

Influence of Cattle rustling on Socio-economic Development of Pastoralist Communities In Laikipia west Constituency, Laikipia county, Kenya.

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Abstract

This study aimed to address the knowledge gap regarding the socio-economic repercussions of cattle rustling on pastoralist communities, with a specific focus on Laikipia West Constituency, Laikipia County, Kenya. Employing a mixed-methods approach, integrating both quantitative and qualitative data, this study examined the impact of cattle rustling on various Socio-economic dimensions that is: health, education, income, and commercial activities. Data collection encompassed questionnaires and interviews targeting key stakeholders such as herders, teachers, healthcare providers, and local administrators. Ethical considerations were adhered to throughout the research process, ensuring proper clearances and confidentiality. Analysis of the data, conducted utilizing SPSS software, revealed that mental and physical health outcomes were profoundly affected, reflecting the broader societal repercussions of cattle rustling, including escalated conflict and diminished access to essential resources. Education emerged as another critical domain significantly impacted by cattle rustling, with attendance hindrances, elevated dropout rates, and adverse effects on learning outcomes and teacher retention. Livelihoods within pastoral communities were severely compromised by cattle rustling, evidenced by declines in livestock productivity and sales, reduced profitability, and market value. Challenges in income diversification and investment opportunities further underscored the broader economic ramifications of cattle rustling on financial stability and long-term viability. Commercial enterprises within pastoral communities faced formidable challenges due to cattle rustling, resulting in diminished sales, profitability, and financial stability. These findings underscore the need to establish free or low-cost boarding schools, mobile clinics, income diversification strategies among pastoralist communities, facilitate access to financial services and land reforms to reduce the conflict of resources in Laikipia West Constituency.

Keywords: Cattle rustling; Education; Health; income; Commercial activities; pastoralist communities.

Introduction

Cattle rustling is a practice that poses a significant threat to pastoralist communities as it involves the theft of their livestock, which serves as their primary form of capital and main source of livelihood. This illicit activity not only results in the loss of valuable assets for pastoralists but also creates detrimental effects on their ability to achieve Sustainable Development Goals. Pastoralist communities frequently have limited access to essential resources like land and water, which puts them under a great deal of stress. This scarcity of resources often pushes them into engaging in cattle rustling as a means of survival (World Bank, 2016). However, this practice hampers their progress towards achieving sustainable development.

Conflicts sparked by cattle rustling have broad repercussions. In addition to causing the loss of livestock, a primary source of income for pastoralists, these conflicts obstruct the development and delivery of essential services in the affected areas (Finley, 2017). Livestock theft disrupts the intricate livelihood systems of these communities, stifling their economic growth and development. Moreover, cattle rustling-related conflicts can facilitate the spread of diseases and destroy social amenities that have been established to support the communities.

Cattle rustling is not limited to Africa, it is a problem that affects many regions of the world. Cattle rustling has been a problem in Wales for centuries, with instances of rustling being recorded as far back as the 16th century (Eaton, 2020). In the past, rustling was often a way for people to supplement their income and provide food for their families. However, as the economy and society have changed, rustling has become more of a criminal enterprise.

In recent years, there have been instances of cattle rustling in Wales, particularly in the rural areas. Rustlers have been known to steal both beef and dairy cattle, with the animals often being sold on the black market (Chrisman, 2019). The Welsh government has been working to combat cattle rustling through a variety of measures, including increasing penalties for rustlers, promoting better security measures for farmers, and increasing awareness of the issue among the public. The National Farmers Union and other organizations have also been actively raising awareness of the problem and providing advice and support to farmers (Cheserek, Omondi & Odenyo, 2016).

In many rural areas of Australia, cattle rustling is a crime that has long plagued those areas. According to the Australian Cattle and Beef Association, cattle rustling costs the industry around \$10 million per year. In recent years, there have been instances of cattle rustling reported in several Australian states like New South Wales, Western Australia, Queensland and Victoria. Rustlers have been known to steal both beef and dairy cattle, with the animals often being sold on the black market (Chambers, 2019).

Livestock rustling is an ongoing issue in the United Kingdom, despite efforts to curb the practice through laws and technology. According to a report by rural insurer NFU Mutual, the cost of livestock thefts in the United Kingdom had risen by 170% in 2011 compared to the previous year. This included the theft of more than 67,000 sheep, which cost farmers an estimated £6 million. Sheep are particularly vulnerable to rustling due to their ease of transport and high market value (Finley, 2017). The problem is not limited to sheep, however. Cattle rustling is also a concern, with the NFU Mutual reporting that cattle rustling costs UK farmers around £5m annually.

Livestock rustling has had devastating effects in South Sudan, resulting in the loss of lives and displacing numerous individuals annually. This practice is closely associated with ethnic violence and contributes to widespread hunger and dependence on food aid. The situation is further aggravated by the easy availability of weapons like RPGs and AK-47s, as well as the involvement of individuals with military experience. According to a UN report from 2009, ethnic violence stemming from cattle rustling caused the deaths of over 2,500 people and displaced more than 350,000 individuals in that year alone. The violence also leads to food insecurity, as families are forced off their farms and unable to harvest crops. The ongoing militarization in South Sudan, a consequence of nearly four decades of civil war, adds to the complexity of the issue.

In Kenya, cattle rustling has been a longstanding problem exacerbated by the policies and practices inherited from British colonial rule and perpetuated in independent Kenya. Cattle rustling has accelerated due to the marginalization of pastoralist communities, which have a demand for resources like land and water. Political instability in neighbouring countries like Uganda, Sudan, Somalia, and Ethiopia has facilitated the proliferation of firearms, contributing to the militarization of cattle rustling (Markakis, 2019). Consequently, this traditional practice has transformed into a criminal activity characterized by increased violence and loss of life.

