

African Journal of Intellectual Property

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Foreword

Volume 6: Issue 2 of the Africa Journal of Intellectual Property journal comes at a time when questions surrounding ownership, protection, and equitable utilisation of knowledge systems are becoming increasingly urgent across the globe, and particularly within the Global South. The contributions in this volume collectively interrogate the evolving contours of intellectual property (IP) law, offering critical insights that challenge conventional paradigms while advancing contextually-grounded solutions.

The first article provides a timely and thought-provoking critique of international and regional frameworks governing traditional knowledge and genetic resources. By examining the Swakopmund Protocol alongside the WIPO Treaty, the author exposes the structural and conceptual tensions that arise when Western-centric IP models are applied to indigenous knowledge systems. The call for more inclusive, culturally responsive, and participatory legal frameworks is compelling, foregrounding the importance of centring indigenous voices in the design and implementation of IP regimes.

The second contribution turns to patent law, engaging with a recent decision from South Africa's Court of the Commissioner of Patents. Through its analysis of the requirement for prior assignment of rights, the article underscores the legal and procedural precision demanded in patent applications. It serves as a critical reminder of the importance of compliance with statutory requirements, while also illustrating how judicial interpretation continues to shape the practical realities of IP protection.

Broadening the scope, the third article explores the intersection between IP policy and technology commercialisation within Uganda's techno-business ecosystem. Drawing on empirical research, it highlights the intricate relationship between regulatory environments, innovation systems, and market outcomes. The findings underscore the necessity of coherent, flexible, and supportive IP frameworks that can facilitate not only protection, but also the effective translation of innovation into socio-economic value.

Finally, the issue concludes with an important examination of trademark infringement in The Gambia's pharmaceutical sector. By linking IP enforcement challenges to public health risks, the study situates trademark protection within a broader societal context. Its recommendations for enhanced coordination, regulatory reform, and awareness-building point to practical pathways for strengthening enforcement mechanisms.

Taken together, the articles in this issue reflect a shared commitment to rethinking IP in ways that are responsive to local realities while engaging with global legal developments. They offer both critical reflections and actionable insights, contributing meaningfully to ongoing debates on how IP systems can better serve innovation, equity, and societal well-being.

With collegial regards
Managing Editor

African Journal of Intellectual Property

Managing Editor

Tawanda Chiwara

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African Journal of Intellectual Property

GUIDELINES FOR AUTHORS

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UK English spelling is preferred; and should conform to the most recent edition of the Concise Oxford English Dictionary.

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A CRITICAL ANALYSIS OF THE SWAKOPMUND PROTOCOL AND THE WIPO TREATY ON INTELLECTUAL PROPERTY, GENETIC RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE

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Abstract

This article presents a critical analysis of the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore and the WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge. Both instruments were conceived to ease the exploitation and misappropriation of traditional knowledge (TK) and genetic resources (GR). However, they exhibit significant structural, conceptual and practical limitations that undermine their effectiveness. The Swakopmund Protocol, while commendable for its intent to protect Africa's cultural heritage, is constrained by its reliance on Western intellectual property paradigms. These models prioritise individual ownership and economic commodification, disregarding the communal, spiritual and non-commercial dimensions of TK inherent in many African indigenous contexts. Furthermore, the protocol's formulation lacked substantive participation from indigenous communities resulting in a framework that inadequately addresses their priorities. Similarly, the WIPO Treaty is critiqued for its fragmented and reductionist approach, which isolates GR and TK into separate legal categories, and failing to capture their holistic and interconnected nature within indigenous epistemologies. The treaty's negotiation process revealed profound power asymmetries, marginalising indigenous stakeholders while privileging the interests of states and corporations. This article advocates for a paradigm shift towards inclusive, culturally-attuned and enforceable frameworks that centre indigenous voices and adopt integrated approaches to the protection of TK and GR. Drawing on legal analyses and critiques from scholars such as Graham Dutfield, Rosemary Coombe, and Olufemi Oguamanam, this study advocates for culturally-grounded, participatory

and enforceable legal regimes that prioritise indigenous sovereignty over knowledge systems.

Keywords

Traditional knowledge, Genetic resources, Indigenous Rights, Intellectual Property

Introduction

The protection of traditional knowledge (TK) and genetic resources (GR) has emerged as a critical challenge in intellectual property (IP) law, exposing fundamental tensions between Western legal frameworks and indigenous epistemologies. As Dutfield (2006) observes, TK, encompassing the intergenerational wisdom, innovations, and practices of indigenous communities, represents not merely information but “a way of life” that sustains both cultural identity and biodiversity. Similarly, genetic resources, defined by the Convention on Biological Diversity (1992) as material containing functional units of heredity, hold immeasurable value for both indigenous communities and commercial interests.

The vulnerability of these knowledge systems to misappropriation has been well-documented by scholars like Coombe (2005), who demonstrates how global IP regimes routinely fail to protect the communal nature of TK while enabling its commodification. This systemic failure has led to what Oguamanam (2008) terms “cultural erosion,” where TK systems are either exploited for profit or rendered obsolete by incompatible legal structures.

In response to these challenges, two significant legal instruments have emerged: The Swakopmund Protocol (ARIPO, 2010) and the WIPO Treaty (2024). The Swakopmund Protocol, as Ncube (2020) notes, represents Africa’s attempt to create a regional framework for TK protection, while the WIPO Treaty seeks to establish global standards for GR and associated TK. However, as this article will demonstrate through critical analysis, both instruments suffer from what Helfer (2004) identifies as the “regime shifting” problem

in international IP law, where new frameworks replicate the limitations of their predecessors.

The Swakopmund Protocol's definition of TK (ARIPO, 2010, Section 1) exemplifies these limitations. While ostensibly comprehensive, scholars like Brush (1993) argue that such definitions often fossilise living knowledge systems, failing to account for their dynamic, evolving nature. Furthermore, as Bavikatte (2014) demonstrates through case studies, the Protocol's reliance on Western IP models creates fundamental incompatibilities with African communal knowledge systems.

This article builds on the work of these scholars to present a comprehensive critique of both instruments. Through legal analysis and case studies, three core limitations will be examined: (1) the conceptual mismatch between Western IP models and indigenous knowledge systems (Dutfield, 2006); (2) procedural exclusion of indigenous voices in policy formulation (Oguamanam, 2008); and (3) structural enforcement gaps (Helfer, 2004). This analysis aims to contribute to the growing body of work by scholars like Sunder (2006) and Okediji (2018) that seeks to reimagine IP protection through culturally-attuned frameworks.

By centering indigenous perspectives and drawing on comparative examples from successful protection models, this article underscores the urgent need for legal frameworks that move beyond commodification to recognise TK and GR as fundamental components of cultural sovereignty and ecological sustainability. As the cases of Maasai cultural appropriation (Coombe, 2005; Kuruk, 1999) and Hoodia bio-piracy (Chennells, 2007) demonstrate, current systems continue to fail indigenous communities. This article proposes concrete reforms to bridge this protection gap.

Methodology

This study employs a tripartite qualitative methodology to critically analyse the protection of TK and GR under international frameworks, drawing on insights from leading scholars in the field.

1. **Doctrinal Legal Analysis**
A close examination of primary legal instruments - the Swakopmund Protocol (ARIPO, 2010) and WIPO Treaty (2024) reveal their conceptual foundations and operational limitations. Following Dutfield's (2006) approach, we analyse how these frameworks define and institutionalise TK/GR protections, exposing tensions between Western IP models and indigenous knowledge systems.
2. **Comparative Framework Assessment**
Building on Oguamanam's (2008) work on legal pluralism, we contrast the two instruments' approaches to scope of protection and community participation mechanisms.
3. **Benefit-sharing provisions**
This highlights divergent conceptions of sovereignty and epistemic justice in regional vs. global governance.
4. **Policy Gap Analysis**
Utilising Coombe's (2005) criteria for cultural rights frameworks, the article evaluates implementation challenges (ARIPO, 2014), enforcement disparities and customary law recognition gaps.

The methodology combines textual analysis, comparative law and critical policy studies to expose systemic flaws in current protection regimes, while centering indigenous perspectives as advocated by Bavikatte (2014) and Sunder (2006). This approach aligns with emerging scholarship on decolonising IP frameworks (Okediji, 2018), offering both theoretical and practical insights for reform.

Critique of the Swakopmund Protocol

Reliance on Western Intellectual Property models

A foundational limitation of the Swakopmund Protocol on the Protection of TK and Expressions of Folklore (2010) lies in its over-reliance on Western IP paradigms—copyrights, patents, and *sui generis* adaptations that are structurally-misaligned with African TK systems. As Dutfield (2006) critiques, this alignment with the neoliberal, Euro-American IP canon distorts the ontological and

social fabric of TK, which is inherently collective, intergenerational and spiritually embedded. Article 4(1) of the Swakopmund Protocol states that “Traditional knowledge shall be protected against misappropriation,” but the implementation strategy predominantly mirrors Western IP norms through mechanisms such as registration, licensing and contractual benefit-sharing. This reflects what Coombe (2005) identifies as a tendency to commodify knowledge systems whose value exceeds mere economic terms.

The clash between Western IP and Communal Custodianship

Western IP regimes are grounded in individual authorship, exclusivity and market-based incentives, which are antithetical to the collective epistemologies that govern TK in many African communities. Article 3(1) of the Protocol defines TK as “knowledge which results from intellectual activity in a traditional context and includes know-how, skills, innovations, practices,” but fails to incorporate customary laws and non-market values as valid legal frameworks.

Key contradictions include:

- **Collective Ownership:** Unlike Western IP systems that assign rights to individuals or legal entities, TK is typically held by entire communities under unwritten customary systems (Oguamanam, 2008). The Protocol’s Section 7(1) acknowledges that “This Protocol shall confer on the owners of rights referred to in Section 6 the exclusive right to authorise the exploitation of their traditional knowledge,” yet it does not specify how collective ownership is to be recognised or enforced within national legal systems.
- **Intergenerational Transmission:** The Protocol offers no mechanism to safeguard oral traditions, which are often fluid and evolving, from exclusion under rigid IP registration schemes (Brush, 1993).
- **Non-commodified Meaning:** TK frequently has spiritual or ecological significance that cannot be monetised without loss of meaning (Bavikatte & Robinson, 2011). Section 9 of the Protocol mandates “fair and equitable sharing of benefits,”

but this frames TK as a tradable resource, ignoring relational and sacred obligations embedded in many indigenous knowledge systems.

These conflicts mirror longstanding critiques of the TRIPS Agreement, which similarly imposes Eurocentric IP norms on diverse cultural systems across the Global South (Helfer, 2004).

The commodification trap

By positioning TK primarily as an economic asset subject to licensing, contracts, and market-based utilisation, the Protocol risks facilitating what Sunder (2006) calls the “commodification trap.” This is particularly evident in Section 8 of the Protocol, which promotes licensing agreements without mandating safeguards to ensure community control or cultural integrity.

Consequences include:

- **Alienation from Heritage:** TK becomes subject to market validation, thereby detaching it from the cultural practices and spiritual contexts in which it is embedded. Communities may be forced to “translate” their traditions into legally-recognisable forms, undermining their authenticity.
- **Legitimisation of Bio-piracy:** The Protocol offers limited protection against corporate misappropriation. For instance, under Article 20, third parties may access TK for scientific or commercial purposes upon obtaining prior informed consent and benefit-sharing agreements. Yet enforcement mechanisms remain weak, and proof of ownership or custodianship is still measured by Western evidentiary standards. In the widely-cited San Hoodia case, TK on appetite-suppressing plants was patented without meaningful community consent, highlighting the flaws in relying on market-centric models (Dutfield, 2006).

As Okediji (2018) argues, such frameworks compel indigenous communities to engage in the very commodification they seek to resist – a paradox that delegitimises the Protocol’s protective claims.

