including cattle rustling) which was at ( $20.7 \%$ ) and robbery with violence. Additionally, this study also sought to understand what the respondents felt as the most threatening crime in the last twelve months within their locality. The findings of the study indicated that robbery with violence ( $16.2 \%$ ), house breaking ( $15.4 \%$ ), usage of narcotic drug/ psychotropic substances (11.0\%) were the most threatening crimes.

## Respondents' perception on Perpetrators of crimes

The finding on perpetrators of perceived crimes were that majority of youths (93.1\%) and those who are males $(50.8 \%)$ are the prominent perpetrators of crimes. Also, it emerged that females $(13.2 \%)$ especially in intimate relationship do perpetuate crimes.

Additionally, majority of the respondents reported that perpetrators of witnessed crimes were the youths $(91.1 \%)$ and males ( $39.3 \%$ ). It also emerged that females ( $10.3 \%$ ) are perpetrators of crimes. On the other hand, findings of the study on the perpetrators of experienced crimes discovered that similar to what the respondents perceived and witnessed, the youths ( $87.3 \%$ ) and most males ( $35.0 \%$ ) perpetrated crimes.

## Factors Contributing to Crimes Causation

The study established that a significant majority of the respondents identified vulnerability occasioned by unemployment ( $81.0 \%$ ), availability of alcohol, illicit drugs and substance abuse ( $69.9 \%$ ), idleness ( $63.5 \%$ ), and vulnerability occasioned by poverty ( $52.6 \%$ ). Othere notable factors highlighted were; weak law enforcement (32.6\%) and youth predisposition/peer pressure factors ( $32.5 \%$ ).

## Respondents Consequences of Crimes

Based on the study findings, the major consequences cited were; loss of property (84.3\%), mistrust and fear ( $58.8 \%$ ), and slow economic development ( $52.2 \%$ ). Also, others said crimes leads to death (40.2\%) and disability due to injuries at (37.4\%).

## Crime Prevention Measure and Strategies

The results of study findings on the crime prevention measures that exists indicated that a majority identified Nyumba-Kumi and/or community policing (77.2\%), in addition, others
mentioned; regular police patrols (44.6\%); timely reporting (36.8\%); Arrest, prosecution \& sentencing of the offender (36.5) as the measures in place to curb criminal activities.

## Key policy recommendations

Arising from the finding of this study, the following are proposed recommendations:-

1. There is need for establishment of economic empowerment programs to vulnerable members of society; the most prevalent factors to crime causation was vulnerability occasioned by unemployment, poverty and use of drugs and other substance abuse among the youths. To address this, the Ministry of Labor and Social Protections, Ministry of Youth Affairs, Sports and the Arts, and National Authority for the Campaign against Drug Abuse (NACADA) roll out social protection welfare and intensify public education on effects of drugs and alcohol. Additionally, Ministry of Labor and Social Protections to enhance street children rehabilitation programs because most of them are being used in drugs trafficking's.
2. Strengthening community policing and Nyumba Kumi initiatives was the best approach to curbing crimes. Therefore, the Ministry of Interior and National Administration need to strengthen community policing across the country.
3. Intensified regular police patrols and deployment of more security officers in crimeprone areas and periodical transfer of Police Officers was recommended by members of public. To achieve this the command of National Police Service is required to review deployment of police officers in terms of priority basis, especially areas prone to bandits require more police officers. Urban areas and other guarding duties be handed over to private security and National Youth Service. Regular police rotation within a period of 3 years is recommended.
4. Collaboration between security stakeholders for efficient service delivery was a recommendation. Ministry of Interior and National Administration need to establish a structured operating procedures on how other Non-State actors including private security should supermen policing effort.
5. Establishment of a remuneration scheme for village elders. Most of the respondents said that their point of contact especially in the village is an areas manager. The Ministry of Ministry of Interior and National Administration should consider a remuneration scheme for areas managers.
6. Improvement of transport and communication infrastructure and use of technology to fight/curb crime. The National Police Service through the Ministry of Information Communication \& Digital Economy and Ministry of Interior and National Administration to procure modern technology for the police to fight crimes. Also, police be supplied with modern vehicles that are protective to explosion and landmines.

## CHAPTER ONE: INTRODUCTION

### 1.1. Background of the study

Crime is an act or omission that is punishable by law according to the Oxford Dictionary. It is an act of offense which violates the regulations of the state and is strongly disapproved by the society. Mushanga (1985) defines crime as any act, committed or omitted, that may harm the state, the individual, or both. The term crime is derived from the Latin word "crimen" meaning offence and also a wrong-doer. Murder, robbery, burglary, rape, drunken driving, child neglect and failure to pay taxes are examples of crimes. (Sowmyaa 2011). States have enacted laws aimed at banning offenders and punishing them with fines, imprisonment, or other forms of punishment in the criminal justice system. In addition, governments need to address the risk factors that cause crime, as research has shown that it is a less expensive method and offers greater social benefits than traditional crime response measures such as the criminal justice system.

### 1.1.1 Global perspective

Crime and violence have increased thus becoming a challenge worldwide and hardly few days passes by without the media covering on crime incidents; rape, desecration, murder, violent robbery, illicit drugs and economic crimes like corruption. Each year, a calculable 740,000 individuals die worldwide as a result of deaths involving violence and conflict outside of war zones (Geneva Declaration, 2008). Consistent with the UN office on Drug related Crime (2014), murder is the most measurable and well defined indicator of violent crime worldwide. Homicide rate worldwide is at ( $6.2 \%$ ) per 100,000 populations with South Africa and Central African Republic topping the globe average, followed by the Middle East and the Caribbean. The regions with all-time low rate crimes are East Asia, Southern Europe and Western Europe; Crime incorporates a negative impact on economic development by reducing growth and has enduring adverse social effects, per the Globe Bank's (2009) report on the aggressiveness of worldwide investment. At the national level, the prices of violence will add up to a major portion of gross domestic product (GDP) and hamper economic growth. In Guatemala, the direct prices of violence were calculable at (7.3\%) of value in 2005 and these were focused primarily within the capital alone, UN Development Program
(2006). The global organized crime Index highlights the prevalence of a number of the foremost insidious sorts of operations perpetrated by criminal actors round the world, together with people and networks operative within the state apparatus. The index highlights widespread flaws in the global resistance to organized crimes from weaknesses in criminal justice systems to rampant corruption and violent repression of press freedom and civil society. In 2020, the index underscores the ability of organized crime to the pandemic. In the face of Covid-19 lockdowns and travel restrictions, criminals did not solely restructure their usual businesses but also embraced new opportunities given by the world health crisis. Individuals, communities and companies struggled to remain afloat and became more susceptible to organized criminal activities either as victims or perpetrators albeit the dearth of viable alternatives ("Global Initiative against transnational organized crime (GI-TOC)", 2022). The global organized crime Index permits users to analyze, compare and distinguish a spread of indicators by country, region and continent. Assembling these indicators discovered many key findings that offer insight into the number of individuals positioned low with crime, the size and scope of criminal markets and also the level of resilience in countries exposed to criminal threats.

Over three quarters of the world's population sleep in countries with high crime rates and in countries with low resilience to organized crime. It is accepted that crime has devastating effects on victims; however in several places, the thought persists that crime is focused in some run-down urban centers restricted to completely different hotspots. However, as the index shows, this is often drastically off the mark. Crime is not a drag for a few: If we tend to value all countries within the world, we discover that the overwhelming majority of the world's populations ( $79.2 \%$ ) sleep in countries with high crime rates and in countries with low resilience ( $79.4 \%$ ). Human trafficking is the most widespread of all criminal markets worldwide. The crime index assessed human trafficking as the most prevailing crime market globally followed by drug trafficking, firearms trafficking, individual's importation and wildlife crime. The human trafficking market has been fueled by mass displacement usually spanned with people smuggling, conflicts and desperate socio-economic conditions. Whereas COVID-19 pandemic could have given some challenges for smugglers, it enabled them to charge higher costs to bypass travel bans and restrictions on movement. The pandemic gave traffickers the likelihood to focus on their victims in cases where movement was not possible to take advantage of who had no chance of escaping. Human trafficking exploited on non-
displaced populations purposely for forced labor and organ trafficking (Global organized crime Index, 2021).

Though countries with significantly acute crime issues are not essentially as similar as countries with low resilience, the extremely spread population underscores each of the presence of organized crime and the pressing issue ought to be how to implement measures to combat crime. Organized crime usually targets the foremost vulnerable communities and its impact ultimately increases the vulnerability of societies as a whole. The depths of criminal activities in our societies have profound and lasting consequences and creates unsafe environment that delays development.

### 1.1.2 African perspective

Crime rates remain high in Africa with statistics showing that nearly half a million homicides were committed worldwide in 2012 according to UNODC (2014) of which (5.0 \%) occurred in Europe, $(31.0 \%)$ occurred in Africa and (36.0\%) in America. According to the South African Police Service (SAPS) that published statistics on violent crime in South Africa, violent crime involves injury or threat of injury to a person and includes: homicide, attempted homicide, ordinary and aggravated assault; sex offences, common and aggravated robbery. Statistics showed that homicide was the most frequently reported violent crime in 2012 rising to ( $13.3 \%$ ) over the past five years; this was higher than the international average of ( $6.2 \%$ ) murders per 100,000 populations.

Crime has a negative impact on a country's economy as it drives away investors; World Bank Investment Survey data from nine African countries showed that more than (29.0\%) of businesses in Africa cited crime as a key barrier to investment which is about ( $50.0 \%$ ) higher than the World Bank global average (2018). The survey showed that between (11.0\%) and $(80.0 \%)$ of the respondents in each country reported direct crime related losses. UNODC (2006) stated that the cost of crime included medical costs and loss of productivity due to violent crime that affects poor people in African countries because most of them cannot afford medical care besides the low levels of medical care. Regarding property losses, the UNODC found that poor households can be crippled due to loss of assets such as vehicles and livestock as it affects livelihood for several people.

### 1.1.3 Kenyan perspective

Crime is a national security issue and it may be a pervasive threat to social and economic pillars of Kenyan development. Its impact affects public and personal entities, Kenyans and foreigners within the country and investors who contribute vastly to economic growth. The threat is broad and complex, starting from ancient crimes such as robbery, cattle rustling, assault, technology-enhanced crimes such as cyberattacks, terrorism, fraud and high-level corruption which needs an in-depth and comprehensive understanding of crime patterns and trends. Studies have highlighted the extent of crime in Kenya: For example, the Overseas Security advisory Council (2018) report on cybersecurity estimates that around 300,000 crimes are reported monthly with most cases concerning bank fraud, illicit cash transfers and organized crimes that modify daily.

Crime statistics from the National Police Service (NPS) indicated gradual increase in crime between 2016 and 2017 and 2018. In 2017, the crime classes that marked the rise were: theft, burglary and cattle rustling while 2018 had an upward trend: violence, assault, general stealing, riots, possession of illicit drugs (cannabis sativa) and malicious damage (NPS Annual Crime Report, 2018). Similar report of 2020 showed 69,645 cases were registered within the period between January and December with a decrease of (25.4\%) from 2019 that had 93,411 cases. In 2018, the police registered a total of 88,268 cases, up with (5.8\%); the ( $25.4 \%$ ) decrease in cases of year 2020 was attributed to government lockdown measures in April, 2020 to prevent the spread of COVID-19.

Crimes against morality including defilement (7381 cases), rape (939 cases), incest (333 cases) and indecent assault (387) were often reported followed by stealing with (8709) cases. In the year 2020 there was a decrease in class crime compared to 2019 with exception of homicides, crimes against morality and economic crimes (NPS crime statistics annual report, 2020). The existence and notable increase of criminal gangs in the country according to NCRC, 2012 and 2016 are doubtless to worsen the safety level in the country. The gangs create a threat to peace, stability and development hence their activities should be controlled and/or eradicated.

The government has created combined efforts with multi agencies to handle criminal gangs and in 2010 enacted the law on prevention of organized crimes, dismantling 33 criminal gangs out of 127 that were in operation in the country. The government also undertook
numerous measures to address serious crimes such as acts of terrorism and cattle rustling by enhancing training to the personnel's ability to counter the threat of terrorism to the formation of inter-agency partnership to disarm and seize illegitimate weapons NPS (2018). The 2016 National Crime Mapping study identified crime strategies such as community policy initiatives and Nyumba Kumi; police patrols; community awareness meetings; street lighting; civic education programs; disarmament initiatives; the penalization of offenders; and community-based dispute resolution mechanisms.

The government of Kenya through National Crime Research Centre (NCRC) conducts biannual national crime mapping to map crime trends and patterns, criminal gangs and hotspots areas within the country in order to develop crime prevention strategies. The 2018 crime mapping was a follow-up to 2016, which evaluated crime prevalence, hotspots, and criminal gangs to know whether or not the projected interventions ensuing from the 2016 study minimized crime in the country and also whether the recommendations were impactful in crime management. The 2020 crime mapping survey indicated that stealing ( $64.5 \%$ ), burglary and housebreaking (58.7\%), possession of illicit brews (51.6\%), being drunk and disorderly (49.1\%), gender-based violence (45.4\%) and cattle rustling ( $37.2 \%$ ) were the highest perceived crimes in most of the forty seven counties. The findings were similar to that of the 2018 Crime mapping survey that showed common crimes committed were stealing ( $53.3 \%$ ), assault ( $30.1 \%$ ), murder ( $26.1 \%$ ), rape ( $24.5 \%$ ), theft ( $23.3 \%$ ) and robbery with violence (18.6\%), (NCRC 2020). The 2021 National Police Service Annual Crime Report (January to December 2021) indicated a total of 81,272 cases that were recorded. This is a ( $16.7 \%$ ) increase from the same period in 2020 which recorded 69,645 cases. In 2020, police recorded a total of 69,645 cases which rose by ( $16.7 \%$ ) or 11,672 cases in 2021 (National Police Service, 2021).

KNBS Economic Survey Report, 2022 depicted the total number of people reported for robberies, burglaries and theft that increased by (34.6\%) from 19,103 in the year 2020 to 25,721 in the year 2021 with theft accounting for the highest proportion at (47.3\%). In this category of crime the number of people who committed carjacking and theft of goods increased by ( $65.2 \%$ ) and ( $31.2 \%$ ) respectively. Crimes involving illicit drugs, malicious damage, economic crimes and crimes involving police officers increased by (42.5\%) from 10,706 in the year 2020 to 15,255 in 2021 (Economic Survey, 2022).

### 1.2. Problem Statement

Crime impacts negatively on a country's economy, peace and national security thereby resulting in under development, hostility between communities and imposing budget constraints on the state budget and as a result, state agendas like the Big Four and Vision 2030 are delayed or partly enforced because of inadequate resources as huge budget is channeled to fighting crime. In 2022/23 financial year, the Cabinet Secretary of Treasury and Planning allocated Kshs 317.8 Billion to security sector (Parliament of Kenya: The Kenyan Parliament website); the figure is much higher compared to financial year 2020/21 that amounted to Kshs 167.9 Billion (National Treasury- the National Treasury of Kenya, 2020).

The government put vital endless efforts to deal with crime aimed at achieving good governance, security, justice, law and order. The efforts embodied the passage of security laws (Amendment) Act, 2014, reforms in Judiciary and Police department including vetting of security personnel. Despite the efforts, there is still a variety of challenges in controlling, managing and preventing crime. UN-Habitat Safer Cities Victimization Survey in Nairobi (UN-Habitat, 2002) and 2010 UNODC-KIPPRA Victimization Survey that assessed 3,000 households' across the country found common crimes that affected people as felony, cattle rustling, fraud and corruption. However, the survey failed to notice the dynamics of rare and serious emerging crimes. The country recently faced new challenges arising from magnified levels of organized crime, youth gangs, kidnappings, acts of terrorism and radicalization. Devolution of governance also brought new challenges such as border and resource conflicts within the community that may manifest into crime (Mkutu et al, 2014). It is against this background that the study is aimed to provide current trends and patterns of crimes in the forty-seven (47) counties in Kenya.

### 1.3 Objectives of the study

The general aim of the study was to conduct an assessment of the crime situation and generate crime trends and prevalence in Kenya. The study was guided by the following specific objectives.

1. To examine crime prevalence and trends in Kenya
2. To establish the perpetrators of crimes in Kenya
3. To examine the factors contributing to crime in Kenya
4. To establish the consequences of crime in Kenya
5. To examine crime prevention measures and strategies in Kenya

### 1.4 Rationale for the study

Crime is an extreme concern in Kenya that limits funding and development. Providing information on forms of crime and their hotspots areas in precise counties is a step in the direction of cost-powerful solutions. However, there is inadequate empirical information on crime mapping in Kenya; Police information suffers loss of records due to scarcity of police posts and/or stations in vast areas, fears of police corruption and extortion, failure to protect witnesses and collusion of criminals with the police officers. Armed Conflict Location and Event Data Project-Kenya (ACLED) disaggregated data is based on media reviews that may be unreliable based on hearsay. Crime mapping research uploads statistics on available literature on crime typology and prevalence based on reference for future researchers in areas of criminal justice, sociology, criminology, political science and governance. A database on crime degrees and types, in particular severe crime and organized crime might serve as a beneficial reference for contrast after interventions.

The first national crime mapping study was conducted by NCRC in 2016 three years after devolution structures were established. The 2018 national crime mapping study provided crime hotspot areas and identified existing organized criminal gangs per county. This was aimed at assisting policy makers on appropriate intervention measures.

Crime mapping is beneficial in informing the links of crimes that can extend beyond the nation borders and security inter agencies collaboration can help prevent, control and manage crime.

Crime statistics highlights patterns, trends, perpetrators, factors, modes, consequences, preventive measures and strategies on how to combat crime. This study therefore, will inform the government on possible ways of controlling crime through its recommendations based on guidance by NCRC Governing Council on rationale on the study to be conducted biannually.

### 1.5 Scope of the Study

The study is a national survey conducted in all the 47 counties of Kenya. It focus on: identifying the prevalence and types of crime; Country specific type and prevalence of crimes, hotspot areas, criminal gangs and activities in which they are involved; root causes of crime; predisposing factors to crimes; existing crime prevention measures, and policy recommendations.

### 1.6 Assumptions of the Study

The following were the study's assumptions:

1. Individual respondents would report their own experiences on their perceptions of crimes performance without fear.
2. The officials in public agencies Criminal Justice Agencies would be willing to share the needed information.
3. The comprehensive reforms in security sector has been successful in crime control and management in the country.

### 1.7 Limitations of the Study

The following were this study's limitations:-

1. Challenges on research samples and selection.
2. Limited time constraints to implement the study
3. Lack of previous research studies on the topic.
4. Lack of unified categorization and reporting of crimes by criminal justice agencies
5. Overreliance of manual methods/instruments/techniques used to collect the data

### 1.8 Theoretical Framework

The study adopted both social disorganization and strain theories of crime that play a major role in understanding crime patterns and trends in Kenya.

### 1.8.1 Social Disorganization Theory

The social disorganization theory was developed by Kaur, Shaw and Mackay. They argued that; "Social disorganization, defined as the sudden influx of large numbers of people in and out of neighborhood creates a pathological environment that contributes more to crime than the deviant behavior of abnormal individuals." Shaw and Mckay conducted a study to analyze neighborhood behavior and they found that high levels of crime were observed in
neighborhoods where residents struggled with little financial stability and in areas where ethnic minorities were highly concentrated.

They described various neighborhood characteristics that led people to become involved in criminal activities. For example areas with high crime rate had multiple factors, such as: overcrowded neighborhood, lack of facilities, residents facing financial instability, concentration of ethnic minority corresponding to social disorganization (Kaur, 2022).Bursik and Grasmick (1993) suggested in their study that a large number of criminal groups or antisocial elements in an area lead to high crime rates in that area. They also suggested that lack of fun and leisure activities in an area leads to an increase in criminal activity due to lack of leisure opportunities. People have difficulty finding a way to engage with society and how to spend their extra time and therefore, they choose to form gangs to spend their free time and socialize with each other's and eventually they become prone to crime because the members of the gang are more likely to engage in violent and criminal activities. The study also showed that as job opportunities increase, criminal activities may decline as people may prefer engaging in jobs rather than involvement in crime (Kaur, 2022).

In this theory, the weakening of social ties leads to "social disorganization," and social disorganization is the main cause of crime in the society. Social ties can be family, community or religious ties. The theory links participation in criminal activity to the person's whereabouts and the place where the person lives influences their behavior whether or not they engage in criminal activity. This theory emphasizes the importance of a person's residential address even more than the person's characteristics such as age, race and sex, in determining the decision to engage in a crime. For example, if the person living in a society that encourages alcoholism and violent behavior then he/she tends to do the same thing thus attracting the attention of other people in their society even though they know it is not good behavior (Kaur, 2022).

This theory relates to crime mapping study as it focuses on social disorganization in the society as the root cause of criminal activity.

### 1.8.2 Strain Theory

The proponents of this theory were Robert Merton and Emile Durkheim. They argued that crime happens once there are no enough legitimate opportunities for individuals to realize the traditional success goals of a society. In such a scenario there is a 'strain' between the
goals and the means to achieve those goals and few people turn to crime in order to achieve success (Thompson, 2021). Strain theory is based on a simple and sensible idea: Once people are treated badly, they will become upset and interact in crime. Strain theory elaborate on the concept by describing the categories of negative treatment that can lead a person to crime, why negative treatment increases the probability of crime and why some folks are likely than others to reply to negative treatment with crime. (Strain Theories of Crime (Criminology Theories) IResearchNet, n.d.)

The strain to possibly steer crime is high in magnitude and perceived as unjust, related to low social control and that it produces some pressure or incentive for crime. An illustration is embodied on parental rejection, harsh or abusive discipline, chronic unemployment or poor working environment, criminal victimization, vagrancy, discrimination and inability to realize financial goals. These strains result in a variety of negative emotions such as anger that produces pressure for corrective action with crime being one of potential response. Crime may be a relief to escape strains, revenge or alleviate negative emotions through usage of illicit drugs. Strain may also increase crime by reducing social control, fostering association with criminal peers and beliefs that are favorable to crime and contributes to negative emotional traits. People are most likely to commit crime as a coping mechanism once they lack the resources to lawfully take care of their strains with an attitude that they have nothing or little too loose by participating in crime (Strain Theories of Crime (Criminology Theories) IResearchNet, n.d.)

This theory is also crucial in crime mapping study as it portrays factors that leads one to crime such as parental rejection, harsh or abusive discipline, chronic unemployment or poor working environment, criminal victimization, vagrancy, discrimination and inability to realize financial goals.

## CHAPTER TWO: STUDY METHODOLOGY

### 2.1 Introduction

This chapter looks at research design, sampling of study area and respondents, sampling and sample size determination, methods and tools of data collection, data collection and management, methods of data analysis and ethical considerations.

### 2.2 Research Design

This study employed a mixed method research design where both qualitative and quantitative research methods were employed. The strong point of the design is the capability to obtain detailed information for both qualitative and quantitative characteristics related to public perceptions of crime patterns trends in Kenya.

The target population were members of the public and the key informants drawn from key stakeholders in administration of criminal justice in Kenya.

### 2.2.1 Sampling of Study Areas and Respondents

The sample for the study was drawn from all 47 counties in the 8 regions of Kenya. Non probability purposive sampling method was used to arrive at study site of data collection. This was guided by data from National Police Service dated $23^{\text {rd }}$ May 2022 as received at NCRC which shown the 3 sub-counties in every county that led in crimes as per police records.

### 2.2.2 Sampling and Sample Size Determination

This research adopted Kenya Population and Housing Census (KPHC, 2019) households sampling list from Kenya National Bureau of Statistics (KNBS) in computation of sample size. However, the desired sample size was determined by the budget and remaining timelines. The study utilized probability proportional to size (PPS) techniques with a calculation formula; $\mathrm{N} 1 / \mathrm{N}(\mathrm{n})$ to arrive at county household sample.

Using Slovin's formula (1972) shown below, a desired sample size was computed.
The sampling unit for the members of the public was the household. The sample size for the members of public ( $\mathrm{n}=5300$ ) was determined using the Slovin's formula, thus:

$$
\mathbf{n}=\mathrm{N} /\left(1+\mathrm{Ne}^{2}\right)
$$

Where: $\mathbf{n}=$ target sample size;
$\mathbf{N}=$ total population size of households $(12,028,743)$;
e: margin of error ( 0.0197 at $97 \%$ confidence level).

As shown in Table 2.1 a total of 5112 respondents declared their gender as per the distribution. The actual sample respondents interviewed as per other social demographic characteristics was 5119 in total of whom 2856 were males and 2256 were females out of which 7 respondents did not disclose their gender. Probability proportional to size sampling was used to distribute the sample in the 47 counties.

Table 2.1 Distribution of the Sample Respondents per County

|  | Male | Percent <br> within <br> County | Female | Percent within <br> County | Totals for <br> the <br> County |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Nairobi | 320 | $49.5 \%$ | 326 | $50.5 \%$ | 646 |
| Kiambu | 178 | $53.1 \%$ | 157 | $46.9 \%$ | 335 |
| Nakuru | 133 | $50.8 \%$ | 129 | $49.2 \%$ | 262 |
| Mombasa | 101 | $54.6 \%$ | 84 | $45.4 \%$ | 185 |
| Kakamega | 118 | $65.6 \%$ | 62 | $34.4 \%$ | 180 |
| Meru | 93 | $52.2 \%$ | 85 | $47.8 \%$ | 178 |
| Machakos | 88 | $52.4 \%$ | 80 | $47.6 \%$ | 168 |
| Bungoma | 81 | $57.0 \%$ | 61 | $43.0 \%$ | 142 |
| Murang'a | 74 | $55.2 \%$ | 60 | $44.8 \%$ | 134 |
| Kajiado | 64 | $48.5 \%$ | 68 | $51.5 \%$ | 132 |
| Kisii | 71 | $54.2 \%$ | 60 | $45.8 \%$ | 131 |
| Uasin <br> Gishu | 76 | $58.9 \%$ | 53 | $41.1 \%$ | 129 |
| Kisumu | 66 | $52.4 \%$ | 60 |  |  |
| Homa Bay | 61 | $55.0 \%$ | 50 | $47.6 \%$ | 126 |
| Kitui | 63 | $57.3 \%$ | 47 | $45.0 \%$ | 111 |
| Nyeri | 41 | $38.7 \%$ | 65 | $42.7 \%$ | 110 |
| Makueni | 39 | $37.1 \%$ | 66 | $61.3 \%$ | 106 |
| Siaya | 61 | $59.2 \%$ | 42 | $62.9 \%$ | 105 |
| Narok | 68 | $66.7 \%$ | 34 | $40.8 \%$ | 103 |
|  |  |  |  | $33.3 \%$ | 102 |


| Kilifi | 62 | $60.8 \%$ | 40 | $39.2 \%$ | 102 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Migori | 53 | $55.2 \%$ | 43 | $44.8 \%$ | 96 |
| Trans <br> Nzoia | 67 | $70.5 \%$ | 28 | $29.5 \%$ | 95 |
| Kirinyaga | 50 | $57.5 \%$ | 37 | $42.5 \%$ | 87 |
| Kericho | 54 | $63.5 \%$ | 31 | $36.5 \%$ | 85 |
| Busia | 48 | $57.1 \%$ | 36 | $42.9 \%$ | 84 |
| Nandi | 42 | $50.6 \%$ | 41 | $49.4 \%$ | 83 |
| Embu | 37 | $46.3 \%$ | 43 | $53.8 \%$ | 80 |
| Bomet | 62 | $79.5 \%$ | 16 | $20.5 \%$ | 78 |
| Nyandarua | 50 | $66.7 \%$ | 25 | $33.3 \%$ | 75 |
| Kwale | 37 | $50.0 \%$ | 37 | $50.0 \%$ | 74 |
| Turkana | 47 | $67.1 \%$ | 23 | $32.9 \%$ | 70 |
| Nyamira | 43 | $67.2 \%$ | 21 | $32.8 \%$ | 64 |
| Vihiga | 35 | $56.5 \%$ | 27 | $43.5 \%$ | 62 |
| Laikipia | 41 | $67.2 \%$ | 20 | $32.8 \%$ | 61 |
| Baringo | 26 | $44.8 \%$ | 32 | $55.2 \%$ | 58 |
| Garissa | 41 | $74.5 \%$ | 14 | $25.5 \%$ | 55 |
| Wajir | 37 | $68.5 \%$ | 17 | $31.5 \%$ | 54 |
| Mandera | 43 | $81.1 \%$ | 10 | $18.9 \%$ | 53 |
| West Pokot | 33 | $67.3 \%$ | 16 | $32.7 \%$ | 49 |
| Tharaka- | 24 | $51.1 \%$ | 23 | $48.9 \%$ | 47 |
| Nithi |  |  |  |  |  |
| Elgeyo | 32 | $76.2 \%$ | 10 | $23.8 \%$ | 42 |
| Marakwet |  |  |  |  |  |
| Taita | 12 | $29.3 \%$ | 29 | $70.7 \%$ | 41 |
| Taveta |  |  |  |  |  |
| Marsabit | 23 | $69.7 \%$ | 10 | $30.3 \%$ | 33 |
| Tana River | 16 | $55.2 \%$ | 13 | $44.8 \%$ | 29 |
| Samburu | 18 | $64.3 \%$ | 10 | $35.7 \%$ | 28 |
| Isiolo | 17 | $68.0 \%$ | 8 | $32.0 \%$ | 25 |
| Lamu | 10 | $58.8 \%$ | 7 | $41.2 \%$ | 17 |
| Totals | $\mathbf{2 8 5 6}$ | $\mathbf{5 5 . 9 \%}$ | $\mathbf{2 2 5 6}$ | $\mathbf{4 4 . 1 \%}$ | $\mathbf{5 1 1 2}$ |
|  |  |  |  |  |  |

### 2.3 Methods and Tools for Data Collection

### 2.3.1 Data Collection Methods

Primary data was collected from the members of the general public and also the key informants. Face to face interviews were conducted with the sample respondents. Key
informants interview schedules was used to collect information from representatives of agencies within criminal justice systems.