Laikipia County has seen the occurrence of predatory banditry and cattle rustling systems over the past 20 years. Large groups of armed youths invade other communities to seize livestock, including cows, sheep, goats, donkeys, and camels (Salvadori & Feeders, 2019). These incursions often lead to violent clashes between communities, resulting in property destruction and loss of life. While cattle rustling in Laikipia County is not a recent phenomenon, it has evolved in terms of operational methods. Traditionally, elders regulated and controlled cattle rustling as a cultural practice, organizing, guiding, blessing, and supervising raids to minimize fatalities. However, with the diminished influence of the elders, uncoordinated raids have become more frequent, resulting in higher casualty rates (Anon, 2019).

Furthermore, cattle rustling has become more sophisticated, with a shift from locally crafted weapons to modern automatic firearms. The utilization of sophisticated firearms has intensified the violence during raids and often leads to politically motivated disputes over administrative boundaries. These disputes aim to expand and monopolize land, with politicians seeking to safeguard homogeneous electoral bases. Cattle rustling in Laikipia West Constituency exhibits many characteristics of violent conflicts, including clashes between different factions, the use of force, killings, and property destruction (Satya, 2020).

Multiple factors contribute to the prevalence of cattle rustling, including historical and ethnic tensions, land disputes, political interference, poverty, unemployment, governance and security challenges, political instability, and climate change. Other factors such as environmental degradation, economic inequality, immigration, pastoralism, general national insecurity, police brutality, and corruption also contribute to the breakdown of law and order, as well as the failure to provide basic services (Barton, 2021). Residents' trust in the ability of security agencies to protect them has been eroded by the threat of banditry in the Laikipia West Constituency region. Banditry has notable negative economic effects and tends to result in businesses closing or moving.

In Laikipia County, cattle rustling has evolved into a pervasive security, lives and property threat that manifests as predatory exploitation of economic resources. It was once thought of as a cultural practice governed by elders, but it has since changed into a major internal security concern across the region. Numerous pastoral communities in Laikipia West Constituency have been forced to relocate as a result of frequent activities that have resulted in massive livestock theft, killings, and extensive property destruction. These activities have also caused a decline in economic activity, a collapse in the education system, and a lack of infrastructure development. The situation has worsened despite the national and Laikipia County Government efforts to combat this menace.

It is in this light that the study area is noteworthy in particular because it will highlight the crucial role that cattle rustling plays in influencing socioeconomic development within the community. Research findings will offer valuable insights into the challenges faced by pastoralist communities in Laikipia West Constituency, Laikipia County, specifically regarding the impact of livestock rustling on education, health, income, and commercial business. The findings of this study will aid in the creation of practical plans to advance human development and deal with the problem of cattle rustling in the region.

Literature review

Cattle Rustling on the Health of Pastoral Communities

Globally, pastoral communities have consistently struggled with the problem of livestock rustling, which has had a serious negative impact on their livelihoods, food security, and general well-being. This review of the literature intends to look into how the health of pastoral communities is affected by cattle rustling. These communities heavily depend on their livestock for sustenance, income, and financial stability. The theft of their livestock not only deprives them of their primary source of income but also disrupts

their food supply (Smith, 2018). As a consequence, the loss of these vital resources can lead to reduced access to food, resulting in malnutrition and various health-related issues (Jones, 2020). Additionally, cattle rustling can increase stress levels and cause physical and mental health problems for the affected communities (Mwaura & Muchiri, 2019). The constant worry about rustling and the scarcity of resources can result in high levels of stress, anxiety, and depression, which can then result in physical health issues. (Liu & Zhang, 2021).

In a study conducted by Omondi *et al.* (2019) in Kenya, researchers examined the health outcomes of pastoral communities affected by cattle rustling incidents. Data from 500 households living in areas where cattle rustling is common were gathered using a cross-sectional design. Results of the study showed that cattle rustling was bad for pastoral communities' health. These communities reported higher rates of raid-related injuries and health problems, such as physical wounds and stress-related illnesses, that are connected to cattle rustling. The study came to the conclusion that the health of pastoral communities was significantly impacted by cattle rustling, resulting in increased morbidity and decreased well-being.

The long-term effects of cattle rustling on the health of pastoral communities were examined in a longitudinal study by Mwangi *et al.* (2020) in northern Kenya. The study followed 300 households over three years and assessed their health outcomes before and after cattle rustling incidents. The study findings revealed that cattle rustling had an enduring negative impact on the health of pastoral communities. Increased rates of injuries, mental health issues, and communicable diseases, such as malaria and respiratory infections, were reported by the communities following cattle rustling incidents. According to the study, pastoral communities may experience health effects from cattle rustling long after the incidents themselves have passed.

In a study conducted in Kenya by Ndungu *et al.* (2018), researchers looked at the relationship between pastoral communities' access to healthcare services and cattle rustling. A qualitative methodology was used to conduct in-depth interviews with healthcare professionals and members of the community. Results of the study showed that incidents involving cattle rustling frequently disrupted healthcare services, resulting in the closure of medical facilities and the displacement of healthcare professionals. Consequently, pastoral communities experienced reduced access to healthcare services, resulting in increased morbidity and mortality rates. The study highlighted the significant implications of cattle rustling on hindering access to healthcare services for pastoral communities.