Alternative models ignored

Notably, the Protocol ignores more culturally-aligned frameworks that prioritise legal pluralism, customary law, and community self-determination:

- The Philippines' Indigenous Peoples Rights Act (IPRA, 1997) recognises customary law as the primary legal framework governing indigenous knowledge, ensuring legal authority remains with communities rather than state institutions or IP offices.
- The Nagoya Protocol adopts a biocultural rights approach, connecting TK protection to land rights, cultural heritage, and ecological stewardship (Bavikatte, 2014). This model shifts the emphasis from economic transaction to rights-based recognition of community sovereignty.

Instead, the Swakopmund Protocol's Section 2 and the WIPO Treaty (2024) Article 2 define TK narrowly as "knowledge associated with genetic resources" and "traditional innovation," thus, reducing it to a utilitarian resource. This echoes a reductionist view where TK is stripped of its relational, ceremonial, and ethical dimensions and reinserted into global IP circuits.

Inadequate participation of indigenous communities

Despite the stated goal of safeguarding TK for and by its rightful custodians, the Swakopmund Protocol and its implementation through national and regional mechanisms suffer from a democratic deficit in indigenous participation. The 2014 ARIPO Report candidly acknowledges that the consultative processes leading up to the Protocol's adoption were overwhelmingly dominated by state actors, with only 5% of participants representing indigenous or local communities (ARIPO, 2014, p. 15). This imbalance in stakeholder representation has profound implications for the legitimacy, design, and effectiveness of the legal protections afforded to TK.

Top-down normative frameworks

The marginalisation of indigenous voices during the drafting process has resulted in top-down legal instruments that often

contradict customary governance systems. For instance, Section 6 of the Swakopmund Protocol, which addresses the “authorised use” of TK, vests the authority to grant or deny permission in state-recognised rights holders, without a clear requirement to consult traditional custodians or elders according to local laws and protocols. This creates a legal fiction whereby state-sanctioned institutions are presumed to speak on behalf of indigenous groups, thereby undermining the principle of community self-determination. As Oguamanam (2008) argues, such statutory overreach reinforces colonial patterns of knowledge governance, where indigenous peoples are “beneficiaries” rather than agents in the stewardship of their heritage.

Tokenistic and one-off engagement

While community consultations were held in some member states prior to ratification, the ARIPO 2014 Report concedes that these engagements were largely symbolic and lacked continuity. Page 30 of the report highlights the absence of any institutional mechanism for ongoing community involvement in the implementation, monitoring, or amendment of the Protocol. This tokenistic inclusion fails to meet international standards such as Free, Prior and Informed Consent, which requires not only initial consultation but continuous participation throughout the policy cycle.

Moreover, indigenous knowledge systems are dynamic and context-specific; legal protections must therefore, be responsive to evolving community norms and expectations. The current framework, however, is rigid and static, treating TK as a closed category that can be administered from above. This misalignment diminishes community trust in formal IP regimes and fosters legal alienation – a condition where communities do not see their realities reflected in the law and thus, disengage from legal processes altogether.

Exclusion from institutional governance

Neither the Swakopmund Protocol nor the WIPO Treaty (2024) create standing institutional platforms for indigenous participation in decision-making at the regional level. The absence of indigenous representation within ARIPO’s administrative and technical bodies exacerbates this governance gap. Without formal seats at the

table, indigenous groups lack the power to shape the operational guidelines, enforcement mechanisms, or benefit-sharing protocols that directly impact their knowledge systems. This structural exclusion reinforces a cycle where laws are made about indigenous peoples without them, violating the participatory rights recognised under instruments like the UN Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007, Art. 18).

Limited scope of protection

While the Swakopmund Protocol claims to safeguard TK and expressions of folklore, its substantive scope of protection remains narrow and conceptually rigid, offering only partial and, at times, inadequate legal coverage for the diverse ways in which TK is created, shared, and threatened in African contexts.

Failure to address Non-Commercial misuse

One of the most glaring limitations is the Protocol's exclusive focus on commercial exploitation, neglecting instances of non-commercial misuse that can equally harm indigenous communities.

For instance, expressions of folklore such as songs, symbols, dances, and rituals are often appropriated by media producers, cultural industries, or social media influencers in ways that trivialise or commodify their sacred meanings. As Coombe (2005) argues, this leaves communities without recourse when their heritage is distorted in public narratives, even if no monetary gain is involved.

Inadequate coverage of digital and transboundary use

The Protocol lacks provisions to deal with digital dissemination and cross-border misappropriation, two major threats in the era of globalisation. Many African cultural expressions are now shared online, often stripped of attribution, context, or consent. However, the Protocol provides no extraterritorial safeguards, nor does it address platform liability for hosting or amplifying misappropriated TK and folklore. This is a crucial omission, particularly when compared to more adaptive frameworks like the Nagoya Protocol, which foregrounds transboundary cooperation and compliance in user countries.

Challenges in Enforcement

Weak cross-border enforcement

One of the most significant barriers to the effective implementation of the Swakopmund Protocol is the lack of robust, harmonised, and enforceable mechanisms to address cross-border misappropriation of TK and expressions of folklore. This challenge is particularly acute in a regional context like Southern Africa, where ethnic and cultural communities often straddle multiple national borders, and where TK is inherently transnational in nature.

Absence of a supranational adjudicative mechanism

The ARIPO 2014 Report explicitly highlights the absence of a centralised supranational body to adjudicate inter-state disputes or enforce TK-related claims across member jurisdictions (ARIPO, 2014). Unlike the European Union's Court of Justice, which can issue binding decisions on cross-border IP matters, ARIPO lacks an appellate or dispute resolution body with the authority to mediate or enforce TK protections at a regional level. As a result, disputes involving TK misappropriated across national lines are left to the discretion of individual states, many of which have inconsistent enforcement capacities and divergent legal definitions.

Divergent national legal frameworks

The Protocol allows national governments significant discretion in implementation, which has led to variability in domestic legislation that undermines regional coherence. For instance, Zambia's Traditional Knowledge Act (2016) adopts a relatively flexible, community-centric model for consent and benefit-sharing, whereas Malawi's legal framework imposes stricter penalties and administrative controls over the licensing and use of TK (Ncube, 2020). These discrepancies result in a situation where:

- A company operating across borders may register and exploit TK in one state with weaker regulation, while avoiding the jurisdiction of a stricter neighbour.
- Communities whose TK spans multiple states may receive unequal protections or benefits, depending on which side of the border their claim is recognised.

- Regional enforcement cooperation is ad hoc and inconsistent, as the Protocol does not mandate inter-agency coordination or mutual legal assistance across member states.

The legal incoherence also undermines community trust in the system, as protections may appear arbitrary or vulnerable to political manipulation. Without clear rules for jurisdictional priority, recognition of foreign rights, or enforcement reciprocity, TK holders are left without meaningful remedies when their knowledge is exploited beyond their national borders.

Enforcement vacuum in digital contexts

The enforcement challenge is further exacerbated by the rise of digital platforms and cross-border e-commerce, where cultural expressions are often circulated without consent, attribution, or regulation. The Protocol does not contemplate transnational enforcement in digital contexts, nor does it propose cooperation with global platforms or digital rights management systems. As a result, traditional knowledge that appears in one country's music video, fashion show, or on a social media post can be appropriated elsewhere with impunity.

Missed Opportunities for Harmonisation

While the Protocol creates a legal foundation for TK protection, it misses opportunities for institutional harmonisation, such as establishing a shared regional TK registry to facilitate prior art checks and communal claims, developing a regional enforcement task force or tribunal and creating uniform criteria for prior informed consent and mutually-agreed terms, as envisioned under the Nagoya Protocol. Without such mechanisms, enforcement remains state-bound, inconsistent, and vulnerable to forum shopping, undermining the Protocol's promise of a coordinated African approach to safeguarding TK.

Critique of the WIPO Treaty on IP, TK and GR

The adoption of the WIPO Treaty on IP, TK and GR (2024) marks a significant milestone in international law's attempt to recognise the role of indigenous knowledge systems in innovation. However, despite its progressive framing, the Treaty suffers from several

critical shortcomings that undermine its capacity to offer holistic and culturally-congruent protections. Chief among these is its fragmented treatment of TK and GR, which reflects broader structural flaws in how Western legal systems engage with indigenous worldviews.

Artificial separation of interdependent knowledge systems

In indigenous frameworks, TK and GR are co-constitutive: knowledge about a plant's medicinal properties, for instance, is inseparable from the plant itself, the ecological context in which it is found, and the spiritual and cultural narratives that govern its use. The Treaty's division of TK and GR into distinct legal compartments mirrors a Western legal ontology that carves nature and knowledge into separate categories for purposes of commodification and regulation. This fragmentation reflects what Dutfield (2006) describes as an "epistemic misfit" between indigenous worldviews and IP frameworks. It forces communities to pursue fragmented protections through different legal instruments, increasing legal uncertainty and administrative burden. Moreover, it denies the holistic and relational essence of biocultural knowledge, which cannot be meaningfully protected through compartmentalised legal tools.

Disclosure without consent: A hollow safeguard

Article 3 of the Treaty requires patent applicants to disclose the country of origin or source of genetic resources used in inventions. However, this disclosure does not extend to TK, nor does it mandate the prior informed consent of indigenous or local communities. As such, disclosure becomes a procedural formality devoid of substantive safeguards. This omission opens the door to legalised bio-piracy, where corporations or research institutions can fulfill minimal disclosure obligations without engaging with or compensating the communities whose TK was essential to the innovation. The lack of consent provisions replicates the same asymmetries of power and access that prior international instruments like TRIPS have been criticised for, (Helfer, 2004).

Failure to embrace biocultural rights frameworks

The Treaty's failure to adopt a biocultural rights framework represents a critical normative gap. Unlike the Nagoya Protocol,

which explicitly recognises the link between TK, GR, and cultural heritage and requires both state and community-level consent, the WIPO Treaty prioritises administrative IP formalities over substantive community agency. As Bavikatte (2014) argues, a rights-based approach to TK must locate it within the broader contexts of land, identity, spirituality, and customary law. The Treaty's silence on these dimensions renders it inadequate as a tool for cultural preservation or self-determination. It treats TK and GR as static "resources" rather than living traditions embedded in community practice and belief systems.

Institutional and operational gaps

Operationally, the Treaty also lacks clear institutional mechanisms to implement or enforce its provisions in a way that reflects indigenous priorities. There is no regional or global registry for integrated TK-GR claims, no mechanism for cross-border enforcement, and no procedures for dispute resolution involving indigenous rights-holders. The absence of these mechanisms means that indigenous communities are often left with no practical avenues for redress in cases of misappropriation, especially where their TK has been used across borders or in digital domains. Furthermore, the Treaty does not propose measures to harmonise national laws or support capacity-building among communities, which further entrenches inequality in access to legal remedies.

Corporate influence in negotiations

Despite its stated goal of empowering indigenous people and protecting TK, the WIPO Treaty on IP, TK and GR (2024) reflects a process heavily influenced by state and corporate actors. This imbalance not only shaped the substantive content of the Treaty but also dictated the political priorities embedded within it, resulting in a framework that largely accommodates corporate flexibility, while offering only symbolic protections to indigenous rights-holders who had limited input as observers, with no direct decision-making power.

No veto power for indigenous communities

Another structural flaw is the Treaty's exclusive reliance on state sovereignty in determining access and benefit-sharing protocols. Although states are encouraged to "take into account" the views of indigenous peoples, there is no provision that gives communities veto power or binding authority in decisions that

affect their knowledge systems. Article 10 (c) says, “The Assembly shall encourage the effective participation of representatives from Indigenous People and local communities as accredited observers.”

As Okediji (2018) points out, the WIPO framework reproduces colonial hierarchies of representation, where states are positioned as the sole gatekeepers of TK and GR, regardless of whether they have a history of marginalising or exploiting those very communities. This top-down structure not only undermines the principle of free, prior informed consent but also leaves communities without institutional recourse if a state enters into agreements or licenses without their involvement.