### 2.3.2 Data Collection Tools

A comprehensive semi-structured questionnaire was used and key informant interview guide for obtaining relevant information for the study. Thes tools were pre-tested to visualize on their validity and reliability in the study.

### 2.4 Data Collection and Management

National Crime Research Centre (NCRC) worked closely with relevant institutions for support in realizing the objective of the study during the data collection process.

Competent research assistants were identified and thoroughly trained before the start of the actual data collection exercise. Upon completion of training, they were distributed according to the clusters and facilitated with the necessary resources for the fieldwork. Close supervision of the research assistants and quality control of the exercise was undertaken by the supervisors and the study coordinators. Collected data was well kept upon the completion of the data collection at the NCRC data office before it was processed.

### 2.5 Method of Data Analysis

Primary data was processed in steps which entailed: data coding, entry, cleaning and thereafter analyzing using Statistical Package for Social Science (SPSS). The analysis are presented thematically based on the research objectives. The qualitative data collected from the Key informants was analyzed thematically and used to strengthen the findings from the members of the public.

The findings and recommendations of the study are presented in the research report for purposes of informing policy on crime prevention with the ultimate goal of enhancing national security in the country.

### 2.6 Ethical Consideration

In line with the best research practices, the study considered the subsequent ethical considerations throughout the study.

1. Adequate training and briefing of researchers was undertaken for purposes of equipping them with adequate knowledge on the entire data collection exercise.
2. Informed consent was sought from the respondents and sampled institutions before the commencement of the data collection exercise.
3. Data was collected anonymously and treated with the utmost confidentiality.
4. Respect for diversity in regard to socio-cultural, economic and political opinions was upheld in the course of data collection exercise.

## CHAPTER THREE: RESULTS AND DISCUSSIONS

### 3.1 Introduction

This chapter presents the results and discussion of the study findings. The section outlines the socio-demographic information of the respondents; the prevalence rates of different crimes; crime perpetrators; a list of criminal gang(s)/group(s), activities that they engage in and crime hotspot areas in the country. The section also covers factors contributing to commission/omission of crimes and the consequences of crime in addition to crime prevention measures and recommendations.

### 3.2 Socio-Demographic Characteristics of the Sample Respondents

This study interviewed a total of 5119 sample respondents of whom 2860 were males and 2259 were females. In regards to age, $28.4 \%$ of the sample respondents were aged between $35-45$ years while $26.9 \%$ of the respondents were aged between $26-34$ years, whereas $18.5 \%$ were aged between $46-55 y$ years. The findings as indicated in Table 3.1 shows that there was a fair representation of the youths compared to older people in the society.

The finding on marital status was that, $75.9 \%$ of the respondents were married; $16.3 \%$ were single/never married while $3.5 \%$ were widowed. On level of education, most of the respondents $(42.0 \%$ ) had secondary education level, $31.7 \%$ had primary school education; $15.8 \%$ had middle level college education; $5.5 \%$ had university education; $4.7 \%$ had never gone to school whereas $0.2 \%$ were of adult literacy. This finding indicates that the majority of the sampled population was generally literate.

From the finding, majority of respondents (87.9\%) were Christians while Muslims constituted $10.4 \%$. The rest of the respondents professed either Traditional, Hindu, Atheist or others. On occupation, a noticeable percentage of the sample respondents $(51.6 \%)$ were business people; $14.1 \%$ of the respondents were casual/temporary employment in private sector and $11.5 \%$ were subsistence farmers. The rest of the respondents worked in other categorized occupations including permanent employment in private sector, permanent employment in public sector, and casual/temporary employment in public sector, unemployed, retiree, housewife/husbands and students. In terms of residency in the area of the study, $60.0 \%$ of the respondents had been residents of their respective locality for more than 13 years; $11.2 \%$ had resided in their area between $1-3$ years; $10.4 \%$ had been residents between 10-12 years; $10.4 \%$ of the respondents had been resident between $4-6$ years while
8.0 \% had stayed for 7-9 years. This means that majority of the respondents understood their area very well. All the socio-demographic characteristics of the respondents are captured in Table 3.1.

Table 3.1: Socio-Demographic Characteristics of Respondents

| Variable | Category | Frequency | Valid Percent |
| :---: | :---: | :---: | :---: |
| Gender | Male | 2860 | 55.9 |
|  | Female | 2259 | 44.1 |
|  | Total | 5112 | 100.0 |
| Age of Respondents in years | 18-25 | 485 | 9.5 |
|  | 26-34 | 1376 | 26.9 |
|  | 35-45 | 1454 | 28.4 |
|  | 46-55 | 947 | 18.5 |
|  | 56-65 | 545 | 10.7 |
|  | 66+ | 307 | 6.0 |
|  | Total | 5114 | 100.0 |
| Marital Status | Single/Never Married | 831 | 16.3 |
|  | Married | 3878 | 75.9 |
|  | Separated | 173 | 3.4 |
|  | Divorced | 50 | 1.0 |
|  | Widowed | 180 | 3.5 |
|  | Total | 5112 | 100.0 |
| Highest Level of Education Attained | None | 242 | 4.7 |
|  | Primary | 1623 | 31.7 |
|  | Secondary | 2148 | 42.0 |
|  | Middle level college | 806 | 15.8 |
|  | University | 282 | 5.5 |
|  | Adult Literacy | 11 | 0.2 |
|  | Total | 5112 | 100.0 |
| Religion | Christian | 4497 | 87.9 |
|  | Islam | 533 | 10.4 |
|  | Hindu | 23 | 0.4 |
|  | Traditionalist | 10 | 0.2 |
|  | Atheist | 18 | 0.4 |
|  | Rastafarian | 2 | 0.0 |
|  | None | 31 | . 6 |
|  | Total | 5114 | 100.0 |
| Main Occupation | Permanent employment-Public sector | 163 | 3.2 |

$\left.\begin{array}{|l|l|r|r|}\hline \text { Variable } & \text { Category } & \text { Frequency } & \text { Valid Percent } \\ \hline & \text { Permanent employment in } & 211 & 4.1 \\ & \text { Private sector }\end{array}\right)$

### 3.3 Types and Prevalence of Perceived, Witnessed and most Threatening Crimes

### 3.3.1 Types and Prevalence of Perceived Crimes

The perceptions of the majority of respondents was that usage of alcohol, drugs and substance abuse ( $60.0 \%$ ), house breakings ( $56.2 \%$ ) and petty theft $(50.1 \%$ ) were the most perceived crimes that were committed within their locality. Also, robbery with violence ( $38.6 \%$ ) and burglary ( $38.6 \%$ ) were reported by the most of the respondent as crimes committed within their areas. The results of all other findings are shown in Table 3.2.

Table 3.2: Types and Prevalence of Perceived crimes

| Types and Prevalence of Perceived crimes | Frequency | Percent of cases |
| :--- | ---: | ---: |
| Alcohol, drugs and substances abuse | 3062 | $60.0 \%$ |
| House Breaking | 2869 | $56.2 \%$ |
| General Stealing | 2558 | $50.1 \%$ |
| Robbery with violence | 1970 | $38.6 \%$ |
| Burglary | 1972 | $38.6 \%$ |


| Types and Prevalence of Perceived crimes | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Robbery | 1935 | 37.9\% |
| Stealing from person | 1885 | 36.9\% |
| Assault | 1662 | 32.5\% |
| Theft of stock (including cattle rustling) | 1659 | 32.5\% |
| Possession of drugs | 1212 | 23.7\% |
| Stealing from a building | 1161 | 22.7\% |
| Murder | 1138 | 22.3\% |
| Trafficking of narcotic drugs | 977 | 19.1\% |
| Handling of drugs | 831 | 16.3\% |
| Rape | 742 | 14.5\% |
| Defilement | 689 | 13.5\% |
| Accepting Bribe | 658 | 12.9\% |
| Theft of Motorcycle | 649 | 12.7\% |
| Soliciting bribe | 510 | 10.0\% |
| Creating Disturbance | 415 | 8.1\% |
| Theft of farm produce | 315 | 6.2\% |
| Accepting Bribe | 292 | 5.7\% |
| Soliciting bribe | 278 | 5.4\% |
| Handling stolen property | 175 | 3.4\% |
| Affray | 170 | 3.3\% |
| Malicious Damage of property | 133 | 2.6\% |
| Cultivating of the drugs | 126 | 2.5\% |
| Obtaining by False Pretense | 127 | 2.5\% |
| Manslaughter | 119 | 2.3\% |
| Driving under influence of Alcohol | 115 | 2.3\% |
| Bag snatching | 85 | 1.7\% |
| Theft from M/V | 77 | 1.5\% |
| Theft of M/V parts | 79 | 1.5\% |
| Stealing by Tenants/lodgers | 65 | 1.3\% |
| Theft of M/V(Motor vehicle) | 67 | 1.3\% |
| Incest | 63 | 1.2\% |
| Fraud /Forgery offences | 59 | 1.2\% |
| Procuring Abortion | 52 | 1.0\% |
| Loitering with immoral intent | 45 | 0.9\% |
| Causing Death by Dangerous Driving | 42 | 0.8\% |
| Abduction | 40 | 0.8\% |
| Forceful detainer | 40 | 0.8\% |
| Currency Forgery | 37 | 0.7\% |
| Indecent Assault | 31 | 0.6\% |
| Cyber crimes | 29 | 0.6\% |


| Types and Prevalence of Perceived crimes | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Infanticide | 24 | 0.5\% |
| Carjacking | 24 | 0.5\% |
| Stealing by employee/servant | 24 | 0.5\% |
| Arson | 27 | 0.5\% |
| Negligent Acts | 24 | 0.5\% |
| Accepting Free gifts | 23 | 0.5\% |
| Grievous Bodily Harm | 23 | 0.5\% |
| Accepting Free gifts | 19 | 0.4\% |
| Offences of female genital mutilation | 20 | 0.4\% |
| Concealing Birth | 16 | 0.3\% |
| Un-natural offences | 14 | 0.3\% |
| Robbery of M/V | 15 | 0.3\% |
| Demanding by False Pretense | 17 | 0.3\% |
| Demanding by False Pretense | 17 | 0.3\% |
| Illegal gambling | 13 | 0.3\% |
| Bestiality | 11 | 0.2\% |
| Stealing by Directors | 9 | 0.2\% |
| Stealing by Agents | 9 | 0.2\% |
| Taking vehicle without lawful authority | 9 | 0.2\% |
| False Accounting | 11 | 0.2\% |
| Illegal removal of forest produce | 12 | 0.2\% |
| Acts of terrorism | 9 | 0.2\% |
| Being in the country illegally | 9 | 0.2\% |
| Environmental pollution | 8 | 0.2\% |
| Illegal possession of fire arms | 9 | 0.2\% |
| Bigamy | 7 | 0.1\% |
| Poaching | 7 | 0.1\% |
| Threat to Kill | 4 | 0.1\% |
| Child labor | 3 | 0.1\% |
| Attempted murder | 5 | 0.1\% |
| Stalking | 3 | 0.1\% |
| Human trafficking | 6 | 0.1\% |
| Trespass upon private land | 3 | 0.1\% |
| Attempted rape | 2 | 0.0\% |
| Attempted robbery | 1 | 0.0\% |
| Attempted defilement | 1 | 0.0\% |
| Extortion | 2 | 0.0\% |

The above findings were also supplemented by discussants in the Focus Group Discussions (FGD) that were conducted in 11 counties. From the results of FGD, it came out that that
usage of alcohol，drugs and substances abuse，trafficking of narcotic drugs，house breaking and petty theft were the most prevalent crimes in the areas as shown in Table 3．3．

Table 3．3：Types and Prevalence of Perceived crimes as highlighted by Focus Group Discussants

| Types and <br> Prevalence of Perceived crimes | Counties of crimes reported（marked by a tick（ $\downarrow$ ） |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\bar{D}}{Z}$ |  |  |  | $\begin{aligned} & \text { قِ } \\ & \text { ت} \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 菏 } \\ & \underset{\text { 亿 }}{\text { 亿 }} \end{aligned}$ | $\begin{aligned} & \tilde{W_{0}^{0}} \\ & \text { た } \\ & \text { E} \\ & \tilde{\Sigma} \end{aligned}$ |  |  |
| Alcohol，drug and substance abuse | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | 9 |
| Trafficking of narcotic drugs | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 9 |
| House Breaking | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 8 |
| General Stealing | $\sqrt{ }$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | 8 |
| Robbery with violence | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 7 |
| House Breaking | $\checkmark$ |  |  | $\sqrt{ }$ | $\sqrt{ }$ |  | $\sqrt{ }$ |  | $\sqrt{ }$ | $\sqrt{ }$ | $\sqrt{ }$ | 7 |
| Burglary |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\sqrt{ }$ |  | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | 7 |
| Defilement |  | $\sqrt{ }$ |  | $\checkmark$ |  | $\sqrt{ }$ |  | $\sqrt{ }$ | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | 7 |
| Theft of <br> （including <br> rustling）  <br> stock  <br> cattle  | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ |  |  | $\checkmark$ | $\checkmark$ |  | $\sqrt{ }$ |  | $\checkmark$ | 7 |
| Handling stolen property | $\sqrt{ }$ | $\sqrt{ }$ |  | $\sqrt{ }$ |  | $\sqrt{ }$ | $\sqrt{ }$ |  |  |  | $\sqrt{ }$ | 6 |
| Theft from M／V | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | 6 |
| Poaching | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ |  |  |  | $\sqrt{ }$ |  |  | $\sqrt{ }$ |  | 5 |
| Cyber crimes | $\checkmark$ |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 5 |
| Illegal possession of fire arms |  |  | $\checkmark$ |  |  |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 4 |
| Offences of female genital mutilation |  |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ |  | $\sqrt{ }$ |  |  | 4 |
| Acts of terrorism |  |  | $\checkmark$ |  |  |  |  |  |  | $\sqrt{ }$ | $\checkmark$ | 3 |
| Forceful detainer | $\checkmark$ |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

Similarly to the above findings on types and prevalence of perceived crimes，key informants also give their inputs，a Probation Officer in Turkana County noted that：－
" .... in this county cases of stock theft- mostly in homes and boundaries with other counties have become common, assault- mostly among the women and also on men and highway robbery have been in increase in the recent past..."

The finding from focus group discussion had confirmed the existence of female genital mutilations in the country. In concurrence of the finding, a Senior Police Officer in Isiolo County had this to say:-
"...the most prevalent crimes here are female genital mutilation, cattle rustling, defilement and gender based violence. There are also cases of human trafficking, and trafficking of drugs from Ethiopia, and general stealing. Recently this county has experienced upsurge of cases of suicide- - especially by high profile people. For example someone committed suicide inside a hotel room .He left his home to buy some material for construction and committed suicide. It is alleged that he had retired, got frustrated as he did not have enough money to build a home. Also, another government officer (police officer) hanged himself in a hotel. But what I can say is that, what affects police officers in the service is lack of prudent ways of managing their finances, peer pressure and frustration from their supervisors..."

In Nyeri County a senior Police officer commanding one of the Police Station observed the following on most prevalent crimes in the county:-
".. Within my area of responsibility, crimes such as house breaking, general stealing, defilement, stealing of farm produce, possession of narcotics, rape, and grievous harm are very common. In addition, we have daily traffic offences, creating disturbance due to alcohol use, handling of stolen property and assault being reported at the station..."

This study findings clearly point out that of alcohol, drugs and substances abuse has become as social problem and a threat to national future, related to the findings, the Ministry of Interior and National Administration has made an observation that:-
"After terrorism and banditry, is trade, use and abuse of illicit alcohol as well as psychotropic substance and drugs as security threats of the nation. This is a problem that is likely to impair Kenya's future in a big way if it is not dealt with" (Cabinet Secretary, $14^{\text {th }}$ April 2023)

On the other hand, National Authority for the Campaign against Alcohol and Drug Abuse (NACADA, 2022) conducted a survey on the "Status of Drugs and Substance Use (DSU) in Kenya (2022). In their report, which to some extent agrees with the finding of this report, $39.0 \%$ of Kenyans had the perception that production of illicit brews was widespread in their community with Western region recording the highest perception level ( $68.2 \%$ ) followed by Nyanza (53.2\%) and Rift Valley (41.5\%); 53.7\% of Kenyans had the perception that consumption of illicit brews was widespread in their community with Western region recording the highest perception level (85.8\%) followed by Nyanza (81.9\%) and Rift Valley ( $55.6 \%$ ); $48.5 \%$ of Kenyans had the perception that there was an increase in the number of bars in the last 5 years in their community with Central region recording the highest perception level ( $74.1 \%$ ) followed by Nairobi ( $65.3 \%$ ) and Eastern ( $47.8 \%$ ); and $52.5 \%$ of Kenyans had the perception that there was an increase in the number of underage drinking in their community with Nairobi region recording the highest perception level (67.4\%) followed by Nyanza ( $67.1 \%$ ) and Central ( $66.6 \%$ ).

Therefore, to secure the future of the youths who are the most vulnerable to alcohol, drugs and substances abuse, there is need to intensify campaigns towards alcohol and drugs reduction and establishment of more rehabilitation center for persons with substance abuse disorders.

### 3.3.2 Types and Prevalence of Witnessed Crimes

The study findings revealed that crimes that were mostly witnessed by the respondents were usage of illicit drugs ( $43.5 \%$ ), house breakings ( $30.1 \%$ ), petty theft ( $24.4 \%$ ), stealing from person ( $22.8 \%$ ), Theft of stock (including cattle rustling) (20.7\%) and robbery with violence. From the study findings there is a close relationship between what the respondents perceived and what they witnessed. These findings are indicated in Table 3.4.

Table 3.4: Types and Prevalence of Witnessed Crimes

| Types and Prevalence of Witnessed <br> Crimes | Frequency | Percent of cases |
| :--- | :---: | :---: |
| Usage of alcohol, narcotic drug/ <br> psychotropic substances | 1889 | $43.5 \%$ |
| House Breaking |  | 1307 |
| General Stealing | 1058 | $30.1 \%$ |


| Types and Prevalence of Witnessed Crimes | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Stealing from person | 989 | 22.8\% |
| Theft of stock (including cattle rustling) | 897 | 20.7\% |
| Robbery with violence | 845 | 19.5\% |
| Burglary | 800 | 18.4\% |
| Robbery | 671 | 15.5\% |
| Assault | 604 | 13.9\% |
| Possession of drugs | 424 | 9.8\% |
| Stealing from a building | 417 | 9.6\% |
| Handling of drugs | 328 | 7.6\% |
| Murder | 305 | 7.0\% |
| Trafficking of narcotic drugs | 292 | 6.7\% |
| Accepting Bribe | 273 | 6.3\% |
| Creating Disturbance | 231 | 5.3\% |
| Theft of Motorcycle | 215 | 5.0\% |
| Theft of farm produce | 208 | 4.8\% |
| Soliciting bribe | 199 | 4.6\% |
| Defilement | 145 | 3.3\% |
| Rape | 138 | 3.2\% |
| Affray | 115 | 2.6\% |
| Accepting Bribe | 82 | 1.9\% |
| Soliciting bribe | 63 | 1.5\% |
| Cultivating of the drugs | 61 | 1.4\% |
| Obtaining by False Pretense | 59 | 1.4\% |
| Handling stolen property | 52 | 1.2\% |
| Malicious Damage of property | 45 | 1.0\% |
| Driving under influence of Alcohol | 36 | 0.8\% |
| Theft of M/V parts | 30 | 0.7\% |
| Stealing by Tenants/lodgers | 25 | 0.6\% |
| Theft from M/V | 24 | 0.6\% |
| Bag snatching | 26 | 0.6\% |
| Manslaughter | 22 | 0.5\% |
| Forceful detainer | 23 | 0.5\% |
| Infanticide | 17 | 0.4\% |
| Theft of M/V(Motor vehicle) | 16 | 0.4\% |
| Fraud /Forgery offences | 18 | 0.4\% |
| Loitering with immoral intent | 16 | 0.4\% |
| Stealing by employee/servant | 12 | 0.3\% |
| Arson | 14 | 0.3\% |
| Currency Forgery | 14 | 0.3\% |


| Types and Prevalence of Witnessed Crimes | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Demanding by False Pretense | 15 | 0.3\% |
| Cyber crimes | 15 | 0.3\% |
| Procuring Abortion | 7 | 0.2\% |
| Causing Death by Dangerous Driving | 9 | 0.2\% |
| Incest | 10 | 0.2\% |
| Abduction | 7 | 0.2\% |
| Carjacking | 10 | 0.2\% |
| Robbery of M/V | 10 | 0.2\% |
| Negligent Acts | 8 | 0.2\% |
| Accepting Free gifts | 7 | 0.2\% |
| Illegal removal of forest produce | 7 | 0.2\% |
| Acts of terrorism | 8 | 0.2\% |
| Offences of female genital mutilation | 8 | 0.2\% |
| Concealing Birth | 3 | 0.1\% |
| Indecent Assault | 5 | 0.1\% |
| Bigamy | 3 | 0.1\% |
| Taking vehicle without lawful authority | 3 | 0.1\% |
| False Accounting | 4 | 0.1\% |
| Accepting Free gifts | 3 | 0.1\% |
| Demanding by False Pretense | 4 | 0.1\% |
| Grievous Bodily Harm | 6 | 0.1\% |
| Illegal gambling | 4 | 0.1\% |
| Child labor | 4 | 0.1\% |
| Environmental pollution | 5 | 0.1\% |
| Illegal possession of fire arms | 5 | 0.1\% |
| Human trafficking | 3 | 0.1\% |
| Un-natural offences | 1 | 0.0\% |
| Bestiality | 1 | 0.0\% |
| Stealing by Directors | 1 | 0.0\% |
| Stealing by Agents | 1 | 0.0\% |
| Poaching | 2 | 0.0\% |
| Threat to Kill | 2 | 0.0\% |
| Attempted rape | 1 | 0.0\% |
| Attempted robbery | 1 | 0.0\% |
| Being in the country illegally | 2 | 0.0\% |
| Attempted murder | 2 | 0.0\% |
| Extortion | 2 | 0.0\% |
| Stalking | 1 | 0.0\% |
| Incitement to violence | 1 | 0.0\% |

Types and Prevalence of Witnessed Crimes
Trespass upon private land

The above findings from sample respondents was collaborated by the results of the focus group discussion. It was also established that cases of possession of narcotic drugs, general stealing, assaults and defilement were high in the eleven counties. The participants also reported some cases of manslaughter, murder and rape cases from their respective counties as shown in Table 3.5.

Table 3.5: Types and Prevalence of witnessed crimes as highlighted by Focus Group Discussants

| Witnessed crimes | Witnessed Crimes in the Counties (marked by a tick (v)) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 要 |  |  |  | $\begin{aligned} & \text { En } \\ & \text { En } \end{aligned}$ |  | $\begin{aligned} & \frac{E}{b} \\ & \frac{E}{n} \end{aligned}$ | En | $\begin{aligned} & \text { Kix } \\ & \text { In } \\ & \text { Z } \end{aligned}$ |  |  |  |
| Possession of drugs | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | , | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 11 |
| General Stealing | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 11 |
| Assault | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 10 |
| Defilement | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | 8 |
| Indecent Assault | $\sqrt{\checkmark}$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | 8 |
| Abduction | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 8 |
| Assault | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | 8 |
| Creating Disturbance | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | 7 |
| Robbery with violence | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | 7 |
| $\begin{aligned} & \text { Robbery of } \\ & \text { M/V } \end{aligned}$ | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 7 |
| House Breaking |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | 6 |
| Burglary | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 6 |
| Theft of stock (including cattle rustling) |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  | 6 |
| Handling stolen property | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ | 6 |
| Stealing from a building | $\checkmark$ |  |  |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 6 |


| Witnessed Crimes in the Counties（marked by a tick（V）） |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Witnessed crimes | 范 |  |  | $\begin{aligned} & \text { 镸 } \\ & \text { 需 } \end{aligned}$ | E |  | $\begin{aligned} & \text { E } \\ & \text { 首 } \\ & \text { Z } \end{aligned}$ | $\begin{aligned} & \vec{B} \\ & B \\ & \text { Bn } \end{aligned}$ | $\begin{aligned} & \text { 年 } \\ & \text { 䛔 } \\ & \text { 吾 } \end{aligned}$ | $\begin{aligned} & \text { IN } \\ & \text { en } \\ & \text { E } \\ & \text { E } \end{aligned}$ |  | E |
| Theft from M／V | $\sqrt{ }$ | $\sqrt{ }$ |  |  | $\sqrt{ }$ |  |  | $\sqrt{ }$ |  | $\checkmark$ | $\sqrt{ }$ | 6 |
| Rape |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ |  | 6 |
| Manslaughter | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | 6 |
| Murder | $\sqrt{ }$ |  |  | $\checkmark$ |  | $\sqrt{ }$ | $\sqrt{ }$ | $\sqrt{ }$ |  |  | $\sqrt{ }$ | 6 |

The key informants were also asked to respond on types of crimes that they have witnessed． A Civil Society Activist in Mombasa County said that：
＂．．．in this county，I have witnessed cases where family members are forced disappear on terrorism related allegations and drug related offences．It is also in public domain where individuals are charged with corruption＂

In Busia County，a National Government Administration Officer cited that：
＂．．This county being at the border point，I have dealt with cases of trafficking of bhang，handling of stolen property with some cases of tax evasion．There are also cases of housebreaking and to robbery with violence，defilement and domestic violence that I have processed for criminal prosecution ．．．＂

Further，in comparison with crimes that are reported to police stations in the previous years． The data from National Police Service indicated that there was an increase of crimes in Kenya between the year 2020 and year 2021．The police crime statistics showed that 81272 cases were recorded in the year 2021 with the year 2020 having recorded 69645 criminal cases which is an increase of $16.7 \%$ ．Additionally，the National Police Statistics police for the year 2020 and 2021 showed that（3575）cases of drugs possession were recorded in 2020 and（4697）cases for 2021 an increase of（1122）which is（31．4\％），also，cases for handling of drugs in 2020 were（64）and in 2021 they had recorded（78）which is an increase of（14） cases and $(21.9 \%)$ increase．On the other hand，cases of trafficking in 2020 were（649）and in 2021 （754）cases had been recorded which is an increase of（105）and（16．2\％）．The offences under cultivation of dangerous drugs，in 2020 were（135）cases recorded and in

2021, the police had recorded (183) which is an increase (48) and (35.6\%) increase. Table 3.6 below was the comparative analysis of all other crimes.

Table 3.6: A comparative Analysis of Types and Prevalence of crimes recorded in Police Station Between 2014-2021.

| Crimes |  | Frequency |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 7}$ | $\mathbf{2 0 1 8}$ | $\mathbf{2 0 1 9}$ | $\mathbf{2 0 2 0}$ | $\mathbf{2 0 2 1}$ |
| 01 | Homicide | 2649 | 2648 | 2751 | 2774 | 2856 | 2971 | $\mathbf{3 1 1 1}$ |
| 02 | Offenses <br> against <br> morality | 5184 | 6164 |  | $\mathbf{3 2 8 1}$ |  |  |  |
| 03 | Other <br> offenses <br> against the <br> person | 19911 | 21174 |  |  |  |  |  |


| Crimes |  | Frequency |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| 14 | Offenses involving police officers | 47 | 71 | 57 | 86 | 174 | 77 | 64 | 75 |
| 15 | Offenses involving tourist | 21 | 19 | 15 | 15 | 93 | 48 | 26 | 31 |
| 16 | Traffic offenses | 100 | 120 |  |  |  | 341 | 186 | 123 |
| 17 | Other penal code offenses | 5650 | 6223 | 7047 | 6772 | 7953 | 8674 | 6790 | 8514 |
|  | Total | 69376 | 72490 | 76847 | 77923 | 88055 | 93411 | 69645 | 81272 |

In another report released by INTERPOL Global Crime Trend Report 2022 (IGCTR, 2022). It emerged that globally, there has been an increase on crimes that includes organized crime, illicit trafficking (highlighting drug trafficking, human trafficking and migrant smuggling), financial crime (noting money laundering, financial fraud, and corruption as a critical crimeenabler), cybercrime (particularly, ransom ware, phishing, and online scams) and terrorism.

On the other hand, Kenya National Bureau of Statistics (KNBS) Economic-Survey-2023KNBS report indicated that that in Kenya there has been an increase of cyber security crimes. The report showed that a total number of reported online crimes doubled from 339.1 million in 2021 to 700.0 million in 2022. System vulnerabilities increased significantly from 58.0 million in 2021 to 452.4 million in 2022, highlighting the pressing need for organizations to prioritize security patching and risk mitigation strategies. In contrast, reported web application attacks declined from 7.0 million in 2021 to 1.0 million in 2022 due to increased investment in web application security and greater awareness of potential.

Further the report indicated that environmental crimes reported to National Environment Management Authority (NEMA) declined from 81 in 2021 to 44 in 2022. Cases of illegal movement or dumping of waste accounted for the highest proportion of reported cases in 2022 at 40.9 \% despite the decline in cases from 79 in 2021 to 18 in 2022.

