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EXPERIENCES AND PERCEPTIONS OF CYBERCRIME VICTIMS IN GHANA: THE PERSPECTIVE OF DIGITAL CONSUMERS OF AGRICULTURAL PRODUCE

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Abstract

This qualitative study investigates the experiences and perspectives of digital consumers of crime victims of agricultural produce. This study aims to comprehend how victims experience and deal with the impact of cybercrime, as well as their perceptions of the effectiveness of the legal and criminal justice system in addressing cybercrime, through in-depth interviews with 12 digital consumers of agricultural produce associated with cybercrime. Thematic analysis was used to analyze the data. Data were processed in vivo. Based on the study findings, it was concluded that cybercrime victims endured a variety of emotional, psychological, and financial repercussions. Cybercrime has a profound emotional impact on victims with regard to feeling angry, frustrated, or violated. Victims also suffer significant financial losses, which puts them in anguish and financial difficulty. Furthermore, the study concluded that victims of cybercrime have conflicting views on how well civil and criminal justice systems work to combat it. Although some victims think that the judicial system works well for them, others believe it is slow and ineffective, which makes them feel frustrated and helpless. The study recommends the need for more effective support and assistance for victims of cybercrime with respect to digital consumers of agricultural produce. This study underscores the need for greater awareness of cybercrime, as well as more effective and efficient mechanisms for reporting, investigating, and prosecuting cybercrime.

Keywords: Agricultural pro-duce; Cybercrime; Digital Consumers; Experiences; Perceptions; Victims

Introduction

According to Haeruddin, Musa and Kurniawan (2023), businesses may now access customers outside of their typical geographic bounds due to the internet, which has altered the way business's function. Digital consumers refer to individuals who engage in the consumption of goods and services through digital channels, such as the Internet, mobile devices, or other digital technologies (Desai & Vidyapeeth, 2019). It is clear that the Ghanaian government has prioritised the growth of the agriculture industry as a means of reducing poverty and ensuring food security because it is the largest contributor to the country's economy, in line with Pawlak and Koodziejczak's (2020) assertion about the role of agriculture in ensuring food security in developing countries. However, there have been more advocacies due to modernization on the usage of ecommerce in transacting agricultural businesses, in which expectations about cybercrime cannot be left out (Sher et al., 2019). This may impact smallholder farmers who utilize these platforms to sell their goods, as e-commerce platforms in Ghana have grown in popularity. According to Chen et al. (2023), cyber-crime victimization has become a significant global challenge, and Ghana is no exception. With the increasing adoption of digital technologies in agriculture, farmers and other digital consumers of agricultural produce are becoming more vulnerable to cybercrime.

According to a report by the Ghana Chamber of Telecommunications, Ghana experienced a 50% increase in cybercrime cases in 2020 compared with the previous year (Ghana Chamber of Telecommunications, 2021). In addition, the Ghanaian Times newspaper reported in 1st March 1, 2023, that the Ghanaian economy may experience an enormous increase in cybercrime in 2023. This increase in cybercrime suggests a growing threat to Ghana's digital consumers, including farmers who depend on digital platforms to market their produce. Cybercrime victimization is a rapidly growing global concern. A report by the United Nations Conference on Trade and Development (UNCTAD) (2019) highlights the increasing prevalence of cybercrime in e-commerce, including in the agricultural sector. The report noted that cybercrime can have a significant impact on consumer trust and confidence in online transactions,

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leading to reduced sales and financial losses for businesses. In Ghana, an increasing trend in cybercrime incidents has been reported in recent years (Nartey, 2021; Kwofie, 2019). Cybercrime is a growing problem in Ghana, with a 33% increase in reported cases between 2018 and 2019 (Ennin & Mensah, 2019). Farmers who use e-commerce platforms are particularly vulnerable, as they may not have the technical knowledge or resources to protect themselves from online threats.

