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# Burning issues: Unraveling the nexus between dysfunctional institutions and counterfeiting in developing countries

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#### ABSTRACT

Counterfeit and substandard products continue to bedevil public health in developing countries across the global South. Despite the growing recognition of the importance of this issue, there remains a critical gap in the scholarly discourse on how dysfunctional institutions in developing countries can create conditions that lead to the detrimental public health effects of counterfeiting. Drawing on insights from key stakeholders in Ghana, this research illuminates the mechanisms through which institutional deficiencies shape the detrimental effects of counterfeiting. The study led to the identification of three sequential and interconnected unfolding effects of counterfeiting, encompassing: tracing the growth and spread of deceptive counterfeiting to factors such as inadequate inspection and authentication of products, as well as the phenomenon of mixing counterfeit and second-hand products (Phase 1); highlighting the potential health and fire hazards stemming from policy and regulatory gaps (Phase 2); and then illuminating stakeholder mobilization and interventions (Phase 3). By exploring the linkages between these three phases, the study advances a more holistic view of the proliferation of counterfeit products, encapsulating the interconnected nature of its origins linked to the evolution of other phenomena, such as the growth of second-hand products in developing countries, and its impacts on society and public health.

#### 1. Introduction

In the past three decades or so, the proliferation of counterfeit products has become increasingly prevalent, with far-reaching effects across developing nations in the Global South (Akinyandenu, 2013; Organization for Economic Co-operation and Development (OECD) & European Union Intellectual Property Office (EUIPO), 2019; Yi et al., 2022). This problem has been further amplified by technological advances and the evolution of the internet and digital platforms, which provide ample opportunities for online piracy to flourish, affecting digital works encompassing films, books, music, television shows, and software (OECD & EUIPO, 2019; The Office of the U.S. Trade Representative (USTR), 2023). Across a range of industries, including intellectual property (IP)-intensive sectors such as pharmaceuticals and biotechnology, entertainment, media, education, and creative industries, the social and economic forces driving counterfeiting remain widespread (Berman, 2008; Gao and Wu, 2023; OECD & EUIPO, 2019; USTR, 2023; Ziavrou et al., 2022). According to the OECD (2019), trade in counterfeit and pirated goods that infringe on trademarks and copyrights accounts for around 3.3% of global trade and continues to rise year on year. For instance, in the European Union (EU), such goods account for approximately 6.8% of imports from non-EU nations (OECD, 2019). While counterfeiting has historically been associated with prestigious and luxury goods, this phenomenon has transformed to impact both the healthcare sector and healthcare products, such as pharmaceutical and electronic items, which directly affect the security and safety of citizens (see Akinyandenu, 2013; Yi et al., 2022).

A plethora of scholarly works have demonstrated that one of the most distinguishing characteristics of developing economies is the prevalence of "institutional dysfunctions" (Barnard and Mamabolo, 2022; Khanna and Palepu, 1999; North, 1990), denoting the absence or weak institutional support mechanisms that buttress the effective functioning of an economy (Barnard and Mamabolo, 2022; Luo and Tung, 2007). Studies indicate that institutional dysfunctions such as weak legal enforcement, lack of adequate disclosure, government bureaucratic inefficiencies, and weak government agencies, can unleash and exacerbate the prevalence of a diverse range of legitimate and illegitimate business and societal practices (Barnard and Mamabolo, 2022; Julian and Ofori-Dankwa, 2013; North, 1990; Ofori-Dankwa and Julian, 2013; Peng, 2002). Despite this burgeoning stream of research on

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institutional dysfunctions across different social science domains (Luo and Tung, 2007), it remains unclear how this creates conditions for the evolution and unfolding public health-oriented effect of the proliferation of counterfeit products. To address the lacuna in the literature, this paper examines mechanisms through which institutional dysfunctions in developing countries can create conditions leading to the evolution and detrimental public health effects of counterfeiting.

To illustrate the analysis of how institutional deficiencies shape the detrimental effects of counterfeiting, we turn our attention to Ghana as the empirical setting of this study. Since gaining independence in 1957 and becoming the first sub-Saharan African country to do so (Johnson, 2022), the nation has come to be widely regarded as a reliable "poster child for democracy in Africa," implementing extensive democratic and policy reforms (African Business, 2017, p. 82). Ghana maintains its democratic status and exemplifies many challenges and opportunities confronting businesses, governments, and broader society in emerging economies.