This concern is not hypothetical. In several Global South countries, state-led bio-prospecting deals have been struck without consulting affected communities, often invoking national sovereignty over genetic resources, while ignoring customary governance systems and traditional stewardship rights (Oguamanam, 2008; Ncube, 2020).

The illusion of multilateralism

While the Treaty was negotiated under the auspices of WIPO, a multilateral forum meant to reflect diverse stakeholder interests, its process demonstrates what Shiva (1997) and others have called the “NGO-isation of resistance”: indigenous voices are formally included but structurally excluded, invited to consult but not to decide. Community representatives often lack resources, legal training, or consistent access to negotiation tables, while corporate and state actors benefit from professional delegations and full-time legal teams.

As a result, the final Treaty text reflects the interests of IP-exporting nations and multinational firms, emphasising patent system integration, disclosure formalities, and legal harmonisation while sidelining demands for community governance, biocultural rights, and reparative justice.

Inadequate enforcement mechanisms

Despite its rhetorical commitment to safeguarding TK and GR, the WIPO Treaty on IP, TK and GR (2024) is undermined by weak and

non-binding enforcement mechanisms. These structural limitations reduce the Treaty's capacity to provide meaningful redress in cases of misappropriation and effectively render it a soft law instrument, one that promotes principles without enforcing obligations.

Voluntary compliance and absence of sanctions

The core enforcement provision of the Treaty, Article 9, encourages states to implement domestic measures that promote disclosure, benefit-sharing, and recognition of indigenous rights. However, the Article is explicitly non-mandatory, relying on voluntary compliance by contracting parties. It contains no binding sanctions or accountability frameworks for non-compliance.

As Helfer (2004) warns in his analysis of international IP law, treaties that lack coercive enforcement mechanisms often become symbolic gestures offering normative guidance but no legal teeth. In this case, even flagrant violations (such as the commercial exploitation of unregistered TK without consent or benefit-sharing) may go unpunished, as the Treaty neither establishes penalties nor empowers any supranational adjudicative body to resolve disputes.

This shortfall is particularly troubling in light of the vast asymmetries between indigenous communities and transnational corporations. Communities already struggle to litigate IP disputes due to resource constraints, jurisdictional complexities, and linguistic/legal barriers. Without binding obligations and enforcement mechanisms, the Treaty effectively places the burden of protection on the very groups it claims to support.

Jurisdictional gaps and extraterritorial misappropriation

Another weakness lies in the Treaty's failure to address cross-border enforcement and extraterritorial misappropriation. For example, if a patent is granted in a country that is not party to the Treaty or if the use of TK occurs in a digital or academic context beyond the jurisdiction of the source country, the Treaty offers no avenue for restitution. This creates a serious enforcement vacuum. Even if a country with strong domestic TK laws (e.g., India or Peru) can prevent local misuse, foreign actors can simply operate from jurisdictions with weaker regulations, exploiting GR and TK with impunity. As a result, corporations and research institutions can

forum-shop, choosing regulatory environments where compliance is minimal and enforcement unlikely.

No dispute resolution or oversight body

Crucially, the Treaty does not establish an independent body for monitoring compliance, arbitrating disputes, or enforcing decisions. Unlike the Nagoya Protocol, which is linked to the Convention on Biological Diversity (CBD) and benefits from the institutional support of the CBD Secretariat, the WIPO Treaty remains institutionally fragmented. Without a dedicated oversight mechanism, enforcement depends entirely on domestic courts, many of which are under-resourced, procedurally biased, or ill-equipped to adjudicate complex TK and GR claims.

Conclusion

The critical analysis of the Swakopmund Protocol and the WIPO Treaty reveals significant shortcomings in their design and implementation, which ultimately limit their ability to safeguard TK and GR in ways that reflect indigenous worldviews. While these instruments signify progress in recognising the intellectual and cultural contributions of indigenous communities, they remain constrained by conceptual, procedural, and structural limitations that reinforce rather than resolve historical inequities.

Recommendations for Transformative Reform

To move from symbolic recognition to effective protection, the following reforms are proposed:

i. Redefine protections using customary law models

Legal frameworks must prioritise indigenous norms and governance systems:

- Collective ownership and spiritual values should form the legal foundation for protection, not economic valuation (Oguamanam, 2008; Sunder, 2006).

- Case Study: The Philippines' Indigenous Peoples' Rights Act (1997) offers a model that integrates customary law into national legal systems.

ii. Establish indigenous oversight bodies

Create inclusive, permanent governance structures:

- An ARIPO-TK Council of indigenous representatives should monitor implementation and hold veto power over exploitative patents (ARIPO, 2014).
- Mandate direct indigenous participation within WIPO processes to ensure community sovereignty in policy-making (Bavikatte, 2014).

iii. Harmonise cross-border enforcement

Develop supranational mechanisms to counter jurisdictional fragmentation:

- Establish regional IP tribunals (e.g., under the African Court of Justice) to adjudicate TK/GR disputes.
- Introduce cross-border sanctions modelled after the compliance system of the Nagoya Protocol (Dutfield, 2006).

iv. Expand legal definitions to reflect dynamic and hybrid TK

Amend current frameworks to recognise the evolving nature of TK:

- Extend protection to hybrid, urban, and diasporic knowledge forms, including digital folklore.
- Incorporate non-commercial misappropriation, such as cultural distortion or symbolic exploitation in media.

v. Prioritise transparency and equitable benefit sharing

Strengthen accountability and community-centred mechanisms:

- Require full disclosure of GR origins in patent applications, with enforceable sanctions for non-compliance (WIPO, 2024).
- Ensure that benefit-sharing schemes such as Botswana's TK Trust Fund deliver direct and fair returns to knowledge-holding communities (Ncube, 2020).

By embracing these reforms, legal instruments can evolve into culturally-resonant, inclusive, and effective frameworks that affirm indigenous sovereignty, preserve cultural heritage, and ensure equitable benefit-sharing for future generations.

References

- African Regional Intellectual Property Organization (ARIPO). (2010). *Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore*. <https://www.aripo.org>
- African Regional Intellectual Property Organization (ARIPO). (2014). *Report on the Implementation of the Swakopmund Protocol*. <https://www.aripo.org>
- Bavikatte, K. (2014). *Biocultural rights: A new paradigm for protecting natural and cultural resources*. Routledge.
- Brush, S. B. (1993). Indigenous knowledge of biological resources and intellectual property rights: The role of anthropology. *American Anthropologist*, 95(3), 653–686. <https://doi.org/10.1525/aa.1993.95.3.02a00070>
- Chennells, R. (2007). Traditional knowledge and benefit sharing after the Nagoya Protocol: Three cases from South Africa. *Law, Environment and Development Journal*, 3(2), 163–175
- Chihambakwe, T. (2019). Traditional knowledge in African legal systems: A communal approach to IP protection. *African Journal of Law and Culture*, 5(1), 25–41.
- Convention on Biological Diversity. (1992). *Article 2: Use of Terms*. <https://www.cbd.int>
- Coombe, R. J. (2005). Protecting cultural industries to promote cultural diversity: Dilemmas for international policymaking. *International Journal of Cultural Property*, 12(1), 5–32. <https://doi.org/10.1017/S0940739105050016>

- Coombe, R. J. (2005). Protecting traditional environmental knowledge and new social movements in the Americas: Intellectual property, human right, or claims to an alternative form of sustainable development? *Florida Journal of International Law*, 17(4), 115–136.
- Coombe, R. J. (2018). Cultural rights and intellectual property: Rethinking the commons. *International Review of Cultural Studies*, 12(3), 215–234.
- Dagne, T. (2020). The quest for fair and equitable benefit sharing: A critical analysis of the Swakopmund Protocol. *Journal of Intellectual Property Law and Practice*, 15(7), 504–514. <https://doi.org/10.1093/jiplp/jpaa050>
- Dutfield, G. (2006). *Protecting traditional knowledge: Pathways to the future*. ICTSD Programme on IPRs and Sustainable Development.
- Helfer, L. R. (2004). Regime shifting: The TRIPS Agreement and new dynamics of international intellectual property lawmaking. *Yale Journal of International Law*, 29(1), 1–83.
- Kawooya, D. (2020). Intellectual property and indigenous knowledge: Bridging the divide. *Contemporary African IP Studies*, 10(2), 142–158.
- Kuruk, P. (1999). Protecting folklore under modern intellectual property regimes: A reappraisal of the tensions between individual and communal rights in Africa and the United States. *American University Law Review*, 48(4), 769–849.
- Mapara, J. (2020). Indigenous knowledge systems in Africa: Challenges and opportunities. *African Studies Quarterly*, 21(3), 75–92.
- Ncube, C. B. (2020). Traditional knowledge protection in the African context: Evaluating the Swakopmund Protocol. *Journal of African Intellectual Property*, 12(1), 67–83.
- Oguamanam, C. (2008). Indigenous knowledge and globalisation: Recasting the debate on intellectual property rights and traditional knowledge. *Indiana Journal of Global Legal Studies*, 15(2), 355–384.
- Okediji, R. L. (2018). Traditional knowledge and the public domain. *CIGI Papers Series*, 176, 1–20.
- Ouma, R. (2021). Safeguarding traditional knowledge: Lessons from the Swakopmund Protocol. *Law and Society in Africa*, 4(4), 18–33.
- Shiva, V. (1997). *Biopiracy: The plunder of nature and knowledge*. North Atlantic Books.

- Sunder, M. (2006). IP³. *Stanford Law Review*, 59(2), 257–332.
- Wendland, W. (2019). Cultural expressions and legal protections in Africa: The role of the Swakopmund Protocol. *WIPO Review*, 8(2), 44–58.
- WIPO. (2024). *Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge*. World Intellectual Property Organization. <https://www.wipo.int>

SOUTH AFRICA: ASSIGNMENT OF INVENTION AFFECTING PATENT VALIDITY

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Abstract

In a recent judgement by the Court of the Commissioner of Patents (Republic of South Africa) in the case Regents of the University of California and Others v Eurolab (Pty) Ltd and Others (2024-039643; 2023-108509) [2025] ZACCP 1 (25 February 2025) the court found that the right for an applicant to apply for a patent where such right is as the consequence of an assignment by the inventor(s) to the applicant, must have been acquired from the inventor(s) before making the application for a patent. On the facts presented to the court, it was found that no assignment existed at the time of the application and the court revoked the patent on the grounds of not meeting the requirements of Section 27(1) of Patents Act 57 of 1978.

Introduction

Section 27 of the South African Patents Act 57 of 1978 sets out who may apply for a patent:

An application for a patent in respect of an invention may be made by the inventor or by any other person acquiring from him the right to apply or by both such inventor and such other person. In the absence of an agreement to the contrary, joint inventors may apply for a patent in equal undivided shares. Any other person acquiring from [the inventor] the right to apply.

No formalities are specifically required other than that the assignment be in writing, see specifically, Section 60(1)(a) that requires: an applicant for a patent or a patentee may in writing assign his rights in an application or patent to any other person.

This requirement is generally met if the relevant document of information is in the form of a data message and accessible in a manner usable for subsequent reference, (Burrell, 2016). The subject matter of the assignment must be sufficiently apparent *ex facie* the document.

Regulation 22 of the South African Patent Regulations provides that: An application for a patent shall be made on form P1 and shall be accompanied by the following documents – Form P1, in duplicate, one copy of which shall be returned to the applicant as proof of lodging; form P2 in duplicate; a declaration and power of attorney on form P3; where the applicant has acquired a right to apply from the inventor, an assignment or other proof, to the satisfaction of the registrar, of the right of the applicant to apply.

Case assessment

The matter concerned the patent applicant The Regents of the University of California (UC) for a South African patent, which was filed as a national validation of the PCT application PCT/US2006/011417, ZA 2007/10870. Although the case included a claim of infringement and a counterclaim on various grounds of invalidity, the Commissioner of Patents ruled that the only question before it was whether UC, as the patentee, had been entitled to apply for the patent as provided in Section 27 of the South African Patents Act 57 of 1978? Specifically, the Commissioner had to enquire whether UC was a ‘person acquiring from [the inventor] the right to apply’ for the patent.