A cross-sectional study was carried out in Kenya by Kiprotich *et al.* (2021) to look into the effects of cattle rustling on pastoral communities' mental health outcomes. To gather information from 400 households living in areas where cattle rustling is common, standardized tests were used to evaluate the results. Research revealed higher rates of post-traumatic stress disorder (PTSD), depression, and other mental health conditions in pastoral communities where cattle rustling incidents had occurred. The study emphasized the need for targeted interventions because the psychological effects of cattle rustling on pastoral communities may have long-lasting effects on mental health.

In a study by Kithinji *et al.* (2018) in Kenya, the impact of cattle rustling on maternal and child health outcomes among pastoral communities was examined. Data were gathered from utilizing a mixed-methods approach, and 800 households. The study findings revealed adverse effects of cattle rustling incidents on maternal and child health outcomes. Increased rates of maternal mortality, infant mortality, and low birth weight among newborns were reported by the communities following cattle rustling incidents. The study underscored the disruption of access to maternal and child health services caused by cattle rustling.

However, it is essential to acknowledge that the existing literature has certain limitations. The studies reviewed were geographically limited to specific regions in Kenya and may not be representative of the experiences of pastoral communities in other parts of the world. Moreover, variations in methodologies and sample sizes across the studies may affect the generalizability of the findings. Therefore, further research is necessary to investigate the health impacts of cattle rustling in diverse contexts, employing rigorous study designs and larger sample sizes to obtain more reliable and comprehensive evidence.

2.2.3 Cattle rustling and education among pastoral communities

Any nation's overall development depends critically on education. By the end of the decade, a framework was established by the UN conference held in Jomtien in 1990 to achieve universal primary education. By focusing on expanding access to early childhood education, making primary education free and mandatory, and promoting learning and the development of life skills in both children and adults, the World Education Forum in Dakar, Senegal, in 2000 reaffirmed member states' commitment to Education for All (EFA) by 2015.

Kenya has been working to improve education ever since gaining political independence in 1963, thanks to efforts from both the public and private sectors. Dedication to education has been reflected in several government documents, including sessional papers, educational commission reports, and national development plans. Notably, Session Paper No. 10 (1965) emphasized that every Kenyan child has the right to access basic welfare provisions, including education, regardless of gender, religion, or ethnicity. The achievement of universal primary education and skilled labour has remained a top priority in Kenya's national development agendas, with significant resources allocated (Sifuna 1994).

However, conflicts, particularly in Africa, have posed challenges to achieving the Millennium Development Goals of Education for All. Conflict-related effects on education have been highlighted in reports, including school closures and child displacement. For instance, conflicts in the Eastern Democratic Republic of the Congo and Liberia have resulted in a sizable number of kids quitting school. (UNICEF 2012). Conflicts and economic pressures pose significant barriers to education, particularly in Sub-Saharan Africa. According to UNESCO (2016), over 10 million children in sub-Saharan Africa drop out of school each year, making up more than 50% of all out-of-school children worldwide in 2008. Children's access to education has been severely hampered by cattle rustling, a localized conflict among

pastoralists. For example, in Kenya, 40% of the over a million primary school-aged children do not attend class because they live in pastoralist communities. 2016 (UNICEF).

Cattle rustling not only affects access to education but also disrupts the learning environment. The presence of insecurity and the destruction of school facilities hinder curriculum implementation and negatively impact the quality of education. Insecure conditions lead to chronic absenteeism among both teachers and students and result in poor performance in national examinations. Teachers, feel insecure, struggling to deliver content effectively, and the scarcity of teachers in affected areas exacerbates the challenges (SCDE 2017). Additionally, pastoralist communities often prioritize cattle ownership over education due to their cultural and economic reliance on livestock. Some parents discontinue their daughters' education to arrange early marriages that will bring wealth in the form of bride prices. Boys also drop out of school to engage in cattle rustling activities or seek revenge for the loss of their fathers. These practices further contribute to low participation in education and reinforce negative stereotypes associated with pastoralist communities (Gorham 1980). The impact of cattle rustling extends beyond education, affecting social integration and community perceptions. Negative labels such as "cattle thieves" and "killers" attached to the Pokot community, for example, lead to social exclusion and transfer requests for Pokot children studying outside their county. These challenges contribute to the community's overall low participation in education (SCDE 2017).

2.2.4 Cattle Rustling and Income of Pastoral Communities

In the United States, rural areas face a significant challenge with cattle rustling. According to a study conducted by the National Agricultural Statistics Service (NASS) in 2018, the estimated value of stolen livestock in the country exceeded \$220 million. This problem affects both large-scale commercial livestock producers and small-scale farmers. Similarly, in Canada, cattle theft is a significant concern. The Canadian Agricultural Crime Information Center (CACIC) found that the value of stolen livestock in the country exceeded \$2 million in 2019. The study also highlighted the adverse impacts of cattle theft on the income of small-scale farmers and ranchers.

Cattle rustling is also a significant issue in Europe, notably in Britain, Italy, and Spain. In Britain, a study by the National Farmers' Union (NFU) in 2021 estimated the value of stolen livestock in the country to exceed £3 million. The study underlined the impacts of cattle rustling on the income and livelihoods of small-scale farmers. In Italy, the Italian National Institute of Statistics (ISTAT) conducted a study in 2019, which found the value of stolen livestock to be over €15 million. The study highlighted the substantial social and economic implications of cattle rustling, particularly among rural populations. Spain faced a similar situation, with the Spanish Ministry of Agriculture, Fisheries, and Food estimating the value of stolen livestock in the country to exceed €5 million in 2020. The study also emphasized the impacts of cattle rustling on the income and livelihoods of small-scale farmers and ranchers.