The study makes vital contributions to the existing scholarly discourse on the growth of public policy literature. First, although prior research has examined the economic repercussions of counterfeiting (e. g., Fink et al., 2016), there remain noticeably limited scholarly insights on how dysfunctional institutions foster this phenomenon. Building on institutional deficiencies literature (Julian and Ofori-Dankwa, 2013; Ofori-Dankwa and Julian, 2013), the study develops a conceptual framework that accounts for how institutional factors give rise to the evolution of counterfeiting. This paper emphasizes how domestic institutional factors create different conditions that give rise to different public health and safety effects on households and domestic businesses.

In addition, although past studies have focused on the issues of counterfeiting (Bian et al., 2023; Yi et al., 2022), much of the current discourse tends to focus on stakeholders in developed countries and the effects on firms situated in such stable institutional settings (see OECD and EUIPO, 2019). By illuminating the proliferation of counterfeit products in a developing economy, this study sheds much-needed light on the risks associated with such products faced by wider society, governments, and citizens. Thus, the study highlights the critical nexus between dysfunctional institutions and the public health consequences of the spread of counterfeit products. The study offers a three-phase process model that focuses on understanding the hazards and health risks associated with counterfeit products and the consequential effects on different stakeholders.

The rest of the paper is organized as follows. In the next section, we review the literature on the concept of institutional dysfunction. This is followed by a description of the research methods, data sources, and analysis. After presenting the main findings of the study, we outline the research and policy implications alongside the directions for future research.

#### 2. Institutional dysfunction: a conceptual Development

Institutional theory generally seeks to illuminate "the processes by which organizations interpret their institutional environments" (Glynn and D'Aunno, 2023; Suddaby, 2010, p. 16). According to Douglass North, institutions are 'the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction' (North, 1990, p.3). Institutions provide the structures that guide and shape human behaviors and business activities (Glynn and D'Aunno, 2023; Julian and Ofori-Dankwa, 2013; North, 1990). There are formal institutions (such as rules and regulations) and informal institutions (such as culture and traditions) that interact to shape how firms behave in different markets, as well as determine what is considered generally acceptable behavior by the wider society (North, 1990; Peng, 2002). The general theory of institutional dysfunction contends that differences in the institutional arrangements that underpin and support the function of markets explain the fundamental differences between developing and developed countries (Gao et al., 2017; Julian

and Ofori-Dankwa, 2013; Ofori-Dankwa and Julian, 2013; Peng, 2002; Rodgers et al., 2022). In developing countries, market-supporting institutions are generally non-existent or weak, including formalized rules and regulations (Khanna and Palepu, 2006; North, 1990). Institutional dysfunctions are typified by features such as poor governance, corruption, government bureaucratic inefficiencies, and obsolete regulations and policies (see Barnard and Mamabolo, 2022; Julian and Ofori-Dankwa, 2013; Ofori-Dankwa and Julian, 2013). Indeed, conditions such as inefficiencies and red tape in government can lead to the misallocation of resources (Doing Business, 2019).

There are some institutional constraints stemming from the legal regulatory context, such as inadequate contract enforcement, weak environmental protection, and weak protection of property rights. Additionally, there are infrastructure-related constraints, such as poor or insufficient transportation networks and lack of access to basic social amenities, such as reliable and safe water supply, as well as accessible electricity supply (see Acquaah and Eshun, 2010; Amankwah-Amoah et al., 2018, 2022; Khanna and Palepu, 2006). Indeed, inadequate transportation infrastructure, such as roads, air, and railways, often leads to higher transportation costs, impeding firms' ability to distribute their products to rural areas and gain access to a wider range of customers (see Akinwale, 2010; Gulyani, 2001; Lakmeeharan et al., 2020). These inadequacies often handicap the goods supply chain by introducing inefficiencies and unpredictability, thereby hampering domestic firms' competitiveness relative to rival firms in advanced industrialized nations (Gulyani, 2001). For instance, inadequate or insufficient healthcare infrastructure, such as clinics and hospitals, can curtail access to healthcare services (Akinwale, 2010).