### 3.3.3. Types and Prevalence of the most Threatening Crimes

This study also sought to understand what the respondents felt as the most threatening crime in the last twelve months within their locality. The findings of the study indicated that robbery with violence ( $16.2 \%$ ), house breaking ( $15.4 \%$ ), usage of alcohol, drugs and substances abuse ( $11.0 \%$ ), Theft of stock (including cattle rustling) ( $9.6 \%$ ) and Burglary ( $8.7 \%$ ) as most threatening crimes in their locality. The results of all other findings are shown in Table 3.7

Table 3.7: Types and Prevalence of the most Threatening Crimes

| Types and Prevalence of the most | Frequency | Percent of cases |
| :--- | ---: | ---: |
| Threatening Crimes |  | 748 |
| Robbery with violence | 708 | 16.2 |
| House Breaking | 507 | 15.4 |
| Alcohol, drugs and substances abuse | 441 | 11.0 |
| Theft of stock (including cattle rustling) | 399 | 9.6 |
| Burglary | 329 | 8.7 |
| Stealing from person | 316 | 7.1 |
| Robbery | 304 | 6.9 |
| General Stealing | 262 | 6.6 |
| Murder | 181 | 5.7 |
| Assault | 77 | 3.9 |
| Theft of farm produce | 49 | 1.7 |
| Stealing from a building | 45 | 1.1 |
| Rape | 43 | 1.0 |
| Theft of Motorcycle | 27 | 0.9 |
| Defilement | 23 | 0.6 |
| Creating Disturbance | 23 | 0.5 |
| Trafficking of narcotic drugs |  | 0.5 |
| Affray | 12 | 0.3 |
| Accepting Bribe | 12 | 0.3 |
| Possession of drugs | 11 | 0.2 |
| Manslaughter | 4 | 0.1 |
| Infanticide | 3 | 0.1 |


| Types and Prevalence of the most Threatening Crimes | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Causing Death by Dangerous Driving | 3 | 0.1 |
| Handling stolen property | 5 | 0.1 |
| Stealing by Tenants/lodgers | 3 | 0.1 |
| Stealing by employee/servant | 3 | 0.1 |
| Theft from M/V | 3 | 0.1 |
| Handling of drugs | 5 | 0.1 |
| Cultivating of illicit drugs | 3 | 0.1 |
| Malicious Damage of property | 5 | 0.1 |
| Obtaining by False Pretense | 3 | 0.1 |
| Soliciting bribe | 6 | 0.1 |
| Bag snatching | 3 | 0.1 |
| Cyber crimes | 3 | 0.1 |
| Loitering with immoral intent | 3 | 0.1 |
| Acts of terrorism | 4 | 0.1 |
| Forceful detainer | 6 | 0.1 |
| Procuring Abortion | 1 | 0.0 |
| Concealing Birth | 1 | 0.0 |
| Indecent Assault | 1 | 0.0 |
| Abduction | 1 | 0.0 |
| Carjacking | 2 | 0.0 |
| Robbery of M/V | 1 | 0.0 |
| Stealing by Directors | 1 | 0.0 |
| Theft of M/V (Motor vehicle) | 2 | 0.0 |
| Theft of M/V parts | 2 | 0.0 |
| Taking vehicle without lawful authority | 1 | 0.0 |
| Arson | 1 | 0.0 |
| Negligent Acts | 1 | 0.0 |
| Fraud /Forgery | 2 | 0.0 |
| Grievous Bodily Harm | 1 | 0.0 |
| Illegal removal of forest produce | 1 | 0.0 |
| Threat to Kill | 1 | 0.0 |
| Illegal gambling | 1 | 0.0 |
| Environmental pollution | 1 | 0.0 |
| Illegal possession of fire arms | 2 | 0.0 |

Comparatively, the findings from focus group discussants showed that defilement and usage of alcohol and substance abuse was the most threatening crime as reported in 8 counties.

From the analysis，other offences as reported were；Theft of stock（including cattle rustling）， robbery with violence，murder，abduction and acts of terrorism as shown in Table 3．8．

Table 3．8：Types and Prevalence of the most threatening crimes as highlighted by Focus Group Discussants

| Most threatening crimes | Most threatening Crimes in the Counties（marked by a tick（ V ）） |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 号 } \\ & \text { Z } \end{aligned}$ |  |  |  | $\begin{aligned} & \text { ق⿳亠二口阝} \\ & \text { 霛 } \end{aligned}$ |  | $\begin{aligned} & \text { 动 } \\ & \text { 号 } \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 휼 } \\ & \text { Z } \end{aligned}$ |  |
| Defilement | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | 8 |
| Usage of alcohol，drugs and substances | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 8 |
| Theft of stock （including cattle rustling） | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  | 5 |
| Robbery with Violence | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ | 5 |
| Murder | $\checkmark$ |  |  |  |  |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 4 |
| Abduction |  |  | $\sqrt{ }$ |  |  |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 3 |
| Acts of terrorism |  |  | $\sqrt{ }$ |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ | 3 |

Analysis from sample respondents and focus group discussion was collaborated by findings from key informants．A National Government Administration Officer in Bomet County had this to say：
＂The most threatening cases in our locality are cases of defilement，abuse of drugs and alcohol by young people cybercrimes－that include hacking of personal accounts and stealing from persons or tracking who withdraw from financial institutions or banks and rob the person along the way＂．

Also a senior police officer in Busia County had this to say on most threatening crimes
＂．．we have witnessed a spike at an alarming rate cases of defilement and drug trafficking in this area－there are also cases of murder－mostly done through mob
justice where suspects are lynched by the community members where they feel that the police officers release suspects when arrested and the police are not supportive

In comparison of 2020 NCRC national crime mapping survey and 2022 national crime mapping survey, the 2020 report indicated that offences of burglary and house breaking, stealing, possession of illicit brews and stealing of livestock were the most threatening crimes while in 2022 robbery with violence came out as most threatening crime from the quantitative analysis followed by house breakings. Table 3.9 shows the 2020 findings on most threatening crimes.

Table 3.9: Types and Prevalence of the most Threatening Crimes as reported in 2020 NCRC National Crime Mapping Survey

| The Most Threatening Crime in 2020 NCRC Study | Response |  |
| :--- | :---: | :---: |
|  | Frequency | Per cent cases |
| Burglary and House Breaking | 850 | 17.4 |
| Stealing | 639 | 13.1 |
| Possession of illicit brews | 517 | 10.6 |
| Theft of stock(including cattle rustling | 494 | 10.1 |
| Robbery with Violence | 266 | 5.4 |
| Being Drunk and Disorderly | 226 | 4.6 |
| Murder | 205 | 4.2 |
| Possession of narcotic drugs | 197 | 4.0 |
| Assault Causing Actual Bodily Harm | 175 | 3.6 |
| Gender-Based Violence(Including Domestic | 163 | 3.3 |
| Violence) | 128 |  |
| Robbery(Including mugging) | 93 | 2.6 |
| Defilement | 71 | 1.9 |
| Theft of Farm Produce | 64 | 1.5 |
| Rape | 51 | 1.3 |
| Child Abuse (including child neglect) | 8 | 1.0 |
| Manslaughter | 8 | 0.2 |
| Attempted Rape | 0.2 |  |


| Loitering for prostitution (including child prostitution) | 3 | 0.1 |
| :---: | :---: | :---: |
| Fraud | 6 | 0.1 |
| Obtaining by false pretense | 4 | 0.1 |
| Carjacking/hijacking | 3 | 0.1 |
| Terrorism | 3 | 0.1 |
| Hate Speech/incitement | 3 | 0.1 |
| Theft of motorcycle/ theft of motorcycle spare parts | 3 | 0.1 |
| Trespass upon private land | 4 | 0.1 |
| Handling stolen property/goods | 3 | 0.1 |
| Attempted murder | 2 | 0.0 |
| Attempted Robbery | 2 | 0.0 |
| Drug Trafficking/Smuggling | 1 | 0.0 |
| Forgery | 1 | 0.0 |
| Creating Disturbance | 1 | 0.0 |
| Female Genital Mutilation (FGM) | 2 | 0.0 |
| Illegal abortion | 2 | 0.0 |
| Corruption ( soliciting for a bribe, receiving bribes, receiving gifts, demanding by menace) | 2 | 0.0 |
| Kidnapping and Abduction | 2 | 0.0 |
| Traffic offences | 1 | 0.0 |
| Infanticide | 1 | 0.0 |
| Cyber Crime | 1 | 0.0 |
| Motor vehicle theft/ theft of motor vehicle parts) | 1 | 0.0 |
| Arson | 2 | 0.0 |
| Threatening to Kill | 1 | 0.0 |
| Practice of witchcraft | 1 | 0.0 |
| Environment pollution and destruction | 1 | 0.0 |
| Violation of Covid 19-protocols | 1 | 0.0 |

### 3.4. Perpetrators of Crimes and Mode of Operations

### 3.4.1. Perpetrators of Perceived Crimes

This study sought to find out the perpetrators of perceived crimes in the study area. The finding were that majority of youths ( $93.1 \%$ ) and those who are males (50.8\%) are the main perpetrators of crimes. In addition, some of the respondents said females (13.2\%), children ( $4.5 \%$ ) and the elderly ( $2.6 \%$ ) do perpetrate crimes and it is important to note that spouses or partners in relationships and boda boda riders are also perceived to commit crimes. These results are indicated in Table 3.10.

Table 3.10: Perpetrators of Perceived Crimes

| Perpetrators of Perceived Crimes | Frequency | Percent of cases |
| :--- | ---: | ---: |
| Youth | 4700 | $93.1 \%$ |
| Male | 2564 | $50.8 \%$ |
| Female | 665 | $13.2 \%$ |
| Children | 226 | $4.5 \%$ |
| Elderly | 129 | $2.6 \%$ |
| Spouse/Partner | 98 | $1.9 \%$ |
| Boda Boda riders | 20 | $0.4 \%$ |
| Immigrants | 16 | $0.3 \%$ |
| Public Officials | 14 | $0.3 \%$ |
| Business people | 4 | $0.1 \%$ |

### 3.4.2. Perpetrators of Witnessed Crimes

Majority of the respondents reported that perpetrators of witnessed crimes were the youths ( $91.1 \%$ ) and males ( $39.3 \%$ ). Also it emerged that females (10.3\%), children (3.3\%) and the elderly $(2.0 \%)$ are perpetrators of crimes. These findings on perpetrators of perceived crimes are comparable to perpetrators of witnessed crimes save in their percentages. The results are as shown in Table 3.11.

Table 3.11: Perpetrators of Witnessed Crime

| Perpetrators of witnessed Crimes | Frequency | Percent of cases |
| :--- | ---: | :--- |
| Youths | 4017 |  |
| Males | 1732 |  |
| Females | 456 |  |
| Children | 145 | $39.1 \%$ |
| Elderly | 88 | $10.3 \%$ |


| Perpetrators of witnessed Crimes | Frequency |  | Percent of cases |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| Spouse/Partner | 67 |  | $1.5 \%$ |
| Boda Boda riders | 14 |  | $0.3 \%$ |
| Public Officials | 14 |  | $0.3 \%$ |
| Immigrants | 8 |  | $0.2 \%$ |
| Business people | 2 |  | $0.0 \%$ |

### 3.4.3. Perpetrators of Experienced Crime(s)

The findings of the study on the perpetrators of experienced crimes discovered that similar to what the respondents perceived, the youths ( $87.3 \%$ ) and most males $(35.0 \%$ ) perpetrated crimes. It also came out that females ( $6.1 \%$ ), children (1.9\%) and spouses or partners (1.3\%) in relationships are involved in commission or omission of crimes.

This study has found out that a high percentage of the leading perpetrators of perceived, witnessed and experienced crimes are mostly committed by the youths, males, females and interestingly, children as indicated in Table 3.12.

Table 3.12: Perpetrators of Experienced Crime

| Perpetrators of experienced Crimes | Frequency | Percent of cases |
| :--- | ---: | :--- |
| Youths | 2291 | $87.3 \%$ |
| Males | 918 | $35.0 \%$ |
| Females | 161 | $6.1 \%$ |
| Children | 51 | $1.9 \%$ |
| Spouse/Partner | 35 | $1.3 \%$ |
| Elderly | 32 | $1.2 \%$ |
| Immigrants | 10 | $0.4 \%$ |
| Public Officials | 8 | $0.3 \%$ |
| Business people | 4 | $0.2 \%$ |
| Boda Boda riders | 4 | $0.2 \%$ |
| Criminal gang | 1 | $0.0 \%$ |

The participants in the focus group discussion agreed with the findings of the sample respondents on the perpetrators of crimes. In general, they observed that male gender and youths are the ones who mainly engage in criminal activities. As shown in Table 3.13, females and those elderly in the society have been linked to acts of crimes commission or omission.

Table 3.13: Perpetrators of Crimes as highlighted by Focus Group Discussants

| Perpetrators of crimes | Main perpetrators of Crimes in the Counties (marked by a tick) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { 㶨 } \\ & \text { E } \\ & \sum_{i}^{\pi} \end{aligned}$ |  |  | $\frac{\vec{E}}{\underline{a}}$ |  |  |  |  |  |  | $\frac{\text { 亲 }}{\frac{1}{5}}$ |
| Male | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | 11 |
| Youth | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | 11 |
| Female |  |  | $\checkmark$ |  | $\checkmark$ |  | $\sqrt{ }$ |  |  | $\sqrt{ }$ |  | 5 |
| Elderly |  |  | $\checkmark$ |  | $\checkmark$ |  |  | $\sqrt{ }$ |  | $\checkmark$ | $\sqrt{ }$ | 5 |
| Spouse/Partner | $\sqrt{ }$ |  |  | $\checkmark$ | $\sqrt{ }$ |  | $\checkmark$ |  |  |  | $\sqrt{ }$ | 5 |
| Children |  |  | $\sqrt{ }$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | 5 |

On the other hand, a key informant had this to say on perpetrators of rimes in general:-
An Assistant County Commissioner in Murang'a County had this to say:
"....the main perpetrators of crimes in this area mainly; male people and youths especially in gated communities."

A Probation Officer in Isiolo County reported that:
> "... Commenting on perpetrators of cases of human trafficking- these whole process is also organized and it is like powerful people are being involved. At times they are locked in houses, the challenge of getting to the bottom of the illegal process is communication barrier by trafficked which make it impossible to link the perpetrators, in addition on drug trafficking especially through Merti Sub County, the youthful male boda boda riders are peddlers. These drugs are in school where children including the girls access them and use..."

Comparatively, the National Police Service statistics for the year 2020 and 2021 showed that the youth are mainly involved in crimes, such as consumption of locally brewed illicit brews, illegal gaming and betting among other crimes. Further the statistics showed that, the age between 20-24 years form part of age group that is involved in such offences.

### 3.4.4 Names of Criminal gangs, Crime Hotspot areas and Criminal Activities

This study sought to find out the names of crime gangs, crime hotspot areas and criminal activities in respective counties and sub-counties of data collection. Appendix II provides the list of names of the criminal gangs and crime hotspot areas (see appendices).

On crime(s) and/or activities that criminal gangs were involved in, it emerged that the leading crimes were house breakings (31.6\%), petty theft ( $26.5 \%$ ), stealing from persons ( $22.3 \%$ ), and robbery with violence ( $21.5 \%$ ) and robbery ( $21.1 \%$ ). The results of the findings are shown in Table 3.14.

Table 3.14: The Crimes and Criminal Activities of Criminal Gangs

| The Crimes/activities of criminal gangs | Frequency | Percent of cases |
| :--- | ---: | ---: |
| House Breaking | 1129 | $31.6 \%$ |
| General Stealing | 946 | $26.5 \%$ |
| Stealing from person | 795 | $22.3 \%$ |
| Usage of illicit drugs | 781 | $21.9 \%$ |
| Robbery with violence | 769 | $21.5 \%$ |
| Robbery | 755 | $21.1 \%$ |
| Theft of stock (including cattle rustling) | 506 | $14.2 \%$ |
| Burglary | 500 | $14.0 \%$ |
| Assault | 301 | $8.4 \%$ |
| Murder | 296 | $8.3 \%$ |
| Theft of farm produce | 164 | $4.6 \%$ |
| Stealing from a building | 97 | $2.7 \%$ |
| Theft of Motorcycle | 92 | $2.6 \%$ |
| Trafficking of narcotic drugs | 93 | $2.6 \%$ |
| Rape | 66 | $1.8 \%$ |
| Creating Disturbance | 59 | $1.7 \%$ |
| Possession of drugs | 39 | $1.1 \%$ |
| Manslaughter | 33 | $0.9 \%$ |
| Defilement | 29 | $0.8 \%$ |
| Handling of drugs | 26 | $0.7 \%$ |
| Obtaining by False Pretense | 17 | $0.5 \%$ |
| Theft from M/V | 13 | $0.4 \%$ |
| Malicious Damage of property | 16 | $0.4 \%$ |
| Bag snatching | 15 | $0.4 \%$ |
| Threat to Kill | 14 | $0.4 \%$ |
| Abduction | 9 | $0.3 \%$ |
|  |  |  |
|  |  |  |


| The Crimes/activities of criminal gangs | Frequency | Percent of cases |
| :---: | :---: | :---: |
| Affray | 12 | 0.3\% |
| Carjacking | 9 | 0.3\% |
| Robbery of M/V | 12 | 0.3\% |
| Stealing by Tenants/lodgers | 10 | 0.3\% |
| Fraud /Forgery offences | 9 | 0.3\% |
| Cyber crimes | 11 | 0.3\% |
| Loitering with immoral intent | 9 | 0.3\% |
| Acts of terrorism | 12 | 0.3\% |
| Extortion | 9 | 0.3\% |
| Causing Death by Dangerous Driving | 7 | 0.2\% |
| Un-natural offences | 6 | 0.2\% |
| Stealing by Agents | 6 | 0.2\% |
| Theft of M/V(Motor vehicle) | 7 | 0.2\% |
| Theft of M/V parts | 7 | 0.2\% |
| Illegal gambling | 7 | 0.2\% |
| Forceful detainer | 8 | 0.2\% |
| Infanticide | 5 | 0.1\% |
| Procuring Abortion | 5 | 0.1\% |
| Concealing Birth | 2 | 0.1\% |
| Incest | 2 | 0.1\% |
| Bestiality | 5 | 0.1\% |
| Indecent Assault | 5 | 0.1\% |
| Bigamy | 5 | 0.1\% |
| Handling stolen property | 5 | 0.1\% |
| Cultivating of the drugs | 3 | 0.1\% |
| Arson | 3 | 0.1\% |
| Currency Forgery | 2 | 0.1\% |
| Soliciting bribe | 2 | 0.1\% |
| Attempted murder | 2 | 0.1\% |
| Illegal possession of fire arms | 4 | 0.1\% |
| Stalking | 3 | 0.1\% |
| Human trafficking | 2 | 0.1\% |
| Offences of female genital mutilation | 2 | 0.1\% |
| Stealing by Directors | 1 | 0.0\% |
| Taking vehicle without lawful authority | 1 | 0.0\% |
| Driving under influence of Alcohol | 1 | 0.0\% |
| False Accounting | 1 | 0.0\% |
| Accepting Free gifts | 1 | 0.0\% |
| Demanding by False Pretense | 1 | 0.0\% |
| Soliciting bribe | 1 | 0.0\% |


| The Crimes/activities of criminal gangs | Frequency |  |
| :--- | :--- | :--- |
| Percent of cases |  |  |
| Accepting Bribe |  |  |
| Grievous Bodily Harm | 1 | $0.0 \%$ |
| Illegal removal of forest produce |  | $0.0 \%$ |
| Attempted rape |  | $0.0 \%$ |
| Being in the country illegally | 1 | $0.0 \%$ |

### 3.4.5. Reasons for Criminal gang/groups' existence

This study revealed the major reasons for existence of criminal gang/groups was due to vulnerability caused by unemployment (62.3\%). It also emerged that most of the respondents were of the opinion that availability and usage of illicit drugs /brews (39.1\%) and idleness $(35.6 \%)$ led to existence of criminal gangs. Also, poverty ( $18.2 \%$ ) and negative peer pressure $(8.4 \%)$ formed part of the reasons. These and others findings are indicated in Table 3.15.

Table 3.15: Reasons for Criminal Groups Existence

| Reasons for criminal groups existence | Frequency | Percent of cases |
| :--- | ---: | ---: |
| Vulnerability occasioned by <br> unemployment | 2215 | $62.3 \%$ |
| Availability and use of illicit drugs/brews | 1390 | $39.1 \%$ |
| Idleness | 1266 | $35.6 \%$ |
| Poverty | 647 | $18.2 \%$ |
| Negative peer pressure | 299 | $8.4 \%$ |
| Poor parenting skills/dysfunctional <br> families | 246 | $6.9 \%$ |
| Illiteracy | 199 | $5.6 \%$ |
| Truancy | 196 | $5.5 \%$ |
| High cost of living/tough economic times | 190 | $5.3 \%$ |
| No action taken by the criminal justice <br> agencies | 100 | $2.8 \%$ |
| Retrogressive cultural practices | 81 | $2.3 \%$ |
| Rogue police officers collaborating with <br> gangs | 59 | $1.7 \%$ |
| Greed | 61 | $1.7 \%$ |
| Inadequate security personnel and patrols <br> in the area | 51 | $1.4 \%$ |
| Corruption | 45 | $1.3 \%$ |


| Reasons for criminal groups existence | Frequency | Percent of cases |
| :--- | :--- | :--- |
| Leniency in administration of justice | 47 | $1.3 \%$ |
| Moral decay in the society | 33 | $0.9 \%$ |
| Sponsorship by politicians/political <br> patronage | 33 | $0.9 \%$ |
| Unequal distribution of <br> resources/opportunities | 31 | $0.9 \%$ |
| Political instigations | 31 | $0.9 \%$ |
| Easy access to illegal arms/ weapons | 28 | $0.8 \%$ |
| Ignorance | 25 | $0.7 \%$ |
| Delay in response to crime by the criminal <br> justice agencies | 17 | $0.5 \%$ |
| Existence of black market | 18 | $0.5 \%$ |
| Radicalization | 19 | $0.5 \%$ |
| Porous borders | 16 | $0.4 \%$ |
| Financial strain due to high population <br> within a household | 15 | $0.4 \%$ |
| Inadequate recreational facilities and <br> programs | 11 | $0.3 \%$ |
| Intentions to grab land | 9 | $0.3 \%$ |
| Inadequacy of rehabilitation centers | 6 | $0.2 \%$ |
| Inadequate civic education | 2 | $0.1 \%$ |
| Inadequacy in criminal justice process | 1 | $0.0 \%$ |

### 3.4.6. Recommendations for Addressing Existence of organized criminal gangs/groups

The respondents were asked to give their recommendations on how to address the existence of organized criminal gangs or groups within their locality. Majority (56.6\%) indicated that there is need to enhance economic empowerment programs for the vulnerable groups, strict enforcement of the law (18.8\%), strengthen the fight against illicit drugs and severe punishment of drug traffickers (14.2\%), regular police patrols (8.7\%) and enhanced access to civic education on crime prevention (8.4\%). These findings are indicated in Table 3.16.

Table 3.16: Recommendations for Addressing Organized Criminal Gangs/Groups

| Recommendations for addressing <br> organized criminal gangs/groups | Responses | Percent of cases |
| :--- | ---: | ---: |
| Enhance economic empowerment <br> programs for the vulnerable groups | 1965 | $56.6 \%$ |
| Strict enforcement of the law | 653 | $18.8 \%$ |


| Recommendations for addressing organized criminal gangs/groups | Responses | Percent of cases |
| :---: | :---: | :---: |
| Strengthen the fight against illicit drugs/severe punishment of drug traffickers | 493 | 14.2\% |
| Regular police patrols | 302 | 8.7\% |
| Enhance access to civic education on crime prevention | 290 | 8.4\% |
| Boost security personnel and patrols in crime prone areas | 283 | 8.2\% |
| Initiate programs to keep young people busy like sports and tree planting activities | 127 | 3.7\% |
| Increase approved schools and rehabilitation for juvenile delinquency | 93 | 2.7\% |
| Instituting disciplinary measures against rogue officers | 85 | 2.4\% |
| Enhanced collaboration between various stakeholders | 76 | 2.2\% |
| Intensifying the fight against corruption | 58 | 1.7\% |
| Putting measures to address truancy in schools | 54 | 1.6\% |
| Emphasis on social studies and family values | 53 | 1.5\% |
| Establishment of more police post | 40 | 1.2\% |
| Increase resource allocations | 41 | 1.2\% |
| Enhance Nyumba Kumi/ Community Policing initiatives | 40 | 1.2\% |
| Enhance investigations | 34 | 1.0\% |
| Disarmament initiatives/blocking easy access to illegal arms | 31 | 0.9\% |
| Enhance installation of street lighting | 29 | 0.8\% |
| Reduce illiteracy levels | 16 | 0.5\% |
| Campaign against retrogressive cultural beliefs | 18 | 0.5\% |
| Tighten border security | 13 | 0.4\% |
| Religious interventions | 9 | 0.3\% |
| Regulation of Motorcycle/Boda Boda operations | 9 | 0.3\% |
| Review of Prevention of Organized Crimes Act- No. 6 of 2010 | 6 | 0.2\% |
| Timely reporting of occurrence for action | 7 | 0.2\% |


| Recommendations for addressing <br> organized criminal gangs/groups | Responses | Percent of cases |
| :--- | :--- | :--- |
| taking |  |  |
| Equal distribution of resources | 8 | $0.2 \%$ |
| Use of technology to curb organized <br> crimes | 5 | $0.1 \%$ |

### 3.4.7. Responses on the Time when Crimes are Mostly Committed

The study sought to find out the time when crimes are mostly committed and most of the respondents stated that there is no specific time ( $32.0 \%$ ), early night between 7.00 pm $11.59 \mathrm{pm}(22.6 \%)$, late night between 1.00am-3.59am (20.9\%), midnight between 12.00am$12.59 \mathrm{am}(9.6 \%)$ and early morning between 4.00am-5.59am (5.1\%). These findings are as shown in Table 3.17.

Table 3.17: Responses on the Time when Crimes are Mostly Committed

| Time when crimes are mostly committed | Frequency | Valid Percent |
| :--- | ---: | ---: |
| No specific time | 1633 | 32.0 |
| Early night (7pm- 11:59pm | 1154 | 22.6 |
| Late night (1am-3:59am) | 1068 | 20.9 |
| Mid night (12:00am -12:59 am) | 490 | 9.6 |
| Early morning (4 am-5:59am) | 262 | 5.1 |
| Evening (4pm-6:59pm) | 178 | 3.5 |
| Afternoon (1pm-3:59pm) | 138 | 2.7 |
| Morning (6am to 11:59 am) | 104 | 2.0 |
| Noon (12pm: 12:59pm) | 74 | 1.5 |

### 3.4.8. Responses on when crimes are mostly committed during the days of the week

The respondents were asked which days of the week that crime mostly occurs as shown in Table 3.18. Majority said that there was no specific day ( $51.8 \%$ ), others said Saturdays ( $16.2 \%$ ), Sundays ( $9.5 \%$ ), Fridays ( $8.4 \%$ ) and Wednesdays (3.3\%).

Table 3.18: Responses on when crimes are mostly committed during the days of the week

| Responses on when crimes are <br> mostly committed during the <br> days of the week | Frequency | Valid Percent |
| :--- | ---: | ---: |
| No specific day |  |  |
| Saturday | 2601 |  |
| Sunday | 816 | 51.8 |
| Friday | 477 | 16.2 |
| Wednesday | 424 | 9.5 |
| Weekends | 168 | 8.4 |
| Monday | 142 | 3.3 |
| Weekdays | 99 | 2.8 |
| Thursday | 103 | 2.0 |
| Tuesday | 87 | 2.0 |

3.4.9. Responses on when crimes are mostly committed during the months of the year The respondents were asked on when crimes are mostly committed during the months of the year. The findings as shown in Table 3.19 were that; most of the respondents said month of December ( $48.1 \%$ ), however, ( $34.7 \%$ ) of the respondents said there was no specific month for crime commission. Others (5.5\%), $(2.3 \%)$ and ( $2.1 \%$ ).had a feeling that in the month of November, August, October and September respectively crimes do occur.

Table 3.19: Responses of when crimes are mostly committed during the months of the year

| Responses of when crimes are mostly committed <br> during the months of the year | Frequency | Valid Percent |
| :--- | ---: | ---: |
| December |  |  |
| No specific month | 2426 | 48.1 |
| November | 1749 | 34.7 |
| August | 276 | 5.5 |
| October | 115 | 2.3 |
| September | 118 | 2.3 |
| January | 105 | 2.1 |
| April | 78 | 1.5 |
| June | 44 | 0.9 |
| July | 44 | 0.9 |

Responses of when crimes are mostly committed Frequency $\quad$ Valid Percent during the months of the year

| May | 19 | 0.4 |
| :--- | ---: | ---: |
| February | 15 | 0.3 |
| March | 12 | 0.2 |

### 3.4.10. Responses of Season when crimes are mostly committed in the year

The findings in Table 3.20 shows that the responses of season when crimes ae mostly committed in the year were; rainy season (36.4\%), other respondents said there was no specific season (31.5\%) for committing crime, dry season (24.0\%) and festive season (7.4\%) was the least period of commission of crimes.

Table 3.20: Responses of Season when crimes are mostly committed in the year

| Responses of Season when crimes <br> are mostly committed in the year | Frequency | Valid Percent |
| :--- | ---: | ---: |
| Rainy | 1823 | 36.4 |
| No specific season | 1577 | 31.5 |
| Dry | 1203 | 24.0 |
| Festive seasons | 372 | 7.4 |

### 3.4.11 Responses on Weapons used in Criminal Activities

The respondents were asked to identify weapons that used in commission of crimes by perpetrators. The findings were criminal use; knives and swords (101.7\%), pangas and machetes ( $86.3 \%$ ), metal rods, iron bars and crowbars ( $67.5 \%$ ), rungus or clubs ( $29.1 \%$ ), guns and rifles ( $21.7 \%$ ) in their criminal activities. These findings are as indicated in Table 3.21 .