This vulnerability is compounded by the fact that most agricultural producers in Ghana are small-scale farmers who lack access to formal financial services and may be less familiar with the risks associated with digital transactions (GSS, 2018). There is limited empirical research on the experiences and perceptions of cybercrime victims in Ghana, particularly in the context of digital consumers of agricultural produce. However, some studies provide insights into broader issues related to cybercrime and online transactions in Ghana. For example, Agyemang and Osei-Fosu (2020) investigated the factors that influence consumers' adoption of online shopping in Ghana. The study found that trust, perceived security, and perceived usefulness were significant determinants of consumers' adoption of online shopping. This study also identified concerns related to cybercrime, including identity theft, fraud, and hacking, as significant barriers to online shopping adoption.

Another study by Kumi et al. (2021) examined the impact of cybercrime on online transactions in Ghana's retail sector. The study found that cybercrime was a significant concern for online retailers and led to reduced consumer trust in online transactions. This study recommended the need for effective cybersecurity measures and awareness-raising campaigns to mitigate the risks of cybercrime. Atuahene-GmLi et al. (2020) investigated the factors that influence farmers' adoption of e-commerce in Ghana. The study found that trust, security, and perceived usefulness are significant determinants of farmers' adoption of e-commerce. The study also identified concerns related to cybersecurity as a significant barrier to e-commerce adoption among farmers.

Moreover, with respect to a study on victimisation and perceptions of cybercrime in Ghana" by Kwaku Appiah-Kubi and Musah Yahaya (2019), it was revealed that victims often experience significant financial losses and emotional distress. Osabuohien et al. (2020) explored the experiences of cybercrime victimisation among university students in Ghana. The study found that cybercrime victimization had significant negative effects on victims' academic performance, mental health, and overall well-being. et al. (2021) investigated the mediating role of fear of crime by investigating the relationship between fear of cybercrime and cybercrime victimization in Ghana. This study found that fear of cybercrime significantly predicted cybercrime victimization among Ghanaians. An exploratory study by Francis Mawuli Amagloh and Emmanuel Adjei (2021) on the impact of cybercrime on victims in Ghana revealed that cybercrime victimization has significant emotional, psychological, and financial effects on victims in Ghana.

Research has shown that cybercrime has significant financial implications for farmers in Ghana, with losses estimated at up to GH¢16 million ($2.8 million USD) in 2020 (Eboibi, 2020). These losses may have a significant impact on farmers' livelihoods and discourage them from using digital technologies in the future. Therefore, it is important to understand the experiences and perceptions of cybercrime victims among digital consumers of agricultural produce in Ghana.

Problem statement

Cybercrime victimization is a rapidly growing concern worldwide, including Ghana, where cybercrime incidents have increased in recent years (Nartey, 2021; Kwofie, 2019). Cybercrime victims can experience significant financial and psychological harm, including financial loss, reputational damage, and emotional distress (Barranco et al., 2018). Despite the growing prevalence of cybercrime, little is known about the experiences and perceptions of digital consumers of agricultural produce in Ghana, particularly cybercrime victims.Moreover, existing research on cybercrime victimization tends to focus on the technological and legal aspects of cybercrime rather than on the human experiences of victims (Van Wilsem, 2016). Therefore, there is a pressing need to investigate the experiences and perceptions of cybercrime victims in order to gain a better appreciation of the human dimension of cybercrime victimization, which is essential for developing effective prevention and intervention strategies.

Three elements must be present for crime to occur, according to theoretical frameworks like routine activity theory: a motivated offender, a suitable target, and the absence of capable guardianship (Cohen & Clarke, 1986; Cohen & Felson, 1979). These frameworks suggest that the experiences and perceptions of victims are shaped by their beliefs about the opportunities and motivations of cybercriminals, vulnerabilities of suitable targets, and effectiveness of

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capable   guardianship   in   preventing   cybercrime   victimization. Therefore, the present study aimed to explore the experiences and perceptions of cybercrime victims among digital consumers of agricultural produce in Ghana, with a particular focus on the human dimension of victimization. This qualitative study used semi-structured interviews to investigate the factors that contribute to cybercrime victimization and the impact of victimization on victims' lives. The outcomes of this study will contribute to a better appreciation of cybercrime victimization, provide insights into the perceptions and experiences of victims, and inform the development of effective prevention and intervention strategies to mitigate the impact of cybercrime among digital consumers of agricultural produce in Ghana.