Another feature of institutional dysfunction is weak governance and accountability, which also have the potential to erode trust in formal institutions and governments (North, 1990). Studies indicate that dysfunctional institutions, such as weak governance structures, limited regulatory enforcement and oversight, and inadequate regulations, have often been major contributory factors in pushing some businesses to engage in illegitimate activities (Amankwah-Amoah et al., 2018). Another dysfunctional institution with the potential to precipitate the growth of counterfeit products is weak intellectual property protection in many developing economies (Cavusgil et al., 2020). Indeed, weak intellectual property rights enforcement can lead to the theft of ideas and the breaching of copyrights (Ang et al., 2014; Cavusgil et al., 2020; Mandrinos et al., 2022). These deficiencies can pose significant challenges for firms operating in emerging economies or transitional societies where legal systems, property rights, and regulatory frameworks may be incomplete or weak (Ang et al., 2014).

History has shown that trade in counterfeit goods and trademark infringements is not new to developing or developed nations (OECD, 2017; Yi et al., 2022). In recent decades, the proliferation of counterfeit products has been further exacerbated by rapid technological advancements, including the internet and social media platforms (Gao and Wu, 2023; Sun et al., 2020). Counterfeit and substandard products continue to bedevil developing countries, unleashing a diverse range of challenges for countries (Amankwah-Amoah, 2022; Amankwah-Amoah and Hinson, 2022; Bian et al., 2023; Bolla et al., 2020; Karungamye, 2022). Accordingly, this study seeks to illuminate how institutional dysfunctions in developing countries can create conditions leading to the evolution and detrimental public health effects of counterfeiting.

#### 3. Methods and analysis

In light of the limited scholarly insights on how dysfunctional institutions in developing countries can create conditions leading to counterfeiting, a qualitative method was adopted to illuminate the issue as well as provide a more in-depth examination of this complex problem (Bell et al., 2022; Gehman et al., 2018; Yin, 2009). In this regard, semi-structured interviews were considered the most suitable method to allow for greater flexibility and adaptability, thereby paving the way for

a further examination of the interviewees' responses (Kallio et al., 2016). To mobilize data for the study, multiple multinational corporations, some government officials and different stakeholders in Ghana were contacted to elicit their participation in the study and gauge their views on the important issue of counterfeit products. The selection of the multinationals was based on their ownership of major brands affected by the issue, as well as their extensive knowledge and experience in combating counterfeit products.

After multiple attempts, a sample consisting of three distinct stakeholder groups: top executives, government officials, and consumers, were obtained. In total, 15 top executives from multinational corporations (MNCs) affected by counterfeiting and 10 consumers who unintentionally purchased cheap products that turned out to be counterfeits and were impacted by this experience were interviewed. Additionally, the views of 5 government officials in the field of regulations and enforcement were sought. The involvement of government officials also provided an opportunity to better understand the policy landscape and the challenges faced in combating counterfeit products. The data

Table 1 List of informants.

Executives	Employer	Role within organization	Educational Background	Length of semi- structure interviews
GM1	Pharmaceutical company	Country manager	Bsc in business	Under 1 h.
GM2	Pharmaceutical company	Top executive	Master's degree	Under 1 h.
GM3	Pharmaceutical company	Line manager	Master's degree	1 h
GM4	Pharmaceutical company	Line manager	Master's degree	Under 1 h.
GM5	Pharmaceutical company	Line manager	Undergraduate degree	Under 1 h.
GM6	Electronic and appliance company	Top executive in finance department.	Undergraduate degree	Under 1 h.
GM7	Electronic and appliance company	Line manager and executive	Undergraduate degree	1 h and above.
GM8	Electronic and appliance company	Country manager	Undergraduate degree	1 h
GM9	Electronic and appliance company	Country manager	Undergraduate and post- graduate degree	1 h
GM10	Electronic and appliance company	Country manager	Undergraduate degree	Under 1 h.
GM11	Electronic and appliance company	Line manager	Undergraduate degree	Under 1 h.
GM12	Electronic and appliance company	Line manager	Undergraduate degree	1 h
GM13	Electronic and appliance company	Top executive	Ph.D	1 h
GM14	Electronic and appliance company	Top executive	Master's degree	Under 1 h.
GM15	Electronic and appliance company	Top executive	Master's degree	1 h

### Government officials

GOVERNMENT CHICAGO				
Gov-O1	Government officials in enforcement.			
Gov-O2	Regulatory enforcement.			

Gov-O3 Products standardization and conformity assessment.

Gov-O5

mobilization started in 2018 and was completed in 2021. Table 1 summarizes the details of the business and government informants.