Cattle rustling remains a prevalent problem in various Asian countries, including China, India, and Japan. In China, a study by

the China Agricultural University in 2019 estimated the value of stolen livestock to exceed ¥1.5 billion. The study emphasized the impacts of cattle rustling on the income and livelihoods of small-scale farmers and ranchers, particularly among ethnic minority communities. In India, the National Crime Records Bureau (NCRB) conducted a study in 2020, estimating the value of stolen livestock to exceed ₹2 billion. The study highlighted the significant social and economic implications of cattle rustling for affected rural communities. Japan faced a similar issue, with a study by the Japanese Ministry of Agriculture, Forestry, and Fisheries in 2018 estimating the value of stolen livestock to exceed ¥100 million. The study emphasized the impacts of cattle rustling on the income and livelihoods of small-scale farmers and ranchers. In Nigeria, Egwuonwu *et al.* (2018) conducted a study to examine the impact of cattle rustling on the livelihoods of pastoral communities in the North-Central region. The findings revealed that cattle rustling had severe consequences for the income of pastoralists, resulting in the loss of up to 70% of their livestock. Consequently, many pastoralists were compelled to abandon their traditional way of life and seek menial jobs to sustain themselves financially. Similar to this study, Mekuria *et al.* (2019) investigated the impact of cattle rustling on the livelihood of pastoral communities in Ethiopia's Borana region. According to the study, cattle rustling significantly reduced pastoralists' income, with some suffering losses of up to 90% of their livestock. Because of this, many pastoralists were forced to rely on remittances from family members working in cities or engage in other non-livestock activities like petty trade to survive.

Omoding *et al.* (2019) conducted research on the effect of cattle rustling on the livelihood of pastoral communities in the Karamoja region of Uganda. The study showed that cattle rustling had caused pastoralists to lose a significant amount of income, with some suffering losses of up to 60% of their livestock. The study also found that cattle rustling disrupted the livestock trade and contributed to a drop in the market value of livestock, which had an additional negative impact on pastoralists' ability to earn a living.

Finally, Mugambi *et al.* (2020) investigated the effects of cattle rustling on the livelihoods of pastoral communities in the Isiolo region of Kenya. According to the findings, cattle rustling had caused pastoralists to lose a sizable amount of money, with some losing as much as 50% of their livestock. The study also showed that cattle rustling hampered livestock trade and decreased the market value of livestock, aggravating the financial difficulties faced by pastoralists. The study emphasized the need for government intervention to address the problem of cattle rustling, including providing compensation to impacted pastoralists.

2.2.5 Cattle Rustling and Commercial Businesses of Pastoral Communities

Cattle rustling, which involves the theft of livestock, this criminal activity has had significant consequences on the commercial businesses of these communities. The economic impact of cattle rustling has been the subject of numerous studies conducted in various regions across the globe.

In the United States, cattle rustling has posed a long-standing problem. According to a study by Aranda (2019), it has caused substantial losses for pastoral communities, resulting in a decline

in commercial businesses. Additionally, the cost of cattle rustling is highlighted in the study. has escalated in recent years, leading to a decrease in the cattle population. Similarly, Canada has also experienced a significant impact on commercial businesses due to cattle rustling. A study by Klaassen (2018) indicates that the theft has resulted in financial losses for many farmers, compelling them to abandon their businesses. Consequently, the number of cattle raised has decreased, and the local communities have felt the economic repercussions, with several businesses failing.

In Brazil, cattle rustling has been a persistent challenge affecting the commercial businesses of pastoral communities. Nascimento's study (2021) reveals a decrease in the cattle population, negatively impacting the country's economy. The study also highlights the substantial cost of theft, contributing to a decline in the income of pastoral communities. In Japan, where pastoral communities focus on Wagyu beef production, a highly prized commodity, cattle rustling has emerged as a concern. Kawamura *et al.*'s study (2019) examines its impact on the commercial businesses of Wagyu beef producers in the Gifu Prefecture. The study reveals that cattle rustling has had a significant influence on these producers' economic well-being, affecting their marketing and sales efforts. The high demand for Wagyu beef makes it an attractive target for cattle rustlers, further jeopardizing the commercial viability of these producers.

The problem of cattle rustling, which is common in Africa, has an impact on pastoral communities that raise livestock. Ibrahim *et al.* (2021), for example, looked at the effects of cattle rustling on the local economies of pastoral communities in Nigeria's North-West. The findings highlighted the significant economic consequences of cattle rustling, hindering the communities' ability to invest in livestock production and marketing. The involvement of armed groups and the absence of adequate security measures further compounded the challenges faced by these communities in protecting their livestock from theft. Similar to this, a 2019 study by Abebe *et al.* in Ethiopia's Oromia region looked at the effects of cattle rustling on pastoral communities' commercial enterprises. The study found significant effects on these communities' economic health, which had an impact on their efforts to market and sell livestock. Furthermore, the presence of armed groups made it more difficult for them to protect their livestock from theft and rustling.

Uganda, known for its cattle production, also experiences the effects of cattle rustling on pastoral communities. Mugerwa *et al.* (2019) conducted a study in the Karamoja region, shedding light on the economic implications of cattle rustling. Research underscored the adverse impact on the communities' ability to invest in livestock production and marketing.

Kenya, with its complex cattle rustling dynamics, has been the subject of multiple studies. Lokaale *et al.* (2018) revealed that cattle rustling in Kenya involves multifaceted factors such as competition for resources like pasture, water, and grazing land. Moreover, the study highlighted the lucrative nature of cattle rustling, with stolen cattle often sold in neighbouring countries, disrupting cross-border trade and economic activities. The effect of cattle rustling on the commercial enterprises of pastoral communities in Kenya was further investigated by Sogoba *et al.* (2020). Their study demonstrated the direct negative effects on the

economy, including reduced household income and food security resulting from livestock loss. Additionally, cattle rustling was found to disrupt the social and cultural fabric of pastoral communities, leading to conflict and insecurity. Moreover, Ruto *et al.* (2021) focused on the tourism sector in Kenya, emphasizing the consequences of cattle rustling on an industry heavily reliant on wildlife and pastoralism. The study revealed that increased cattle rustling activities negatively affected tourism, leading to a decline in industry revenue. Collaboration between the government and pastoral communities was highlighted as crucial in addressing cattle rustling and ensuring the sustainability of the tourism sector.