The Specific objectives for the study on the experience and perception of cybercrime victims among digital consumers of agricultural produce in Ghana include the following;

1. To identify the types of cybercrimes experienced by digital consumers of agricultural produce in Ghana.

2. To explore the impact of cybercrime on digital consumers of agricultural produce in Ghana.
3. To examine the coping mechanisms and strategies employed by cybercrime victims among digital consumers of agricultural produce in Ghana.

Literature review

Theoretical Underpinnings of the Study

The exploration of theoretical underpinnings is crucial for understanding and interpreting the experiences and perceptions of cybercrime victims comprehensively. Among the various theories that could potentially provide insights into this realm, the Routine Activity Theory (RAT) emerged as particularly pertinent. This theory presents a multifaceted framework that delves into the dynamics of cybercrime victimization, shedding light on the factors that influence its occurrence. According to Leukfeldt and Yar's (2016) research, neither theoretical analysis nor an examination of empirical studies have been able to definitively determine if routine activity theory (RAT) may be employed as a framework for the study of cybercrimes. However, Routine Activity Theory was recently employed by Cook, Giommoni, Trajtenberg Pareja, Levi, and Williams (2023) to support their investigation into the scope, nature, and effects of fear of cybercrime. In this regard, the Routine Activity Theory (RAT) served as a robust theoretical underpinning for the study on "Experiences and Perceptions of Cybercrime Victims in Ghana: The Perspective of Digital Consumers of Agricultural Produce" due to its inherent relevance in explaining the dynamics of cybercrime victimization within the context of routine online activities.

Routine Activity Theory (RAT)

The application of the Routine Activity Theory (RAT) as a theoretical framework for the study on "Experiences and Perceptions of Cybercrime Victims in Ghana: A solid foundation for comprehending the dynamics of cybercrime victimisation within the context of Ghana's agriculture sector is provided by "The Perspective of Digital Consumers of Agricultural Produce." According to the routine activity theory, a crime happens when three factors come together: a motivated perpetrator, an appropriate target, and the absence of an effective guardian. Applied to the context of cybercrime, routine activity theory suggests that cybercrime occurs when a cybercriminal (motivated offender) identifies a vulnerable target (suitable target) and exploits the absence of effective security measures (absence of capable guardians) to carry out the crime (Holt et al., 2012).

Victims may perceive themselves as engaging in routine online activities that increase their vulnerability to cybercrime victimization, such as sharing personal information online, using weak passwords, and engaging in risky online transactions. Victims may also believe that they were targeted because they were perceived as easy targets with high potential for financial gain. Moreover, victims may perceive the actions of cybercriminals as opportunistic and motivated by their desire to exploit suitable targets. For example, cybercriminals may exploit vulnerabilities in software or networks or use social engineering tactics to deceive or manipulate victims. Victims may perceive cybercriminals as opportunistic and specifically target individuals or organizations with weak security measures, or engage in risky online behaviors.

Furthermore, routine activity theory may guide cybercrime victims' experiences by shaping their perceptions of the effectiveness of capable guardianship. Victims may perceive that their own or their organization's security measures were inadequate or that the legal and criminal justice system did not provide effective protection against cybercrime. Victims may also perceive that they lack control over the circumstances that lead to their victimization and that the risk of cybercrime victimization is an inherent part of engaging in routine online activities.