The study elicited insights from the businesses regarding the challenges they face in combating counterfeit products, the causes and dynamics of counterfeiting, the effects they have observed on customers, the measures they employ, and how they can mobilize other stakeholders to tackle the issue. By encompassing these three vital stakeholder groups interacting with the evolution of counterfeiting, the study offers a much more comprehensive analysis of the issue from multiple angles. In addition to the interview data, archival records such as company annual reports, newspaper clippings, and internet information on the companies' activities were collected. Also, national archives, government reports and Ghanaweb information on the phenomenon of counterfeiting were also mobilized and utilized. The interviews were recorded and transcribed within 24 h of each interview. The study employed pseudonyms, such as "GM" for the business executives in multinational corporations, "user-" for each of the 10 consumers, and "Gov-O" for the government officials, to refer to the respondents and preserve their anonymity.

#### 3.1. Data analysis

The analytical approach used follows the method outlined by Gioia et al. (2013), which involves developing first-order, second-order, and aggregate dimensions or themes. This approach allows for a systematic and rigorous analysis of the qualitative data to uncover key patterns, processes, and relationships (Magnani and Gioia, 2023; Nag et al., 2007). In the first-order analysis, the interview transcripts were carefully reviewed and coded to identify recurring patterns, concepts, and themes (Gioia et al., 2000) pertaining to the effects of institutions on the spread of counterfeit products and the stakeholders' interactions and engagement with the issue. The initial coding process involved open coding, where meaningful units of data were identified and labeled with descriptive codes (Gioia and Thomas, 1996; Gioia et al., 2013), which captured the participants' perspectives, experiences, and attitudes toward counterfeit products. The process of identifying first-order dimensions involves carefully reading and coding the interview transcripts or text data to extract meaningful units of information. These dimensions capture the primary quotes, ideas, concepts, or experiences expressed by participants in relation to counterfeit products. After completing the initial coding, the next step involved grouping similar codes together to form second-order themes. This process entailed identifying commonalities and relationships between the codes and grouping them based on their conceptual similarity. Through this process, a higher level of abstraction was achieved, capturing broader themes that encompass multiple codes.

The second-order themes provided a more comprehensive understanding of the underlying concepts and patterns associated with counterfeit products. The final step in the analysis process involved aggregating the second-order themes to form higher-level aggregate themes (Gioia et al., 2013). This process aimed to identify broader patterns and overarching concepts that cut across multiple second-order themes. By integrating and synthesizing the second-order themes, the researchers were able to identify overarching concepts that captured the essence of the participants' perspectives on counterfeit products. These processes reflect the identification of initial concepts in the data and clustering them into categories (open coding) (Corley and Gioia, 2004), the delineation of core themes, and then the aggregation of themes (Gioia et al., 1994) through the examination of the commonalities and differences in the core issues (Corley and Gioia, 2004). The resulting data structure is depicted in Fig. 1.

#### 4. Findings and interpretation

The analysis reveals three interconnected phases of the unfolding effects of counterfeiting, starting from tracing the root causes to the

Gov-O4

# **1st Order Dimension**

# 2nd Order Dimension

Aggregate Dimensions

- The growth of online marketplaces and e-commerce platforms as mechanisms for reaching potential users.
- Counterfeit goods are designed to appear authentic with labels, logos, and brands, creating a false sense of legitimacy.
- Counterfeiters deceive consumers by selling counterfeit products as used or second-hand items.
- Lack of proper documentation weakens buyers' ability to verify the authenticity of products.
- Weak regulatory enforcement and poor documentation of products.
- Mixing counterfeit products with secondhand products.

Phase 1: Unmasking the shadow market.

- Substandard materials and production processes in counterfeit products lead to an increased risk of malfunction, short circuits, and overheating.
- Difficulties in distinguishing between genuine and counterfeit products can lead to the purchase of such products.
- Limited consumer awareness of the risks associated with counterfeit products.
- · The wider appeal and low cost of "factory seconds."
- · Social acceptance of the sale and purchase of counterfeits.
- Counterfeit pharmaceutical products can lead to ineffective treatment and adverse reactions for end users.
- Failure to adhere to high safety standards can result in fires and damage to life and property.

Phase 2: Unveiling the fire and health hazards.