Table 3.21: Responses of Weapons used in Criminal activities

| Responses of Weapons used in Criminal <br> activities | Responses | Percent of cases |
| :--- | ---: | ---: |
| Knives and swords | 4920 | $101.7 \%$ |
| Pangas and machetes | 4176 | $86.3 \%$ |
| Metal rods, iron bars \& crowbars | 3268 | $67.5 \%$ |
| Rungus /clubs | 1408 | $29.1 \%$ |
| Guns and rifles | 1050 | $21.7 \%$ |


| Responses of Weapons used in Criminal <br> activities | Responses | Percent of cases |
| :--- | ---: | ---: |
| Other crude weapons | 838 | $17.3 \%$ |
| Hammers and mallets | 614 | $12.7 \%$ |
| Axes | 321 | $6.6 \%$ |
| Canes and sticks | 241 | $5.0 \%$ |
| Master Keys | 135 | $2.8 \%$ |
| Bows and arrows | 111 | $2.3 \%$ |
| Stones | 86 | $1.8 \%$ |
| Metal cutters scissors | 72 | $1.5 \%$ |
| Pliers | 51 | $1.1 \%$ |
| Ropes/Wires | 10 | $0.2 \%$ |
| Intoxicating sprays | 8 | $0.2 \%$ |
| Teasers (Electrocuting torches) | 7 | $0.1 \%$ |
| Car-jacks | 1 | $0.0 \%$ |

### 3.5. Factors Contributing to Crimes Causation

Respondents were asked what are the underlying factors they felt were contributing to crime occurrence. From the responses, a significant majority identified vulnerability occasioned by unemployment (81.0\%), availability of alcohol, illicit drugs and substance abuse (69.9\%), idleness ( $63.5 \%$ ), and vulnerability occasioned by poverty ( $52.6 \%$ ). Other notable factors highlighted were; weak law enforcement (32.6\%) and youth predisposition/peer pressure factors (32.5\%). The detailed findings are presented in Table 3.22.

## Table 3.22: Factors Contributing to Crimes Causation

| Factors Contributing to Crimes Causation | Frequency | Percent of <br> Cases |
| :--- | ---: | ---: |
| Vulnerability occasioned by unemployment | 4138 | $81.0 \%$ |
| Availability of alcohol, illicit drugs and substance abuse | 3573 | $69.9 \%$ |
| Idleness | 3242 | $63.5 \%$ |
| Poverty | 2689 | $52.6 \%$ |
| Weak law enforcement | 1667 | $32.6 \%$ |
| Youth predisposition/peer pressure factors | 1662 | 1138 |
| Corruption in the criminal justice system | 1031 | $32.5 \%$ |
| Illiteracy | 1028 | $22.3 \%$ |
| Physical environmental factors facilitating crime victimization <br> e.g. absence of street lighting and farm plantation |  | $20.2 \%$ |
| Gender vulnerability | 863 |  |


| Factors Contributing to Crimes Causation | Frequency | Percent of <br> Cases |
| :--- | ---: | ---: |
| Vulnerability of some groups (orphans, widows, elderly | 655 | $12.8 \%$ |
| Ignorance of the law | 655 | $12.8 \%$ |
| Lack of social support systems | 560 | $11.0 \%$ |
| Locals community members harboring criminals | 483 | $9.5 \%$ |
| Lack of integrity /professionalism | 362 | $7.1 \%$ |
| Unresolved Land and boundary-related dispute | 223 | $4.4 \%$ |
| Retrogressive cultural practices (including religious beliefs and | 207 | $4.1 \%$ |
| practices) |  |  |
| Poor parenting | 165 |  |
| Negative ethnicity | 134 | $3.2 \%$ |
| Porous borders | 133 | $2.6 \%$ |
| Lack of integrity /professionalism | 133 | $2.6 \%$ |
| Business rivalry | 121 | $2.6 \%$ |
| Psychological disorder | 115 | $2.4 \%$ |
| Proliferation of illicit arms and weapons | 112 | $2.3 \%$ |
| Political incitement and/or competition | 82 | $2.2 \%$ |
| Truancy/School drop out | 80 |  |
| Truancy/School drop out | 31 |  |
| Greed | 33 | $1.6 \%$ |
| Existence of black market | 15 | $0.6 \%$ |
| Moral decay | 14 | $0.6 \%$ |
| Time, patterns and routine | 3 | $0.3 \%$ |
| Relationship issues | 2 | $0.3 \%$ |
| Infidelity | 2 | $0.1 \%$ |
| Unregulated gambling activities | 2 | $0.0 \%$ |
|  |  | $0.0 \%$ |
|  | $0.0 \%$ |  |
|  |  |  |

In concurrence with the findings on factors that causes crimes in the society by the sample respondents highlighted above, the Focus Group Discussions (FGDs) conducted in 11 counties also showed that vulnerability occasioned by poverty, vulnerability occasioned by unemployment, availability of alcohol, illicit drugs and substance abuse in all counties in Kenya are the leading factors to disposition of crimes as shown in Table 3.23.

Table 3．23：Factors Contributing to Crimes Causation as highlighted by Focus Group Discussants

| Factor contributing crimes | Factors contributing to Crimes in the Counties（marked by a tick） |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\bar{D}}{\underset{Z}{\overparen{Z}}}$ |  |  |  | $\begin{aligned} & \text { चै } \\ & \text { Eun } \end{aligned}$ |  | $\begin{aligned} & \text { 光 } \\ & \text { 品 } \\ & \text { Z } \end{aligned}$ |  |  | $\begin{aligned} & \tilde{\mathscr{W}} \\ & \text { た } \\ & \tilde{Z} \\ & \dot{\Sigma} \end{aligned}$ | $\begin{aligned} & \text { "̄ } \\ & \text { OU } \\ & \text { Z } \end{aligned}$ |  |
| Vulnerability occasioned Poverty | $\checkmark$ | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 11 |
| Vulnerability occasioned unemployment | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 11 |
| Availability of alcohol，illicit drugs and substance abuse | $\sqrt{ }$ | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\checkmark$ | $\sqrt{ }$ | $\checkmark$ | 11 |
| Idleness | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | 7 |
| Youth predisposition／peer pressure factors | $\sqrt{ }$ | $\checkmark$ |  |  | $\checkmark$ |  | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | 7 |
| Physical environmental factors facilitating crime victimization e．g． absence of street lighting |  | $\checkmark$ |  | $\sqrt{ }$ |  | $\checkmark$ | $\sqrt{ }$ |  |  | $\sqrt{ }$ |  | 5 |
| Poor parenting | $\checkmark$ |  | $\checkmark$ |  | $\sqrt{ }$ |  | $\checkmark$ | $\sqrt{ }$ |  |  |  | 5 |
| Relationship issues |  |  | $\checkmark$ |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ | 3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

On the other hand，a key informant interviewed in Narok County on factors contributing to crimes had this to say：－：
＂．．This locality we have traditional cultural practices that infringe on children leading to defilement and early marriages，also men in the household are bread winners and when not able to provide as a man，you they are forced to go and look for food；some go stealing．（National Government Administration Officer）

An officer from Department of Children in Embu County observed that：－

- "In my opinion, in this locality factors contributing to crime(s) include: high poverty levels, ignorance of the law, youth idleness and need for money not worked for by the youths, unemployment amongst the youth, substance abuse amongst the youth, prevalence of narcotics and high prevalence of illicit brews.."

Additionally, a senior police officer in Tharaka Nithi County noted that:-
"...in this locality, the main causes of crime in this locality include high poverty levels, there is also high number of unemployed youths in the locality and drugs and substance abuse, issue of land succession dispute and grazing conflicts in lowlands parts of this county...."

### 3.6. Responses of the Consequences of Crimes

The study respondents were asked to establish the consequences of crimes within their locality. From the results as shown in Table 3.24, the major consequences cited were; loss of property ( $84.3 \%$ ), mistrust and fear ( $58.8 \%$ ), and slow economic development ( $52.2 \%$ ). Also, others said crimes leads to death (40.2\%) and disability due to injuries at (37.4\%).

Table 3.24: Responses on the Consequences of Crimes

| Consequences of Crimes | Frequency | Percent of Cases |
| :--- | ---: | ---: |
| Loss of property | 4289 | $84.3 \%$ |
| Disability due to injuries | 1901 | $37.4 \%$ |
| Family breakups | 578 | $11.4 \%$ |
| Loss of employment/loss of income | 1897 | $37.3 \%$ |
| Imprisonment | 907 | $17.8 \%$ |
| Death | 2044 | $40.2 \%$ |
| Mistrust/fear | 2991 | $58.8 \%$ |
| Increase in poverty level | 1886 | $37.1 \%$ |
| Slow economic development | 2653 | $52.2 \%$ |
| Psychological distress | 1626 | $32.0 \%$ |
| Increase in school drop-outs | 882 | $17.3 \%$ |
| Displacement of people and investors | 748 | $14.7 \%$ |
| Unwanted pregnancies | 448 | $8.8 \%$ |
| Drug addiction due to readily available illegal drugs | 1526 | $30.0 \%$ |
| Increase in STIs including (including HIV\AIDS | 379 | $7.5 \%$ |
| High levels of illiteracy | 281 | $5.5 \%$ |
| Emotional distress | 1153 | $22.7 \%$ |
| Leads to Dysfunctional families | 494 | $9.7 \%$ |


| Consequences of Crimes | Frequency | Percent of Cases |
| :--- | ---: | ---: |
| Damage of property | 24 | $.5 \%$ |
| Health Complications | 18 | $.4 \%$ |
| Rivalry | 12 | $.2 \%$ |
| Decreased tourism | 3 | $.1 \%$ |
| Stigmatization | 4 | $.1 \%$ |

In consonance with the above findings, a number of these consequences were highlighted by the focus group discussants and are presented in order of prevalence as follows: loss property, loss of lives, injuries and disability, family breakups, imprisonment and loss of employment and income among others. These results are shown in Table 3.25 including other consequences.

Table 3.25: Consequences of Crimes as highlighted by Focus Group Discussants

| Consequences of crimes | Con | sequ | ence | of | rime | in the | Cou | nties | mar | d by | tick) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\square}{5}$ |  |  |  | $\begin{aligned} & \frac{E}{E} \\ & \text { E } \end{aligned}$ |  |  | $\begin{aligned} & \underline{E n} \\ & =0 \end{aligned}$ |  |  |  |  |
| Loss of property | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | 9 |
| Loss of lives | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | 8 |
| Injuries and disability | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | 8 |
| Family breakups |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | 7 |
| Imprisonment | $\checkmark$ | $\checkmark$ |  |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | 7 |
| Loss of employment/loss of income | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | 7 |
| Mistrust/fear |  |  | $\sqrt{ }$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | 6 |
| Increase in poverty level | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | 6 |
| Slow economic development | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ |  | 5 |
| Psychological distress | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | 5 |
| Increase in school dropouts |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  |  | $\checkmark$ | $\checkmark$ |  | 5 |
| Displacement of people and investors | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ |  |  | $\checkmark$ |  | 5 |
| Decreased tourism |  |  |  |  |  |  | $\checkmark$ | $\checkmark \sqrt{ } \sqrt{ }$ |  | $\checkmark$ | $\checkmark$ | 5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

The above averments were corroborated by a senior National Government Administration official in West Pokot County who pointed out that:
".. This part of country has been greatly affected by banditry that has seen people lose their livestock and property, there is actual loss of lives, and it affects the economy of the county where no business and school going children are affected. This country spends too much on security operations in this areas. A number of schools closed down and families have been displaced...."

Furthermore, a senior official from the Probation and Aftercare Department in Trans Nzoia observed the following:
".....criminal activities has led to loss of lives, destruction of property, physical injuries, keep off investors in this county hence crippled development, teenage pregnancy and school dropouts and upsurge of sexually transmitted infections (STIS) and HIV/AIDS $\qquad$ ."

### 3.7 Existing Interventions as Crime Prevention Measures

The results of study findings on the crime prevention measures that exists indicated that a majority identified nyumba Kumi and/or community policing ( $77.2 \%$ ), in addition, others mentioned; regular police patrols (44.6\%); timely reporting (36.8\%); Arrest, prosecution \& sentencing of the offender (36.5). More detailed findings are captured in Table 3.26.

## Table 3.26: Existing Interventions as Crime prevention Measures

| Existing Intervention as Crime Prevention <br> Measures | Frequency | Percent of Cases |
| :--- | ---: | ---: |
| Nyumba Kumi and/or Community Policing | 3882 | $77.2 \%$ |
| Regular police patrols | 2240 | $44.6 \%$ |
| Timely reporting | 1849 | $36.8 \%$ |
| Arrest, prosecute \& sentencing of the <br> offender | 1834 | $36.5 \%$ |
| Street lighting | 1791 | $35.6 \%$ |
| Regular security meetings with community | 1282 | $25.5 \%$ |
| Presence of physical protection (including <br> perimeter walls, fence, locks, guards) | 1005 | $20.0 \%$ |


| Existing Intervention as Crime Prevention Measures | Frequency | Percent of Cases |
| :---: | :---: | :---: |
| Reconciliation | 846 | 16.8\% |
| Private security guards | 690 | 13.7\% |
| Civic education on crime | 674 | 13.4\% |
| Rehabilitation of offenders | 481 | 9.6\% |
| Establishment of more police stations /patrol bases | 445 | 8.9\% |
| Deployment of more security personnel | 419 | 8.3\% |
| Child protection | 262 | 5.2\% |
| Implementation of police reforms | 254 | 5.1\% |
| Economic empowerment of youths \& vulnerable groups | 217 | 4.3\% |
| Use of technology such as CCTV cameras | 209 | 4.2\% |
| Campaign against retrogressive cultural practices and beliefs | 166 | 3.3\% |
| Disarmament of illegal firearms | 99 | 2.0\% |
| The campaign against tribalism and nepotism | 93 | 1.9\% |
| Change of response strategy; time, routine and pattern | 83 | 1.7\% |
| Provision of medical services | 58 | 1.2\% |
| Collaboration amongst the stakeholders | 15 | 0.3\% |
| Availability of psychosocial support | 10 | 0.2\% |
| Provision of hotline numbers | 7 | 0.1\% |
| Vetting of employees | 1 | 0.0\% |
| Alternative Dispute Resolution mechanisms | 2 | 0.0\% |
| Swift incidence response | 2 | 0.0\% |

This study also sought to engage key stakeholders in focus group discussions to establish the existing interventions on crimes and offences in Kenya in the order of prevalence. As highlighted by the FGD discussants the findings were: Nyumba Kumi and/or Community Policing (mentioned in all 11 counties); Arrest, prosecute \& sentencing of the offender (mentioned in all 11 counties); and regular police patrols and establishing more patrol bases (mentioned in 10 counties) are the existing interventions by duty bearer agencies to curb crimes in their areas of responsibilities. These findings are captured in Table 3.27.

Table 3.27: Existing Interventions as Crime prevention Measures as highlighted by Focus Group Discussants

| Existing Interventions as Crime |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| prevention Measures |  |  |  |  |  |  |  |  |  |  |  |  |  |

The results of above analysis of focus group discussion are concurred by the sentiments from an officer from National Police Service in Kiambu County who noted that:
"...we have managed to control crime levels through public barazas to sensitize community on effects of crimes such as drug abuse and illicit brews. However, this has not had a meaningful impact because locals do not share timely report of perpetrators....,

Corroboratively, another senior police officer from Isiolo County had this to note in respect to existing interventions:
" ...we have Non-Governmental Organizations Operating in the area who are championing community interest, mostly they deal with radicalization which cut across as culture and religion but right now it's not happening.-The intervention from religious leaders has also made an impact in Isiolo County.-Both Christians and Muslims leaders sit and preach against crimes and the unity between the groups....."

From the above findings, a number of measures exists in the country to curb crimes of different nature. However, looking at a comparative analysis of crimes recorded at police station which is still going up, these measures are either inadequate or need to be enhanced.

### 3.7.1 Level of Satisfaction with Existing Interventions of Crime Prevention Measures

The respondents were asked to indicate the level of satisfaction with the duty bearer agencies in regard to crime prevention measures. From the results of the respondents, $63.1 \%$ were satisfied with National Government Administration Officers while (29.4\%) were not satisfied, $31.8 \%$ where satisfied with National Police Service while $63.8 \%$ were not satisfied. Also $30.1 \%$ of the respondents were satisfied with Office of the Director of Public Prosecution while $9.2 \%$ were not satisfied, $46.5 \%$ were satisfied with Judiciary (Law Courts) while $21.1 \%$ were not satisfied. In addition, $52.3 \%$ of the respondents were satisfied with Kenya Prisons Service while $6.5 \%$ were not satisfied, $44.6 \%$ were satisfied with Probation and Aftercare Service while $5.1 \%$ were not satisfied, also, $41.6 \%$ of the respondents were satisfied with County Government while $24.8 \%$ were not satisfied. For Kenya Forest Service, $25.4 \%$ were satisfied with their work while $4.6 \%$ were not satisfied.

Further, $24.5 \%$ of the respondents were satisfied with the work Kenya Wildlife Service inline of their mandate and crime prevention measures while $5.6 \%$ not satisfied, $28.1 \%$ were satisfied with National Intelligence Service while $4.4 \%$ were not satisfied, $48.0 \%$ were satisfied with Health Institutions while $26.8 \%$ were not satisfied. The findings also showed that $19.0 \%$ of the respondents were satisfied with Government Chemist while $3.6 \%$ were not satisfied, $12.5 \%$ were satisfied with Witness Protection Agency while $6.8 \%$ were not satisfied. Also, $21.6 \%$ of the respondents were satisfied with Independent Policing Oversight Authority while $8.1 \%$ were not satisfied, $28.8 \%$ were satisfied with Kenya National Commission on Human Rights while $4.7 \%$ were not satisfied.

Additionally, $20.4 \%$ of the respondents were satisfied with Victims Protection Board while $4.8 \%$ were not satisfied, $76.1 \%$ were satisfied with Local Community while $7.6 \%$ were not satisfied, $60.2 \%$ were satisfied with Civil society (Faith-based and N.G.O.'s, F.B.Os and CBOS) while $2.9 \%$ were not satisfied and $35.6 \%$ of the respondents were satisfied with Children Department while $1.7 \%$ were not satisfied. These findings are presented in Table 3.28.

Table 3.28: Level of Satisfaction with Existing Interventions of Crime Prevention Measures

| Respondents Level of satisfaction with the with Duty Bearer Agencies in regard to Crime Prevention Measures |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Level of satisfaction | Frequency | Valid Percent |
| National Government Administration Officers | Satisfied | 3166 | 63.1 |
|  | Not satisfied | 1473 | 29.4 |
|  | Not sure | 375 | 7.5 |
|  | Total | 5015 | 100.0 |
| National Police Service | Satisfied | 1598 | 31.8 |
|  | Not satisfied | 3201 | 63.8 |
|  | Not sure | 221 | 4.4 |
|  | Total | 5020 | 100.0 |
| Office of the Director of Public Prosecution | Satisfied | 1298 | 30.1 |
|  | Not satisfied | 399 | 9.2 |
|  | Not sure | 2618 | 60.7 |
|  | Total | 4315 | 100.0 |
| Judiciary (Law Courts) | Satisfied | 2062 | 46.5 |
|  | Not satisfied | 934 | 21.1 |
|  | Not sure | 1435 | 32.4 |
|  | Total | 4431 | 100.0 |
| Kenya Prisons Service | Satisfied | 2255 | 52.3 |


| Respondents Level of satisfaction with the with Duty Bearer Agencies in regard to Crime Prevention Measures |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Level of satisfaction | Frequency | Valid Percent |
|  | Not satisfied | 278 | 6.5 |
|  | Not sure | 1776 | 41.2 |
|  | Total | 4309 | 100.0 |
| Probation and Aftercare Service | Satisfied | 1920 | 44.6 |
|  | Not satisfied | 221 | 5.1 |
|  | Not sure | 2166 | 50.3 |
|  | Total | 4307 | 100.0 |
| County Government | Satisfied | 1846 | 41.6 |
|  | Not satisfied | 1102 | 24.8 |
|  | Not sure | 1489 | 33.6 |
|  | Total | 4438 | 100.0 |
| Kenya Forest Service | Satisfied | 1085 | 25.4 |
|  | Not satisfied | 199 | 4.6 |
|  | Not sure | 2996 | 70.0 |
|  | Total | 4280 | 100.0 |
| Kenya Wildlife Service | Satisfied | 1045 | 24.5 |
|  | Not satisfied | 239 | 5.6 |
|  | Not sure | 2990 | 70.0 |
|  | Total | 4274 | 100.0 |
| National Intelligence Service | Satisfied | 1201 | 28.1 |
|  | Not satisfied | 186 | 4.4 |
|  | Not sure | 2884 | 67.5 |
|  | Total | 4271 | 100.0 |
| Health Institutions | Satisfied | 2145 | 48.0 |
|  | Not Satisfied | 1199 | 26.8 |
|  | Not sure | 1121 | 25.1 |
|  | Total | 4468 | 100.0 |
| Government Chemist | Satisfied | 801 | 19.0 |
|  | Not Satisfied | 152 | 3.6 |
|  | Not sure | 3253 | 77.3 |
|  | Total | 4206 | 100.0 |
| Witness Protection Agency | Satisfied | 523 | 12.5 |
|  | Not satisfied | 282 | 6.8 |
|  | Not sure | 3365 | 80.7 |
|  | Total | 4170 | 100.0 |
| Independent Policing Oversight Authority | Satisfied | 925 | 21.6 |
|  | Not satisfied | 345 | 8.1 |
|  | Not sure | 3011 | 70.3 |
|  | Total | 4283 | 100.0 |
| Kenya National Commission on Human Rights | Satisfied | 1237 | 28.8 |
|  | Not satisfied | 200 | 4.7 |
|  | Not sure | 2851 | 66.5 |
|  | Total | 4288 | 100.0 |


| Respondents Level of satisfaction with the with Duty Bearer Agencies in regard to Crime Prevention Measures |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Level of satisfaction | Frequency | Valid Percent |
| Victims Protection Board | Satisfied | 877 | 20.4 |
|  | Not satisfied | 207 | 4.8 |
|  | Not sure | 3215 | 74.8 |
|  | Total | 4299 | 100.0 |
| Local Community | Satisfied | 3574 | 76.1 |
|  | Not satisfied | 358 | 7.6 |
|  | Not sure | 765 | 16.3 |
|  | Total | 4698 | 100.0 |
| Civil society (Faith-based and N.G.O.'s, F.B.Os and CBOS) | Satisfied | 2440 | 60.2 |
|  | Not satisfied | 118 | 2.9 |
|  | Not sure | 1493 | 36.9 |
|  | Total | 4051 | 100.0 |
| Children Department | Satisfied | 21 | 35.6 |
|  | Not satisfied | 1 | 1.7 |
|  | Not sure | 37 | 62.7 |
|  | Total | 59 | 100.0 |

### 3.7.2 Reasons of not satisfied in Regards to Crime Prevention Measures by Duty Bearer Institutions

The respondents were asked the reasons for not satisfied in regard to crime prevention measures by duty bearer Institutions. From the findings, $37.2 \%$ of the respondents said they were not satisfied with National Government Administration Officers because they demand bribes while $36.2 \%$ said they don't perform their functions as expected, $56.7 \%$ of the respondents said National Police Service are corrupt they while $12.5 \%$ said they lack professionalism in their actions, $46.6 \%$ of the respondents said Office of the Director of Public Prosecution officials are corrupt while $12.6 \%$ said they are unprofessional, $48.2 \%$ of the respondents said at the Judiciary (Law Courts)- court judgement can be influence by corruption while $26.8 \%$ said there is delays in some cases to deliver justice.

Additionally, $39.6 \%$ of the respondent said Kenya Prisons Service reformation strategies for convicts are ineffective while $19.3 \%$ said there is inadequate rehabilitation programs, $33.6 \%$ of the respondents said Probation and Aftercare Service reintegration strategies for exconvicts are ineffective while $24.5 \%$ said some of the officers are corrupt, for County Government(s) $36.0 \%$ of the respondents said that there is poor service delivery and
unprofessionalism while $24.7 \%$ said that there is increased insecurity due to the failure to maintain the streetlights hence exposing victims to attack during the night.

In regards, to Kenya Forest Service, $48.0 \%$ of the respondents said there is corruption (they would also mean collusion with illegal loggers) while $29.3 \%$ said they are non-responsive to combat forest crimes, $72.0 \%$ of the respondents said Kenya Wildlife Service are slow in responding to human wildlife conflicts while $8.9 \%$ said they are corrupt (collude with poachers). Responses on the why not satisfied with National Intelligence Service, 27.5\% said some the officials are inactive in their operations while $21.4 \%$ said they are not satisfied due to limited accessibility of the agency. On reasons on why not satisfied with Health Institutions, $40.8 \%$ said that there is insufficient medication for victims and $20.7 \%$ said there is poor provision of health care to assist victims, /unprofessionalism whereas Government Chemist, $45.9 \%$ said limited accessibility while $17.8 \%$ said costly services.

Further, $67.6 \%$ of the respondents said that they are not satisfied with Witness Protection Agency because of the inadequate witness protection program while $24.0 \%$ said there is limited accessibility for the agency, also, $25.9 \%$ of the respondents said that they are not satisfied with Independent Policing Oversight Authority because of limited accessibility while $24.4 \%$ said that they conduct their work with lack of professionalism, $45.4 \%$ of respondents said Kenya National Commission on Human Rights don't perform their mandate as expected while $28.9 \%$ said their accessibility is limited. The respondents were also asked why they are not satisfied with Victims Protection Board, the results were that $66.1 \%$ said there is inadequate victim protection programs and $24.5 \%$ said it is due to limited accessibility, $48.7 \%$ said Local Community lack of unity in fighting against crime while $30.8 \%$ said some locals do conceal criminals. On why they are not satisfied with Civil society (Faith-based and N.G.O.'s, F.B.Os and CBOS), $33.3 \%$ of the respondents said they don't perform their mandate as expected while $30.1 \%$ said it is due to poor leadership/unprofessionalism. All of these findings are illustrated in the Table 3.29.

Table 3.29: Reasons of not satisfied in regard to crime prevention measures by Duty Bearer Institutions

| Agencies | Reasons for Not Satisfied | N | Percent of Cases |
| :---: | :---: | :---: | :---: |
| National Government Administration Officers | Demand for bribes | 472 | 37.2\% |
|  | Chief Barraza's are no longer done | 115 | 9.1\% |
|  | Delay to respond to incidences | 155 | 12.2\% |
|  | Don't perform their functions as expected | 460 | 36.2\% |
|  | Biasness/ discrimination | 129 | 10.2\% |
| National Police Service | Lack of professionalism in their actions | 396 | 12.5\% |
|  | They are corrupt | 1802 | 56.7\% |
|  | Inadequate police patrols | 224 | 7.0\% |
|  | They don't take action on complaints | 372 | 11.7\% |
|  | Limited accessibility | 43 | 1.4\% |
|  | Delay to respond to issues | 379 | 11.9\% |
|  | Poor investigations | 107 | 3.4\% |
|  | Inadequate resources | 35 | 1.1\% |
|  | Poor relationship with the community | 13 | .4\% |
| Office of the Director of Public Prosecution | They are skewed in prosecution | 33 | 8.5\% |
|  | In some cases they don't cooperate with police | 33 | 8.5\% |
|  | Some officials are corrupt | 181 | 46.6\% |
|  | Unprofessionalism | 49 | 12.6\% |
|  | Limited accessibility | 33 | 8.5\% |
|  | Political influence | 12 | 3.1\% |
|  | Discrimination/biasness | 14 | 3.6\% |
|  | Delays | 38 | 9.8\% |
| Judiciary (Law Courts) | Delays in some case to deliver justice | 263 | 26.8\% |
|  | Judgement can be influence by corruption | 474 | 48.2\% |
|  | Expensive judicial process | 36 | 3.7\% |
|  | Discrimination/biasness/favourism | 131 | 13.3\% |
|  | Unprofessionalism | 31 | 3.2\% |
|  | Inadequate skills | 4 | .4\% |
|  | Limited accessibility | 36 | 3.7\% |
|  | Inadequacy in criminal justice process | 27 | 2.7\% |
|  | Inadequate resources | 1 | .1\% |
|  | Political interference | 2 | .2\% |
| Kenya Prisons Service | Inadequate rehabilitation programs | 53 | 19.3\% |
|  | Reformation strategies for convicts are ineffective | 109 | 39.6\% |
|  | Some officials are corrupt | 41 | 14.9\% |
|  | Discrimination | 15 | 5.5\% |
|  | Limited accessibility | 14 | 5.1\% |
|  | Inadequate resources | 16 | 5.8\% |
|  | Poor service delivery | 29 | 10.5\% |


| Agencies | Reasons for Not Satisfied | N | Percent of Cases |
| :---: | :---: | :---: | :---: |
| Probation and Aftercare Service | Inadequate measures to supervise offenders | 44 | 20.0\% |
|  | Some officials are corrupt | 54 | 24.5\% |
|  | Reintegration strategies for ex-convicts are ineffective | 74 | 33.6\% |
|  | Limited accessibility | 25 | 11.4\% |
|  | Unprofessionalism | 24 | 10.9\% |
|  | Inhumane treatment | 3 | 1.4\% |
| County Government | There is a lot of nepotism/ Discrimination/Biasness | 91 | 8.3\% |
|  | Some officers are corrupt | 150 | 13.6\% |
|  | Poor management of resources that would assist victims | 81 | 7.4\% |
|  | Failure to maintain the streetlights hence exposing victims to attack during the night | 272 | 24.7\% |
|  | Poor service delivery to victims/unprofessionalism | 396 | 36.0\% |
|  | Unequal distribution of resources | 52 | 4.7\% |
|  | Political influence | 29 | 2.6\% |
|  | Limited accessibility | 39 | 3.5\% |
| Kenya Forest Service | There is corruption \# ( They would also mean collusion with ) | 95 | 48.0\% |
|  | Non responsive/No action taken | 58 | 29.3\% |
|  | Limited accessibility | 20 | 10.1\% |
|  | Don't perform their mandate as expected | 12 | 6.1\% |
|  | Inadequate resources | 13 | 6.6\% |
| Kenya Wildlife Service | They are slow in responding to wildlife human conflicts | 170 | 72.0\% |
|  | They are corrupt (Collude with poachers)\# | 21 | 8.9\% |
|  | Limited accessibility | 20 | 8.5\% |
|  | Inadequate compensation | 26 | 11.0\% |
| National Intelligence Service | Their impact in crime prevention is minimal | 25 | 13.7\% |
|  | Fail to share prompt information with other agencies | 26 | 14.3\% |
|  | Limited accessibility | 39 | 21.4\% |
|  | In active | 50 | 27.5\% |
|  | Political influence and deception | 36 | 19.8\% |
|  | Don't perform their mandate as expected | 6 | 3.3\% |
| Health Institutions | Too slow in emergency response services | 104 | 8.6\% |
|  | Poor provision of health care to assist victims/unprofessionalism | 250 | 20.7\% |
|  | Insufficient medication for victims | 492 | 40.8\% |
|  | Limited accessibility | 87 | 7.2\% |
|  | In adequate resources | 121 | 10.0\% |
|  | Corruption | 52 | 4.3\% |
|  | Costly services | 119 | 9.9\% |


| Agencies | Reasons for Not Satisfied | N | Percent of Cases |
| :---: | :---: | :---: | :---: |
|  | Discrimination | 16 | 1.3\% |
| Government Chemist | Limited accessibility | 67 | 45.9\% |
|  | Costly services | 26 | 17.8\% |
|  | Poor handling of evidence | 25 | 17.1\% |
|  | Some officials are corrupt | 17 | 11.6\% |
|  | Delays | 12 | 8.2\% |
| Witness Protection Agency | In adequate witness protection program | 186 | 67.6\% |
|  | Limited accessibility | 66 | 24.0\% |
|  | Some officials are corrupt | 20 | 7.3\% |
|  | Unprofessionalism | 4 | 1.5\% |
| Independent Policing Oversight Authority | Some officials are corrupt | 74 | 21.5\% |
|  | Unprofessionalism | 84 | 24.4\% |
|  | Limited accessibility | 89 | 25.9\% |
|  | Poor investigation | 28 | 8.1\% |
|  | No action taken | 49 | 14.2\% |
|  | Discrimination/biasness | 12 | 3.5\% |
|  | Interference from external forces | 11 | 3.2\% |
|  | Delays | 4 | 1.2\% |
| Kenya National Commission on Human Rights | Limited accessibility | 56 | 28.9\% |
|  | Some officials are corrupt | 30 | 15.5\% |
|  | They don't perform their mandate as expected | 88 | 45.4\% |
|  | Discrimination | 9 | 4.6\% |
|  | Unprofessionalism | 11 | 5.7\% |
|  | Delays | 3 | 1.5\% |
| Victims Protection Board | Limited accessibility | 47 | 24.5\% |
|  | Inadequate victim protection programs | 127 | 66.1\% |
|  | Inadequate compensation for victims | 13 | 6.8\% |
|  | Unprofessionalism | 8 | 4.2\% |
| Local Community | Some locals harbouring criminals | 108 | 30.8\% |
|  | Lack of unity in fighting against crime | 171 | 48.7\% |
|  | Don't share information | 43 | 12.3\% |
|  | Corruption | 11 | 3.1\% |
|  | Discrimination | 22 | 6.3\% |
| Civil society (Faithbased and N.G.O.'s, F.B.Os and CBOS) | Limited accessibility | 23 | 18.7\% |
|  | Corruption | 14 | 11.4\% |
|  | Poor leadership/unprofessionalism | 37 | 30.1\% |
|  | They don't perform their mandate as expected | 41 | 33.3\% |
|  | Discrimination | 11 | 8.9\% |

### 3.8 Recommendations

Respondents were asked to give their own recommendations on addressing crime. The majority focused on economic empowerment to vulnerable members of society ( $69.5 \%$ ). Also, others cited strengthening community policing and nyumba kumi initiative (48.5\%), regular police patrols $(48.0 \%)$ and deployment of more security officers in crime-prone areas (37.6\%). In additions, some respondents had opinion that installation of street lighting ( $36.7 \%$ ) reduce insecurity and fighting corruption (36.0\%) in security sector has a great impact to provision of security. These recommendations are captured in Table 3.30.