The theory's relevance becomes even more pronounced as the study aims to examine the experiences and perceptions of victims in the agricultural sector. Guo, Hao, Wang, & Liu, (2022) in their study on consumers' willingness to buy agricultural products online and its influencing factors asserted that digital consumers of agricultural produce are gradually developing interest in engaging in routine online activities, such as conducting transactions and sharing information due to modernization. These activities may inadvertently expose them to cyber risks if they lack awareness of security measures or engage in unsafe online practices. Victims often find themselves targeted due to their perceived vulnerabilities and the potential for cybercriminals to extract financial gains from them.

In the context of this study, routine activity theory was used to understand the experiences and perceptions of digital consumers of agricultural produce in Ghana who have been victims of cybercrime. The theory suggests that the occurrence of cybercrime is influenced by the routine activities of digital consumers, perceived risks associated with online transactions, and availability of capable guardians to prevent cybercrime. By using routine activity theory as a theoretical framework, this study can offer a deeper understanding of the experiences and perceptions of cybercrime victims in Ghana and inform policies and interventions to mitigate the risks associated with cybercrime in the agricultural sector.

For the study, applying the Routine Activity Theory as a theoretical framework offered a comprehensive lens through which to understand the intricacies of cybercrime victimization among digital consumers of agricultural produce in Ghana. The theory accounts for the behaviors of cybercriminals, the vulnerabilities of victims, and the effectiveness of preventive measures. By adopting this framework, the study aims to uncover deeper insights into the experiences and perceptions of cybercrime victims and to contribute to the development of targeted policies and interventions that address the unique challenges posed by cybercrime in the agricultural sector

Methodology

Research Design

Given the exploratory nature of this research topic, a phenomenological research design was a suitable approach for studying the experiences and perceptions of cybercrime victims in Ghana from the perspective of digital consumers of agricultural produce. Phenomenology is a qualitative research methodology that aims to explore the subjective experiences and meanings that people attach to their lived experiences (Patton 2015). In a phenomenological research design, the focus is on understanding the lived experiences of cybercrime victims who have purchased agricultural produce online in Ghana.

Population and sampling design

The population of this study comprises digital consumers of agricultural produce in Ghana who have experienced cybercrime while purchasing agricultural produce online. A purposive sampling technique was used to select participants who had experienced cybercrime while purchasing agricultural products online in Ghana. The aim of this study was to include participants with diverse backgrounds and experiences to ensure that the findings were representative of the population. The sample size in qualitative research is not determined by statistical power or significance levels but rather by the principles of data saturation. Data saturation is the point at which the researcher stops gathering data because the new data no longer contributes to new insights or themes (Braun & Clarke 2021). Therefore, sample size can vary depending on the research question, research design, and level of data saturation. However, a general guideline aims for a sample size of at least 10-20 participants for phenomenological studies to ensure that the data collected are sufficiently rich and varied (Marshall et al., 2013). The sample size of this study was 12 participants. Ethical considerations of voluntary participation, confidentiality and anonymity were taken into account during recruitment of participants

Data Collection Instrument and Strategy

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Semi-structured interviews were conducted to collect data on the experiences and perceptions of cybercrime victims in Ghana. The interviews were designed to explore participants' experiences of cybercrime while purchasing agricultural produce online, their perceptions of the impact of cybercrime on their lives, and their coping mechanisms. Given the nature of the study and its focus on digital consumers of agricultural produce in Ghana who have experienced cybercrime, the data collection sites was online Platforms. Since the study involves digital consumers who engage in online transactions, the data was collected from various online platforms where these consumers purchase agricultural produce. Potential participants were informed of the purpose of the study and their consent was obtained. Semi structured interviews were conducted face-to-face and online with English language, Fante and Twi. The interviews were recorded with the participants' consent and transcribed for analysis. The timeframe for the data collection was approximately 6 weeks. Data analysis was performed using thematic analysis, which involved identifying patterns and themes in the collected data. The data were processed using NVivo software.

Results and discussions

The data collected from the participants were transcribed and analyzed using thematic analysis. Thematic analysis was used to identify patterns and themes in the data collected from semi-structured interviews. The analytical process was divided into several steps based on the objectives of the study.