- · Informal institutional acceptance of counterfeit products.
- Weak enforcement of laws and regulations related to counterfeit products.
- · Inadequate enforcement of intellectual property rights.
- Legitimate retailers and distributors also sell counterfeit products, making it challenging for consumers to distinguish between authentic and counterfeit goods.
- The presence of institutional impediments demands public intervention.
- Counterfeit products hamper investment incentives.

Phase 3: Stakeholder mobilization and interventions.

Fig. 1. An interconnected unfolding process model of effects of counterfeiting.

hazards and health risks and then shifting towards public intervention and regulation in combating counterfeiting, as demonstrated in Fig. 1.

#### 4.1. Phase 1: unmasking the shadow market

# 4.1.1. Mixing counterfeit and second-hand products

In Phase 1, the research data indicates that counterfeiters appear to deceive consumers into purchasing counterfeit products by offering them as either used or second-hand items. The phenomenon of mixing counterfeits and second-hand products was reported by the business executives and consumers interviewed. It was seen as more prevalent in the technology and electronics industry. This technique created a sense

that such products are authentic. As one manager asserted:

"If you visit any of the local markets, they are selling many of these products and the vendors will say, 'Oh, it was first used by a rich family in the US or Europe, and they did not like it,' so it was thrown away. Many of such products have not been used before ... they have the right labels, logos, and brands, but the products look genuine to the naked eye."

As another corporate executive (GM13) of a multinational corporation in the electronic and appliance industry stated:

"So then, the real problem we face today is that fake versions of our products making their way to Kumasi, Accra, and many other markets in the country. Many have been disguised as second-hand  $\dots$  We have tried but cannot stop this on our own."

The pricing of these products is often much lower than the originals, and it falls within a range closer to second-hand products. This creates a fake sense of "bargain" for potential buyers, thereby making such products more enticing with higher prospects of sale. One consumer (User-A), reflecting on his experience of buying such product camouflaged second-hand item, indicated:

"Well, I'll tell you the main reason. I was told it was second-hand ... it was knocked down ... It looks original, so I thought I had the best bargain of my life, but it was fake and broke after two weeks."

# 4.1.2. Difficulties differentiating between authentic and unauthentic products

Our analysis indicates that the growth of counterfeiting appears to stem from end users' limited ability to distinguish between genuine and fake/substandard products. In 2023, the Ghana Standards Authority (GSA) identified over 6000 substandard and inferior electrical products and appliances in the Ghanaian market, impeding market competition (The Ghanaian Times, 2023). The Ghana Standards Authority's report observed that there are 21 registered brands of electrical standardized cables and products certified by the GSA, but the market is polluted by many other cables that fail to meet even the basic standards (The Ghanaian Times, 2023). These sub-standard and counterfeit goods are often disguised to create a perception of "legitimacy" and reduce consumer suspicion. One line manager (GM4) in one of the firms asserted:

"It is like a cancer in our society ... It took me time in this industry to notice, but it's clear that [many] consumers do not question the authenticity of products ... they look at the price and say, 'it's good.' It will do the job."

As one executive (Line manager) for an electronic company asserted,

"As mentioned before, many consumers want expensive brands like Calvin Klein, Gucci, and Louis Vuitton, but cannot afford them. Similarly, some consumers want Sony and Samsung but cannot afford the originals ... If you have the chance, visit Mokola market, and you will see appliances from all the famous brands. Check for genuine products, and I can assure you that you will find very few" (GM12).

One of the reasons for passing off counterfeit products as used or second-hand is that there is very limited scrutiny for used or second-hand products. As one executive (GM15) echoed this sentiment:

"Well, it's pure and simple ... There is no or no proper inspection of used or second-hand items in any of the major markets. If there are, I am yet to see it "

The issue is particularly problematic given that many legitimate retailers and distributors also sell counterfeit products, thereby making it difficult for users to differentiate between authentic firms' products and products pretending to originate from authentic firms. By reducing a sense of suspicion about such products, the counterfeiters have managed to flourish in the market. Accompanying this often absence of proper documentation to support the originality of such products is the ability of any potential buyers to verify the authenticity of such products. The amalgamation of legitimate and unauthorized activities, specifically counterfeiting, by many small and large businesses globally has also made it increasingly difficult to detect and halt such practices, thereby creating conditions for growth. It appears that there are users who make impulsive purchasing decisions without having the knowledge and expertise to thoroughly verify the authenticity of the products.