Table 3.30: Proposed Recommendations

| Proposed Recommendations | Frequency | Percent of <br> Cases |
| :--- | ---: | ---: |
| Economic empowerment programs to vulnerable members of <br> society | 3531 | $69.5 \%$ |
| Strengthen Community Policing and Nyumba Kumi <br> initiatives | 2462 | $48.5 \%$ |
| Regular police patrols | 2437 | $48.0 \%$ |
| Deployment of more security officers in crime-prone areas | 1910 | $37.6 \%$ |
| Street lighting | 1866 | $36.7 \%$ |
| Corruption prevention initiatives | 1827 | $36.0 \%$ |
| Regular civic education programs and sensitization | 1694 | $33.4 \%$ |
| Punishment and rehabilitation of offenders | 1441 | $28.4 \%$ |
| Collaboration between security stakeholders | 1293 | $25.5 \%$ |
| Establishment of recreation facilities and activities to engage <br> the youth | 1140 | $22.4 \%$ |
| Periodical transfer of Police Officers | 867 | 681 |
| Fast-tracking of administration of criminal justice | 616 | $17.1 \%$ |
| Establishment of prison facilities and police posts | $13.4 \%$ |  |
| Improvement of transport and communication infrastructure | 595 | $12.1 \%$ |
| Emphasis on social studies and family values | 544 | $11.7 \%$ |
| Embrace community-based dispute resolution mechanisms | 529 | $10.7 \%$ |
| Timely reporting | 462 | $10.4 \%$ |
| Adequate resource allocation to criminal justice agencies | 457 | $9.1 \%$ |
| Use of technology to fight/curb crime | 369 | $9.0 \%$ |
| Equal distribution of public resources | 366 | $7.3 \%$ |
| Enhance Witness protection programs | 326 | $6.2 \%$ |
|  |  | $6.4 \%$ |


| Proposed Recommendations | Frequency | Percent of <br> Cases |
| :--- | ---: | ---: |
| Religious advocacy against crime | 296 | $5.8 \%$ |
| Enhanced fight against drugs and substance abuse | 287 | $5.7 \%$ |
| Disarmament initiatives | 236 | $4.6 \%$ |
| Campaigns against negative ethnicity | 150 | $3.0 \%$ |
| Granting amnesty to reformed offenders | 128 | $2.5 \%$ |
| Strict law enforcement | 89 | $1.8 \%$ |
| Establish a remuneration scheme for village elders | 72 | $1.4 \%$ |
| Enhance professionalism in CJS | 57 | $1.1 \%$ |
| Improve health care services | 25 | $0.5 \%$ |
| Increase remuneration of criminal justice officers | 25 | $0.5 \%$ |
| Regulation of motorcycle/bodaboda operations | 14 | $0.3 \%$ |
| Increase food security initiatives | 16 | $0.3 \%$ |
| Enhanced investigations | 16 | $0.3 \%$ |
| Fight against GBV | 8 | $0.2 \%$ |
| Enhance county government services delivery | 9 | $0.2 \%$ |
| Frequent research on crime | 9 | $0.2 \%$ |
| Issuing title deeds | 10 | $0.2 \%$ |
| Putting electric fence to reduce human wildlife conflicts | 5 | $0.1 \%$ |
| Regulation of time for school operations | 3 | $0.1 \%$ |

## CHAPTER FOUR: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Introduction

The National Crime Mapping Survey is designed to give a comparative assessment of nonreported crimes verse crime reported in police station and areas that crimes are most prevalent (as hotspot) for purpose of resource planning and action. This study specific objectives were to: examine crime prevalence and trends; establish the perpetrators of crimes; examine the factors contributing to crime; establish the perpetrators of crime; establish the consequences of crime and examine crime prevention measures and strategies in Kenya.

### 4.2 Summary of Key Findings

The key findings of this study have been summarized thematically according to the specific objectives of the study as follows:

### 4.21. Typology of Crime Prevalence and Trends

This study established that majority of the respondent's perceived usage of narcotic drug/ psychotropic substances ( $60.0 \%$ ) as the leading in crimes and offences in the country. This is followed by house breakings ( $56.2 \%$ ) and petty theft ( $50.1 \%$ ) as the most perceived crimes. Also, robbery with violence (38.6\%) and burglary (38.6\%) were reported by the most of the respondent as crimes committed within their areas.

As identified in the study, crimes that were mostly witnessed by the respondents were usage of illicit drugs (43.5\%), house breakings (30.1\%), petty theft ( $24.4 \%$ ), stealing from person ( $22.8 \%$ ), Theft of stock (including cattle rustling) which was at (20.7\%) and robbery with violence. Additionally, this study also sought to understand what the respondents felt as the most threatening crime in the last twelve months within their locality. The findings of the study indicated that robbery with violence ( $16.2 \%$ ), house breaking ( $15.4 \%$ ), usage of narcotic drug/ psychotropic substances (11.0\%), Theft of stock (including cattle rustling) ( $9.6 \%$ ) and burglary ( $8.7 \%$ ) as most threatening crimes in their locality

### 4.2.2 Respondents perception on the Perpetrators of crimes

The finding on perpetrators of perceived crimes were that majority of youths $(93.1 \%)$ and those who are males (50.8\%) are the prominent perpetrators of crimes. Some of the respondents said females ( $13.2 \%$ ), children ( $4.5 \%$ ) and the elderly ( $2.6 \%$ ) do perpetrate crimes and it is important to note that spouses or partners in relationships and boda boda riders are also perceived to commit crimes.

Additionally, majority of the respondents reported that perpetrators of witnessed crimes were the youths ( $91.1 \%$ ) and males (39.3\%). It also emerged that females (10.3\%), children (3.3\%) and the elderly $(2.0 \%)$ are perpetrators of crimes. On the other hand, findings of the study on the perpetrators of experienced crimes discovered that similar to what the respondents perceived and witnessed, the youths ( $87.3 \%$ ) and most males ( $35.0 \%$ ) perpetrated crimes. It also came out that females ( $6.1 \%$ ), children ( $1.9 \%$ ) and spouses or partners ( $1.3 \%$ ) in relationships are involved in commission or omission of crimes.

### 4.2.3 Factors Contributing to Crimes Causation

The study established that a significant majority of the respondents identified vulnerability occasioned by unemployment ( $81.0 \%$ ), availability of alcohol, illicit drugs and substance abuse ( $69.9 \%$ ), idleness ( $63.5 \%$ ), and vulnerability occasioned by poverty ( $52.6 \%$ ). Other notable factors highlighted were; weak law enforcement (32.6\%) and youth predisposition/peer pressure factors ( $32.5 \%$ ).

### 4.2.4 Respondents perception Consequences of Crimes

Based on the study findings, the major consequences cited were; loss of property ( $84.3 \%$ ), mistrust and fear ( $58.8 \%$ ), and slow economic development ( $52.2 \%$ ). Also, others said crimes leads to death (40.2\%) and disability due to injuries at (37.4\%).

### 4.2.5 Existing Interventions as Crime Prevention Measures

The results of study findings on the crime prevention measures that exists indicated that a majority identified Nyumba-Kumi and/or community policing (77.2\%), in addition, others mentioned; regular police patrols ( $44.6 \%$ ); timely reporting ( $36.8 \%$ ); Arrest, prosecution \& sentencing of the offender (36.5) as the measures in place to curb criminal activities.

### 4.3 Conclusion

This study main objective was to conduct an assessment of the crime situation and generate crime trends and prevalence in Kenya. It has emerged that crime prevalence is still high in the country through a comparative analysis of 2020/2021 and perception of members of public in 2022. The usage of drugs, alcohol and other substance abuse are the most prevalent crimes in Kenya hence predisposing youths to crime. This is the reason why youths and mostly male are the main perpetrators of crimes in Kenya. The study has also shown that vulnerability occasioned by unemployment, idleness and vulnerability occasioned by poverty contribute to crimes. Additionally, it came out that retrogressive cultural practice still leads to crimes such as female genital mutilations and domestic violence.

From the report members of public have also resulted to take law in their hands where law enforcement authorities are not approachable hence lynching criminal suspect which is not the due process of law. However, all respondents did agree that Nyumba- Kumi and/or community policing and intensified police surveillance through patrols supported by modern crime prevention strategies are the best approach to crime prevention.

### 4.4 Recommendations

### 4.1.1 Policy Recommendations

Arising from the finding of this study, the following are proposed recommendations:-

1. There is need for establishment of economic empowerment programs to vulnerable members of society; the most prevalent factors to crime causation was vulnerability occasioned by unemployment, poverty and use of drugs and other substance abuse among the youths. . To address this, the Ministry of Labour and Social Protections, Ministry of Youth Affairs, Sports and the Arts, and National Authority for the Campaign against Drug Abuse (NACADA) roll out social protection welfare and intensify public education on effects of drugs and alcohol. Additionally, Ministry of Labour and Social Protections to enhance street children rehabilitation programs because most of them are being used in drugs trafficking's.
2. Strengthening community policing and Nyumba Kumi initiatives was the best approach to curbing crimes. Therefore, the Ministry of Interior and National Administration need to strengthen community policing across the country.
3. Intensified regular police patrols and deployment of more security officers in crimeprone areas and periodical transfer of Police Officers was recommended by members of public. To achieve this the command of National Police Service is required to review deployment of police officers in terms of priority basis, especially areas prone to bandits require more police officers. Urban areas and other guarding duties be handed over to private security and National Youth Service. Regular police rotation within a period of 3 years is recommended.
4. Collaboration between security stakeholders for efficient service delivery was a recommendation. Ministry of Interior and National Administration need to establish a structured operating procedures on how other Non-State actors including private security should supplement policing effort.
5. Establishment of a remuneration scheme for village elders. Most of the respondents said that their point of contact especially in the village is an areas manager. The Ministry of Ministry of Interior and National Administration should consider a remuneration scheme for areas managers
6. Improvement of transport and communication infrastructure and use of technology to fight/curb crime. The National Police Service through the Ministry of Information Communication \& Digital Economy and Ministry of Interior and National Administration to procure modern technology for the police to fight crimes. Also, police be supplied with modern vehicles that are protective to explosion and landmines

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## APPENDICES

## Appendix 1: Interview Schedule for Members of the Public



NATIONAL CRIME MAPPING /2022
Interview Schedule for Members of the Public
Name of County $\qquad$
Name of Sub- County $\qquad$
Name of Division $\qquad$
Name of Location $\qquad$
Name of Sub- Location $\qquad$
Name of Specific Area/Village $\qquad$
Date of Interview: $\qquad$
Start Time $\qquad$
$\qquad$

## INTRODUCTION

Hello, my name is $\qquad$
The National Crime Research Centre (NCRC) is conducting a study on National Crime Mapping in Kenya for the year 2020. The aims of this study are to: examine the prevalence and typologies of crimes by county; establish the factors contributing to crimes in the country; Identify the perpetrators of crimes in the country; examine the mode of operation, map and analyze crime hot spots across the country; establish the consequences in the country; identify and evaluate crime prevention strategies, and recommend crime reduction approaches in the country. You are, therefore, requested to participate in the exercise by providing relevant information on the subject. Your participation is critical in making this study a success and all information shared will be treated with high confidentiality.

## Thank you in advance

(Yes) Respondent Agree (No) Respondent does not agree

## Section A: Respondent's Background Information

1. Sex
2. Male
3. Female
4. Intersex
5. Age of Respondent in years.
6. $18-25$
7. 46-55
8. $26-34$
9. 56-65
10. $35-45$
11. $66+$
12. Marital Status:
13. Single/Never Married 4. Divorced
14. Married
15. Widowed
16. Separated
17. Highest Level of Education attained:
18. None
19. Primary
20. Secondary
21. Middle-level college
22. University
23. Adult Literacy
24. Other (Specify)
25. Religion:
26. Christian
27. Islam
28. Hindu
29. Other (Specify) $\qquad$
30. Main Occupation
31. Permanent employment - Private Sector
32. Permanent employment - Public Sector
33. Casual/temporary employment- Private Sector
34. Casual/temporary employment- Public Sector
35. Businessperson
36. Subsistence farming
37. Other (specify e.g. unemployed)
38. Length of stay in the locality (study site)
39. Below 1 year
40. 1-3 years
41. 4-6 years
42. 7-9 years
43. 10-12 years
44. 13 years and above

## Section B: Specific Information on Crime Patterns and Trends

8. (a) List the crimes perceived, experienced and witnessed in the locality and the most threatening one in the last 12 months.
$\left.\begin{array}{|r|l|l|l|l|l|}\hline & & & & & \\ \hline \text { 1. } & \text { Burglary and breakings } & & & & \\ \hline \text { 2. } & \text { Stealing }\end{array}\right)$

| 5. | Possession of narcotic drugs |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 6. | Assault Causing Actual Bodily Harm |  |  |  |  |
| 7. | Murder |  |  |  |  |
| 8. | Robbery |  |  |  |  |
| 9. | Rape |  |  |  |  |
| 10. | Robbery with Violence |  |  |  |  |
| 11. | Gender-Based Violence (including Domestic Violence) |  |  |  |  |
| 12. | Being Drunk and Disorderly |  |  |  |  |
| 13. | Defilement |  |  |  |  |
| 14. | Theft of Farm Produce |  |  |  |  |
| 15. | Child Abuse (including child neglect) |  |  |  |  |
| 16. | Others (specify) |  |  |  |  |

## Section C: Victims and Perpetrators of Crime

9. (a) Please indicate the main victims of crimes in the locality in the last 12 months.

|  |  |  |  |
| :--- | :--- | :--- | :--- |
| 1. | Women |  |  |
| 2. | Children |  |  |
| 3. | Men |  |  |
| 4. | Youths |  |  |
| $\mathbf{5 .}$ | Elderly persons |  |  |
| $\mathbf{6 .}$ | Others (Specify) |  |  |

(b) Generally, indicate the main victims of crime in this locality with regard to the following socio-demographic characteristics. (Please tick only one option in each of the six categories).
(i) Gender:

1) Male
2) Female
(ii) Age category: 1) Children below $18 y r s$ years and above
3) Youth aged 18-34yrs
4) Adults aged 35
(iii) Education status: 1) Without education 2) Primary education 3) Secondary education 4) College education and above
(iv) Marital status: 1) Married 2) Single
(v) Social-economic status: 1) High
(vi) Strangeness in a locality: 1) Strangers
5) Separated 4) Widowed 5) Widower
6) Average
7) Low
(c) Main perpetrators of perceived, experienced and witnessed crimes in the locality in the last 12 months.

|  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- |
| $\mathbf{1 .}$ | Male |  |  |  |
| $\mathbf{2 .}$ | Female |  |  |  |
| $\mathbf{3 .}$ | Male and female |  |  |  |
| $\mathbf{4 .}$ | Youth |  |  |  |
| $\mathbf{5 .}$ | Elderly |  |  |  |
| $\mathbf{\text { 6. }}$ | Spouse/Partner |  |  |  |
| $\mathbf{7 .}$ | Children |  |  |  |
| $\mathbf{8 .}$ | Others Specify |  |  |  |

## Section D: Factors Contributing to Crimes

10. In your opinion, what factors have contributed to the prevalence of crimes in this locality? $\qquad$
$\qquad$
$\qquad$
$\qquad$

## Section E: Modus Operandi of Crime

11. When are crimes mostly committed in this locality?

| 1. Time of the day | 1) No specific time <br> 2. Early night ( $7 \mathrm{pm}-11: 59 \mathrm{pm}$ ) <br> 3) Mid night (12:00am -12:59 am) <br> 4) Late night ( $1 \mathrm{am}-3: 59 \mathrm{am}$ ) <br> 5) Early morning (4 am-5:59am) <br> 6) Morning ( 6 am to $11: 59 \mathrm{am}$ ) <br> 7) Noon (12pm:12:59pm) <br> 8) Afternoon ( $1 \mathrm{pm}-3: 59 \mathrm{pm}$ ) <br> 9) Evening (4pm-6:59pm) |
| :---: | :---: |
| 2. Day of the week (Tick one only) | 1. Monday 2. Tuesday 3. Wednesday 4. Thursday 5. Friday 6. Saturday 7. Sunday |
| 3. The month of the year (Tick one only) | 1. January 2. February 3. March 4. April 5. May. 6. June 7. July 8. August 9. September 10. October 11. November 12. December |
| 4. Season of the year (Tick one only) | $\begin{array}{lll}\text { 1) Rainy } & \text { 2) Dry } & \text { 3) Others }\end{array}$ |

12. In your opinion, what weapon(s) is used by the perpetrator(s) to commit crimes in this locality?
13. Pangas and machetes
14. Knives and swords
15. Guns and riffles
16. Metal rods, iron bars \& crowbar
17. Rungu and clubs
18. Hammers and mallet
19. Other crude weapons
20. Cane and stick
21. Bows and arrows
22. Axes
23. Others (specify)
24. How are crimes in this locality committed?
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
25. Based on your knowledge and or experience, what are the crime hotspot areas in this locality? $\qquad$
$\qquad$
$\qquad$
$\qquad$

## Section F: Consequences of Crimes

15. In your opinion, what are the consequences of crime in this locality? $\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

## Section G: Crime Prevention Measures

16. (a) Are the crimes committed in this locality reported?
17. Yes
18. No
19. I don't know
(b) If yes in Q16 (a) above, to whom are they reported?
20. National Police Service (Police Stations)
```
2. National Government Administration Officers (RC, CC, ACC, Chiefs)
3. Nyumba Kumi and/or Community Policing officials
4. Hospital
5. Religious institution
6. County Government
7. Beach management unit
8. Ethics \& Anti-Corruption Commission
9. Kenya Wildlife Service
10. Judiciary (Courts)
11. Others (specify)
```

(c) If No in Q16 (a) above, why are the crimes not reported?
$\qquad$
$\qquad$
$\qquad$
17. (a) Please list the crime prevention measures in this locality.

|  |  |  |
| :--- | :--- | :--- |
| 1. | Nyumba Kumi and/or Community Policing |  |
| 2. | Regular police patrols |  |
| 3. | Street lighting |  |
| 4. | Regular security meetings with community |  |
| 5. | Deployment of more security personnel |  |
| 6. | Establishment of more police stations /patrol bases |  |
| 7. | Arrest, prosecute \& sentencing of the offender |  |
| 8. | Civic education on crime |  |
| 9. | Private security guards |  |
| 10. | Timely reporting |  |
| 11. | Divine interventions/use of religion to fight crime |  |
| 12. | Provide physical protection (including perimeter walls, fence, locks, <br> guards) |  |
| 13. | Use of technology such as CCTV cameras |  |

14. Economic empowerment of youths \& vulnerable groups
15. Police reforms
16. Rehabilitation of offenders
17. Reconciliation
18. The campaign against tribalism and nepotism
19. Disarmament of illegal firearms
20. Witness protection
21. Campaign against retrogressive cultural practices and beliefs
22. Child protection
(b) Please indicate your level of satisfaction with the listed organizations concerning their crime prevention measures in line with their work/mandate in this locality.

| Organization | Rating of your satisfaction <br> (Please tick your choice) |  | Explain your answer in case you <br> are not satisfied |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Satisfied <br> (1) | Unsatisfied <br> (2) | Not <br> sure <br> (3) |  |
| National Government <br> Administrative Offices <br> (including Nyumba <br> Kumi Initiative) |  |  |  |  |
| National Police Service |  |  |  |  |
| Office of the Director <br> of Public Prosecutions |  |  |  |  |
| Judiciary (Law Courts) |  |  |  |  |
| Kenya Prisons Service |  |  |  |  |
| Probation <br> Aftercare Service |  |  |  |  |
| County Governments |  |  |  |  |


| Kenya Forest Service |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Kenya Wildlife Service |  |  |  |  |
| National Intelligence <br> Service |  |  |  |  |
| Health Institution |  |  |  |  |
| Local Community |  |  |  |  |
| Civil Society <br> Organizations (FBO, <br> CBOs \& NGOs) |  |  |  |  |
| Other organizations <br> (Please specify) |  |  |  |  |

18. What measures have you or a close member of your family put in place to enhance personal safety
and security? $\qquad$
19. Please list the victim of crime support services that are currently available in this locality.

|  |  |
| :--- | :--- |
| 1. | Compensation |
| 2. | Guidance \& counselling of victims |
| 3. | Treatment of physically injured and/or <br> sick victims |
| 4. | Arresting of offenders |


| 5. | Prosecution of offenders |
| :--- | :--- |
| 6. | Victim/witness protection |
| 7. | Provision of treatment/medical services |
| 8. | Legal aid services |
| 9. | Investigation of crime |
| 10. | Tracking/recovery of stolen properties |
| 11. | Educating victims |
| 12. | Rescue Centre services |
| 13. | Arbitration of disputes |
| 14. | Availing hotline number for reporting |
| 15. | Provision of food |
| 16. | Restoration of property |
| 17. | Reconciliation |
| 18. | Proper reintegration of the victims into |
| 19. | Land survey \& titling |
| 20. | Others (specify) |
| 21. |  |

20. Please respond to the following with regard to Alternative Dispute Resolution Mechanisms (ADR).

| S/No. | a) What are the <br> Alternative Dispute <br> Resolution mechanisms <br> in this locality? | b) How satisfied are you with <br> the ADR mechanisms? | Briefly explain your <br> response if not satisfied |
| :--- | :--- | :--- | :--- | :--- |
|  | Satisfied | Unsatisfied |  |

21. What do you recommend to address crime(s) in this locality?

|  |  |  |
| :--- | :--- | :--- |
| 1. | Economic empowerment programmes to vulnerable members of society |  |
| $\mathbf{2}$ | Deployment of more security officers in crime-prone areas |  |
| 3. | Regular civic education programmes and sensitization |  |
| 4. | Granting amnesty to reformed offenders |  |
| 5. | Disarmament initiatives |  |
| 6. | Regular police patrols |  |
| 7. | Establishment of recreation facilities and activities to engage the youth |  |
| 8. | Strengthen Community Policing and Nyumba Kumi initiatives |  |
| 9. | Collaboration between security stakeholders |  |
| 10. | Corruption prevention initiatives |  |
| 11. | Adequate resource allocation to criminal justice agencies |  |
| 12. | Periodical transfer of Police Officers |  |
| 13. | Punishment and rehabilitation of offenders |  |
| 14. | Street lighting |  |
| 15. | Establishment of prison facilities and police posts |  |
| 16. | Emphasis on social studies and family values |  |
| 17 | Embrace community-based dispute resolution mechanisms |  |
| 18. | Improvement of transport and communication infrastructure |  |
| 19. | Use of technology to fight/curb crime |  |
| 20. | Equal distribution of public resources |  |
| 21. | Religious advocacy against crime |  |
| 22. | Fast-tracking of administration of criminal justice |  |
| 23. | Witness protection programmes |  |
| 24. | Campaigns against negative ethnicity |  |
| 25. | Timely reporting |  |
| 26. | Others (specify)............ |  |
|  |  |  |

Thank you for participating and stay safe.

| Appendix II: Crime Hotspot Areas and Names of Criminal gangs in Counties \& Sub-Counties |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | County | Sub-County | Crimes Hotspot areas | Names of Criminal Gangs |
| 1 | Mombasa | Changamwe | Port Reit , Santana ,Kona Soweto ,Bokole ,Bungoli ,Wayani ,Mtaa Wa Wajinya ,Popole ,Mwa Yosi ,Chaani ,Bagala ,Moroto ,Overland ,Mwangoka ,Mogongo, Kwa Mr Berry, KCB Agentin Wani - Kwa Mwaniki, Pipeline,Mbokoli, Parents Hope, Lilongwe Slums, Msufuni Nuru, BBC, Kwa Mr Berry ,Kcb Agent ,Kwa Mwaniki ,Pipeline ,Mbokoli ,Parents Hope ,Lilongwe Slums Msufuni Nuru ,BBC | Mateja,Wajukuu <br> Nyanya,Spanish,Acapuluko,SukariY aWarembo,WakaliWao,Mateja,Waju KuuWa Nyanya ,Spanish ,Acapuluko ,Sukari Ya Warembo ,Wakali Wao,Alshabab |
|  |  | Kisauni | Kidarasani ,Kadzandani, Bakarani, Mshomoroni, Loma, Inner First Street From Bomu Hospital, Kwa Chafu, Bamburi, Kashana, Kiembeni, Magodoroni, Blue Bench, Toa Tugawe, Kwa Sonko, Sunlight, Vikwatani, Kongoni Leisure Ikhadisa, Kidogo Basi, Ziwa La Ngombe, Kadzonzo, Kasiweni, Samba Wawili, Stretch From Pasta To Bethsheba, Msafini, Cobra Grounds, Makumba ,Milango Saba ,SokoMjinga,Magogoni,Juda ,Mtopanga ,Maeneo ,Mwandoni ,Mlaleo ,Bilima ,Jitegemee ,Joy Junior ,Kajiweni ,Hope Secondary ,Kisauni ,Kwa Sango ,Bakarani ,Washanga, Mjambere ,Maziwa Matatu ,Maji Machafu ,Mdundo ,Kwa Video | Wakali Kwanza ,Mateja ,Wakali Wao,Wasafi ,Wategwa ,Wajukuu Wa Bibi,Gaza,ZozaZoza,Chafu,Cuba,Wa nagu ,Wategwa ,Alshabab |

Kongowea Market ,Around Matopeni ,Swahili Ina Wakali Wao,Wakali Kwanza
,Mosque ,Toa Tugawe,Zamzam ,Gharama ,Mtambe
,Utangei ,Kiembeni Kwa Bakari,Streets Of Hadija Pri
,Kisumu Ndogo ,Shauri Yako,Kidogo Basi ,Kandina ,Makaburini Ya Kiislamu.