The invention was a creation out of collaborative medical research between UC and Howard Hughes Medical Institute (HHMI). There were various agreements signed in an attempt to assign rights to inventions made under the collaborative research (See Table 1). According to agreements between UC and HHMI, all patentable inventions were to be assigned to UC (HHMI and its employees).

There are eight inventors to the patent in question, *vis-à-vis* Sawyers, Tran, Wongvipat, Jung, Chen, Ouk, Welsbie and Yoo. The inventors are all employees of HHMI and UC respectively.

Although detailed heads of argument were presented referencing various agreements and documents to support the assignment, it does not appear (from the judgement itself) that evidence was considered from the US Patent prosecution file. The dispute was specific to at least three of the inventors that were not employed by UC, and allegedly assignment documents flawed in some aspect with the applicant arguing that there was no full assignment from all inventors to the applicant and therefore, the applicant was not entitled to apply for the patent.

On the face of the judgement, it appears that the Court did not consider the inventions to have already been assigned to UC under the 1986 patent agreement in view of the employee status of some of the inventors which would by operation of law have been assigned to HHMI when employment agreements were signed. The agreement between UC and HHMI wherein an undertaking for employees to directly assign the inventions to UC, may not have been executed effectively, the documents on the USPTO prosecution file of the priority applications appears to have affected the inventor assignments already on application for priority. It is the view of the authors that assignment has taken place already before the application was filed at PCT and subsequently in South Africa, the 4.17 declaration could be relied upon and the priority applications P1, P2 and P3 are deemed to have been assigned on the Declaration of inventorship (Rules 4.17(iv) and 51*bis*.1(a)(iv)) for the purposes of the designation of the United States of America, on applying for the PCT application in the USA (and South Africa).

Table 1 Time line of UC priority and patent application assignment

Document	Date	Relevant Party	Invention
Collaboration Agreement	Nov-86	UC and HHMI	Addressed in the Patent Agreement
Patent Agreement	Nov-86	UC and HHMI	All patentable inventions of HHMI
IP Statement of Agreement (IP assignment included)	02-Jan-03	Swayers, Tran and Wongvipat (HHMI employees) and HHMI	P1, P2, P3 and RD162
Assignment Agreement	27 July 2005 and 11 August 2005	Swayers, Jung, Chen, Ouk and Welsbie and UC	P1
Swayers Assignment	17-Aug-05	Swayers and HHMI	P1
Swayers Agency Appointment	31-Aug-05	Swayers and HHMI	P1
Priority Applications Filed (USA)	13 May 2005 (P1) 15 December 2005 (P2) 6 January 2006 (P3)	UC	RD162
Principal Assignment	24 May – 12 June 2006	Sawyers, Tran, Wongvipat, Jung, Chen, Ouk, Welsbie and Yoo and UC	P1, P2, P3 and RD162
Patent Application (also the PCT International filing date)	29-Mar-06	UC	RD162
PCT National Phase entry	13-Dec-07	UC	RD162
POA	23-Apr-08	UC	RD162
Assignment	07-Oct-08	Tran and HHMI	RD162
Assignment	14-Oct-08	Wongvipat and HHMI	RD162
Agent Assignment Agreement	29-Nov-09	Sawyers and UC	P1, P2, P3 and RD162

Considering the patent prosecution reality

Considering Table 1, the priority patent applications were filed on 13 May 2005 (P1), 15 December 2005 (P2) and 6 January 2006 (P3) respectively and completed as a single PCT application filed on 29 March 2006.

In accordance with US Patents Invents Act, any entity can file an application on behalf of an inventor who assigned, or is under an obligation to assign the invention rights to the entity (or if the entity otherwise has financial interest in the invention), without seeking the inventor's execution of the application. However, any patent that issues belong to the inventor, absent a written assignment from the inventor or inventor's estate to the entity.

The US priority (Provisional applications) were filed in the name of the inventors and as is evident from the USPTO public records the assignment of P1, P2, P3 and RD162 was already on file on 29 August 2005, as is confirmed on the PCT application from Sawyers,

Jung, Chen, Oak, Welsbie (employees of HMMI), assigned invention directly to UC during July and August 2005 and Tran, Wongvipat and Yoo assignment by law as employees of UC.

In the case of a national phase entry in South Africa of a PCT application, Rule 4.17 of the WIPO Rules provides as follows:

Declarations Relating to National Requirements Referred to in Rule 51bis.1(a)(i) to (v)

The request may, for the purposes of the national law applicable in one or more designated States, contain one or more of the following declarations, worded as prescribed by the Administrative Instructions:

- (i) a declaration as to the identity of the inventor, as referred to in Rule 51bis.1(a)(i);
- (ii) a declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent, as referred to in Rule 51bis.1(a)(ii);
- (iii) a declaration as to the applicant's entitlement, as at the international filing date, to claim priority of the earlier application, as referred to in Rule 51bis.1(a)(iii);
- (iv) a declaration of inventorship, as referred to in Rule 51bis.1(a)(iv), which shall be signed as prescribed by the Administrative Instructions;
- (v) a declaration as to non-prejudicial disclosures or exceptions to lack of novelty, as referred to in Rule 51bis.1(a)(v).

In South Africa, Practice Note 1 of 2023, published in the South African Patent E- Journal as by the South African Companies and Intellectual Property Commission (CIPC), the formality requirements for assignments in patent applications were amended.

Previously, where an International PCT application claims priority from an earlier filed application in a Convention country, assignments were not required for filing in the South African PCT national phase application if the applicant in the international PCT application is identical to the applicant in the priority application. This exemption no longer applies, and assignments are to be filed unless suitable PCT 4.17 (ii) and (iii) declarations have been filed in the international PCT application, and a PCT IB306 published in the international PCT application exists that shows suitable chain of transfer.

The notice included, an added exemption, that for all patent applications, assignments will not be required where a transfer of rights has occurred by operation of law, in which instance the name of the applicable legislation and section thereof will need to be included in a declaration contained in patent Form P.3.

It is clear from the judgment that the court did not consider the relevant evidence with regards to the assignment of inventors' rights to the Applicant at the time the PCT International Application was filed i.e. the deemed filing date of the South African patent application, and in our view this judgment should be appealed even on this ground alone. If we are to assume that the judgment is correct in interpreting the law that an assignment is required before an application is made, then on the facts of the case, the judge has erred, as the title to the invention was already assigned in 2005, before the filing date of the PCT International Application and thus, the deemed filing date of the South African patent application. Some questions remain regarding the facts of the case and judgment:

- (1) Is the interpretation of the court correct in this instance on the meaning of acquiring, i.e. that the process of acquiring must be complete before the application, or is the correct interpretation that the assignment must be completed before the acceptance of the patent?
- (2) Which evidence is conclusive in determining the factual assignment? The documents lodged with the patent office by the applicant and inventors, or external evidence available and potentially contradicting the documents submitted to the patent office?

- (3) Even if the Court was correct in its finding that assignment had not taken place, should the Court not then have directed that the patent be granted in the name of the inventors rather than revoking the patent? Section 63 of the South African Patents Act provides that:

After revocation on ground of fraud inventor may obtain patent in certain circumstances. Where a patent is revoked on the ground of fraud, or a patent fraudulently obtained has been surrendered and revoked, the commissioner may, on the application of the inventor of the relevant invention or his assignee or legal representative, made in accordance with the provisions of this Act, direct the grant to him of a patent for the whole or any part of the invention, bearing the same date as the patent so revoked.

Protecting rights, rather than simply accepting surrender, is in the best interests of innovation. The Commissioner had the discretion to direct the grant of a patent to the intended assignee. The Court erred by simply revoking the patent, without considering or exercising that discretion.

Considerations for applicants and inventors

From a practical experience the following scenarios need to be considered if the judgment is not appealed or is upheld on appeal.

1. Provisional Application

a. Single inventor non-employee

A provisional application can be filed directly by the applicant/inventor, or by a patent attorney. In the event a provisional application is filed, it serves as the priority application. Where the applicant/inventor is not employed, there cannot be an assignment of the invention to an employer or other entity as it may not be possible to identify a future applicant at any date before applying for the patent. As this priority application is the base right to which a complete and/or convention application claims priority, is the absence of an assignment at the date of filing the complete or convention application in an assignee's name, rendering the priority claim, and thus the complete/convention application invalid?

Furthermore, a single inventor could be engaged as an independent consultant or could be the employee of a third party entity engaged for delivery of a service or related commercial transaction to the non-employer party. In this instance consulting/contracting agreements with non-employer clients should be concluded prior to any inventions conceived and include a clear and precise assignment of inventions from the potential inventor identifying the subject matter that is assigned with a specific right to the non-employer client with regards to application for patents resulting from the engagement. It is advisable that these agreements include a warrantee and indemnity that no earlier assignment to the same subject matter, or entitlement to claim ownership of any inventions made by the inventor to a third party, exists, and to the extent that it does, recall all earlier assignments. In this regard note that Unilateral contract revocation is enforceable where there is a legitimate ground, such that the earlier contract is no longer valid, or contained misrepresentation and fraudulent undertakings. It is essential to manage contracts and be fully aware of their contents and implications and not simply sign agreements without proper understanding of the limitations that may affect freedom to contract in any particular case.

If the invention is the result of collaboration between parties and the applicant is the non-employer, of the inventor, the necessary assignment between the applicant entities are to be addressed. Such an assignment should be cognisant of the operation of law that automatically assigns ownership of an invention, such as the Intellectual Property Rights Act of Publicly funded research institutions Act 51 of 2008 of 2010 (the "IPR Act") where it is assumed that the IP so created belongs to the research institution and an assignment is a mere confirmation of the operation of law upon application for a patent.

b. Multiple inventors, non-employees

Section 27(2) of the Patents Act states that, in the absence of an agreement to the contrary, joint inventors may apply for a patent in equal undivided shares. The same challenges as discussed in a. above apply here. In the case of multiple inventors the additional complexity arise that there are different aspects of the invention as claimed that could have been created by the different inventors. The case may also arise that one of the

inventors may not be interested in, or unwilling to participate in the application of the patent, refusing to sign an assignment document for example. Section 28(2) of the Patents Act state that if the commissioner is satisfied that a person, not being obliged thereto, is unable or unwilling to exercise his right to participate in an application for a patent, the commissioner may order that person to execute an assignment, in order that the application may be made without such participation: Provided that where it appears to the commissioner to be just and equitable, he may order the payment of compensation to the non-participating person. Section 28(3) provides that in any order declaring that a person has a right to the exclusion of any other person to apply for a patent, the commissioner may direct that such other person execute any deed of assignment that may be required and that such deed of assignment extend to countries outside the Republic. On a literal interpretation of clause 28, it appears that this assignment is required before the application for a patent is made. On a practical interpretation of clause, to not miss a priority date, it is possible that the intent of this provision is to address such dispute after the application has been made. It would make no sense to interpret it any differently. If however, the interpretation as viewed by the court in the present case, patent applicants that rely on an assignment of rights from multiple inventors would have to seek written assignment from all inventors before any application of a provisional application may be brought.

c. Inventors who are publicly-funded research institutions employees

As mentioned earlier, the IPR Act provides that any publicly-financed research and development undertaken and resulting in IP, by using any funds allocated for R&D by a funding agency, be it State, a state agency or an organ of State but excluding funds allocated for scholarships and bursaries, such IP is owned by the recipient of said funding. The IPR Act further applies to any Higher Education Institution, any Science Councils, any institution identified as such by the Minister of the Department of Science and Technology.