#### 4.2. Phase 2: unveiling the fire and health hazards

In Phase 1, our data indicates a diverse range of fire (for electronics

and appliance products) and health hazards (pharmaceutical products). Across the globe, the demand for counterfeit products continues to surge, unleashing different health and safety risks. The proliferation of counterfeit products has been further exacerbated by rapid technological advancements in recent decades, including the internet and social media platforms. Below we tease out the findings.

#### 4.2.1. Fire hazards

The counterfeit products can amplify the risk of fire stemming from the use of inferior components and batteries used in electronic products, as well as their perceived failure to adhere to basic safety standards. The use of substandard materials often leads to appliances and electrical systems becoming more prone to malfunction, short circuits, or overheating, thereby resulting in fires and damage to human life and property. In discussing the potentially damaging effects of such practices, one executive of a multinational company in the electronics sector asserted:

"Oh, certainly, [counterfeits] are hazardous and can cause fires. I can assure you recent fires in city markets in Kumasi, Accra, and Takoradi have something to do with such products. People buy them but don't know they can cause fires. These fires burn down market areas and people lose their property and genuine goods" (GM13).

As one country manager (GM14) with expertise in health and safety standards compliance asserted:

"Whenever you examine these products, you see the wiring components not in the right place or using very cheap materials, which leads to overheating, burning, and even fires."

As another executive (GM9) asserted:

"But I think it was reported to us last year that there was a fire outbreak linked to our products ... After some investigation, it became clear that the product was fake, not our brand, and the fire outbreak was caused by those faulty cables used in the fake products."

Although many counterfeit electrical products generally mimic the features of genuine electrical equipment, they often differ in terms of quality standards and specifications. This is largely due to utilization of substandard materials coupled with poor quality control measures, which have the potential to lead to or trigger fires, electrical shorts, or damage to private and public properties. The malfunctions in counterfeit electronic appliances also lead to accidents and damage to other connected devices.

#### 4.2.2. Health hazards

Pertaining to the pharmaceutical companies, the executives expressed deep concern about product safety and risk to healthcare delivery systems, the end users of their products. Much of such product fails to meet basic hygiene standards, quality control and can encompass harmful substances. This often leads to people taking counterfeit medications, which are usually ineffective treatments and generate adverse reactions for the end users. On this one executive asserted (GM2):

"In reality, if you look at this in term of consumers' safety, then this is dangerous. Some people have allergies, you have to use the right materials. The [counterfeit] drugs/medicine do not work, because they are fake, or even expired and repackage for sale. This is not good."

This phenomenon has the potential to lead to a loss of public confidence in some medicines due to the substandard nature of counterfeits. The substandard materials and production processes can also harm consumers. On this aforementioned angle, one line manager (GM5) outlines the effects:

"A few weeks ago, I was in Kumasi to visit a relative and to attend a funeral. I visited the market and it was obvious to everyone. I could see such products everywhere .... My main concern is that they are getting

people sick by giving false hope ... their vaccines do not work and do not meet international standards."

Another top executive in the finance department of an electronic and appliance company (GM6) further illuminated this issue:

"I am concerned as a parent whenever I read in the news that another child or person electrocuted by faulty appliances and there is burial church service ... this is the real consequences for the problem not our business bottom line. During such difficult times, the policymakers need to act but they do not."

The distribution of counterfeit healthcare products has the potential to adversely impact the general public.

Table 2 provides a diverse perspective of the effects of counterfeit products from the end users and businesses. As can be deduced from the above analysis, counterfeit products pose numerous health and safety

**Table 2**Data Supporting the evolution and effects of counterfeit products.

Health and Safety	Explanation of the mechanisms	Illustrative quotes businesses' experience	Illustrative quotes from consumer experiences
Fire hazards.	Counterfeit products leading to fires.	" The issue became more prominent after we set up this branch The ups and downs power supply in this country means that faulty appliance can catch fire easily". (GM8)	"After I bought two. It was two for one deal and then when I got home, I plugged and within seconds it started to smoke I asked some to come a check it was fake, and they sellers have disappeared from the market."  (User-A)
Electrical Hazards	Fake and faulty appliance can cause electrocution or fires.	Substandard materials coupled with poor quality control measures cause fires or electrical shocks.	"I bought a radio from Kejetia from a street vendor, and when I got home and plugged it in, there was a loud bang noise, and I saw smoke coming out The repairer said it was counterfeit." (User-D) "My new mobile charger stopped working, and when I plugged it in, there was smoke." (User-C)
Inadequate inspection and authentication of products.	Product failure, malfunctions and underperformance leading to harm.	"We have had customers calling our office to complain about appliances catching fire, not working, or even causing fires. We asked one customer to return the product to our office, only to discover that it was fake. It was not our product, but it was still damaging our reputation." (GM10)	"It was not working, then in starts working and then stop On and off every day". (User-B)

effects stemming from inadequate inspection and authentication of products and the phenomenon of mixing counterfeit and second-hand products.