| 2 | Kwale | Msambweni | Mwaroni ,Kenya Rural ,Ostrich ,Germane ,Darling Center ,Nuru ,Mwakidafi ,Blue Jay ,Forest Tukutane ,Maunga ,Kona Ya Msa , Bongwe,Polisi Ya Zamani ,Mwaroni ,Ukunda ,Diani Town ,Uwanja Wa Jogoo,Mvumoni ,Mwamambi ,Kagara ,Mwakama ,Pangwe ,Milaloni,Vingujini,Bomani ,Tumbe (Kmtc) ,Chepechepe ,Harmoni ,Shamu Blue Gel. | Mageta, Vijana Vya <br> Vipanga,Maunga, Wajuku Wa Bibi <br> ,Wakali WaKwanza,Alshabaab <br> Returnees, Wajukuu Wa <br> Babu,Alsbabab |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Kinango | Kinango Township ,Ndavaya ,Madzola ,Kibanda Ndogo ,Sururu,Kifyozo ,Vigurungani ,Tada ,Mbweka ,Maganyakolo ,Ngomeni , Waa Location ,Panga Bwani ,Kavaya. | Mageta ,Vijana Vya Vipanga ,Maunga,Wajuku Wa Bibi ,Wakali WaKwanza,Alshabaab Returnees , Wajukuu Wa Babu |


|  |  | Matungu |  | Kapedo ,Fibro ,Kizazi Cha Mtume ,Chafu ,Kirongo ,Kombani |
| :---: | :---: | :---: | :---: | :---: |
| 3 | Kilifi | Malindi | Kwa Famau ,Kwa Baya ,Shella Village ,Maweni Sea Breeze ,Kwa Famau ,Pentagon ,Majengo ,Kisumu Ndogo ,Zaragaza Area ,Shella Star ,Gaza ,Kwa Diva ,Timbo Taka ,Mijikenda ,Miyeya ,Fatpollar ,Team Parika ,Magongo ,Santafe, Sokomoko ,Latfrade. | Zaragoza, Wakali Wao ,Tembo ,Pachika, Final ,Team Chrome,Funja Fine ,Wakali Kwanza ,Gaza 36,Alshabab |
|  |  | Kilifi North | Kikambala Farm ,Trading Centre ,Bimturu ,Dispensary ,Mkoshoni ,Kiwanda Ni ,Kibaoni ,Kaya Mtaani ,Kibaoni Pri ,Mnarani ,Vumbini ,Kosovo. | Wakali Kwanza ,Kikambala ,Taifa Huru |
|  |  | Kilifi South | Mtomondoni, Kwa Goa ,Mpokomo ,Maweni ,Maweni ,Maeneo ,Leba ,Mikanjini, Kachabara,Mtepeni ,Chakara ,Majengo ,Barani ,Mwendo Wa Panya ,Fo Farm ,Majengo ,Mapya ,Ziwani ,Kwa Mwangu ,Mwatundu ,Makio ,Moroto ,Mponyo „Barani ,Beach Dume ,Kibaoni ,Kwa Robart ,Kakola ,Kwa Rama ,Morokoto ,Marembo ,Kasarani ,Misufuni , Mmtwapa Center ,Mti Pesa. | Wakali Kwanza, Kikambala, Taifa Huru,Mbira Boys, Home Boys |
| 4 | Tana River | Tana North | Adele ,Mwororo ,Samira ,Boji ,Bura ,Chumvi ,Madogo Stage ,Huzuni ,Mororo ,Malere ,Raga ,Bonch ,Kayole ,Hag Arsut | Kayole ,B-13 ,Dandora,Alsbabab |
|  |  | Tana Delta | Kurawa ,Oda ,Boroko Villa ,Hurara ,Kusangani ,Mwanza ,Delta ,Otole ,Ipao ,Samicha ,Ndarakwa . |  |


|  |  | Tana River | Laza Ya Kale, Laza ,Mwangaza, Kibuyu ,Hola Mission ,Chanani ,Mikindani ,Liberia . |  |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Lamu | Lamu West | Jua Kali ,Hongwe ,Lake Kenyatta ,Msefuni ,Bahanni ,Umoja ,Kilimani ,Kijichuni ,Kashmri ,Wioni ,Mararani Town ,Mkomani ,Kandari ,Langoni ,Basuri ,Gadeni ,Mapanys Kijijini ,Hoswe | Maziarani $\quad$ Must, $\quad$ Gudhacha ,Alshabab |
| 6 | Taita Taveta | Taveta | Matopeni ,Bura Ndogo ,Bura Ndogo A,B And C ,Bahati ,Maweni ,Bura Ndogo (Bieni ) ,Bustani ,Kambi Ya Matope | Wakaliwao, Benchi, Mangweni, 40 Brothers |
|  |  | Mwatate | All Area Of Singala ,World Vision -Kariombagi ,Mwatate ,Kwa Reli ,Majengo ,Pelelezi ,Kirogwe ,Mwatate ,Soko Ya Zamani | Wakaliwao, Benchi, Mangweni, 40 Brothers |
|  |  | Voi | Maweni, Sofia, Mwasemo, Opposite Chaos Bar, Birikani, Kasarani, Mwakingali, Runda, Kaloleni, Voi Market, Mwaranginyi, Makaburini, Tanzania, Embakasi, Bura, Ndogo, Tayeta Town | Wakaliwao, Benchi, Mangweni, 40 Brothers |
| 7 | Garissa | Dadaab | Madagazi, Dabader, Rata, Somalia-Kenya Boarder, Marothiley, Along Darfur-Daga Road, Refugee Camp, Block AI, Block B3, Wel Har, Fafi Area, Mathahbaqi, Durfur Road | Shifta, Al-Shabab |


|  |  | Garissa | Bull-Mzari, Aulyan Clan, Burburls, Umma Pry, Bulla Highway, Bula Punda, Kabure, Bulla-Burburis, BullHagar, Madina Airstrip, ADC Area, Marothiley, Clan Militia | Iskoris |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Modogashe | Modogashe, Benane, Janju, Kambi Samaki, Garba Tula, Sericho, Isiolo \& Garissa Border, Forest Area, Eldere, Barkuke, Bullo | Bonana, Boran Militia |
| 8 | Wajir | Wajir West | Water Point, Town Center | Borehole |
|  |  | Habaswein | Dabader, Kenya-Somali Border, Sarif Town, Shimbirey | Shifta, Dhobley Army,Alshabab |
|  |  | Wajir East | Soko Mjinga, Shopping Centre, Makarer, Football Pitch, Grifi Stage | Tuga, Iskoris |
| 9 | Mandera | Mandera North | Town Centre, Jabib, Along The Border, Badiya, Water Point, Kombiso, Kenya-Ethiopia Border | Saku, Rendile Bandits, Shifta |
|  |  | Mandera East | Bulla Arabia, High End Areas, Kenya-Somali Boarder, Along Highway | Shifta, Al-Shabab |
|  |  | Mandera Central | Qobo, Dabasiti, Korobo Shaman, Bulla Afya, Koroboshanan, Bulla Elhache, Dabasiti, Iresuki, Elram, Corners, Iresuki, Barkus, Inante | Shifta, Al-Shabab |
| 10 | Marsabit | Moyale | Ethiopia And Border, Kenyan Maili Yano, Soko Mjinga, Redcross, Ngolani, Lions, Kambi Sheikh, Matter Area |  |


| 11 | Isiolo | Garbatulla | Escort, Eldra, Manyatta, Boji, Uchana, Daresha, Water Points, Samaki, Dadach Bassa, Kambi | Shifta |
| :---: | :---: | :---: | :---: | :---: |
| 12 | Meru | Imeni-North | Shauri Yako, Gako Romone, Kooje, Kibira Ndovu, Mjini Near Mortuary, , Mikinduri, Majengo Meru Town, Near Meru National Library, Waterfalls, Full Gospel Church Area, Brother Hood, Makandara Junction, Museum Road, Mikinduri Highway, Kakoromone, Githembena, Kaithe Area, Marigiti Area, Gakoromone Market, Continental Road, Gitimbini, Kanthukune, Mwireni | Black Python, Commandos, |
|  |  | Imenti South | Mwai Area, Uguti, Mwirega, ,Arega, Kahuruni, Ogoti, Maraga, Nyambene, General Hospital Area, Ruruma, Kianda, Annex Area, Makiri Thaaele Area, Rwongone, Kilimantirii, Maili, Maua | Al-Shabaab, Mbogi, Kikusi, Siafu, Nyati |
|  |  | Igembe South | Mwai Area, Uguti, Mwirega, Marega, Kahuruni, Githugu Bridge, Kwa Mutai, Gakoromune, Mitungu, MCK Church, Ngonga, Gasero, Yuhuru School |  |
| 13 | Tharaka Nithi | Maara | Chogoria,Kamara,Kabeshe,Mugaani Village,Muriruni | Syria Boys, Funga File |
| 14 | Embu | Mbere North | Witwa | Mungiki,Commando, Mkuki, ,Fimbo, Usiku Sacco |
|  |  | Mbere South | $\begin{aligned} & \text { Muraru Market,Ngoori,Maramuni,Guthiru,Muraru } \\ & \text { Past,ATG Church } \end{aligned}$ | Mkuki, ,Fimbo, Usiku Sacco |


|  |  | Embu West | Kangaru,Gichege,Kangaru Market,Miandari area,Kevote,Kayole,Karoe,Leaders area | Mkuki, <br> , Usiku Sacco |
| :---: | :---: | :---: | :---: | :---: |
| 15 | Kitui | Mwingi Central | Mavoko,Mwingi Central,Vithathini,Tyaa Village,Kyanika,Mwingi Town,Seikur,Ukasi | B13,Ngethi No Undu, Kilunda |
|  |  | Mumoni | Katse <br> Area,Township,Kanzinwa,Barani,Muvinge,Tharake,Kam ukuyu,Konyu,Kama Kumbi,Katuka | CB12, Sokoni Youths |
|  |  | Kitui Central | Kiteta,Muvuti,Spotlight Club Kitui-KibweziRoad,KalunduMarket,Majengo,Isaangwa,Malathani,Ilima,Isovya,Kasarani Market,Majimbo Market,Syongeza,UnyaaVillage,Kilima Ngovu,KyamwuiChamwui,Around <br> House,Itulya,Kavoko,Makutano Market,Maiyuni,Tungu | CB13, Some Boda Boda Operators, Jeshi King'ore |
| 16 | Machakos | Athi River | $\begin{array}{lr}\text { Antheya,Plot } & \text { 10(Sabaki),Railway } \\ \text { Station,Kathangaita,Mlolongo } & \text { Phase 3,Taffom }\end{array}$ Area,Tunnel To Kitengela,Muguka Base,Pumzika Area,Sabaki To Mcahngani,Taffom Village Road,St Bahita Near Playground,Mlolongo Stage,Mlolongo Fly Over,Shiranga Swamp Katanyi,Rubis Petrol Station,Kasima Village,Mama Kantas,Mlolongo,St Zone,St Cooperatives Road,Katani Centre,Rim House,Madharao Street,Pumzika Jakis,Behind Family Bank,Mlolongo Petma Stage Fly Over,Kambi,Sabaki | Gaza,Mungiki,Mbogigenje, Alshabab, Gaza |


|  |  |  | Kwa Uwanja,3d Foot Bridge,Shalom Hotspot,Mavemba Area,Clubs,Brighton School Road |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Matungulu | Tala Market,Tala Nyamisuni Road,Kalandini Market,Katangi Market,Kyaume(Forest Road),Kisukioni Market,St Mary Pangala,Matugutha Market | Sikoni Youths |
|  |  | Yatta | Nursing,Kavingo,Masaani,Matuu Centre,Sinai Area,Tag Club,Kyua Market,Plateau,Rairaa Base,X Ray Road,Matuuu Stage,Milkingi,Matuu High,Mangetheni Base, | Funga File, |
| 17 | Makueni | Mukaa | Madharao Street, Malili Market, Oasis Area, Malili Area | CB 12, CB 13, Sokoni Youths |
|  |  | Mbooni East | Kipani Center, Kivaani Market, Linga Market, Kwa Karenga Market |  |
|  |  | Kibwezi | Kathyka Mkt, Kioni Mkt, Kwa Chai, Kisayani Mkt, Nzavoni,Syathani Ranch, Thangemarket, Kisivani Market, All Of Thange, | Alshabab |
| 18 | Nyandarua | Nyandarua West | Kayole, Ngomongo Center, Gikenge, Jericho, Swela |  |
|  |  | Nyandarua South | Kayole, Murungaru Town Mkt, Ndunyu Njeru, Bidii Engineer Center, Sende Moto,Kimuri, Micida, Murungaru, Kiangombe, Chuma Centre, Kangui Area | Mungiki |


| 19 | Nyeri | Kieni East | Ngerima, Majengo, Toll Road,Shamata, Kakima, Toll Station, Kahurura Forest, Ichuka, Toll Market, | Mungiki |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Nyeri Central | Witemere, Majengo,Kiawara Road, Kingongo Kwa Daraja,Kwa Miraa,Ruringu, Grogon, Gatamara, Blue Valley | Mungiki, Kamjeshi, Shymbo12, |
|  |  | Mathira East | Karindundu Shopping Centre, Karindondo,Kiawara, Railsways In Kariondondo | Mungiki,Kamjeshi |
| 20 | Kirinyaga | Mwea East | Samson, Kianjiru Town, Along Kianjiru River, Kamtithi, Muruli, Kutus, Kimbimbi,Kagumo,Ndaraca Ya Ngai, Stadium Road | Mungiki |
|  |  | Kirinyaga East | Wesame, Kianjiru Corner, Kianjiru Tea Factory |  |
|  |  | Kirinyaga Central | Kathungu, Teskom, Kaitheri, Stadium, Kerugoya Town, Kimuri Slum | Kamagira, Syria boys, Boda Boda Operators |
| 21 | Muranga | Muranga South | Jerusalem, Blooms Near Ploto, Ccf,Kabati Towards Thika, Guthoro, Twenty Five,Gachirini, Wempa Location,Ndunyo, Kona Mbaya,Del Monte, Kenya Mpya | Mungiki,Gaza, Usiku Sacco,Sokini Youths |
|  |  | Kangema | Marimara, Kitugu, Ngoini Shopping Center, Kanyenini Township, Gitugu,Kibutha, Gakita,Itwamwigi,Irima | Usiku Sacco |
|  |  | Gatanga | Gatanga Technical And Vocational Training, Kiahiga,Gathugu, Wachinga, Magras, Ndunyu ,Toroga, Mbakainichege,Macaniini, Gitiri, Kamunyaka, Kiaregi |  |

\begin{tabular}{|c|c|c|c|c|}
\hline 22 \& \multirow[t]{3}{*}{Kiambu} \& Juja 65

Thika West 66 \& | Molo,Witeithie,Kanyiri,Kibute,Car |
| :--- |
| Wash,Wembely,Kamitu,Sewage,Dam,Kamuguto,Muslim ,Nearstage,Catholic Church,Police Station,Kibuthe,Kwa Reli |
| Phase7, Phase 4,Kiganjo,Bat,Phase 10,Sisal Area,St Murumba,Rurii,Thika Medical,Kangoki,Market Place,Mangokeni Phase |
| 7,Gachagi,Landmark,Kiangombe,Around Peace Area Buildings,Mtca,Vuka Academy,Behind Chinense Company,Kairi,Liberty Church,Kiandiku,Kisii,Kangoki,Blue Nile Company,Athena Railwat Area,Burupika Street Kingajo,Polysack Company Area,Thika Revival,Corner Kwa Power,Mugoka,Club 300 Area, Sepping Stone Preparatory Area,Kplc,Pamoja Area. | \& Gaza,Quails,Obbs

Gaza,Getto fm <br>

\hline \& \& Githunguri 64 \& | Kanjuki,Garage | Area,Karinga, | Giko Primary |
| :--- | ---: | ---: | ---: |
| Area,Corner | House,Linesaba,Kahigani,Thuita,Kibia |  |
| Memorial | Church,Commercial | Bank,Assistant | \& Mungiki,Boda Boda Operators <br>

\hline \& \& Juja \& Sewage Area Near Foot Bridge,Duplomot Area, Main Stage,Islam Area,Railway Line Near Highway,Kivute,Thika Institute Of Business Studies, \& Jeshi Ya Mtaa, Ukutani, Kanairo, Gaza, Tamahuru, KamJeshi <br>
\hline
\end{tabular}

|  |  |  | Good Hope,Vineyard,Sewage,Gachorogo Carwash,High Point,Chacagi Area,Jkuat Gate B, Sunrise Street,Ndarugto,Gasman Area., Around Pcea Church, Mashinani, Justei, Main Stage, Kibute, Jkuat Gate D, Muslim, Telaviv, |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Thika West | MakongeniStage,Lostjoy,Phase <br> Umoja8,KivuliniEstate, | Gaza,Getto fm |
| 23 | Turkana | Turkana Central | Kanam Market And Nablon,Line,Along The Rivers,Kanam Market, Kanamkerer Location | Ngengora,SuperPower |
|  |  | Turkana West | Line West,Refugee Camp,Sale Yard,Legio,Kakuma Town |  |
|  |  | Loima | Nakten,Lokipetot,Logurum Area, Border Of Turkana/West Pokot | Bandits, Ajer |
| 24 | West Pokot | West Pokot | Safari Hotel, Chewoyey, Aramaget, Makutano, Benedera, Sakas, Chinese Corridor, Kisima | Curfew,Ngoroko |
|  |  | Central Pokot | Orwo, Along The Border, Cheptulel, Saramach, Marany, Nasalot | Bandits,Saba saba |
|  |  | North Pokot | Along The Border, Kapenguria |  |
|  |  | Kacheliba | Kapulio |  |


| 25 | Samburu | Samburu Central | Ranagau, Loikas, Lokurto, Shabaa, Poros, Grace Garde, Nkoroto, Yare, Shauri Yako, Changaa Estate, Cereal Board, | Morans, The 47 |
| :---: | :---: | :---: | :---: | :---: |
| 26 | Transzoia | Transzoia East | Makoi, Maili Saba, Mkuyu, Sibanga, Orombe, Sokomoko, Mtoni, Nyangau, Chebarus, Marura | Toka Uone, Cuba, Baghdad |
|  |  | Kiminini | Bigtree, Maisha Bora, Birunda, Kiungani Centre, Makindu, Staff Area, Birunda, Kisumu Ndogo, Sokomoko, Malava, Babton, Obama, Meso Farm | 2 Brothers, 4 Brothers, 17 Brothers |
|  |  | Saboti | Ex Kari, Mount View, Umoja, Mitume Stage, Ndaraja, Matisi, Kipsongo, Bigtree, Kisumu Ndogo |  |
| 27 | Uasin Gishu | Kapseret | Coner Mbaya, Kisumu Ndogo, Kambi Nguruwe, Kambi Nyoka, Lancaster Area, Panama, Kwa Omosh, Chinese, Kbichula, Duka Mbili, Jamii School Area, Mwanzo, Jijenge, Perry, By Pass Center | 7 Brothers,Mafia, 6 Brothers, 12 sisters |
|  |  | SOY | Stage 3, Kidiwa Este, Kambi Teso, Kamukunji Areas, Marakwet Road, Kiplombe | Gaza, Mbogi |
| 28 | Elgeyo <br> Marakwet | Keiyo South | Mindiliwa Village, Ngeny Biribir, Kipsaos, Kapkonga, Kerio Valley, Small Town, Marichor, Bondeni Area, Koibarack Village, Samich Village, Kapngetik, | Murenju, Ngoroko, Young Turks |
|  |  | Keiyo North | Katalik, Choma Base, Iten Stage, Bomas, Motos Village, Singore Centre, Kapshoo, Victorias Bar,Kambi Kichwa, Eden Square | Tosh |


|  |  | Keiyo West | Kimareu, Cheptongei |  |
| :---: | :---: | :---: | :---: | :---: |
| 29 | Nandi | Nandi Central | Township Area, Showground, Kamobo, Kwa Wanja, Tegat Road, Surungai, Bondeni, Kapenguria, | 4 Brothers, Sokoni Youths |
|  |  | Tinderet | Soi Sindet, Junction, Chemogoch, Tunet Center,Koromi, Tinderet, Sitet |  |
|  |  | Nandi North | Kabeit Shopping Centre, Nandi Escapment, |  |
| 30 | Baringo | Koibatek | Koinange Street, Huruma, Shauri, Bondeni | Shabana, Young Turks |
|  |  | Baringo Central | Korogonya, Turkuo |  |
|  |  | Mogotio | Kapnyagale, Westland, Katarngot, Mogoyio Girls, Daraja, Kipsogon, Chemogoch, Lebus, Kamanyagale | Pokot Bandits, Ngoroko |
| 31 | Laikipia | Laikipia East | South 1, Majengo, Kieni Ya Punda, Kichochoro, Soko Mzee, Thingitho Estate, Stadium Road, Likii, Nanyuki Town, Maina Estate, Emmanuel Estate | South 1, Kieni, Mungiki, |
|  |  | Nyahururu | Falling Water Junction, Bageshon, Ndonyo Kenyatta Avenue, Koinange Avenue, Grade Estate, Chemic Hemi, Ngomongo, Daraja Rubies School Road. | Mungiki, Katambe,Cuba |


|  |  | Laikipia West | Marura, Rumuruti Town, Posta On The Way To Maralal |  |
| :---: | :---: | :---: | :---: | :---: |
| 32 | Nakuru | Rongai | Zaburi Centre,Mutinduri,Mpesa Merchants,Histon |  |
|  |  | Nakuru East | Flamingo,Kivumbini,Wayers, Roda, Bondeni, Langa Round About, Shimo In Nakuru, Free Area, Murogi, Karatina, Matangi Nne Home Centre, Mlima, Mawanga, Langalanga, Ronald Ngala Street, Kivumbini, Kaptembwa, Shiners, Nakuru-Nairobi Highway, Mabatini, Home Centre, Street Near University Hostels, Naka Centre, Manyani Bondari, Chiefs Street | Confirm,Posta, Kaptebwa 1, Honey cup, <br> Flamingo,Arapat, Gaza,Boston,ZagaZaga, Rambo 12 |
|  |  | Rongai | Muiru Centre, Rapchumo Estate, Kiamunyi, Mukinduri, Olive, Mercy Njeri, Zambuni, Mastere Road Street, Lower Solai, Gioro, Baraka, Gaigai Road, Railway, ECK St Peters Road, Kambi Ya Moto, Grand Winston, Maasai Centre, Ruyobei, Maji Tamu, Emaragishu | Msalaba |
|  |  | Naivasha | Kosovo, Sanctuary, Mirera, Murogi, Karagita, Kangoe, Robiri, Railway Line, Pentagon, High Peak, Maruti Area, Gathundia, Ndabibi Central, Kiburuti, Ndereti, Kiwanja Ya Ndege, Airstrip, Slaughter House, White House, Mariguini, Bars And Clubs, Miraa Baze, Mirera Secondary, Rubiri Secondary, St Joseph Catholic Church Street Kiandege, Ndabibi Central, Kiburuti, Gathundia, Kichinjio, Huruma, Nduro, Njonjo | Mungiki,Boston,Gaza,Zaga zaga, Roho safi, Bongo 6, Gang 4 |


| 33 | Narok | Transmara West | Tz Border ,Kambi Shetani ,Town Center ,Sachagwa ,Sajangwan ,Oldonyo ,Tilango Village ,Olomiyan ,Siteti ,Sokon ,Keringani | Morans,Kenta, Chinkororo |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Narok North | Maasai Mara Gate C ,Mungare ,Mpopongi ,Olopito ,Lenana ,Daraja ,Mashariani Tegat ,Mkokalam ,Irmajii ,Majengo ,Total ,London ,Masdonia ,London Estate ,Area Near Masai Mara University ,Total ,Estate C ,Narok Town, Around Stadium ,Rungu Ya Moi ,Quarry ,Oldodongi ,Dumping Site ,Mungare ,King Stone Street ,Mtom ,Kiiotunga Forest ,Iriam Olepolos | Kenta, |
|  |  | Narok East | Wafoo (Ntulele) ,Oletepesi ,Shauri Yako ,Oldogo ,Trading Centre |  |
|  |  | Transmara West | Town Centre Especially Mpesa Shops ,Lolgorian ,Yashangwa ,Oldonyo Isoit Nabor ,Game ,Kambi Shetani ,Kwa Linus ,Minanda Ya Ngombe | Kenta, Chinkororo |
| 34 | Kajiado | Kajiado <br> South/Loitoktok | Kisoronye Village,Border(Kenya And Tanzania) |  |
|  |  | Kajiado East/Isinya | Ostrich Farm,Kitengela,Stage 3 Korobo,Kimalat,Kijaju Area,Birika Town,Undugu Orphanage Road,Koroboi Centre Under The Bridge, Land Mark Near Bridge, Embakasi <br> Rangers,Kiserian,Kasamoyo,Trade Road,Jamanda Around Prestige Home | Gaza, Kamagira, Mungiki,Scorpion, Symbol 12 |


| 35 | Kericho | Kericho East | Kapsaos, Kamukunji, Kambi Chura, Satellite, Mjini Estate, Mti Mkubwa, Kamukunji, Mlango, Kapsoit Centre, Mombasa, Nyagacho, Milimani, Migingo, Riverside,Makaburi, Majengo | Shymbo 12, Sokoni Youths, Men in Black, Alamalai |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Belgut | Chemasi, Jomo Area, Lamchu, Kapkaet, Chebalulu, Master C, Sasosa | Scorpion |
|  |  | Beruti | Kibera Ndogo, Chelilis, Chebarus, Kapkaet, Keron, Jubilee |  |
| 36 | Bomet | Bomet Central | Zebra,Bomet $\quad$ Centre,Major,Annex,Mulo,Kambi  <br> Shetani,St Around  <br> Prison,Nyabongo,Tarakosa,Chuyat  <br> Munngano,Muhoti,Highway  <br> Mugando,Kitoben,Masese,Silibwet,Bingwa,Kipsait  <br> Travellers,Kapkweni,Cherando,Raiya Maembe Street  | Mandazi group, Kipsigis raiders, |
|  |  | Sotik | Wajackoya Sissei River,Chebui,Sasita Village,Sigorian Sub Location, Town Centre,Chebole,Town Place Chebare,Kiwanja Ya County, Along The River,Hardware,Bingwa,Kambira,Sisse Meja,Kware,Kapsembe | Kapkekesoi Team, Mobile 99, Fuliza |
|  |  | Chepalungu | Kapisimba,Kapngetunia,Kaptuolo,Bingwa,Kataret,Sarov a,Kapsoseli,Kamogibon Village,Cheponjeru,Higway Bar | Reinforcement |
|  |  |  | Streets In The Township Area, Farmers Street,Kipchamba Street,Club City |  |


|  |  |  | Hotel,Chuiyat,Maembe,Chebukosa,Longisa,Siongroi,Urb an Centre,Bankika Seb Lounge,Aroumd Family Bank, Cups Mbili, Kwa Turkana Area, Farmers Around Twigs,Raiya,Amazon,Bomet,Townships Centre,Sewage |  |
| :---: | :---: | :---: | :---: | :---: |
| 37 | Kakamega | Kakamega East | Ikuywa,Sigalagala,Ilala Junction, Chemneko,Shibakala,Khayeha,Ivihiga,Museno,Mulundu, Luvando,Vikutsa,Mukombero,Mukhonje,Hakuna Kulala,Ikolomani,Mukumu | Shigoli, <br> Angola Msubiji, <br> Shymbo12 <br> Mozambique |
|  |  | Kakamega Central | Golden Inn,Bukura  <br> Market,Juakali,Amazemba,Masingo,Maraba,Kenya   <br> Power, Water Kiosk, <br> Somali,Lurambi,Malembi, Kakamega  <br> Town,Joyland,Shirehe,Makaburini,Jua   <br> Estate,Shukambi,Sichiria,Bukura Market,Kfa,Al-  <br> Karim,Izraim Territory,Eshiziru,Maraba,Al-  | Shiakulo,Lukuru Squad, <br> Fishpond, Haki La Kuishi, <br> Landlord, Shigoli, <br> Mising Pasi, Angola Msubiji, <br> Shymbo 12 <br> Mozambique <br> Vigilante group |
|  |  | Kakamega South | Sichinji,Butweehe,Shimanhiro,Ibushiiiiiitsiula,Shiseso | Haki La Kuishi, Landlord, Shigoli, |
| 38 | Vihiga | Hamisi | Senande,Chavakali Fly Over,Vuyai Village,Chanduba Centre,Kegondi,Kamlukyo |  |
|  |  | Sabatia | Miudhukhu Petrol Station,Vikhendi Area,Oli Esubo,Kaimosi Junction,Buyai,Muhorera,Kiguni Jobless Corner,Viyalo,Lusala Market,Muguka Base,Kilingili |  |


|  | Bungoma |  | Market |  |
| :---: | :---: | :---: | :---: | :---: |
| 39 |  | Luanda | Ebusirulu,Kwa <br> Jogoo,Mwisavo,Luanda,Kamuruguyo,Makutano,Chanda <br> mba Market,Mumboha Area,Msilongo,Mwitala <br> Village,Mtandao Junction,Majembe Road,Ebusakami <br> Junction,Junction <br> At <br> Senende,Epanga,Bisakhame,Luanda Omena <br> Soko,Khulielabo Village, Behind Kingendi Secondary | 42 Brothers, Reckless squad, DownTown |
|  |  | Bungoma South | MarakaArea,Nation Estate,Nabuyole,Behind Slaughter House,Sigalame,Mechimero <br> Market,Manatwa,Khamunyalo,Froy <br> Area,Molo/Soweto,Lukusi,Musando Area,Muslim Corner,Mala Monye,Lukhoba,Mechimeru Market |  |
|  |  | Bungoma East | Maraka Area, Nation Estate, Nabuyole, Behind Slaughter House, Sigalame, Walala B Village, Misikoma, Moca, Samoya, Marrel, Mpeli B,Mufule Village, Didrex, Mandizini,Embakasi,Bondeni,Six <br> Estate,Msando,Sangalo,Mwibale,Sikalame,Iraka, Munyali, <br> Mulaha,Mokaa,Mechimeru,Mabuzi,Mteremko,Kiwanja Ndege,Iraq,Luyekhe. | Warembo wa Bukembo, Syria, Funga Safe, Old5, NabuyoleG, Ngware Boys, Mulik Mtu, Kimili Boys, FERA, Chetabwe, 82 Brothers |
|  |  | Cheptais | Kimabole,Melon,Kimama,Chesikaki,Moluku,Ndakaru,C hesiywo,Kapkanai,Kiptii,Kaptoboi,Tuikot,Kamaranu,Tu | Funga Safe, Old5, NabuyoleG, Ngware Boys, Mulik Mtu, Kimili |