2.4 Theoretical Framework

The theoretical framework underpinning this study delves into the intricacies of conflict theory, particularly drawing from the perspectives of Karl Marx and Randall Collins. Marx's foundational work laid the groundwork for understanding societal dynamics through the lens of conflict, emphasizing the role of economic structures in shaping social relations. According to Marx, class conflict arises from the inherent contradictions within capitalist societies, where the ownership of property determines power dynamics and perpetuates inequalities. He conceptualized conflict as a dialectical process, wherein opposing interests clash, leading to societal change. Collins, on the other hand, expands on Marx's ideas by incorporating insights from symbolic interactionism and phenomenology. He emphasizes the role of violent coercion and unequal distribution of resources in fueling conflicts within societies. Collins argues that individuals are driven by self-interest and engage in status struggles to maximize their subjective status. Together, these perspectives provide a comprehensive framework for analysing the influence of cattle rustling on pastoral communities, highlighting the underlying power differentials and competition for scarce resources as key drivers of conflict.

Methodology

Research Design

The descriptive survey design adopted for this study facilitates the examination of the relationship between the independent variable, cattle rustling, and the dependent variable, socioeconomic development of pastoralist communities in Laikipia West Constituency, Laikipia County, Kenya. The descriptive survey design, commonly utilized in the social sciences (Mugenda, 2003), aims to gather detailed information on the experiences and perceptions of pastoral communities regarding the impact of cattle rustling on their socio-economic development.

Population and Sampling

The sample size for this study was calculated using Fisher's formula (Fisher, 1932): With a population size of 2670, a conservative estimated proportion (p) of 0.5, a confidence level of 95%, and a margin of error of 5%, the calculated sample size is 385 (Fisher's formula, 95% CI, n = 385). This sample size ensures a sufficient representation of the population and provides a reliable basis for concluding the target population (Smith, 2010).

Table 1: Sampling procedure

Target Population	Proportion in %	Sample size (P*385)
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Herders	1500	1500/2670	216
Teachers	630	630/2670	91
Health Practitioners	300	300/2670	43
Local Administration	20	20/2670	5
Traders	200	200/2670	30
TOTAL	2670	1	385

Data Collection Methods

Utilizing questionnaires and interviewing methods, primary data was collected from study participants. Key Informant Interviews (KIIs) were also utilized to gather more detailed information.

Data analysis techniques

After the completion of fieldwork, the gathered data from the questionnaires underwent entry into SPSS software for systematic analysis. The quantitative data were subjected to analysis using SPSS. Qualitative data obtained from open-ended questions; a thematic approach was also adopted.

Results and discussions

Response Rate

In the pursuit of this research endeavour, the selected methodology aimed to involve a cohort of 385 individuals through the strategic distribution of surveys, with an additional twelve respondents earmarked for inclusion via comprehensive interviews. The outcome materialized as 295 meticulously completed questionnaires, derived from the initial pool of 385, resulting in a notable 76.6% response rate, meticulously documented in Table 4.1. This substantial level of participation demonstrated by the respondents serves as a testament to the efficacy of our data collection strategy.

Table 2: Response Rate Results

Response	Frequency	Percentage
Unreturned questionnaires	90	23.4%
Returned questionnaires	295	76.6%

According to reputable scholars, the optimal threshold for completed data return from participants is set at a minimum of 50% to meet adequacy criteria, and no less than 60% for data of commendable quality (Creswell, 2014). However, a response rate surpassing the 70% mark can be deemed exceptional. In the context of this study, the remarkable response rate of 76.6% achieved is indeed commendable. This exceptional level of enthusiasm and active engagement from the research participants underscores the significance of the study's findings. Furthermore, this elevated response rate significantly enhances the credibility and reliability of the research outcomes, as the sample size appropriately reflects the population under examination.

Cattle Rustling and Health of Pastoral Communities in Laikipia West Constituency, Laikipia County, Kenya

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The examination of mental and physical health indicators within pastoral communities affected by cattle rustling underscores the multifaceted nature of health challenges and their profound implications for well-being and socioeconomic stability as illustrated in Figure 4.1.