#### 4.3. Phase 3: stakeholder mobilization and interventions

Following Phase 2, we observed a further manifestation of the effects and a shift towards a desire for strategies for public intervention and regulation in combating counterfeiting in the developing economy. Many of the business informants traced the desire to institutional impediments, such as the informal institutional acceptance of counterfeit products, weak enforcement of laws and regulations related to counterfeit products, inadequate intellectual property rights enforcement, and the challenge for consumers to distinguish between authentic and counterfeit goods, which were alluded to as the root cause of the proliferation of counterfeit products. These were seen as weaknesses of the current regulatory landscape, shaping the wider business and social conditions for the growth of such products. The business informants emphasize the need to develop networking relationships with external stakeholders such as governments and consumers as key in helping to alleviate the issue. As one official in government (Gov-O5) puts it this way:

"The folder you can see in front of me is a dossier put together by one of the big businesses about incidents of counterfeits affecting their businesses and want us to something about this ... they want more enforcements, more police, more inspectors, but we do not have that kind of resource to all of these. We are trying but cannot fix all of this today."

The environment, typified by weak intellectual property laws and enforcement structures, appears to create a situation where counterfeiters are unlikely to be apprehended. Even when apprehended, they face minimal legal repercussions, making counterfeiting a very attractive avenue for many individuals and small businesses in the country and beyond. Coupled with the inherent difficulties in distinguishing between counterfeit and authentic goods, this has created a higher demand for such products. Another executive (GM7) further exemplifies the importance of the issue by stating:

"I like the question, but we have already looked at the issue. At times, second-hand items have been used for decades in the US and Europe and then sent here, repaired, polished, and reused. These also cause some fires in local markets. This is where the politicians have a role."

Our analysis indicates unfolding effects on business activities beyond the effects on consumers and end users. There appear to be adverse effects on authentic firms' profitability and investment incentives. One line manager (GM5) further outlines the issue of counterfeiters free-riding on their business investment by noting:

"Yeah, we do scientific testing and research at headquarters for years before products are developed, then tested and tested again. After all of these, they just come along and steal sales from us with counterfeits. It's not out of the question."

Some informants indicate that the national government even lacks robust science facilities and laboratory testing facilities closer to markets to be able to collect samples of products and conduct effective verification processes, which also affects regulatory enforcement authorities. Indeed, counterfeit and pirated products have become a vital source of revenue for organized criminal activities, as well as possessing the potential to erode companies' brand value and reputation (Gao and Wu, 2023; OECD, 2017).

#### 5. Discussion and implications

Given the gap in the current scholarly discourse, this study sought to examine the mechanisms through which institutional deficiencies in developing countries can create conditions leading to detrimental public health effects of counterfeiting. This is an especially important issue, considering the growing concern among public policy officials and scholars about the need for a deeper understanding of the spread of counterfeit products. Based on insights from top executives of multinational corporations, government officials, and consumers, the analysis led to the identification of three interconnected processes and mechanisms in which institutional deficiencies in developing countries foster the unfolding effects of counterfeiting. Phase 1 traced the dynamics of counterfeit growth to factors such as the simultaneous growth and mixing of counterfeit and second-hand products, weak enforcement of intellectual property rights, and increasing consumer demands for such products. This then led to Phase 2, which focused on the fire and health hazards resulting from unattended policy and regulatory gaps. This phase shed new light on core issues such as compromised product safety and infringements. The hazards and health risks reviewed in Phase 2 culminate in Phase 3, which focuses on stakeholder mobilization and interventions. It is evident that many counterfeit goods have infiltrated the second-hand market, making it challenging for consumers and the general public to distinguish between genuine and fake products. By harnessing insights from each phase to build upon the successive one, this study offers a more comprehensive and deeper understanding of the process of counterfeiting and its multifaceted public health effects. These complex interactions have shaped the dynamics and evolution of counterfeiting and its effects on a developing economy.