|  |  |  | kot,Cherenowo,Kapsitet,Chemonges,Kaptokot,Green Valley,Embakasi,Mfungu,Naokaru,Mutambo | Boys, |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 40 | Busia | Butula | Munyeya,Mung'abo,Kalalani,Tingolo,Bumala <br> B,Elukongo,Sikarira Village,Masedevalle,Jobless <br> Corner,Masebula,Busire,Sigulu,Bumala <br> Town,Tingolo,Mrende Route,Nambale,Rakite <br> Centre,Butula Market,Sikarira,Ugalo,Kanjala | 48 Stars,Wajinga <br> Brothers, 42 m <br> Brothers,Awoo,Wajinga <br> Brothers | Sacco, 10 <br> Circle, 17 |
|  |  | Busia | Burumba,Maukoo,Kisii Estate,Slaughter,Stage Maembe, Mabale,Marachi,Boulanda,Madowa,St Theresa's ,Sokomoko,Stage Mawe, Marachi,Maoko | Bulander Boy |  |
|  |  | Teso North | Lang'ata,Uplands,Kaje,Atapar <br> Village,Okodai,Burukuchu <br> Village,Greentown <br> Village,Sokomok,Opong Village,Kamlukoyo | Wararusi |  |
| 41 | Siaya | Siaya | Awelo \& Abango Estate,Banana Estate,Gotojur Village,Pandi,Labongo Area,Siaya Town | China Squad,Mungao, Kosovo Boys, Ambish | Мареро, |
|  |  | Bondo | Bondo Town,Kondut Area Outside University,Masiya Road,Sinapang'a Road,Nyakasumbi-Police Station Road,Ratia,Atilili Otumba Road,Otieno Estate,Oloo City | Oksim,Oktho,47 Brothers,Kapedo, |  |
|  |  | Gem | Nyaolo,Malele In Akata,Kambare,Malele Area,Bagdad Village,Wambusa,Akala,Suyakho Area |  |  |
| 42 | Kisumu | Kisumu Central | Kondele,Call-Box Corridor,Migos,Manyatta  <br> B\&A,Nyamwongo,Kona   <br> Mbaya,Otong'lo,Nyalendaoboch $\&$ Nyaori,Skyware | 42 <br> Brothe <br> Boys,Mabogi,Chinese <br> Commandos,America Mar | ,Baghdad Squad nes |


|  |  |  | Area |  |
| :--- | :--- | :--- | :--- | :--- | :--- |


|  |  | Suna Central | Nyasare Resort,Nyasare River,Apida | Msela |
| :---: | :---: | :---: | :---: | :---: |
| 45 | Kisii | Kenyenya | Magena Centre, Gesabakwa,Igembe, Mogomba, <br> Kiango,Riobonyo,Gesings,Kisii Main Stage, <br> Kesoonga,Nyamasogota, Mogonga,Idhani Getumo | Hustlers, Rasta, Mabasu,Amachuma, Bad Boys, |
|  |  | Kitutu Central | Daraja Mbili, Mosque Road, Township Cenre, Mwamogesa, Sirikiso, Mobile, Kona Mbaya, Umoja Flats, Botori, Kiwanja Cha Wachawi, | Mbogi Genje, Wasanii, Majango, Kisungu Sungu, Beba Baba |
|  |  | Kisii Central | Nyanchwa,Keroka, Milimani, Mwende, Erera, Town Centre, Kinonga, Mwembe Efagi | Saba Saba, Amachuma, Chinkororo, Bamba 40, |
| 46 | Nyamira | Nyamira North | Magwagwa, Jobless Corner, Omote, Getare, Nyagonyo, Kendera, Munayo, Amakura, | Botebai, Mungiki, Single Soft |
|  |  | Masaba North | Keroka Post Office, Keroka Village, Bochari, Nyamakoto,Sokobe Market,Destiny Bar | Gaza, Usiku Saccco, Chinkororo |
|  |  | Nyamira South | Nyamaiya Market, Minika, Gesusura, Nyabite Market, Bokimburi , Nyasore Market, Marara, Roy Resort, Keroka Primary | Shabana |
| 47 | Nairobi | Starehe | Near Holiness Gospel Church, Kayaba Maasai Village, Corner Mukuru Kayaba, Gaza City, Near The Bridge Of Maasai Village, Bridge To Likoni Road, Hazina, Fuata Nyayo, Mandazi Bridge, Owino Bridge, CDF Office, Scrape Area, Foot Bridge, Winners Chapel Road Near Hazina CDF Toilets, Wanyoike Area/Keriye, Maoria | Alshabab, Gaza, Mungiki, Siafi,KendaKenda, Siafi,Kamjeshi, <br> Jeshi La Embakasi, Jeshi La Mzee, Kenya Youth Alliance, Kamkunji |


|  |  | Area | Boys, Nubians, KenyaBattalions, <br> Kamukunji, Bossman <br> Group, <br> Richman Group |
| :---: | :---: | :---: | :---: |
|  | Njiru | Spring Valley, Near Nairobi River, Boston, St. Michael Stage, To Mosque Road, <br> Budalangi, Chokaa Area, Karao Kwa Muindi, Njiru Town, Along Kangudo Area, Midax, Matopeni, Malaysia, Bridge Ya Matopeni, Kayole North Primary Area, Njiru Shopping Centre, Fagilia, Nigeria Kwa Mwindi Mweusi, Ruvinda, PCEA Area, Mabatini, Kariobangi South Bridge, Maigua Area, Ngong River, Gaza City Area, Corner-Maasai, Malysia, Club East, Mathare To Juja Road, Thirty Eight (38), Jupiter, Line One, Kambi Moto, East Mast Secondary, Chokaa Budalangi, Eastmat Area, Company Area, Njiru Stage, Potmo, Ndiriginia , Marii Children's Home, Maana Village, Railway Line, Rounda, CVO, Kariobangi Primary, Kochi, Mwenja Road, Malaysia, Matopeni, Kwa Chief, Club East, Spring Valley, Maringa ROG Stage, Along The Kariobangi South Parkway Line, B3, Harmony Area, Korogocho, Kwa Chief, KCC, Victory Court, Kwa Mama Safi, Korogocho Roundabout, Thirty Six (36), Outring Road, Dandora Highway, Fifty Six (56), St Johns Area, Umoja 3, KCC, Gaza Area, Street Near Full Gospel, Near Alibaba, River Bank, | Gaza, Genge, Boggie, Jeshi Ya Alar, United 42, Shushtani Youth, Criminal Gangs, Alfataha, 42 Brothers, Mabani, Makinika,Mtakwei,Mauki Family,Miani,Msako Empire,Nyuki Mbele Yao,Ritok,Shak Attack,Trendi, Usiku Sacco |



Appendix III: County analysis on Types and Prevalence of Perceived Crimes (Counties Number 001-025)


|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{9} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & \text { o? } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{4}$ | $\stackrel{8}{+}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{o} \\ & \dot{r} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \underset{i}{i} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{e} \\ & \dot{m} \\ & \dot{n} \end{aligned}$ |
|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \theta^{0} \\ & 0 \\ & i \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{8}{7}$ | $\begin{aligned} & b^{2} \\ & \underset{O}{2} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |
| $\stackrel{\rightharpoonup}{\underset{\sim}{\sigma}}$ | $\begin{aligned} & \stackrel{\circ}{r} \\ & \underset{\sigma}{2} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0_{1}^{9} \\ & \stackrel{i}{2} \end{aligned}$ | $\begin{aligned} & \Delta^{9} \\ & \underset{\sim}{亡} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \\ & m \end{aligned}$ | $\stackrel{\text { Of }}{\substack{4 \\ \hline}}$ | $\begin{aligned} & 0 \\ & \text { n} \\ & \text { an } \end{aligned}$ | $\begin{aligned} & \text { of }^{0} \\ & \text { ì } \end{aligned}$ | $\frac{8}{i}$ | $\begin{aligned} & 0_{0}^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & \underset{0}{0} \end{aligned}$ | $$ | $\begin{aligned} & b^{n} \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & b^{e} \\ & \dot{m} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \stackrel{y}{4} \\ & + \end{aligned}$ | $\begin{aligned} & \theta_{0}^{0} \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0 \\ & m \\ & m \end{aligned}$ | $\begin{aligned} & \text { o? } \\ & \text { ò } \\ & i \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { n} \\ & \text { an } \end{aligned}$ | $\frac{b^{e}}{\underset{\sim}{r}}$ | $\begin{aligned} & b_{0}^{0} \\ & \stackrel{0}{0} \end{aligned}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & \dot{j} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{\rightharpoonup}{c} \end{aligned}$ | $\frac{8}{4}$ |
|  | $\begin{aligned} & 0 \\ & 0 \\ & i \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { o } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { Q } \\ & \text { Ǹ } \\ & \text { Ǹ } \end{aligned}$ | $\frac{\Delta^{0}}{\underset{\sim}{7}}$ | $\begin{aligned} & \underset{\sim}{*} \\ & \underset{\sim}{*} \end{aligned}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & 0 \end{aligned}$ | $\frac{\stackrel{\rightharpoonup}{r}}{\stackrel{\rightharpoonup}{c}}$ | $\frac{89}{\stackrel{0}{7}}$ | $\frac{\Delta 9}{\underset{n}{n}}$ | $\frac{0^{e}}{\underset{\sim}{2}}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \\ & \hline \end{aligned}$ | $$ | $\begin{aligned} & o^{p} \\ & ? \\ & \text { n } \end{aligned}$ | $\frac{0}{a}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \infty \end{aligned}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{+} \\ & \dot{\sim} \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \dot{p} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { N} \end{aligned}$ | $\frac{8}{6}$ | $\begin{aligned} & 0 \\ & 0 \\ & \infty \\ & \underset{\sim}{n} \end{aligned}$ |


|  | $\begin{aligned} & 09 \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8_{0}^{0}$ | $\begin{aligned} & \text { of } \\ & \underset{\sim}{+} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & \infty \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & z^{9} \\ & \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \theta^{0} \\ & \text { n} \\ & \hline \end{aligned}$ | $\stackrel{\circ}{\square}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $0$ | $\stackrel{0}{\square}$ | $0$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \vdots \\ & \vdots \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \underset{O}{2} \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 . \end{aligned}$ | $\begin{aligned} & Q_{i}^{2} \\ & \underset{\sim}{+} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ |
| 帚 | $\begin{aligned} & Q^{2} \\ & ? \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{n} \\ & \underset{i}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | of | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $0$ | $0$ | $0$ | $0$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ |
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|  | $\begin{aligned} & 0^{2} \\ & 6 \\ & \hline \end{aligned}$ |  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{+} \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & i \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { o } \\ & \infty \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\frac{0}{i}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8$ | $\begin{aligned} & 0^{0} \\ & \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & = \\ & = \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline 0 \end{aligned}$ |


| 是 | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{+}{\square}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | of | of | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
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|  | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \mathfrak{o}_{0} \\ & \dot{寸} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \underset{\sim}{c} \\ & \underset{\sim}{n} \end{aligned}$ | $\frac{\stackrel{9}{7}}{\underset{\sim}{\sim}}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \end{aligned}$ | $\begin{aligned} & o^{\circ} \\ & ? \\ & \vdots \end{aligned}$ | $\frac{\stackrel{y}{c}}{\underset{i}{n}}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & \underset{N}{N} \end{aligned}$ | $\begin{aligned} & b^{2} \\ & n \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { n} \\ & e \\ & m \end{aligned}$ | $\begin{gathered} 0 \\ 0 \\ 0 \\ \underset{N}{0} \end{gathered}$ | $\frac{\mathfrak{S}^{2}}{\underset{\sim}{i}}$ | $\begin{aligned} & 0 \\ & n \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \text { n} \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & o^{\circ} \\ & \frac{1}{2} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & 0_{0}^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ }_{0} \\ & \text { ì } \end{aligned}$ | $\frac{0}{6}$ | $\begin{aligned} & \overbrace{}^{2} \\ & \text { n} \\ & \vdots \end{aligned}$ | $\frac{0}{0}$ | $\begin{aligned} & 0_{0} \\ & \dot{0} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & \underset{e}{2} \end{aligned}$ | $\begin{aligned} & \overbrace{2} \\ & \underset{\sim}{n} \\ & \hline \end{aligned}$ |
|  | $\begin{aligned} & 0 \\ & 0 \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{9} \\ & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \\ & \text { ǹ } \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \text { N} \\ & \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { n } \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & o^{p} \\ & \text { m } \\ & m \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \text { n} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \dot{0} \\ & \dot{0} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & \text { ơ } \\ & \text { Ǹ } \\ & \text { Nun } \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & \text { or } \\ & \underset{0}{n} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & \\ & \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \underset{0}{2} \end{aligned}$ | $\begin{aligned} & \stackrel{+}{+} \\ & +\infty \end{aligned}$ |  | $\begin{aligned} & \text { of } \\ & 0 \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
| 荡 | $\begin{aligned} & \text { ペ } \\ & \text { N} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { in } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & \text { n} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 1 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{+}{i} \\ & \underset{N}{2} \end{aligned}$ | $\begin{gathered} o^{0} \\ \cdots \\ \vdots \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{i}$ | $\begin{aligned} & 0^{0} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 09 \\ & 0 . \end{aligned}$ | $\begin{aligned} & \vdots \\ & \\ & \end{aligned}$ | $8$ | $\begin{aligned} & \text { o } \\ & ? \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{n} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & ? \\ & ? \end{aligned}$ | $0$ | $\begin{aligned} & 0^{2} \\ & ? \\ & \vdots \end{aligned}$ | $\frac{8}{6}$ | 0 0 0 |
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|  | $\begin{aligned} & 0_{0} \\ & 0 . \\ & \infty \\ & \hline \end{aligned}$ | $\begin{aligned} & \overbrace{}^{2} \\ & \underset{i}{i} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0_{0}^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \\ & \text { ה } \end{aligned}$ | $\begin{aligned} & \overbrace{1} \\ & \underset{\sim}{2} \\ & \text { an } \end{aligned}$ | $\begin{aligned} & \text { o } \\ & \stackrel{y}{c} \end{aligned}$ | $\begin{gathered} 0^{0} \\ 6 \\ i \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \underset{\sim}{0} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0_{0} \\ & \dot{0} \\ & \dot{+} \end{aligned}$ | $\begin{aligned} & \text { B } \\ & 0 \\ & \vdots \end{aligned}$ | $\begin{aligned} & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0_{1} \\ & 0 \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 80 \\ & \stackrel{\rightharpoonup}{n} \\ & \hline \end{aligned}$ | $$ | $\begin{aligned} & \text { B } \\ & \underset{\sim}{0} \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { og } \\ & \text { ò } \\ & \text { mे } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \vdots \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { or } \\ & \text { m } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 6 \\ & \hdashline \end{aligned}$ | $\begin{aligned} & \underbrace{9} \\ & \\ & \end{aligned}$ | $\begin{aligned} & \overbrace{}^{2} \\ & \stackrel{n}{2} \\ & \stackrel{y}{n} \end{aligned}$ |
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|  | 80 $\square$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of }_{1}^{+} \\ & i \end{aligned}$ | $\begin{aligned} & 0^{e} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & b^{0} \\ & 0 \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\text { ®l}}{n} \\ & \underset{\sim}{n} \end{aligned}$ | $0$ | $$ | $\begin{aligned} & \overbrace{}^{0} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ |
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|  | $\frac{0}{6}$ | $\begin{aligned} & \stackrel{Q}{2} \\ & \underset{\sim}{i} \end{aligned}$ | $\begin{aligned} & \dot{q}^{2} \\ & \dot{r} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \underset{\sim}{i} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 09 \\ & \hat{0} \\ & i \end{aligned}$ | $\begin{aligned} & b^{0} \\ & 0 \\ & i \end{aligned}$ | $\begin{aligned} & \text { op } \\ & \text { N } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \stackrel{1}{=} \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \underset{\infty}{\infty} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { O } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \vdots \\ & \hline \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \cdots \\ & i n \\ & i \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \dot{0} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{2} \\ & \stackrel{+}{\dot{o}} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & \dot{\infty} \end{aligned}$ | $\begin{aligned} & 0^{9} \\ & \underset{0}{6} \end{aligned}$ | $\begin{aligned} & 0 \\ & \vdots \\ & \hat{6} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & \cdots \\ & \cdots \\ & i n \end{aligned}$ | $\frac{\dot{\infty}}{\dot{\infty}}$ | $\begin{aligned} & \dot{N}^{\circ} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { n } \\ & \text { N } \end{aligned}$ |  |
| $\frac{\text { 雨 }}{\text { en }}$ | $\begin{aligned} & 0^{2} \\ & \cdots \\ & \cdots \end{aligned}$ | 0 $\cdots$ $\cdots$ | $\begin{aligned} & \stackrel{Q}{\gtrless} \\ & \underset{寸}{j} \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & \dot{寸} \end{aligned}$ | $\begin{gathered} \stackrel{\text { N}}{2} \\ \underset{~}{7} \end{gathered}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \text { on } \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { on } \\ & \text { n } \\ & \text { N} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \dot{\forall} \\ & \text { - } \end{aligned}$ | $\begin{aligned} & \frac{89}{7} \\ & \stackrel{i}{n} \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{2} \\ & \underset{寸}{7} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{\gamma} \\ & \text { r } \end{aligned}$ | 0 0 0 | $\begin{aligned} & o ̛ \\ & o \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 8 \\ & i \\ & i \end{aligned}$ | $\begin{aligned} & \text { B } \\ & 0 \\ & \text { it } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \infty \\ & 0 \end{aligned}$ | \％ | $\begin{aligned} & \stackrel{9}{+} \\ & \underset{\sim}{\infty} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & i \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & i \end{aligned}$ | $\frac{8}{6}$ | $\begin{aligned} & 89 \\ & \stackrel{0}{0} \\ & \hline \end{aligned}$ |


|  | $\begin{aligned} & \stackrel{\text { O}}{+} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{e}{+} \\ & \stackrel{+}{+} \\ & \underset{\sim}{n} \end{aligned}$ | $\frac{09}{\stackrel{0}{i}}$ | $\begin{aligned} & \text { of } \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { ò } \\ & \text { in } \end{aligned}$ | $\frac{\stackrel{0}{+}}{\stackrel{+}{m}}$ | $\begin{aligned} & \infty \\ & \infty \\ & \pm \end{aligned}$ | $\begin{aligned} & \stackrel{9}{\sim} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & n \\ & \vdots \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 8 \\ & 0 \end{aligned}$ | $\frac{0}{\frac{0}{n}}$ | $\begin{aligned} & \mathcal{O}_{0} \\ & \text { i } \\ & \text { i } \end{aligned}$ | $\frac{0}{6}$ | $\begin{aligned} & \stackrel{\circ}{\circ} \\ & \stackrel{+}{\bullet} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \bigotimes_{0} \\ & \infty \\ & \dot{寸} \end{aligned}$ | $\begin{gathered} \text { ô } \\ \underset{\sim}{c} \end{gathered}$ | $\begin{aligned} & \stackrel{Q}{0} \\ & \dot{\oplus} \end{aligned}$ | $\begin{aligned} & \stackrel{o}{0} \\ & \stackrel{y}{n} \\ & \stackrel{y}{n} \end{aligned}$ | $\begin{aligned} & \stackrel{0}{\circ} \\ & \stackrel{\rightharpoonup}{n} \end{aligned}$ | $\frac{89}{\underset{\sim}{n}}$ | $\begin{aligned} & \text { cे } \\ & \text { ì } \end{aligned}$ | $\begin{gathered} \text { ô } \\ \text { ên } \end{gathered}$ | $\begin{aligned} & \stackrel{\circ}{寸} \\ & \stackrel{\rightharpoonup}{\circ} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { of }^{n} \\ & \underset{~}{7} \end{aligned}$ | $\begin{aligned} & \text { Ò } \\ & \text { İ } \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ơ } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { of } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{r} \\ & \underset{\sim}{r} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { g} \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{p}{+} \\ & \stackrel{y}{*} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | of | $\begin{aligned} & \text { ơ } \\ & \end{aligned}$ | $\begin{aligned} & \text { ọ } \\ & \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { oे } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{n} \\ & \stackrel{y}{n} \end{aligned}$ | $\frac{0}{\stackrel{0}{0}}$ | $\begin{aligned} & \stackrel{y}{4}_{+}^{+} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{0}{0} \\ & \dot{n} \end{aligned}$ |
|  | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & i n \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{f} \\ & i n \end{aligned}$ | $\begin{gathered} \text { ơ } \\ \underset{\sim}{n} \end{gathered}$ | $\begin{aligned} & \text { of } \\ & \text { of } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{7} \\ & \underset{7}{7} \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & \infty \\ & \infty \\ & + \end{aligned}$ | $\begin{aligned} & \stackrel{\text { P}}{\underset{\sim}{4}} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{2}$ | $\begin{aligned} & 0 \\ & \cdots \\ & \cdots \\ & m \end{aligned}$ | $\begin{aligned} & \mathrm{O}_{0} \\ & \underset{~}{~} \end{aligned}$ | $\frac{0}{\infty}$ | $\begin{aligned} & \stackrel{0}{7} \\ & \stackrel{y}{*} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { io } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { Ǹ } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { Ơ } \\ & \text { ते } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \underset{\sim}{n} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & o^{\circ} \\ & \stackrel{n}{7} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & i \\ & i \end{aligned}$ | $\frac{0}{6}$ | $\begin{aligned} & \text { or } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{9}{\infty} \\ & \infty \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & \dot{c} \end{aligned}$ |
|  | $\frac{0}{\square}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { 子 } \end{aligned}$ | $\stackrel{\stackrel{\rightharpoonup}{+}}{\stackrel{y}{c}}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { of } \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0_{0} \\ & \underset{\gamma}{ } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{n} \\ & \stackrel{n}{r} \end{aligned}$ | $0_{0}^{0}$ | $0$ | of | $0$ | $0$ | of | $\begin{aligned} & \text { ô } \\ & \text { oे } \end{aligned}$ | of | $\begin{aligned} & \text { op } \\ & ? \end{aligned}$ | $\begin{aligned} & \circ \\ & 0 \\ & 0 \end{aligned}$ | of | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
|  | $\begin{aligned} & \text { of } \\ & \underset{子}{7} \\ & \underset{7}{2} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & 00 \\ & \text { ? } \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { or } \\ & \stackrel{1}{i} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \dot{=} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { By } \\ & \stackrel{y}{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & n \\ & \end{aligned}$ | $\frac{8}{9}$ | $\begin{aligned} & \text { of } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { Ni } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & 69 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{0}{n} \\ & \text { an } \end{aligned}$ | $\begin{aligned} & \text { ®े } \\ & \underset{\sim}{n} \end{aligned}$ | $\frac{\stackrel{0}{2}}{\stackrel{1}{i}}$ | $\begin{aligned} & \text { in } \\ & = \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \end{aligned}$ |  | $\begin{aligned} & \circ \\ & \infty \\ & \infty \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{c} \end{aligned}$ |
|  | $\begin{aligned} & \text { in } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \mathfrak{o}_{0} \\ & \dot{f} \end{aligned}$ | $\begin{gathered} \text { of } \\ \text { en } \\ \text { in } \end{gathered}$ | $\begin{aligned} & \text { ô } \\ & \stackrel{n}{2} \\ & \underset{n}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & n \\ & \infty \\ & i \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $$ | $\frac{02}{\stackrel{\circ}{i}}$ | $\frac{0}{a}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \text { i } \\ & \text { m } \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{y}{n} \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { on } \\ & i \end{aligned}$ | $\frac{0}{\frac{0}{i}}$ | $\begin{aligned} & \text { of } \\ & \dot{\sim} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \text { of } \\ & \dot{f} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { ó } \\ & \text { o } \end{aligned}$ | $\begin{gathered} \text { oे } \\ \stackrel{y}{c} \end{gathered}$ | $\begin{aligned} & o f \\ & \dot{\sim} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & 0_{0} \\ & \text { of } \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{1} \\ & \stackrel{i}{i} \\ & \text { in } \end{aligned}$ | $\frac{0}{\frac{0}{n}}$ |



|  | $\begin{aligned} & 0^{0} \\ & \infty \\ & \dot{+} \end{aligned}$ | $\xrightarrow{*}$ | $\begin{aligned} & \text { ô } \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & \dot{r} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { on } \\ & \text { in } \end{aligned}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & \hdashline \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{y}{n} \\ & \vdots \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \overbrace{}^{p} \\ & \cdots \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { n } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { o } \\ & \text { n } \\ & \infty \end{aligned}$ | $\begin{aligned} & 09 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \text { n } \\ & i n \end{aligned}$ | $\begin{aligned} & b^{?} \\ & \underset{\sim}{\forall} \end{aligned}$ | $\frac{\Delta^{2}}{\underset{\sim}{7}}$ | $\begin{aligned} & \text { Ơ } \\ & \text { O} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \underset{\sim}{1} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \dot{+} \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{+} \\ & \hline \end{aligned}$ | $\frac{8}{7}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\frac{80}{\stackrel{\circ}{\infty}}$ | $\frac{8}{i}$ | $\begin{gathered} 0^{p} \\ m \\ \infty \\ n \end{gathered}$ | $\begin{aligned} & \text { of }^{0} \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{2} \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \underset{\sim}{2} \end{aligned}$ | $$ | \% | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{1} \\ & \stackrel{y}{+} \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{i n}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 09 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{e} \\ & \underset{\sim}{0} \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{2} \\ & \stackrel{\rightharpoonup}{0} \end{aligned}$ | $\begin{aligned} & \stackrel{9}{2} \\ & \stackrel{i}{n} \end{aligned}$ | $\begin{aligned} & Q^{2} \\ & \underset{\sim}{i} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { n} \\ & \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & i n \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\frac{0}{i}$ |
|  | $\frac{0}{c}$ | $\begin{aligned} & \text { ơ } \\ & \infty \\ & \text { m } \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { ò } \end{aligned}$ | $\begin{aligned} & \stackrel{9}{+} \\ & \stackrel{y}{c} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\text { P}}{\stackrel{1}{c}} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0^{9}}{4}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{8}{+\infty} \underset{\infty}{+}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{p} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & - \end{aligned}$ | $\begin{aligned} & \Delta^{2} \\ & \stackrel{y}{*} \end{aligned}$ | $6_{0}^{2}$ | $$ |  | 8 $\square$ - | $\begin{aligned} & 0^{2} \\ & i \\ & i \end{aligned}$ | $\begin{gathered} \stackrel{\text { N }}{1} \\ \stackrel{N}{N} \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{n}$ |
|  | $$ | $\frac{0}{\square}$ | $\begin{aligned} & \stackrel{P}{+} \\ & \stackrel{+}{+} \end{aligned}$ | $\stackrel{\Delta}{\stackrel{\rightharpoonup}{+}}$ | $\begin{aligned} & 0 \\ & 0 \\ & i \\ & i n \end{aligned}$ |  | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | O. | $\begin{aligned} & \text { of } \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & \stackrel{\text { N}}{1} \\ & \text { N } \\ & \text { N } \end{aligned}$ | O. | $\begin{aligned} & 6 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & n \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \underset{\sim}{1} \end{aligned}$ | ai | $\begin{aligned} & \text { b }_{0} \\ & \text { in } \end{aligned}$ | $\stackrel{80}{\stackrel{0}{i}}$ | $\begin{aligned} & \text { or } \\ & \end{aligned}$ | $\begin{aligned} & \text { Be }_{+}^{+} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & \text { or } \\ & ? \\ & ? \end{aligned}$ | $\begin{aligned} & \frac{0}{3} \\ & \stackrel{1}{n} \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \text { N} \\ & \hline \end{aligned}$ | $8$ | of | $\begin{aligned} & b^{0} \\ & \dot{m} \end{aligned}$ |
|  | $\begin{aligned} & \text { of } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{+} \\ & \stackrel{r}{+} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{9} \\ & 0 \\ & i n \end{aligned}$ | $\begin{aligned} & \stackrel{N}{n}_{n}^{n} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & \\ & \hline \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 . \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \text { ǹ } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { Be }_{2}^{r} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & b^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{r} \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |


|  | $\begin{aligned} & \stackrel{y}{n}^{2} \\ & \text { n} \\ & \text { o } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { ón } \\ & \vdots \end{aligned}$ | $\begin{aligned} & o^{\circ} \\ & i \\ & i \\ & \infty \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \infty \\ & \underset{\infty}{\infty} \\ & \infty \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \Delta^{?} \\ & \underset{\sim}{亡} \end{aligned}$ | $\begin{aligned} & \text { og } \\ & \text { ó } \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{y}{+} \\ & \underset{m}{2} \end{aligned}$ | $0_{\infty}^{0}$ | $\begin{aligned} & \stackrel{\circ}{2} \\ & \stackrel{0}{6} \\ & n \end{aligned}$ | $\begin{aligned} & 0_{0} \\ & 0 . \\ & 0 . \end{aligned}$ | $\begin{aligned} & \stackrel{p}{\circ} \\ & \dot{o} \\ & \dot{o} \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { n } \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { n} \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \infty \\ & \underset{\sim}{+} \end{aligned}$ | $\begin{aligned} & \frac{0}{\lambda} \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \\ & \text { No } \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & 0 \\ & \underset{N}{n} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { oे } \\ & \text { an } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \cdots \\ & \hdashline \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { of } \\ & \text { an } \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & \pm \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
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| $\begin{aligned} & \text { E } \\ & \text { On } \\ & \text { U2 } \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{r} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0^{e} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{e} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 00 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & = \end{aligned}$ | O. | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |