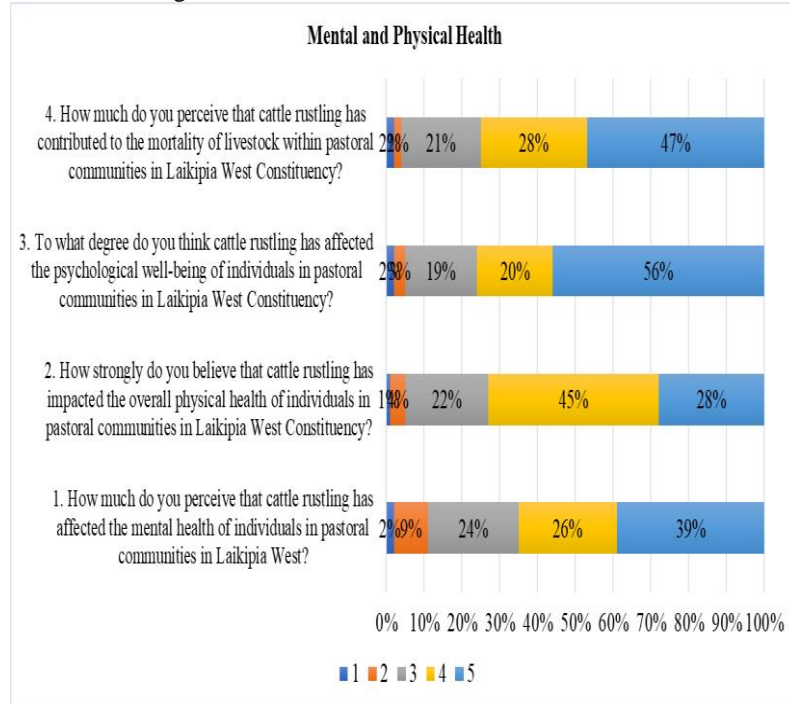


Fig 1: Mental and Physical Health

The findings reveal a significant perception among respondents that cattle rustling has a considerable impact on mental health, with 65% reporting significant or extreme effects. This resonates with existing literature, which suggests that incidents of cattle rustling elevate stress, anxiety, and depression levels among affected individuals (Liu & Zhang, 2021). Such findings emphasize the psychological distress experienced within pastoral communities, highlighting the imperative for targeted interventions to address mental health concerns. Similarly, the study indicates a substantial impact of cattle rustling on the physical health of individuals within pastoral communities, with 73% of respondents perceiving significant or extreme effects. This aligns with prior research highlighting the direct and indirect consequences of cattle rustling on physical health, including injuries, stress-related illnesses, and limited access to healthcare services (Omondi et al., 2019; Mwangi et al., 2020). The findings underscore the immediate threats posed by cattle rustling incidents, as well as the long-term implications for health outcomes within affected communities. Furthermore, the analysis reveals a considerable perception among respondents regarding the psychological well-being of individuals within pastoral communities, with 76% reporting significant impacts. This echoes existing literature emphasizing the profound psychological distress caused by the persistent threat of cattle rustling (Kiprotich et al., 2021). The results underscore the substantial psychological toll experienced by community members, emphasizing the urgency of addressing mental health challenges through targeted interventions and support services.

Regarding livestock mortality, a majority of respondents (75%) perceive that cattle rustling has contributed significantly to livestock mortality within pastoral communities. This finding aligns with prior research highlighting the substantial loss of livestock resulting from cattle rustling incidents, exacerbating economic and health challenges for pastoralists (Mwangi et al., 2020; Kithinji et al., 2018). The interconnectedness of livestock welfare and human health underscores the need for holistic approaches to address the health impacts of cattle rustling, encompassing strategies to mitigate livestock losses and enhance livestock management practices within these vulnerable communities.

Influence of Cattle Rustling on the Education of Pastoral Communities in Laikipia West Constituency, Laikipia County, Kenya

The investigation into the influence of cattle rustling on school attendance and dropout rates among pastoral communities in Laikipia West Constituency delves into the multifaceted challenges posed by localized conflicts on educational outcomes. Through the analysis of survey data capturing community perceptions, this study aims to illuminate the extent of the problem and its implications for educational attainment. The results are presented in Figure 2.

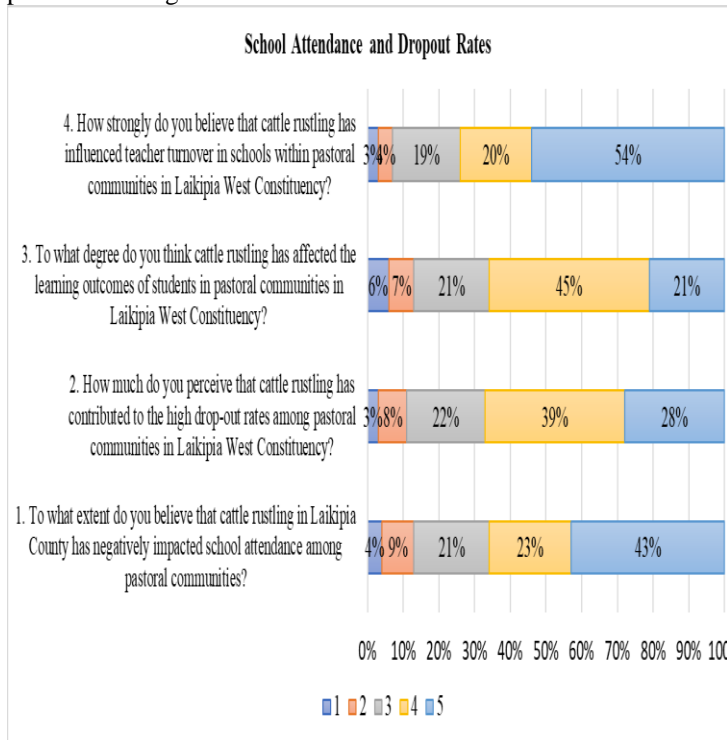


Fig 2: School Attendance and Dropout Rates

The findings reveal a widespread perception among respondents that cattle rustling significantly hampers school attendance, with 43% strongly agreeing and 23% agreeing with this assertion. This underscores the profound impact of conflict on educational access in pastoral areas, aligning with existing literature that emphasizes how conflicts, including cattle rustling, disrupt daily routines and pose security risks for students (UNICEF, 2020).

Moreover, a substantial portion of respondents attribute high dropout rates to cattle rustling, with 39% perceiving a large contribution and 28% attributing a very large impact. This perception reflects an acknowledgement of the multifaceted challenges faced by pastoral students, including insecurity and disrupted learning environments, contributing to premature school leaving. These findings resonate with prior research highlighting the negative consequences of insecure learning environments on students' academic achievement (SCDE, 2017), emphasizing the urgent need for interventions to address dropout rates and support pastoral students.