#### 5.1. Theoretical and practical contributions

From a theoretical standpoint, by drawing on dysfunctional institutions (Barnard and Mamabolo, 2022; Julian and Ofori-Dankwa, 2013; Ofori-Dankwa and Julian, 2013; Rodgers et al., 2022), this study extends and enriches researchers' understanding of how dysfunctional institutions can create fertile grounds, conditions, and frictions that lead to the growth of counterfeiting activities. The study offers a comprehensive conceptual model capturing the decision-making processes, evolutions, and dynamics of healthcare product counterfeiting in developing countries. In addition, we advanced three interconnected unfolding effects of counterfeiting, shedding much-needed light on the interdependencies and interconnectedness of the counterfeiting phenomenon and the diverse range of effects on different stakeholders. Furthermore, by focusing on the developing economy of Ghana, this research also contributes to the literature by offering a more comprehensive understanding of the consequences of dysfunctional institutions in shaping the dynamics of counterfeit markets in emerging markets. This study goes a long way in stimulating the scholarly discourse on the causes of counterfeit products, as well as their effects on institutions in developing countries.

From a practical standpoint, the findings indicate the necessity for more stronger and effective business-government partnerships to utilize healthcare professionals in awareness campaigns aimed at educating the general public. The objective of these campaigns would be to raise awareness about the detrimental public health effects of counterfeit products while emphasizing the value of purchasing authentic ones. Such collaborations would also help to facilitate a more efficient enforcement of counterfeiting regulations in developing countries. Moreover, for governments in the region and beyond, there is a need for a specialized and resource-backed cross-border enforcement team, including border forces, police, legal experts, and domestic regulatory enforcement officials, geared towards dissuading counterfeiters. Such a team could help in updating knowledge and expertise, as well as monitoring and imposing stricter penalties to serve as a deterrent. Given that many West African countries tend to have porous national borders, weak regulatory enforcement, and lenient or no penalties for counterfeiting, there is a need for the sharing of best practices. This, in tandem with the cross-border enforcement team, can play a crucial role in delivering these practices.

Furthermore, there is a demand for high-quality financial and human

resources to support enforcement activities, particularly in the identification and removal of potentially harmful products from the market. Furthermore, our analysis highlights the importance of investing in product authentication technologies that can be widely disseminated to regulators and consumers. These technologies would aid in verifying the authenticity and safety of products. Considering that many counterfeit products are imported into countries like Ghana, it is crucial to establish effective international collaborations between governments. This collaborative effort should address the issue at both the source and destination countries in order to effectively combat counterfeiting. Additionally, given the difficulties in tracking such illicit activities, there is potential value in the government creating some kind of "whistleblower scheme" to provide attractive incentives to citizens and individuals with insider knowledge, helping to track, trace, and halt potentially harmful practices. Collaborating with social media organizations, local news, and TV outlets to promote awareness and support dissemination of up-to-date knowledge on counterfeit products has the potential to help in reaching target local community audiences.

#### 5.2. Limitations and future research directions

The findings outlined above have enriched scholarly understanding; nevertheless, there are limitations that must be borne in mind. First, the sample size of the study, consisting of 15 top executives, 10 consumers, and five government officials, is simply too small given the large number of multinational companies operating in the region, coupled with a population of over one billion and numerous government agencies. To address this limitation and enhance the representativeness of the broader population, future studies could seek a much larger sample of informants to better illuminate the issue of counterfeit products. In addition to the aforementioned limitation, the focus of the study was restricted to only one country. Future research could extend the analysis by focusing on the same and different industries in some of the other fifteen West African nations, such as Benin, Burkina Faso, Gambia, Liberia, Mali, Nigeria, Sénégal and Togo. Such an approach could provide more generalizable findings on the wider issue of counterfeit products in Africa. Future research could also extend this study by exploring the perspectives of a diverse range of stakeholders, including suppliers, distributors, and healthcare professionals. Such analysis would help in offering a more comprehensive analysis of the complexities pertaining to counterfeit products. In conclusion, it is hoped that this study helps to foster new lines of research on the phenomenon of counterfeit products in emerging markets.

#### Data availability

Data will be made available on request.

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