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|  | $\begin{aligned} & 0^{0} \\ & m \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{9} \\ & m \\ & m \end{aligned}$ | $\begin{aligned} & \theta_{0}^{0} \\ & \underset{i}{0} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{t} \\ & \stackrel{y}{*} \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{+} \\ & \stackrel{+}{i} \end{aligned}$ | $\begin{aligned} & \stackrel{\Delta}{+} \\ & \stackrel{t}{i} \end{aligned}$ | $\begin{aligned} & z^{?} \\ & ? \end{aligned}$ | 8 $\square$ $\square$ | $\begin{aligned} & 0_{0}^{0} \\ & 0 \\ & \hline \end{aligned}$ | $\frac{0}{i}$ | $\begin{aligned} & b^{0} \\ & n \\ & m \end{aligned}$ | $\stackrel{0}{\circ}$ | $\begin{aligned} & b^{0} \\ & n \\ & \end{aligned}$ | $\frac{\Delta}{\sim}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{2} \\ & \dot{+} \\ & \dot{y} \end{aligned}$ | $\stackrel{\Delta}{7}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & i n \end{aligned}$ | $\frac{8}{i}$ | $\begin{aligned} & \Delta^{2} \\ & \text { N } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { op } \\ & \text { n } \end{aligned}$ |

Appendix III: Continued; County analysis on Types and Prevalence of Perceived Crimes (Counties Number 026-047)


|  | $\begin{aligned} & \text { ®̂ } \\ & \text { N} \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 89 \\ & ? \\ & ? \end{aligned}$ | $0$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & \text { of } \\ & \end{aligned}$ | $\frac{0}{\infty}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & \text { of } \\ & \dot{+} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & 0 \end{aligned}$ |
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| $\stackrel{\text { 券 }}{\underset{\sim}{\mid c}}$ | $\frac{\leftrightarrow 9}{\underset{N}{N}}$ | $\begin{aligned} & \text { of } \\ & \text { of } \end{aligned}$ | $$ | $\begin{aligned} & \stackrel{\text { P}}{1} \\ & \stackrel{n}{n} \end{aligned}$ | $\begin{aligned} & b^{0} \\ & \infty \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { in } \end{aligned}$ | $\stackrel{\text { ol }}{\stackrel{1}{\dot{J}}}$ | $\begin{aligned} & s^{p} \\ & n \\ & \infty \end{aligned}$ | $\frac{\Delta 9}{ \pm}$ | $\begin{aligned} & \text { ơ } \\ & \text { ờ } \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \dot{\infty} \\ & \dot{N} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0_{0} \\ & \text { + } \\ & \underset{\sim}{1} \end{aligned}$ | $\frac{\stackrel{\circ}{\gtrless}}{\underset{\sim}{N}}$ | $\begin{aligned} & \text { of } \\ & \text { i } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \underset{ \pm}{ \pm} \end{aligned}$ | $\begin{aligned} & \text { so } \\ & \text { Ǹ } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{0}{0} \\ & \hline \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{+} \\ & \dot{\sim} \end{aligned}$ | $\stackrel{\text { ®ै }}{~}$ |
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|  | $\begin{aligned} & \stackrel{8}{4} \\ & \infty \end{aligned}$ | $\stackrel{\circ}{\infty}$ | $\stackrel{\stackrel{\circ}{\circ}}{=}$ | $\begin{aligned} & \text { O̊ } \\ & \text { di } \end{aligned}$ | oㅇㅇㅇ | $8$ | $\underset{\substack{\text { ci }}}{\substack{0}}$ | $\stackrel{\circ}{\infty}$ | $\stackrel{\stackrel{\circ}{\mathrm{i}}}{\substack{0}}$ | $\stackrel{8}{8}$ | oㅇ | $\stackrel{\circ}{\infty}$ | ふ̊ | $\begin{aligned} & \text { ®io } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{7} \\ & \underset{\sim}{2} \end{aligned}$ | $\stackrel{\circ}{9}$ | $\stackrel{\circ}{\infty}$ | $\begin{gathered} \text { bo } \\ \text { if } \end{gathered}$ | $\begin{aligned} & \text { 808 } \\ & \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\mathrm{g}} \\ & \stackrel{y}{c} \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\circ} \\ & \underset{\sim}{\infty} \\ & \underset{\sim}{0} \end{aligned}$ | $\stackrel{8}{\substack{\circ \\ 子 \\ \hline}}$ |
| $\frac{\pi}{4}$ |  | $\infty$ | oio | $\begin{aligned} & \text { Co } \\ & \text { ci } \end{aligned}$ | $0$ |  | $\stackrel{80}{9}$ | $\stackrel{\circ}{\circ}$ |  | $\stackrel{\infty}{\stackrel{\circ}{=}}$ | $\stackrel{\infty}{\infty}$ | $\underset{\substack{\infty \\ \text { co } \\ \hline}}{ }$ | oi | $\stackrel{80}{\circ}$ | ®ọ | oㅇ | O | $\stackrel{\text { ®o }}{\stackrel{y}{n}}$ | $\stackrel{\circ}{\infty}$ |  | so | $\stackrel{\text { či }}{\substack{0}}$ |
|  |  | $\begin{aligned} & \infty \\ & \stackrel{\circ}{\circ} \\ & \stackrel{1}{2} \end{aligned}$ | $\stackrel{\circ}{n}$ | $\stackrel{\substack{\mathrm{N}}}{\substack{0}}$ | $\begin{aligned} & \text { Bio } \\ & \underset{\sim}{c} \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\mathrm{o}} \\ & \stackrel{y}{c} \end{aligned}$ | $\begin{aligned} & \text { 80 } \\ & \text { ¢ } \end{aligned}$ | $\begin{aligned} & \text { in } \\ & \text { í } \end{aligned}$ | $\stackrel{\infty}{\stackrel{\circ}{\circ}}$ | $\stackrel{\circ}{\stackrel{\circ}{\mathrm{m}}}$ |  | $\begin{aligned} & \stackrel{\circ}{\infty} \\ & \stackrel{\rightharpoonup}{6} \end{aligned}$ | $\stackrel{\circ}{\stackrel{\circ}{\mathrm{N}}}$ |  |  |  | $\begin{aligned} & \infty \\ & \stackrel{\infty}{\infty} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \substack{\text { d } \\ \hline} \end{aligned}$ | $\begin{aligned} & \text { 80 } \\ & \underset{\sim}{\circ} \end{aligned}$ |  | $\begin{aligned} & \text { oi } \\ & \text { in } \end{aligned}$ | $\begin{gathered} \text { g } \\ \text { in } \\ i n \end{gathered}$ |


|  | $\begin{aligned} & \text { of } \\ & \text { ò } \\ & \text { en } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & 0 \\ & \text { n } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & 0 \\ & n \\ & \sim \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { ò } \\ & \text { à } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \vdots \\ & \dot{\gamma} \end{aligned}$ | $\frac{0^{2}}{\dot{7}}$ | $\begin{aligned} & o^{\circ} \\ & \text { n } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & \infty \\ & \infty \end{aligned}$ | $\frac{0}{i}$ | $\begin{aligned} & \stackrel{0}{+} \\ & \stackrel{y}{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{o} \\ & \text { m } \end{aligned}$ | $\begin{aligned} & 80 \\ & \\ & \hline \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \cdots \\ & e \end{aligned}$ |  | $\begin{aligned} & \stackrel{R}{7} \\ & \stackrel{7}{7} \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \underset{子}{7} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \\ & i n \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \text { à } \end{aligned}$ | $\frac{0}{2}$ | $\begin{gathered} 0^{p} \\ 0_{0} \\ \dot{o} \\ i \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \infty \\ & 0 \end{aligned}$ | ${ }^{69}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | O. | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \hdashline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{y}{n}_{+}^{+} \\ & \underset{i}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & \\ & \hline \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { No } \end{aligned}$ |
|  | $$ | $\begin{gathered} \stackrel{Q}{n} \\ \text { n} \\ \text { n } \end{gathered}$ | $\begin{aligned} & o^{0} \\ & \text { n } \\ & \text { n } \end{aligned}$ | $\frac{0}{6}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \text { n } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \stackrel{y}{2}^{2} \\ & \text { ò } \end{aligned}$ | $\begin{aligned} & 0^{?} \\ & \vdots \\ & \hat{6} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{+} \\ & \stackrel{0}{2} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \underset{~ N}{7} \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { in } \\ & \text { ? } \end{aligned}$ |  | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & \cdots \end{aligned}$ | $$ | $\begin{aligned} & 6 \\ & n \\ & n \\ & 6 \end{aligned}$ | $\begin{aligned} & 0^{n} \\ & \underset{\sim}{n} \end{aligned}$ | $\frac{8}{\mathbf{N}}$ | $\begin{aligned} & 0 \\ & \text { n } \\ & \text { on } \end{aligned}$ | $\frac{0}{\dot{n}}$ | $\begin{aligned} & 0^{p} \\ & \text { ǹ } \\ & \vdots \end{aligned}$ |
| 总 | $\begin{aligned} & \text { of } \\ & +\infty \\ & \hline \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & \underset{\sim}{\infty} \\ & \underset{N}{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n} \\ & \text { m } \end{aligned}$ | $\begin{aligned} & \stackrel{p}{n}_{n}^{n} \\ & i ̂ \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \mathrm{o}^{\circ} \\ & \underset{+}{\mathrm{f}} \end{aligned}$ | $\begin{gathered} \stackrel{9}{4} \\ \underset{7}{7} \end{gathered}$ | \% | $\begin{gathered} \stackrel{\text { N}}{+} \\ \underset{\sim}{7} \end{gathered}$ | $\begin{aligned} & \mathfrak{o}^{p} \\ & \underset{\sim}{2} \\ & \underset{\sim}{2} \end{aligned}$ |  | $\begin{aligned} & o^{\circ} \\ & n \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{2} \\ & \underset{+}{+} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{8} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { on } \\ & \text { m} \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \text { oे } \\ & \text { m } \end{aligned}$ | $\frac{0}{3}$ | $\begin{aligned} & \text { of } \\ & \text { oे } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & n \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \stackrel{Q}{+} \\ & \stackrel{+}{+} \end{aligned}$ | $\frac{0}{\dot{q}}$ |


|  | $\begin{aligned} & \stackrel{0}{寸} \\ & \underset{\sim}{6} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \hat{0} \\ & \hline \end{aligned}$ | $\begin{aligned} & 0_{0} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{9}{+} \\ & \stackrel{+}{+} \end{aligned}$ | $\begin{aligned} & \text { oq } \\ & \stackrel{i}{i} \end{aligned}$ | $\begin{aligned} & Q^{\circ} \\ & \text { i } \\ & \text { i } \end{aligned}$ | $\begin{aligned} & \text { ヘ̀ } \\ & \text { N } \\ & \text { n } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\sim} \\ & \underset{\sim}{\infty} \\ & \underset{\sim}{n} \end{aligned}$ |  | $\begin{aligned} & 00 \\ & \dot{\gamma} \\ & \underset{子}{2} \end{aligned}$ |  | $\begin{aligned} & \text { ô } \\ & \underset{\infty}{\infty} \\ & \infty \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{y}{0} \\ & \stackrel{y}{0} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \dot{f} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{m} \end{aligned}$ | $\frac{0}{3}$ | $\begin{aligned} & \text { ơ } \\ & \text { ה̀ } \\ & \text { N } \end{aligned}$ |  | $\begin{aligned} & \stackrel{\circ}{寸} \\ & \dot{\sim} \end{aligned}$ | $\begin{aligned} & \text { ol } \\ & \dot{f} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & ? \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { ô } \\ & \text { in } \end{aligned}$ | $$ | $\frac{0}{7}$ | $\begin{aligned} & \infty \\ & + \\ & + \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & ? \\ & = \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0}_{6}^{+} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \infty \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{\text { N}}{\substack{1 \\ \hline}}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{9}{n} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & \text { ì } \\ & \text { N} \end{aligned}$ | $\begin{aligned} & \stackrel{\text { O}}{+} \\ & \stackrel{y}{2} \end{aligned}$ | へ̣ | of | $\begin{aligned} & \text { of } \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0^{2}}{i}$ | べ | $\begin{aligned} & \text { of } \\ & \text { ò } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & 0 \end{aligned}$ |
|  | $\begin{aligned} & \stackrel{Q}{0}^{\circ} \\ & \dot{\infty} \\ & \dot{\sim} \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{寸} \\ & \underset{\infty}{+} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{9}{\infty}$ | $\frac{0}{\dot{\sim}}$ | $\frac{0}{6}$ | $\begin{aligned} & 09 \\ & \vdots \end{aligned}$ | $\frac{\stackrel{q}{7}}{\stackrel{m}{f}}$ | $\begin{aligned} & 0^{\circ} \\ & \text { - } \end{aligned}$ | $\begin{aligned} & 0 \\ & \underset{7}{7} \\ & \hline \end{aligned}$ | $\frac{0}{i}$ | $\begin{aligned} & \text { ơ } \\ & \text { i } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { in } \\ & \underset{\sim}{7} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \frac{1}{m} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ה̀ } \\ & \text { הे } \end{aligned}$ | $\begin{aligned} & \text { or } \\ & \end{aligned}$ | $\begin{aligned} & 0 ゚ \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0} \\ & \underset{0}{0} \end{aligned}$ | $\begin{aligned} & \text { ì } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & 0 \\ & \hline 0 \end{aligned}$ | $\begin{aligned} & 00 \\ & \text { è } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{4} \\ & \stackrel{y}{+} \\ & \stackrel{1}{n} \end{aligned}$ |
|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & \stackrel{y}{2} \\ & \stackrel{y}{n} \end{aligned}$ | $\stackrel{\circ g}{\dot{+}}$ | $\begin{aligned} & \text { of } \\ & \text { g? } \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { ô } \end{aligned}$ | $\begin{aligned} & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & 0 . \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \hline- \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & \infty_{0}^{0} \\ & \infty \\ & \dot{m} \end{aligned}$ | $\frac{0}{m}$ | $\begin{aligned} & \stackrel{0}{n} \\ & ? \end{aligned}$ |
|  | $\begin{aligned} & \stackrel{9}{+} \\ & \stackrel{+}{+} \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \frac{1}{m} \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{r} \\ & \stackrel{y}{m} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ô } \end{aligned}$ | $\begin{aligned} & \infty^{0} \\ & \infty \\ & \pm \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { 둥 } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \stackrel{n}{n} \end{aligned}$ | $\stackrel{\leftrightarrow}{\underset{\sim}{7}}$ | $\begin{aligned} & \text { of } \\ & n \\ & \text { ǹ } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \infty \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{4} \\ & \underset{\sim}{n} \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \text { in } \\ & i \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \infty \\ & \dot{\sim} \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \end{aligned}$ | ô | $\frac{0}{\infty}$ | $\begin{aligned} & \text { op } \\ & \stackrel{n}{n} \\ & \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0} \\ & \stackrel{1}{\infty} \\ & \underset{N}{2} \end{aligned}$ | $\begin{aligned} & \stackrel{9}{+} \\ & \dot{\sim} \end{aligned}$ | $\stackrel{\otimes}{\stackrel{\infty}{\infty}}$ |


|  | $\begin{aligned} & \stackrel{\text { Q }}{1} \\ & \underset{\sim}{t} \end{aligned}$ | $\begin{aligned} & \stackrel{8}{r} \\ & \stackrel{1}{\lambda} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \vdots \\ & \vdots \end{aligned}$ | $$ | $\begin{aligned} & o ̛ \\ & \stackrel{\circ}{\infty} \\ & \infty \end{aligned}$ | $\begin{aligned} & \stackrel{9}{7} \\ & \stackrel{i}{n} \\ & i n \end{aligned}$ | $\begin{aligned} & \stackrel{\text { of }}{ } \\ & \underset{\sim}{7} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { N} \\ & \text { of } \end{aligned}$ | $\begin{gathered} \text { al } \\ \text { ì } \\ \text { in } \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hdashline \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { c̀ } \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & \text { ỳ } \\ & \text { ỳ } \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0} \\ & \stackrel{1}{6} \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { n } \\ & \vdots \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{9}{+} \\ & \dot{+} \end{aligned}$ | $\begin{aligned} & \text { c̀ } \\ & \text { c̀ } \end{aligned}$ | $\begin{aligned} & \text { bo } \\ & \stackrel{\rightharpoonup}{\dot{\sigma}} \end{aligned}$ | $\begin{aligned} & o^{\circ} \\ & \text { n } \\ & \text { of } \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & n \\ & n \\ & n \end{aligned}$ | $\begin{gathered} \stackrel{\circ}{\underset{子}{+}} \\ \stackrel{y}{+} \end{gathered}$ | $\begin{aligned} & \text { č } \\ & \text { Ǹ } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { on } \end{aligned}$ |
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|  | $0$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ |  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 . \\ & \hline 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $8_{0}^{0}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 . \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ñ } \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \end{aligned}$ |
|  | of | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | of | of | $\begin{aligned} & 0 \text { of } \\ & 0 . \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | of | $0_{0}^{0}$ | $0_{0}^{0}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{\Delta 0}{\substack{0}}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ |
|  | of | $\begin{aligned} & \infty \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | of | of | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8$ | $\begin{aligned} & \infty \\ & \infty \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | or | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0_{0} \\ & \underset{i}{2} \end{aligned}$ | of | of | $\begin{aligned} & \text { ơ } \\ & \text { ô } \end{aligned}$ | of | $0_{0}^{0}$ | $\begin{gathered} \text { ê } \\ \text { ê } \end{gathered}$ | $\begin{aligned} & \text { N̂ } \\ & \text { N} \end{aligned}$ |
|  | $0$ | $\begin{aligned} & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\text { P}}{ \pm} \\ & \underset{\sim}{+} \end{aligned}$ | of | of | $\begin{aligned} & \stackrel{0}{n} \\ & \text { n} \end{aligned}$ | $\stackrel{0}{\square}$ | of | $\begin{aligned} & \infty \\ & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \underline{-} \end{aligned}$ | of | of | $\begin{aligned} & \stackrel{\circ}{\circ} \\ & \stackrel{\rightharpoonup}{\gamma} \end{aligned}$ | $\begin{aligned} & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { O} \end{aligned}$ | of | $\begin{aligned} & \infty \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \end{aligned}$ | $\begin{aligned} & \text { Ṇ } \\ & \end{aligned}$ |


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| $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \text { N } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & 8^{2} \\ & 10 \\ & 7 \end{aligned}$ | $\begin{aligned} & 80 \\ & 1 ? \\ & 7 \end{aligned}$ | $\begin{aligned} & \Delta^{2} \\ & \hat{\theta} \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \stackrel{y}{n}_{0}^{8} \\ & \text { ì } \end{aligned}$ | $\frac{\Delta 9}{i}$ | $\frac{0^{2}}{2}$ | $\begin{aligned} & \text { of } \\ & \text { o } \\ & \text { e } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 10 \\ & 7 \end{aligned}$ | $\stackrel{\text { of }}{\substack{0}}$ | $\begin{aligned} & \stackrel{\text { Na}}{i} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { Nु } \end{aligned}$ |  | $\stackrel{\theta^{2}}{i n}$ | $\begin{aligned} & \text { ơ } \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { e. } \\ & \text { ri } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{+} \\ & \stackrel{+}{+} \end{aligned}$ | $\begin{aligned} & 0 \\ & \hat{0} \\ & \stackrel{\rightharpoonup}{2} \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { è } \end{aligned}$ |  | $\begin{aligned} & 0^{2} \\ & \text { N} \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { Be } \\ & \text { be } \\ & \text { तi } \end{aligned}$ |
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Appendix IV：County analysis on Types and Prevalence of Witnessed Crimes（Counties Number 001－025）

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | of | of | of | of | ô. | of | of | ô. | ô | of | of | of | ô | $\stackrel{\text { IO}}{i}$ | ô. | $\stackrel{\infty}{\infty}_{\infty}^{\infty}$ | of | $\stackrel{O}{寸}$ | ô. | ço | of | ペٌ | ô. | of | of |


|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | of | $0_{0}^{0}$ | $0_{0}^{0}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{gathered} \text { or } \\ \text { on } \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ |
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|  | $\begin{gathered} \text { ®ٌ } \\ \stackrel{1}{2} \end{gathered}$ | $\stackrel{\stackrel{1}{\infty}}{\infty}$ | $\stackrel{\circ}{\stackrel{\circ}{0}}$ | $\begin{aligned} & \infty \\ & \infty \\ & \dot{m} \end{aligned}$ | $\begin{aligned} & \infty ゚ \\ & \infty \\ & \underset{寸}{\circ} \end{aligned}$ | $\frac{0}{m}$ | of | $\stackrel{\circ}{\underset{\sim}{c}}$ | $\frac{0}{6}$ | $\frac{0}{6}$ | $\begin{aligned} & \text { of } \\ & \dot{f} \end{aligned}$ | $\begin{aligned} & \text { in } \\ & \stackrel{y}{n} \end{aligned}$ | of | $\stackrel{\text { ®゚ }}{\sim}$ | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\stackrel{\infty}{\infty}_{\infty}^{\infty}$ | $\begin{gathered} \text { of } \\ \text { in } \end{gathered}$ | $\stackrel{8}{\stackrel{\circ}{7}}$ | of | ô. | $\underset{\sim}{\infty}$ | $\stackrel{\text { ®̃ }}{\substack{0}}$ | of | $\begin{gathered} \stackrel{\text { S}}{\substack{4}} \end{gathered}$ | ô. |
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|  | of | of | of | of | of | of | $\frac{0^{2}}{i}$ | of | of | of | ô. | of | ô | of | of | of | of | $\stackrel{\circ}{\square}$ | of | ̣̣̂ | of | of | of | of | ô. |
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|  | $\begin{aligned} & \circ \\ & \text { ơ } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & \stackrel{9}{\circ} \\ & \stackrel{\rightharpoonup}{2} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n} \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{\lambda}$ | $\begin{aligned} & \text { ì } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & \stackrel{0}{0} \\ & \vdots \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \text { n } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { ç } \\ & \text { ה̀ } \end{aligned}$ | $\begin{aligned} & \mathrm{O}_{0}^{\circ} \\ & \dot{\gamma} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{r} \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { ̀̀ } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { Ne } \\ & \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\circ} \\ & \underset{\gamma}{2} \end{aligned}$ | $\begin{aligned} & \stackrel{p}{n}^{n} \\ & \text { n} \end{aligned}$ | of | of |
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|  | $0_{0}^{0}$ | $\begin{aligned} & \text { No } \\ & \text { N} \\ & \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $0_{0}^{0}$ | $0_{0}^{0}$ | $0$ | of | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $0_{0}^{0}$ | $\frac{\Delta 9}{\underset{\sim}{\lambda}}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{2} \\ & \underset{+}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{gathered} \text { N® } \\ \end{gathered}$ | of | $\begin{aligned} & \stackrel{0}{2}_{n}^{\sim} \\ & \underset{7}{2} \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ |
|  | $\begin{aligned} & 80 \\ & 0 . \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 . \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \hline \end{aligned}$ | $0_{0}^{0}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0} \\ & \infty \end{aligned}$ | $0$ | $\frac{8}{7}$ | of | $8$ | $\begin{aligned} & \text { ộ } \\ & \text { in } \end{aligned}$ | $8$ | $\stackrel{\stackrel{\circ}{2}}{\stackrel{1}{1}}$ | of | of | of | $\stackrel{\ominus}{+}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{y}{n}_{+}^{+} \\ & i \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { ? } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & n \\ & \text { n } \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
| $\begin{aligned} & \tilde{B} \\ & \frac{0}{4} \\ & \frac{0}{4} \end{aligned}$ | $0_{0}^{0}$ | $0_{0}^{0}$ | $\begin{aligned} & \text { ô } \\ & \text { g} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{i}$ | $\begin{aligned} & 0^{0} \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | of | of | $\begin{aligned} & \text { of } \\ & \stackrel{y}{+} \end{aligned}$ | of | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & \hline \end{aligned}$ | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | of | $0_{0}^{0}$ |


|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\frac{0}{i}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $0_{0}^{0}$ | $0_{0}^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0_{0}^{2} \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & \text { of } \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 . \\ & 0 . \end{aligned}$ |
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|  | of | of | $\begin{aligned} & \stackrel{\circ}{\circ} \\ & i \end{aligned}$ | ô | $\begin{aligned} & \text { ì } \\ & \text { in } \end{aligned}$ | of of | $\frac{0}{3}$ |  | $\begin{aligned} & \text { of } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { ci } \end{aligned}$ | of | $\begin{gathered} \text { ®゚ } \\ \stackrel{1}{2} \end{gathered}$ | of | $\stackrel{\text { ®® }}{\stackrel{1}{2}}$ | of | ô | of | $\stackrel{\text { Ơ }}{\substack{\text { O}}}$ | of | $\begin{aligned} & \text { ơ } \\ & \underset{子}{2} \end{aligned}$ | $\xrightarrow[\infty]{\infty}$ | $\stackrel{\text { or }}{\stackrel{1}{i}}$ | $\begin{gathered} \text { in } \\ \text { cin } \end{gathered}$ | of | of |
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| 关 | $\begin{aligned} & \text { of } \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & \stackrel{\text { N}}{1} \\ & \text { ì } \end{aligned}$ | $\frac{80}{\stackrel{\circ}{0}}$ | $\begin{aligned} & \stackrel{9}{+} \\ & \stackrel{y}{c} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{\text { ®}}{+} \\ & + \end{aligned}$ | $\stackrel{\Delta 9}{\underset{\sim}{r}}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \infty \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \dot{ \pm} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & 00 \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0_{0}^{0} \\ & \infty \\ & \hline 0 \end{aligned}$ | $\frac{0}{0}$ | $\begin{aligned} & 0^{\circ} \\ & n \\ & \infty \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { er } \end{aligned}$ | $$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \hline \end{aligned}$ | $0_{0}^{0}$ | $\frac{0}{i}$ |
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|  | $\begin{aligned} & 09 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8$ | $\begin{aligned} & \text { or } \\ & \dot{+} \\ & \dot{r} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\frac{0}{i}$ | of | $\frac{8}{6}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \infty \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 69 \\ & 0 \\ & 0 \end{aligned}$ |
|  | of | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | O. | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | O. | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | O. | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0_{0}^{0}$ | $8$ |
| $\underbrace{\substack{0 \\ x}}_{\substack{0 \\ 0}}=$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $8^{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{e} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |


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|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 \\ & \hline \end{aligned}$ | $0_{0}^{0}$ | $\begin{aligned} & 0_{0}^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{e} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & b^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $0$ |
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## Appendix IV: Continued; County analysis on Types and Prevalence of Perceived Crimes (Counties Number 026-47)



| nfanticide | 80 $\square$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 80 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 09 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | of | $\begin{aligned} & 0^{0} \\ & n \\ & n \end{aligned}$ | $0$ | $\begin{aligned} & 89 \\ & \underset{-}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
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|  | $0$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 60 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 69 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 69 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b_{0}^{2} \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 60 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | of | $\begin{aligned} & 0 \\ & 0 \\ & \infty \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 69 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |
|  | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 09 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { OP } \\ & \text { Nin } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | $0$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 8 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | - | $0$ | 0 |
| $\begin{gathered} \stackrel{0}{6} \\ \underset{\sim}{7} \\ \hline \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\underset{i}{8}$ | $\begin{aligned} & Q_{n} \\ & n \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & \infty \\ & \dot{\gamma} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & 0 \end{aligned}$ | $\begin{aligned} & Q^{n} \\ & ? \\ & \cdots \end{aligned}$ | $\stackrel{8}{2}$ | - ${ }^{0}$ | 0 0 0 0 | $\begin{aligned} & \text { ol } \\ & \text { n} \end{aligned}$ | $\begin{aligned} & \text { ơ } \\ & \text { or } \end{aligned}$ | $$ | $\begin{aligned} & \text { OQ } \\ & \underset{+}{2} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & b^{2} \\ & \infty \\ & \infty \end{aligned}$ | $\frac{8}{3}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \dot{n} \end{aligned}$ | O | $\begin{aligned} & b^{p} \\ & \text { N } \\ & \text { in } \end{aligned}$ | O |
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|  | of | $\begin{aligned} & 69 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $0$ | - | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{n}{n} \end{aligned}$ | O | $0$ | $\stackrel{\leftrightarrow}{\underset{\sim}{r}}$ | $\begin{aligned} & \text { o? } \\ & \text { n? } \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \infty \end{aligned}$ | $\xrightarrow[+]{+}$ | $\begin{aligned} & \stackrel{Q}{+} \\ & i \end{aligned}$ |  | 0 $n$ $n$ | 6? | $\stackrel{\Delta 9}{+}$ | $0^{0}$ | 80 | ci N N | ơ N $\square$ |
|  | $\begin{aligned} & \text { of } \\ & \text { ó } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \stackrel{1}{+} \\ & \stackrel{y}{n} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { in } \\ & i n \end{aligned}$ | 0 $\infty$ $i$ $i$ | $0^{0}$ $\stackrel{+}{+}$ $\stackrel{n}{n}$ | $\begin{aligned} & \text { ô } \\ & \text { oे } \\ & = \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { त̀ } \end{aligned}$ | $\begin{aligned} & 0^{\circ} \\ & \text { of } \\ & \dot{r} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { n } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & b^{2} \\ & n \\ & n \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { of } \\ & \text { m } \\ & \text { for } \end{aligned}$ | $\begin{aligned} & 0^{p} \\ & \infty \\ & i \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & \stackrel{0}{0} \\ & \stackrel{\infty}{+} \\ & \hline \end{aligned}$ | $\begin{aligned} & 0^{0} \\ & \infty \\ & \dot{N} \end{aligned}$ | $\begin{aligned} & \text { of } \\ & n \\ & n \end{aligned}$ | $\begin{aligned} & \text { ô } \\ & \text { on } \\ & \text { in } \end{aligned}$ | $\begin{aligned} & 0^{2} \\ & 0 \\ & \text { ò } \end{aligned}$ | $\begin{aligned} & q^{p} \\ & \underset{q}{2} \\ & \underset{\sim}{n} \end{aligned}$ | $$ | $\begin{aligned} & 0_{0}^{0} \\ & 0 \\ & \text { N } \end{aligned}$ | b $\stackrel{+}{+}$ $i$ | $\frac{8}{6}$ |
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