Additionally, respondents strongly perceive those cattle rustling significantly compromises learning outcomes, with 45% attributing a large extent of influence and 21% perceiving a very large impact. This underscores the disruptive nature of conflict in the educational process, including interrupted instruction and trauma experienced by students and teachers. The perceived influence on learning outcomes underscores the necessity for comprehensive support measures to address the educational needs of pastoral students affected by conflict, consistent with prior observations in the literature (SCDE, 2017).

Furthermore, a widespread perception among respondents indicates that cattle rustling has led to significant instability in pastoral schools, resulting in high teacher turnover rates. This underscores the challenges teachers face in working in conflict-affected environments, including safety concerns and limited resources, necessitating strategies to support and retain educators in pastoral areas affected by conflict. These findings correspond with existing literature, highlighting the broader implications of cattle rustling on educational stability and quality (SCDE, 2017).

Influence of Cattle Rustling on the Income of Pastoral Communities in Laikipia West Constituency, Laikipia County, Kenya

The examination of the influence of cattle rustling on the market value of livestock and investment opportunities within pastoral communities in Laikipia West Constituency reveals significant implications for economic stability and livelihood strategies as shown in Figure 3.

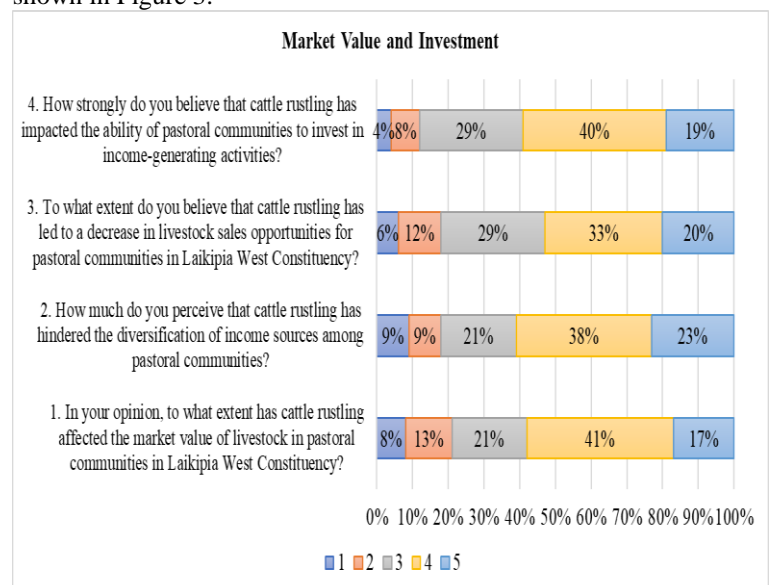


Fig . 3: Market Value and Investment

The data analysis indicates a prevalent perception among respondents that cattle rustling substantially affects the market value of livestock, with 41% attributing a large extent of impact. This finding aligns with existing literature, emphasizing the adverse economic consequences of cattle rustling on livestock markets (IBGE, 2020; NASS, 2018; NFU, 2021). The observed fluctuations in livestock prices and increased risk associated with cattle theft contribute to this perception, highlighting the need for interventions to mitigate economic losses incurred by pastoralists. Moreover, respondents perceive cattle rustling as a significant hindrance to income diversification efforts, with 38% attributing hindrance to a large extent. This perception underscores the economic instability and insecurity caused by cattle theft, which deters investments in alternative income-generating activities (Egwuonwu et al., 2018; ISTAT, 2019). Additionally, the perceived decrease in livestock sales opportunities, reported by 33% of respondents, reflects the adverse effects of cattle rustling on livestock trade and market dynamics, contributing to income instability for pastoralists (Mugambi et al., 2020; UNICEF, 2020). Furthermore, respondents widely perceive cattle rustling as a barrier to investment in income-generating activities, with 40% indicating a significant impact. This perception reflects the diversion of resources towards mitigating risks associated with cattle theft, limiting investments in alternative income ventures (Mekuria et al., 2019; Omoding et al., 2019). These findings underscore the broader economic challenges posed by cattle rustling, hindering investment and economic development within pastoralist regions.

Influence of Cattle Rustling on Commercial Businesses of Pastoral Communities in Laikipia West Constituency, Laikipia County, Kenya

Cattle rustling, a persistent menace in pastoral communities, extends its detrimental effects beyond individual livelihoods to the commercial enterprises operating within these regions. The data collected (figure 4.4) from the Laikipia West Constituency sheds light on the perceived impact of cattle rustling on the growth and expansion prospects of commercial businesses within pastoral communities.