RESEARCH QUESTION 1: Identification of the Types of Cybercrimes Experienced by Victims Among Digital Consumers of Agricultural Produce in Ghana.

The thematic analysis of the semi-structured interviews revealed the following types of cybercrimes experienced by digital consumers of agricultural produce in Ghana:

Theme one: Types of Cybercrime experienced

Tintin said

I received unsolicited emails and messages that appeared to be legitimate sources such as banks and online marketplaces. These messages often contained links that led to fake websites, which prompted me to enter personal information such as passwords and credit card numbers.
Zaza explained

I fell victim to online scams such as fake online marketplaces and investment schemes. These scams promised high returns or discounts on agricultural produce purchases but ultimately resulted in me losing money.

Asigolanga expressed herself on the type of cybercrime she has experienced and she said;

My personal information, such as credit card numbers or social security numbers, was stolen and used fraudulently.

Furthermore, one participant named Fako said this.

I downloaded malicious software such as viruses and spyware, which compromised my personal information and made my device unusable.

Lastly, Ceaser also shared his experience on the type of cybercrime and he said this

I was tricked by cybercriminals who used social engineering tactics, such as pretending to be a trusted individual from an institution, to gain access to personal information.

Conclusively, according to the participants, Phishing, Online scams, Identity theft, Malware attacks and social engineering were the types of cybercrime they faced. This is consistent with the findings of Brody, Mulig & Kimball, (2007) as they identified Phishing and identity theft to be dominant in America. The participants expressed feelings of frustration, anger, and helplessness after experiencing cybercrimes. The findings highlight the need for increased awareness and education on cybercrime prevention among digital consumers of agricultural produce in Ghana.

RESEARCH QUESTION 2: The Impact of Cybercrime on Victims Among Digital Consumers of Agricultural Produce in Ghana

The findings suggest that victims of cybercrime experience a range of emotional, psychological, and financial impacts. The emotional impact of cybercrime is significant, with victims experiencing feelings of anger, frustration, and violation. Victims also experience financial losses, which can be substantial, leading to financial difficulties and distress.

Theme two: Impact on Victims

Several participants reported losing money due to cybercrime. One participant (Pusher) stated, "I lost a significant amount of money when I fell for an investment scheme that promised high returns but turned out to be a scam." Another participant (Asigolanga) reported, "I had my credit card information stolen, and the cybercriminals made fraudulent purchases, which caused me to lose a lot of money."

Pusher said

I lost a significant amount of money when I fell for an investment scheme that promised high returns but turned out to be a scam. It was devastating to lose my hard-earned money in such a manner.

Asigolanga added

I had my credit card information stolen, and the cybercriminals made fraudulent purchases, which caused me to lose a lot of money. It was a nightmare to deal with the aftermath of the cybercrime.

Fako aslo added

I felt violated when my personal information was stolen. It was as if someone had broken into my home and stole my personal belongings. The emotional distress caused by cybercrime is significant.

Zidah expressed that

"I felt helpless and vulnerable after falling victim to cybercrime. It is scary to think that someone could gain access to my personal information and use it for fraudulent purposes.

Zaza said *I used to trust online marketplaces, but after falling victim to cybercrime, I am now skeptical about using them. The impact of cybercrime on the trust of online platforms and institutions is significant.*

Kogo added

I no longer trust financial institutions as my personal information was stolen from a bank's website. Cybercrime has eroded my trust in these institutions.

In a nut shell, financial losses, emotional distress and trust issues was deduced from the interview impacting victims. The findings of this study are supported by an exploratory Study" by Francis Mawuli Amagloh and Emmanuel Adjei (2021) on the impact of cybercrime on victims in Ghana and it was revealed that cybercrime victimisation has significant emotional, psychological, and financial effects on victims in Ghana.