If a recipient does not wish to retain ownership of its IP may, after notifying The National Intellectual Property Management Office (NIPMO) of its decision and furnishing full reasons

thereof, afford the IP creator an opportunity to own the IP unless NIPMO elects to own and seek statutory protection of the IP. Where a private entity has co-financed the R&D, such private entity shall first be offered such opportunity to own the IP. A private entity may become a co-owner of the IP if it contributed to the resources, such as relevant background IP; if jointly created the IP; if appropriate arrangements are in place for IP benefit sharing with IP creators; and if the institution and the private entity conclude an agreement for the commercialisation of the IP.

In the case where a private entity funds such R&D on a full cost basis, as defined in regulations to the IPR Act, the IP is not deemed to be publicly-financed R&D and the Act does not apply.

Patent applicants that wish to own the IP emanating from publicly-funded research should include full cost provisions in the R&D agreements and clearly address the assignment of IP in the R&D contracts including the full assignment of the inventor researchers. This is especially so where researchers are not necessarily employed by the institution contracted with. Care should be taken on visiting researchers that may be subject to their institution's IP policies regarding IP assignment, or even more complex from another country where legislation to automatic IP rights exists, or IP laws that has specific requirements for a valid assignment for inventors from the country. Some countries, such as Italy, require a foreign patent license where a national inventor assigns rights to a non-Italian applicant prior to an application being filed; other jurisdictions require an application to be filed in the country of nationality of the inventor with waivers to be requested prior to any such "foreign" application being made.

d. Inventors with employment contract

There is no explicit provision in the South African Patents Act that an invention created by an employee necessarily belongs to the employer. There is however, a deemed provision in view of Section 59:

- (1) Subject to the provisions of section 39 (7), i.e. that a patent for a main invention and its patent of addition shall not be capable of assignment apart from one another., the rights vested in a patentee or an applicant for a patent shall be capable of assignment and of devolution by operation of law.
- (2) Any condition in a contract of employment which— (a) requires an employee to assign to his employer an invention made by him otherwise than within the course and scope of his employment; or restricts the right of an employee in an invention made by him more than one year after the termination of the contract of employment, shall be null and void.

The approach of the legislature is that an invention made by an employee within the course and scope of employment would rightfully be the property of the employer. According to Burrell (2016), the inquiry is two-fold: (1) was the invention made by the employee in the course and scope of employment? and (2) is there a contractual relationship between the employee and the employer entitling the employee to any rights in respect of the invention? The contract needs not be in writing, it can be an oral agreement.

Employers should thus, be very clear on any entitlement that an employee may have or retain in the event of a patent application. Although not required, it is advisable to have the IP assignment and full title transfer addressed in the agreement and specifically consider including clear definitions of what is considered or deemed to be in course and scope of employment. No other assignment is required and any invention made in course and scope of employment is deemed to have been assigned by operation of law. Assignment documents filed at the South African patent office should reflect a “confirmation” of assignment and should clearly indicate in the assignment confirmation that the right of assignment was acquired before the application date as a consequence of employment.

2. Complete Application

a. Claims priority from Provisional application

Section 31(1) of the Patents Act provides that:

An application accompanied by a complete specification may claim priority from— (a) the date of the lodging of a prior application relating to the same subject-matter, accompanied by a provisional specification; or ... (c) the date of an application in a convention country relating to the same subject-matter, provided — (iv) the applicant in the application claiming priority is the proprietor of the prior application referred to in paragraph (a) ... or of the application in the convention country referred to in paragraph (c), or the applicant has acquired the right to claim priority in the Republic.

Following the judgment, a quo, if the assignment is flawed at the provisional stage it holds that the application on completion will not comply with the requirement of an assignment before the application is made and therefore, the applicant would not be able to claim priority. It is thus, essential that applicants ensure that inventions are properly assigned before application of the complete application, or that the priority right is assigned to the applicant prior to application for a completed application.

b. Convention Application (in another jurisdiction - their laws of IP ownership)

According to the Patents Act, a Convention Application:

means an application for a patent made in the Republic which claims priority from a relevant application in a convention country;" and

"convention country", in relation to any provision of this Act, means any country, including any group of countries and any territory for whose international relations another country is responsible, which the President has with a view to the fulfilment of any treaty, convention, arrangement or engagement, by proclamation in the Gazette declared to be a

convention country for the purposes of such provision; and the expressions “convention aircraft”, “convention land vehicle” and “convention vessel” have corresponding meanings.

Section 31 (1) (c) of the Patents Act states that:

An application accompanied by a complete specification may claim priority from the date of an application in a convention country relating to the same subject-matter, provided—in the case of an application claiming priority in terms of paragraph (a) or (b) the prior application was lodged not earlier than one year before or, on payment of the prescribed fee, not earlier than 15 months before, the date of the application claiming priority; and in the case of an application claiming priority in terms of paragraph (c) the application in the convention country was lodged not earlier than one year before the convention application and was the first application in any convention country in respect of the relevant invention; **and** the applicant in the application claiming priority is the proprietor of the prior application referred to in paragraph (a) or (b) or of the application in the convention country referred to in paragraph (c), or the applicant has acquired the right to claim priority in the Republic.

Although there are continuous attempts to harmonise patent laws internationally, countries’ patent laws do vary and particularly requirements for assignment, including whether assignment of right to ownership of an invention is by operation of law, required to be in writing, timing of assignment before or after filing of an application and the provisions for employer-employee relationship with regards to assignment of inventions, differ from country to country.

Where the legal requirements for the assignment of rights are different in the priority country, the application is at risk if it does not meet the South African requirements. This is even more so if the inventors are from different countries with different laws to South Africa. The requirement of assignment and clear entitlement to ownership of the invention before application for a patent will have a severe legal and commercial impact, which could not have been the intent of the law.

c. Other aspects to consider:

(1) Added inventors

If inventors are added due to added matter after the priority patent application has been filed, a specific assignment of that added matter must be obtained from the contributing inventor before filing the complete application or a patent of addition.

(2) PCT Application National Phase

A PCT national phase application is a one-time submission to apply for a patent through member states of the Patent Cooperation Treaty (PCT). This streamlined process provides patent protection, while adhering to each nation's individual requirements. A South African patent application which is a PCT national phase application is deemed to have as its filing date, despite the actual date of lodging of National Phase entry documents being later, as the date of the PCT application filing.

As mentioned earlier, in terms of South African patent law, assignment of an invention is not required where a transfer of rights has occurred by operation of law, in which instance the name of the applicable legislation and section thereof will need to be included in a declaration contained in the Form P.3 or where under PCT 4.17 (ii) and (iii) declarations have been filed in the international PCT application, and a PCT IB306 published in the international PCT application exists that shows suitable chain of transfer.

(3) Same applicant as priority application

Where the applicant is the same applicant for the complete application as for the priority application, and provided that the applicant has acquired its rights by assignment of the priority application, no additional proof of entitlement should be required.

(4) Different applicant than priority application

Where the applicant differs from the priority application, evidence of the assignment of the priority rights and entitlement to the invention prior to application for a complete application should be in place.

(5) Same applicant as PCT application

Where the applicant is the same applicant as for the PCT application no additional proof of entitlement should be required provided that the PCT 4.17 (ii) and (iii) declarations have been filed in the PCT application.

(6) Different applicant from PCT applicant i.e. assignment during international Phase

Where the applicant in the national phase application differs from the applicant of the PCT application, evidence of the assignment of the rights and entitlement to the invention as filed under the PCT application prior to application for a national validation in South Africa should be in place.

3. Commercial matters for consideration

In addition to the patent application itself, other factors that are to be considered in the assignment of inventions from inventors to applicants are:

a. IP Policies

Many companies and research institutions have implemented IP Policies that define the ownership of IP Rights. Often these policies provide for IP to automatically reside with the company or institution, whether employed or not. By accepting the terms and conditions of engagement, these policies are accepted and no further IP assignment is required. The mere acceptance of these policies is an assignment of any IP created by an inventor engaged under the standard terms. IP Policies will have to be carefully drafted to ensure that an opt out or opt in completes the assignment.

b. Assignment documents with an “effective date”

Many Deeds of Assignment and Assignments of Invention have a clause or statement that the effective date thereof is prior to the signing thereof. Where this “effective date” predates that filing date of the patent application (whether a PCT National Phase, a Convention Application, or a First Instance Application), it remains to be seen whether this will be held to satisfy the requirement that the rights are to be assigned before the application is filed, should the position in the present judgment under discussion be final.

c. Commercial contractual arrangements between business partners with respect to IP assignment and patent prosecution in particular

Assignments are perfectly valid and legally enforceable without being recorded at the PTO. It is however, crucial that inter partes the assignment is executed. A patent assignment document must comprise certain crucial elements to effectively convey the intent to transfer patent rights, including a clear description of the patent rights being assigned, the identities and capacities of the assignor and assignee, and the terms and conditions governing the assignment. The document should accurately identify the parties involved, specifying their capacities and designations, and describe the patent rights being transferred, including the patent number, title, and relevant details. It is necessary to include the effective date of the assignment and the consideration, if any, exchanged for the transfer of rights. Leveraging standardised assignment templates can help guarantee that all necessary elements are included. Additionally, the use of electronic signatures can facilitate the execution of the assignment document, providing a secure and efficient means of authentication. The assignment document should be drafted in a clear and concise manner, avoiding ambiguity and certifying that the parties' intentions are accurately reflected. By including these crucial elements, the patent assignment document can effectively convey the transfer of patent rights, providing a clear and binding agreement between the parties involved.

Recording the assignment at the patent office is not a legal requirement and does not affect the validity of the patent, but it does provide public notice of the change in patent ownership.

As these rights come into effect generally after patent application, the case *quo* should have no bearing on assignments between owners post application.

d. Exchange Control – South African Reserve bank (SARB)

Exchange control refers to government-imposed restrictions on the movement of currency and capital across national borders. In South Africa, exchange control is regulated by the South African Reserve Bank (SARB) and administered by the Financial Surveillance Department (FinSurv).

In terms of the South African Reserve Bank, Exchange Control Act and Exchange Control Regulations of 1961 read together with the Currency and Exchanges Manual for Authorised Dealers (Authorised Dealer Manual), which contains, inter alia, the permissions and conditions applicable to transactions in foreign exchange that may be undertaken by Authorised Dealers and/or on behalf of their clients.

Exchange Control Regulation 10(1)(c) restricts the export of capital or any right to capital from the Republic. No person is allowed to enter into any transaction that directly or indirectly exports capital or any right to capital from the Republic without permission granted by the Treasury and in accordance with such conditions as the Treasury may impose.

Since the *Oilwell (Pty) Ltd v Protec International Ltd and Others* (2011 (4) SA 394 (SCA)) [2011] ZASCA 29; 295/10 (18 March 2011), an amendment to the Exchange Control Regulations by South African Government Notice, Notice Number 35430, dated 8 June 2012 were implemented.

Originally Regulation 10(1)(c) read

10.(1) No person shall, except with permission granted by the Treasury and in accordance with such conditions as the Treasury may impose –

...

(c) enter into any transaction whereby capital or any right to capital is directly or indirectly exported from the Republic.

The amendment added the following sub-regulations:

For the purposes of sub-regulation (1)(c) [of Regulation 10] -

(a) “capital” shall include, without derogating from the generality of that term, any intellectual property right, whether registered or unregistered; and

- (b) “exported from the Republic” shall include, without derogating from the generality of that term, the cession of, the creation of a hypothec or other form of security over, or the assignment or transfer of any intellectual property right, to or in favour of a person who is not resident in the Republic.

This change brought about that any IP transferred from a South African entity (or individual) to a foreign entity requires SARB approval failing which the transaction would be considered void.