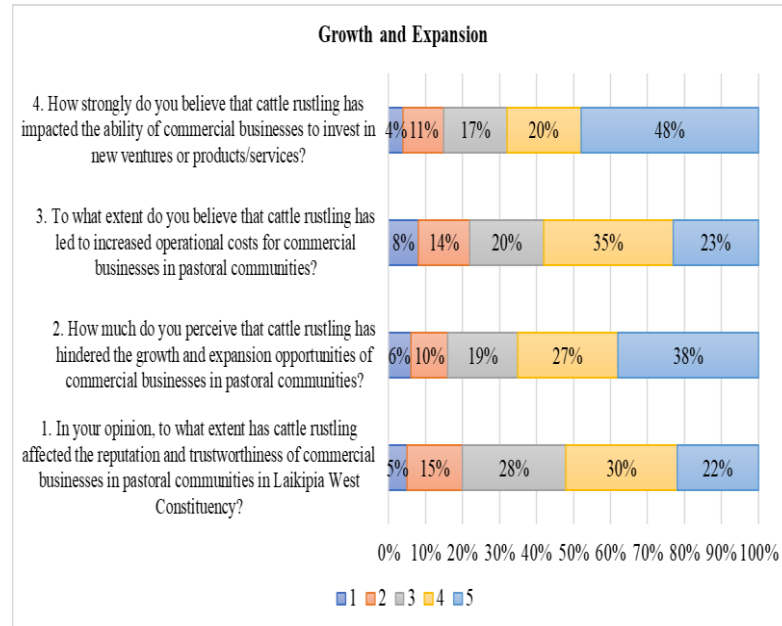


Fig 4: Growth and Expansion

The survey indicates that a significant portion of respondents, 52%, believe cattle rustling has indeed affected the reputation and trustworthiness of commercial businesses in the region (Ibrahim et al., 2021; Abebe et al., 2019). Respondents overwhelmingly (65%) perceive those cattle rustling significantly hinders the growth and expansion opportunities of commercial businesses in pastoral communities, with 38% strongly agreeing with this statement (Klaassen, 2018; Nascimento, 2021).

Furthermore, the data suggests that cattle rustling has resulted in increased operational costs for commercial businesses in Laikipia West Constituency, with 55% of respondents believing that cattle rustling has contributed to large operational cost increases (Mugerwa et al., 2019; Sogoba et al., 2020). The survey highlights a strong belief among respondents that cattle rustling has significantly impacted the ability of commercial businesses to invest in new ventures or products/services, with 48% of respondents believing this impact is extremely significant (Kawamura et al., 2019; Beltran, 2021).

Conclusion

The examination of the influence of cattle rustling on the health of pastoral communities in Laikipia West Constituency underscores the urgent need for targeted interventions to address the profound mental and physical health challenges exacerbated by cattle rustling incidents. With significant perceptions among respondents regarding the detrimental effects on mental health, physical well-being, and livestock mortality, holistic approaches that encompass mental health support services, improved access to healthcare facilities, and livestock management practices are imperative to safeguard both the economic livelihoods and human health within these vulnerable communities. Additionally, efforts should prioritize resilience-building initiatives to mitigate the long-term implications of cattle rustling on the well-being of pastoralists.

The investigation into the influence of cattle rustling on the education of pastoral communities highlights the significant

impact of conflict on school attendance, dropout rates, and learning outcomes. The widespread perception among respondents regarding the hindrance posed by cattle rustling underscores the urgency of interventions to address barriers to educational access, support pastoral students affected by conflict, and retain educators in conflict-affected pastoral areas. By addressing these challenges comprehensively, policymakers and stakeholders can work towards promoting educational resilience and quality in pastoral communities, thereby enhancing prospects for socio-economic development and well-being.

The examination of the influence of cattle rustling on the income of pastoral communities underscores the urgent need for interventions to mitigate economic losses and promote economic resilience. With prevalent perceptions among respondents regarding the adverse effects on livestock market value, income diversification efforts, livestock sales opportunities, and investment ability, targeted policies and programs aimed at enhancing livestock security, promoting alternative livelihood strategies, and strengthening market systems are essential to alleviate the economic burden imposed by cattle theft. Moreover, cross-regional collaborations and knowledge-sharing initiatives can facilitate the adoption of effective strategies tailored to the specific socio-economic contexts of pastoralist communities, thereby fostering sustainable economic development and livelihood opportunities.

The analysis of the influence of cattle rustling on commercial businesses within pastoral communities highlights the substantial challenges posed by cattle rustling to the growth and expansion prospects of commercial enterprises. With significant perceptions among respondents regarding the damage to reputation, hindered growth prospects, increased operational costs, and constrained investment opportunities, comprehensive strategies that encompass enhanced security measures, community engagement, and policy interventions are essential to promote economic resilience and sustainability in pastoral communities. By addressing the underlying causes of cattle rustling and mitigating its adverse impacts on commercial businesses, policymakers and stakeholders can contribute to fostering an environment conducive to economic growth and prosperity in pastoral areas.

Recommendations

To mitigate the impact of cattle rustling on education in pastoral communities, it is recommended to establish secure, low-cost or fully funded boarding schools; implement mobile education initiatives and online learning programs to ensure continuity in remote or insecure areas; enhance teacher training with a focus on conflict-sensitive pedagogy and cultural sensitivity; and invest in infrastructure development, such as roads, schools, and communication networks, to improve access and retention of students. The study also recommends the integration of mental health support services into existing healthcare frameworks, enhancing livestock management practices to improve economic livelihoods and human health, and addressing underlying socioeconomic factors like poverty and insecurity. Collaborative efforts involving government agencies, community organizations, and development partners are crucial for implementing sustainable solutions.

To mitigate the economic impacts of cattle rustling on pastoral communities and commercial businesses, the study recommends promoting income source diversification and supporting alternative livelihood activities to reduce reliance on livestock. Strengthening market systems and facilitating access to financial services can empower pastoralists and businesses to navigate economic uncertainties. Additionally, policy and governance reforms addressing issues like marginalization, insecure land tenure, and lack of legal protection for pastoralists are essential. To cushion pastoralists' commercial business, insurance and risk management strategies should be implemented to provide financial security against livestock losses, including coverage for death, theft, and business interruptions. Collaborative efforts involving government agencies, law enforcement, community leaders, and business associations are essential for developing comprehensive strategies. Additionally, investing in community-based initiatives focused on conflict resolution, livelihood support, and economic empowerment can contribute to long-term resilience and sustainable development in affected pastoral areas.

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