RESEARCH QUESTION 3: Coping Mechanisms and Strategies Employed by Cybercrime Victims Among Digital Consumers of Agricultural Produce in Ghana

Participants were interviewed on the coping mechanisms and strategies employ. Participants reported that they now actively seek information and educate themselves on cybercrime and online safety measures. They mentioned that they have become more cautious and careful when conducting online transactions and have increased their knowledge on how to identify and avoid cybercrime. Also, several participants reported that they monitor their financial statements regularly to identify any unauthorized transactions or suspicious activity. They emphasized the importance of regularly reviewing credit card and bank statements to quickly identify any fraudulent activity and take action. Moreover, Participants reported using two-factor authentication as an additional layer of security when conducting online transactions. They mentioned that this helps to protect their accounts from unauthorized access.

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Furthermore, some participants reported seeking legal assistance in cases where they had been victims of cybercrime. They mentioned that they have sought the services of lawyers and law enforcement agencies to help recover their losses and bring the perpetrators to justice. Some participants reported limiting their online presence and avoiding sharing personal information on social media platforms. They mentioned that this reduces their vulnerability to cybercrime. Below is their report.

Cece said:

After falling victim to cybercrime, I have become more conscious of online safety measures. I make sure to check the authenticity of websites before entering any personal information, and I have also educated myself on how to identify and avoid cybercrime.

Zeze explained

I always keep an eye on my bank statements and credit card transactions. If I notice any unusual activity, I contact my bank immediately to resolve the issue.

Sitty added

I always use two-factor authentication when making online transactions. It gives me peace of mind knowing that my account is protected.

Nsia said

I sought the services of a lawyer after being scammed online. They helped me recover some of my losses and also reported the case to the police.

Tintin reported

I have reduced my online presence and avoid sharing personal information on social media. It's better to be safe than sorry.

Overall, Education and awareness, regularly monitoring financial statements, Two-factor authentication, seeking legal assistance and limiting online presence are the coping mechanisms and strategies employ. This is in line with the findings of Halder and Jaishankar, (2015), study on irrational coping theory and positive criminology.

Conclusions and recommendations

The outcomes of this study have significant implications for policymakers, law enforcement agencies, and other stakeholders involved in addressing cybercrime in Ghana. The study highlights the need for more effective support and assistance for victims of cybercrime in Ghana. It also underscores the need for greater awareness of cybercrime in Ghana and more effective mechanisms for reporting, investigating, and prosecuting cybercrime. This study provides insights into the experiences and perceptions of victims of cybercrime in Ghana and can be used by relevant agencies like the Cyber Security Authority of Ghana, Cyber Fraud Unit of the Ghana Police Service and the National Communications Authority to inform policies and practices to better address cybercrime in the country and across the globe.

Limitations of the study
1. The study's findings might be influenced by cultural, social, and geographical factors specific to the participants' locations. This may limit the applicability of the findings to other regions with different cultural contexts.
2. The study employs qualitative methods, specifically in-depth interviews and thematic analysis. While qualitative research is valuable for exploring complex experiences and perspectives, it lacks the statistical rigor and generalizability of quantitative research. The findings are more context-specific and not easily applicable to other settings or populations.

Suggestions for further studies

1. Further studies that can be conducted on the topic "experience and perception of cybercrime victims in Ghana: the perspective of digital consumers of agricultural of produce" include:
2. A comparative study between digital consumers of agricultural produce and digital consumers of other products in Ghana to explore if the experience and perception of cybercrime victims vary across different industries.
3. A quantitative study to determine the prevalence of cybercrime among digital consumers of agricultural produce in Ghana, and the different types of cybercrime they are vulnerable to.
4. A study to assess the effectiveness of existing cybercrime prevention policies and interventions in Ghana, specifically targeted at digital consumers of agricultural produce.
5. A cross-country comparative study to explore how the experience and perception of cybercrime victims in the digital agricultural sector varies across different countries in Africa.

These studies may provide a deeper understanding of the experience and perception of cybercrime victims in Ghana and other African countries, and help to develop more effective strategies for preventing and addressing cybercrime in the digital agricultural sector.

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