In March 2017, the SARB proposed certain new exemptions relating to the sale and licensing of Intellectual Property (IP) from South African residents to foreign entities. These exemptions are well-received and indeed a relaxation toward stringent exchange. These requirement were relaxed through Exchange Control Circular no. 7 of 2017 and no. 8 of March 2017 consequently issued FinSurv providing that:

Authorised dealers may, however approve the outright sale, transference and assignment of intellectual property by a South African resident, excluding mandated state owned companies as defined in schedule 2 of the Public Finance Management Act, 1999 (Act no. 1 of 1999) to unrelated non-resident parties at an arms’ length and a fair and market related price, provided that authorised dealers view the sale, transfer or assignment agreement and the provision of an auditor’s letter or intellectual property valuation certificate confirming the basis of calculating the sale price. The above-mentioned dispensation excludes sale and lease back agreements.

In many instances the assignment of IP rights are addressed and formalised after the filing of a patent application pending the outcome of the authorised dealer’s decision on the IP assignment and thus, not practical for an assignment to be effective until the required authorisation has been obtained.

As the application to SARB, or its authorised dealer, requires the existence and identification of the relevant IP before any assignment will be considered, the judgment has the consequence that any

patent application, which entails a foreign assignment will be invalid as in most cases prior assignment won't be practical due to the SARB approval process requirements. Surely this cannot be the intent.

4. What is acceptable evidence of assignment of rights by an inventor or the automatic right to the invention of an employee (or in case of a consultant)

The Patent Act is explicit on the requirements to be met on application for a patent. Section 30(4) states that: "Any person other than the inventor making or joining in an application for a patent shall in the prescribed manner furnish such proof of his title or authority to apply for a patent as may be prescribed."

Regulation 22 (d) prescribes that where the applicant has acquired a right to apply from the inventor, the requirements are to furnish an assignment or other proof, to the satisfaction of the registrar, of the right of the applicant to apply.

Regulation 23 defines that for a convention application, if not made by the applicant in the convention country, shall also contain an assignment or other C, of the applicant's right to claim priority.

Regulation 24 defines that an application claiming priority under the Act from any prior application to the patent office shall contain a copy, in duplicate, on form P 2 of such prior application as well as the specification lodged in support of such prior application.

Regulation 58 addresses that Title to and interest in inventions, patent applications and patents, require that an application for the recording of an assignment, be made in duplicate on form P16 accompanied by proof of title of such assignment.

It is apparent that the evidence required is that which is submitted by the applicant in support of the assignment to the patent office. What constitutes "proof, to the satisfaction of the registrar, of the right of the applicant to apply" should be based on acceptable and current practice at the patent office.

Advice to clients is that care should be taken that contradictory assignments, or multiple assignments of the same subject matter does not exist and where it does to address such discrepancies by a confirmation of assignment of the earlier assignment, rather than a fresh assignment.

Conclusion

Requirements differ by jurisdiction and what is acceptable practice in one may not be acceptable in another jurisdiction. It is thus, important to understand the laws and practice where there is an intention to file a patent application before it is filed.

The consequences of this judgment are far reaching and affects the ownership of fundamental rights which could be the subject matter of (long standing) commercial rights. The jurisdictional administrative requirements for application of a patent are different in each territory, and meeting the requirements in one territory does not imply that all requirements can be equally satisfied, thus render the right vague and unclear. This could never have been the intention of the legislature. In the opinion of the authors, this judgment is incorrect and appeal is most likely to succeed. Protecting rights, rather than simply accepting surrender, is in the best interests of innovation. The Commissioner had the discretion to direct the grant of a patent to the intended assignee. The Court erred by simply revoking the patent, without considering or exercising that discretion.

(Post note: The decision was appealed and the case concluded on September 8, 2025, judgment was awaited at the time of publishing)

Reference List

- Burrell, T.D. (2016). *Burrell's South African Patent and Design Law*. Durban: LexisNexis
- Intellectual Property Rights from Publicly-financed Research and Development Act 51 of 2008 South African Government.
Available at: <https://www.gov.za/documents/acts/intellectual-property-rights-publicly-financed-research-and->

development-act-51-2008 (Accessed: 13 April 2025).

Oilwell (Pty)Ltd v Protec International Ltd and others (2011 (4) SA 394 (SCA)) [2011] ZASCA 29; 295/10 (18 March 2011). Available at: <http://www.saflii.org/za/cases/ZASCA/2011/29.html> (Accessed: 14 April 2025).

Patent E- Journal, 25 January 2023, Part II, Page 341 available here: [E_Journal_January 2023 Part 2.pdf](#)

Regents of the University of California and others V Eurolab (Pty) Ltd and others (2024-039643; 2023-108509) [2025] ZACCP 1 (25 February 2025). Available at: <https://www.saflii.org/za/cases/ZACCP/2025/1.html> (Accessed: 14 April 2025).

South African Exchange control regulations, 1961. Available at: <https://www.resbank.co.za/content/dam/sarb/what-we-do/financial-surveillance/financial-surveillance-documents/Exchange%20Control%20Regulations,%201961.pdf> (Accessed: 14 April 2025).

South African Government Notice, Notice Number 35430, (8 June 2012). Available at: https://www.gov.za/sites/default/files/gcis_document/201409/35672rg9824gon733.pdf (Accessed: 13 April 2025).

South African Patents Act 57 of 1978

TECHNOLOGY ADOPTION AND COMMERCIALISATION IN THE TECHNO-BUSINESS ECOSYSTEM IN UGANDA: CONTRIBUTION OF THE IP POLICY ENVIRONMENT

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Abstract

Techno-business enterprises typically invest a significant portion of their resources in basic research to generate new ideas and technologies. However, turning these ideas into marketable products can be challenging, and firms often struggle to bridge the gap between prototype development and successful product commercialisation. Although extensive research exists on technology adoption and commercialisation, the current literature lacks a comprehensive analysis of its intricate relationship with the intellectual property (IP) policy environment in developing countries such as Uganda. This article discusses the contribution of the prevailing IP policy environment to technology adoption and commercialisation in Uganda's techno-business ecosystem. This study utilised an exploratory mixed-method approach, encompassing semi-structured interviews supplemented with observational studies of more than 50 techno-business firms in Uganda. The study results indicate that a supportive IP environment is crucial for successful IP collaboration. However, its effects are substantially influenced by the ability to streamline the technology licensing process and the rate of adoption of new technologies. This demonstrates a complex network of interconnected factors that have not been thoroughly examined in previous research. Effective technology adoption and commercialisation require consistent innovation and commercialisation policies and environments, a flexible IP legislative structure, sufficient subsidies and support schemes, and proper utilisation of indigenous technologies. This article contributes to the theoretical knowledge base by elucidating the complex factors influencing technology adoption and commercialisation in developing countries while also providing practical recommendations for policymakers.

Keywords

Commercialisation, Intellectual property, IP Policy environment, Techno-business ecosystem, Uganda.

Introduction

Uganda's value has long been associated with its physical and tangible assets. This includes its natural resources, hospitable environment, and cash crops such as coffee. In economic terms, the value proposition is shifting all around Uganda, and the time is now to realise that the value attached to coffee and fruits is quickly shifting to the knowledge possessed on how to grow these products faster (NPA, 2007, 2020). Intellectual capital and IP laws, the tools for protecting this capital, are a key concern for Uganda's future. Broadly speaking, Uganda's IP law accommodates legislation that protects brands and identifiers of value in businesses. These can be names, symbols, logos, slogans, or a combination of these, and they also cover patent laws (MOJCA, 2019). Patents protect technical innovations for things such as new methods of making medicine or even apparently simple inventions as modifications to padlocks. Another area covered by IP law in Uganda is copyright law, which protects those whose creative efforts are reflected in music, books, artistic works, dramatic works, and similar works (MOJCA, 2019). Other less well-known but equally important areas, such as industrial design, geographical indications, trade secrets, and plant varieties, are included among the important areas of IP. Although Uganda acknowledges their importance, some have not yet been specifically legislated.

Traditionally, IP has been the domain of lawyers. As such, the subject was taught only until the late 1990s as part of a Postgraduate Bar course at the Law Development Center in Kampala. During the intensive one-year course, IP was taught over two days. With the need to modernise legal education, Makerere University introduced the subject in the late 1990s, and it was subsequently introduced into the Uganda Christian University Law School program when that university started in 1997. Currently, the subject is taught as part of a bachelor's degree (LLB) with varying degrees of content at six universities. These include Makerere University, Uganda Martyrs

University, UCU Mukono, Kampala International University, and Islamic University of Uganda in Mbale (Okwakol et al., 2022). It is apparent that these universities only teach IP law as a substantive subject to law students, leaving other disciplines with hardly any significant content.

After leaving the formal educational system, several government institutions recognised the need to increase awareness of the value of IP in Uganda beyond the university setting (MOJCA, 2019). Key among these are the Uganda Registration Services Bureau (URSB), Uganda National Council for Science and Technology (UNCST), Ministry of Trade, Tourism, and Industry, and Makerere University. As Uganda becomes more integrated into the global economy, its economy becomes even more vulnerable, unless it becomes more innovative and competitive in its key industries (Okumu & Buyinza, 2020; Salmon et al., 2020). Many policymakers have recognised the vulnerability of holding on to the ancient advantages of the cash crop commodity era. This is because tea, sugar, and coffee prices are subject to numerous trade barriers at the best of times, while newer products, such as vanilla, must compete with artificial flavors because of modern science and technology. For this reason, scientists, artists, and business people need to appreciate the notion of IP and the advantages it gives them in this new era of international trade.

This has compelled some of these organisations to rethink IP education processes as intrusive on the Internet. The Internet has been recognised worldwide as the most disruptive technology of the past century, almost in the same way as mobile phones in Africa in the 1990s. This provides huge opportunities for learning, trading and commerce. Small and medium businesses (SMEs) in Uganda have latched on to electronic commerce as a sensible imperative for cutting out middlemen in Kampala and Nairobi, thereby saving money and making more profits (Okumu & Buyinza, 2020; World Bank, 2021). More importantly, in the context of IP, cultural goods such as music now constitute a significant value of Uganda's invisible exports. The Ministry of Trade, Tourism, and Industry, as well as other partner institutions, have realised that enhancing artists and other actors in the creative industry sector will lead to an increase in service sector exports.

This study discusses the contribution of the prevailing IP policy environment to technology adoption and commercialisation in Uganda's techno-business ecosystem. Beyond the existing plans, there are huge institutional challenges that must be overcome. The basic concepts of IP, its application at the enterprise level, and its macro-level benefits are yet to be understood by public officials. This could significantly delay or even derail any efforts toward curriculum review or public sensitisation. Therefore, all public and private organisations should join hands and work together to enhance the understanding of a subject that could potentially lift many from poverty and have a positive impact on the country's export earnings.

On the other hand, highly-developed countries and their multinationals reap the most from Uganda's consumption of their commodities, which provide direct support to IP education drives (GEM, 2022; Dutta et al., 2023), as opposed to crying foul when counterfeit products are found littering the streets of Kampala. This must go beyond workshop-style education to practical support on how to use the IP system through the transfer of know-how to enterprises and support the establishment of a national innovation support system. Hopefully, this formula will leave everyone in a better position to exploit their creativity and entrepreneurship for the benefit of businesses and the country at large.

Literature Review

Intellectual Property Protection in Uganda

Uganda boasts a comprehensive legal framework for IP, encompassing the Patents Act, Copyright and Neighboring Rights Act, and Trademarks Act. These laws do not differentiate between IP ownership by individuals and organisations and allow joint ownership. Consequently, individual scientists in Uganda can claim sole ownership of IPRs unless stipulated otherwise in a contract with their employer, such as a university, or if the organisation's bylaws and policies indicate otherwise. However, many scientists and innovators in Uganda are unaware of existing IP laws, and numerous universities and research organisations, excluding Makerere University, lack effective internal policies for IP management. Historically, Uganda has fallen behind other countries in safeguarding IP. According to data from the Global

Innovation Index (GII) (Dutta et al., 2023), Uganda filed only 39 patents since 2000, significantly fewer than Kenya's 452 patents in South Africa's 22,040 patents. To tackle this issue, the UNCST and the Uganda Registration Services Bureau (URSB) joined forces and launched IP seminars to raise awareness among researchers, entrepreneurs, and scientists.

The importance of IP rights in fostering innovation and competitiveness has been recognised worldwide (Tahir et al., 2022). However, protecting IP in the digital age presents challenges for Uganda given the global nature of the Internet (Ma, 2020). Blockchain technology can be used for IP protection (Zinych, 2021) and innovative strategies employed by foreign firms in emerging economies with weak IP enforcement (Ziebermayr, 2021) can be considered for implementation in Uganda. Scholars have highlighted various aspects of IP protection including legal frameworks (Tahir et al., 2022), technological solutions (Zinych, 2021), and strategic management (Ziebermayr, 2021). These insights suggest that an integrated approach to IP protection that incorporates legal, technological, and strategic elements may be effective.

The national IP policy (MOJCA, 2019) devised by the Ministry of Justice and Constitutional Affairs and the URSB focuses on Uganda's TRIPS obligations. This policy spurs innovation, safeguards IPRs, and fosters creativity, all of which are vital components of a robust IP system. Although IP protection is crucial in an effective IP regime, it is not the only factor. Innovators must also consider other strategic options, such as investment and licensing, as well as the structure and functions of the innovation system to optimise the value of their IP assets (Pererva et al., 2024). Scholars have emphasised the complexity of enforcing IPRs and stressed the need for a comprehensive strategy that integrates robust legal frameworks, innovative technologies, and strategic management practices (Ma, 2020; Zinych, 2021; Tahir et al., 2022). Uganda must adapt these principles to its local context, considering the country's unique legal, economic, and technological environment to effectively protect IPRs.

IP education has become increasingly important as online learning has become more prominent. In the past, most teaching materials were physical, such as textbooks. Owing to war and a decline

in local publishing, fewer local authors are on the approved list of published works for use in the public education system. Universities have come to appreciate that for their students to make use of the wide repertoire of works available on the Internet, they must navigate through the various copyright permissions necessary to access online resources (Okwakol et al., 2022). With better and faster Internet access, there is an increasing view that universities producing thousands of IT professionals should focus on developing local content. This should create a greater appetite for online resources and local solutions (Bowman, 2019; Onapa et al., n.d.). The challenge here is that the creators of this content will expect some form of compensation, as available under copyright regimes that users are not yet aware of or are prepared to pay for. Considering this growing awareness, Makerere University passed its IP Policy in 2009 to assist its staff and students in determining how to assess, appropriate, and distribute the benefits of IP.

Uganda's International IP Obligations

Uganda is a signatory to several international treaties and protocols, including the Paris Convention for the Protection of Industrial Property, Patent Cooperation Treaty (1970), Convention on Biological Diversity (1992), and Cartagena Protocol on Biosafety (2000) (UNCTAD, 2020). However, Uganda has not implemented most of the provisions of these treaties; it has only complied with some specific provisions. Uganda is also a signatory to the World Trade Organization (WTO)'s Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, a member of the African Intellectual Property Organization (ARIPO) and the World Intellectual Property Organization (WIPO) (UNCTAD, 2020; Dutta et al., 2023). This membership means that innovators and scientists can access these organisations and have their innovations patented at levels other than the Ugandan level. Uganda established the Uganda Trade and Intellectual Property (UTIP) Program to further integrate the country into the global economy and trading system by increasing the contribution of IP to sustainable economic growth and poverty eradication.

As one of the founding members of the WTO, the Republic of Uganda is obligated to bring its domestic regulatory framework into conformity with the standards of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement). Negotiated during the 1994 Uruguay Round of

multilateral trade negotiations, the TRIPS Agreement constitutes the premier comprehensive international accord, establishing minimum standards for the protection of IPRs across 166 WTO Member States. The Agreement, which was to be implemented in Uganda on July 1, 2013, sets forth enforceable legal benchmarks with respect to each of the major IP areas and defines the key elements of protection to be provided by WTO Members, most notably, the subject matter to be protected, the rights to be conferred to IP rights holders, permissible limitations and exceptions to those rights, and the minimum duration of protection (UNCTAD, 2020; Dutta et al., 2023).

Uganda, a low-developed country that signed the World Trade Organization's TRIPS Agreement, is bound to implement and enforce IP laws. Although Uganda enjoyed some flexibilities until 2016, with respect to Pharmaceutical Patents, there is tremendous pressure from developed countries for it to comply in other areas. One of the key areas of concern in this regard is trademarks and the enforcement of stringent anti-counterfeit legislation. While most Ugandans appreciate the importance of stringent laws against counterfeit products, including pharmaceuticals, there is a concern that the scope of the law may be so wide as to prevent generic medicines from entering the country under the guise that they are counterfeits (Nahikiriza, 2023; Tweheyo et al., n.d.). This area requires the line ministry of trade as well as that of health to deploy significant resources in terms of sensitisation and public awareness for the public to appreciate the purpose and imperatives of the law. If this does not occur, Uganda's anti-counterfeit legislation may face significant implementation challenges.

In addition, unlike predecessor multilateral IP instruments promulgated under the auspices of the World Intellectual Property Organization (WIPO), the TRIPS Agreement sets forth standards governing domestic procedures and remedies for the enforcement of IPRs, which WTO Member States are obligated to make available to domestic and foreign IP rights holders to facilitate effective global protection of rights in proprietary knowledge goods (United Nations, 2016; Stubbs et al., 2022). While Ugandan policymakers have made considerable progress in bringing Uganda's legal and institutional frameworks into conformity with the standards of the TRIPS Agreement, as well as the country's other multilateral and regional IP obligations, much work remains to be done.

At present, Uganda's effective IP legislation, most of which predates the conclusion of TRIPS, falls substantially short of meeting TRIPS requirements, both regarding the scope and strength of substantive standards, as well as with respect to the availability and efficacy of legal mechanisms enabling IP rights holders to enforce their entitlements (UNCTAD, 2020; United Nations, 2020). To address these challenges and align Uganda's IP regulatory framework with the TRIPS Agreement and other applicable multilateral and regional/bilateral IP Agreements, a specific IP framework must be adopted. This will further integrate Uganda into the multilateral trading system and increase the contribution of IP to the achievement of the country's sustainable growth and poverty reduction.

Role of Technology Adoption in Product Commercialisation

Technology adoption is pivotal in product commercialisation as it facilitates the progression of innovations from conceptualisation to market-ready status. This process adheres to an S-curve lifecycle, characterised by the sequential adoption of new technologies by distinct categories of adopters: innovators, early adopters, early majority, late majority, and laggards. This sequence reflects the inherent uncertainties and risks associated with discontinuous innovations. The success of commercialisation is contingent on the rate and extent of technology adoption, which in turn affects the speed and breadth of a product's market diffusion. Furthermore, technology adoption is influenced by regulatory and business environments, encompassing IP policies, financial support, and institutional capacities. These factors collectively determine a firm's capabilities to innovate, license technology, and leverage indigenous knowledge (Dissanayake et al., 2022; Jjagwe et al., 2024a). Consequently, effective technology adoption is crucial for bridging the gap between prototype development and market entry, ultimately fostering sustained economic growth and competitiveness within the techno-business ecosystem.

The S-curve of technological innovation can be illustrated as a by-product that embraces new technology and aligns with prevailing market trends. By dividing the technology lifecycle into the passage of time and the cumulative number of technological adopters on the vertical and horizontal axes (Figure I), respectively, we can better understand the curve (Byun et al., 2018; Kim et al., 2019).

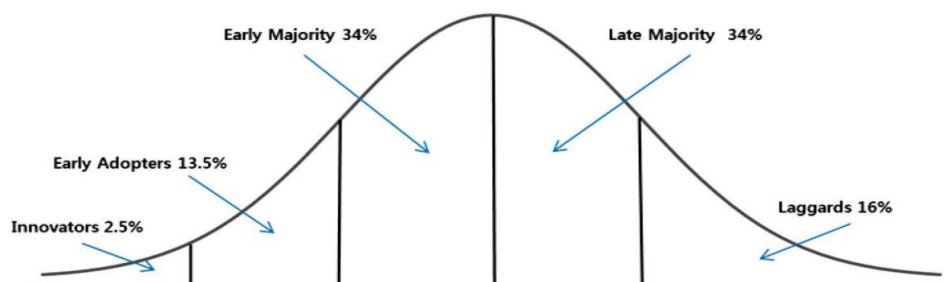


Figure I: Technology adoption lifecycle (Byun et al., 2018)

According to Byun et al. (2018), innovators are the first to accept discontinuous innovation and represent approximately 2.5% of all consumers. Following this, early adopters or visionaries accepted innovation in the next stage, accounting for approximately 13.5% of all the adopters. The early majority, or pragmatists, who are at the second highest level, tend to accept innovation slightly ahead of ordinary people in society, constituting approximately 34% of all the adopters. The late majority, or conservatives, constituted the next highest proportion, accounting for approximately 34% of all the adopters. Finally, laggards or skeptics, who are highly skeptical about innovation, account for approximately 16% of all adopters. The technology adoption cycle suggests that technological innovation does not have an immediate positive effect on the market and consumers and that it takes time to encourage the adoption of products, technologies, or ideas with discontinuous innovation, which is often associated with uncertainty and risk (Byun et al., 2018; Kim et al., 2019).

Materials and Methods

Study Materials and Approach

This study utilised an exploratory mixed-method approach, encompassing semi-structured interviews supplemented with observational studies. The exploratory mixed-methods approach deployed in this study is intended to ensure contextual depth, empirical rigor, and theoretical clarity in addressing technology adoption and commercialisation gaps. Interviews were conducted to gain insights and gather evidence on the determinants of technology adoption and commercialisation of techno-business entrepreneurs in Uganda. Observations were made to better

understand the interactions and contextual factors associated with technology adoption and commercialisation. The conduct of observational studies involved systematically collecting, analysing, and interpreting behaviors, interactions, and environmental contexts among techno-business ecosystem actors. This allows researchers to gain a deeper understanding of technology adoption and commercialisation by examining real-life conditions. A triangulation method was used to verify the interpretations from observational studies using interview data. This method enabled researchers to interpret their findings and is highly relevant to empirical studies based on observations or experience (Holliday, 2014; Manly, 2015).

Study Population

A purposive sampling technique was used to obtain a representative sample of key informants based on the expected proportion of techno-business firms and possession of deep experience in technology adoption and commercialisation processes in Uganda. The study determined a participant count of 50 through power analysis, ensuring a 95% confidence level and 5% error margin for quantitative data. For qualitative information, data collection continued until theme saturation was achieved, with no novel concepts emerging from the interviews. Interviewees were selected based on their organisational positions (such as CEOs and R&D managers) and their firms' stages in the commercialisation process (including the pre-commercialisation, commercialisation, and post-commercialisation phases). Observations focused on techno-business sector firms because of their significant relevance to the Ugandan market. The participant pool included techno-business entrepreneurs involved in the commercialisation process of their enterprises. Key informants with experience and the ability to provide detailed descriptions of the commercialisation process within their respective firms were selected. All participants provided informed consent prior to participation.

Data Collection Instruments

Data for this study were collected through interviews and observations of the commercialisation trends. This study employed a semi-structured interview methodology focusing on three primary domains: firm-specific challenges, industry-wide trends, and the regulatory impacts on technology adoption and commercialisation. To systematically assess technology adoption and commercialisation

endeavors within the examined organisations, the investigators developed and implemented the observational protocols. The collected data were supplemented by information from public and government databases. The data collection tools were thoroughly examined for completeness and consistency to ensure the accuracy of the collected data.

Data Analysis

The data were then entered into Microsoft Excel, organised, and meticulously cleaned before analysis using the Statistical Package for Social Scientists (SPSS) version 26.0. Statistical trends were extracted from the survey data through quantitative analysis, while the interview responses were coded and thematically examined to elucidate common technology adoption and commercialisation determinants. The results from both methodologies were subsequently cross-referenced to derive comprehensive conclusions regarding the factors in the IP policy environment that influence technology adoption and commercialisation in Uganda. To gain further insight into technology adoption and commercialisation processes within firms, an explanation-building procedure was employed in the cross-case analysis (Plotz, 2020). The synthesised data were organised into chronologically-arranged matrices that were used to draw conclusions.

Results and Discussion

Key IP Policy Environment Contributing Factors to Technology Adoption and Commercialisation

IP policy-contributing factors affect technology adoption and commercialisation. These factors affect the regulatory and business environments in which firms operate and can either speed up or slow down the process of bringing ideas to market.

Consistent innovation and commercialisation policy environment

A well-balanced regulatory framework and government-assisted programs are essential for promoting innovation adoption (UNCTAD, 2020; Aktar et al., 2021). In Uganda, 27.2% of firms identified a stable innovation and commercialisation policy environment as a key factor affecting technology adoption and commercialisation (Figure II). Although Uganda has made notable

progress in becoming a significant market player through effective IP policies and processes that foster growth, concerns have been raised regarding the lack of a comprehensive and consistent policy approach. Appropriate government policies are crucial for creating favorable conditions that drive technological advancement (Uyarra et al., 2020; Aktar et al., 2021).

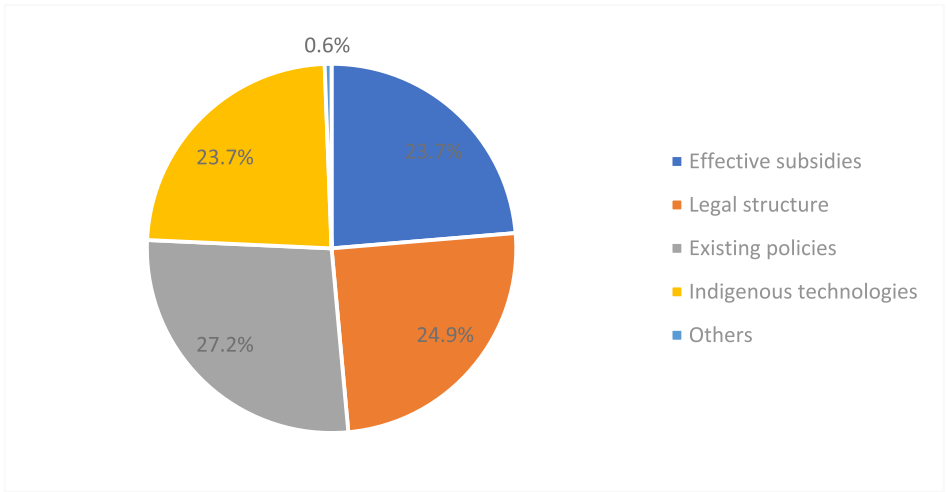


Figure II: Key IP policy environment contributing factors

Flexible IP legal structure

According to the Global Entrepreneurial Monitor (GEM), Uganda has a favorable legislative environment that supports entrepreneurial activity (GEM, 2022). It outperforms other countries in providing government support for entrepreneurial initiatives, business creation, and development. However, 24.9% of the surveyed firms identified the current legislative structure as a policy-related issue hindering technology adoption and commercialisation in Uganda (Figure II). Although the regulatory environment is generally stable and supportive of firms, there is room for improvement in the technological licensing process, which is complex and involves numerous procedures and standards (Fosci et al., 2019; CHANE & Atwal, 2023). Enhancing Uganda’s legal framework will enable firms to accelerate the commercialisation of technological innovations.

Effective subsidies and support schemes

Techno-business firms in Uganda’s technology sector lack resources, and small firms require additional funding to transform their ideas

into significant innovations. Subsidies and support schemes were cited by 23.7% of the firms surveyed as influencing technology adoption and commercialisation in Uganda. This finding aligns with the views of numerous researchers who highlight access to finance as a critical determinant of business sustainability and growth. Although Uganda's GERD is low compared to that of similar economies, financial support for techno-business firms is essential. Although some firms receive assistance from organisations such as the Uganda Development Bank (UDB), obtaining funding, especially for later-stage firms, remains a significant challenge. Studies by Kim et al. (2019) and Zhu et al. (2020) emphasise the importance of adequate funding at all stages, including R&D and the intermediate phase, before the market launch. Expediting the lengthy process of providing financial assistance through centralised start-up support and single-allocation disbursements can help address this challenge.

Proper utilisation of indigenous technologies

This study analysed the role of indigenous technology in promoting sustainable economic growth, preserving cultural diversity, and improving local communities' livelihoods. It was found that 23.7% of the firms surveyed identified improper utilisation of indigenous technology as a policy-related issue hindering technology adoption and commercialisation in Uganda (Figure II). Indigenous technologies can play a significant role in commercialising inventions and contributing to economic growth, social progress, and cultural preservation (Ongâ & Abbey, 2019; NPA, 2020). Uganda's rich cultural diversity and traditional knowledge systems provide a promising platform for commercialising indigenous innovations. Traditional farming methods, such as agroforestry, crop rotation, and organic farming, offer sustainable alternatives to conventional techniques that benefit the environment. Additionally, commercialising indigenous medical knowledge can preserve traditional therapeutic practices and provide economic opportunities according to Ongâ and Abbey (2019). Similarly, commercialising indigenous creative traditions can help craftsmen support themselves, boost cultural tourism, and preserve the cultural heritage.

Recommended Strategies to Close Technology Adoption and Commercialisation Gaps in the Techno-Business Ecosystem

Streamlining the technology licensing process: To optimise the technology licensing process, a well-balanced strategy is essential

to enhance both resource allocation effectiveness and decision-making efficiency. A streamlined licensing process reduces costs and bureaucracies, thereby facilitating benefit sharing associated with accrued royalties. To address this, the government should establish clear, transparent regulations and predictable approval processes. Additionally, regulatory agencies must be prepared to modify legislation as technology advances to avoid stifling innovation.

Training and raising awareness of IP: It is critical for the development of a viable IP system in Uganda that domestic policymakers, regulators, academics, collective management organisations (CMOs), lawyers, and other stakeholders are continually educated on, including techniques of effective IPR administration and enforcement, and the importance of balanced IPRs protection for the development of Uganda. To achieve this goal, Uganda should establish a comprehensive IP instruction and training program at one of its universities. In addition, stakeholder training should be accompanied by a broad-based IPRs promotion campaign targeted at the public and SMEs and designed to increase understanding of the negative effects of IPRs infringement and the dangers associated with counterfeit goods.

Stimulation of domestic innovation: A particularly important prerequisite for the achievement of sustained development in Uganda is the creation of an indigenous scientific and technological capacity that enables the country to establish its own processes of technological innovation and facilitates the effective absorption of knowledge and technologies developed abroad. Feasible methods of stimulating domestic innovation include: (i) the establishment of an “IP Clinic” at Makerere University (or any other institution) to help local innovators and SMEs take advantage of national IP laws; and (ii) the creation of geographically-delimited “Innovation Zones” where innovation-stimulating (yet often infringing) activities such as copying, imitation, and reverse engineering would be permitted.

Improved coordination and cooperation among institutions and stakeholders: To facilitate the effectiveness and efficiency of the Ugandan IP system, it is important to strengthen the linkages between (i) domestic administrative and enforcement institutions, (ii) Ugandan institutions and private sector stakeholders (CMOs,

SMEs, Uganda Bar, etc.), and (iii) domestic and foreign IPRs enforcement agencies. A prerequisite for this is the full digitisation and improved staffing of all relevant Ugandan institutions.

Establishment of a mechanism to support the implementation of TRIPS flexibilities: The provision of exclusive IPRs is not an end but rather a tool to increase general welfare through the provision of incentives to creators and innovators to produce knowledge goods that benefit the public. In Uganda, domestic regulators' aim should not be simply to establish an IP system that complies with the provisions of the TRIPS Agreement but rather to utilise the TRIPS framework to advance domestic development interests. To this end, relevant Ugandan institutions (e.g., the Ministry of Health and the Ministry of Education) should consider establishing a unified mechanism that would enable domestic firms to apply for compulsory licenses.

Creation of a mechanism for ongoing legislative and policy review: Uganda's soon-to-be-upgraded IP system cannot rely merely on the adoption of TRIPS-consistent legislation by Parliament. Uganda must possess a mechanism designed to continually assess whether its IP regulatory framework adequately reflects domestic development interests, innovation trends, technological advances, and changes in the global flow of trade and investment. Given the complexity of IP and the fast pace of the modern economy, such a review mechanism cannot be the responsibility of a single institution but should reflect the perspectives of all institutions and stakeholders affected by the design of Uganda's IP system.

Reviving competition policy: The complex relationship between IP protection and competition is another important consideration in Uganda. Competition law and policy are important mechanisms for curbing the abusive use of IPRs and ensuring that access to technology on reasonable terms is possible. Uganda's competition policy must incorporate and reflect the importance of competition law to curb monopoly prices based on exclusive proprietary rights. It is strongly recommended that Uganda considers incorporating specific competition limitations on IPRs in its new IP legislation.

Protection of traditional knowledge, biodiversity, and new plant varieties: Given Uganda's rich cultural endowment, domestic institutions should accelerate the preparation of *sui generis* systems to protect

traditional knowledge and new plant varieties. Implementing these systems to safeguard this knowledge ensures that local communities maintain control over their cultural assets while deriving economic benefits from their commercialisation. Furthermore, the protection of biodiversity is crucial for maintaining ecosystem balance and supporting livelihoods reliant on natural resources. The effective protection of traditional knowledge and biodiversity not only promotes cultural diversity and social progress but also enhances Uganda's capacity for innovation and competitiveness on the global market (Fioravanti et al., 2023; Jjagwe, et al., 2024), thereby aligning with national development and poverty reduction objectives.

Adoption of a regional IP policy: Finally, Uganda should carefully consider and assess the current proposals for adopting an East African regional IP policy. While a regional IP framework brings important benefits, most notably economies of scale, cost savings, and pooling of expertise, it also creates the danger of free riding and difficulties in institutional coordination and enforcement. Moreover, the implementation of a regional IP policy in East Africa would lessen domestic regulators' ability to strategically utilise IP for their development goals.

Conclusion

Theoretical implications

The theoretical implications of technology adoption and commercialisation within Uganda's techno-business ecosystem underscore the intricate relationship between IP policy environments and innovation dynamics in developing countries. This ecosystem necessitates a nuanced understanding of how regulatory frameworks, institutional capacities, and market mechanisms collectively impact firms' ability to convert inventions into marketable products. The research emphasises that technology adoption does not occur instantaneously, but rather follows an S-curve lifecycle (Jjagwe, Kirabira, Mukasa, et al., 2024b; Mogull, 2021), wherein different adopter categories influence diffusion rates, reflecting the uncertainty and risk inherent in discontinuous innovations.

Therefore, theoretical models must consider the multifaceted role of IP policies, not only as protective mechanisms but also as strategic tools that influence innovation incentives, licensing processes, and the utilisation of indigenous technology. Furthermore, the findings indicate that effective commercialisation relies on a balanced and flexible IP legal framework, consistent innovation policies, and supportive financial and institutional infrastructures, which collectively create an environment conducive to sustained technological advancement. This integrated perspective advances theoretical discourse by highlighting that IP policy environments in developing contexts, such as Uganda, must be adaptive and inclusive of local innovation realities to bridge the gap between prototype development and successful market entry. This will contribute to economic growth and the alleviation of poverty.

To facilitate technology adoption and commercialisation, government should establish collaborations between startups and various stakeholders, including academic institutions, research organisations, and individuals possessing relevant expertise and business acumen (Sutarjo & Bajuri, 2024). This approach aligns with research that indicates that product or innovation development relies on collaborative agreements, modifications to existing products, and internal ideation (Jjagwe et al., 2024b). Furthermore, government should prioritise the enhancement of market expansion, technical competence, and business longevity, which are critical elements for sustainable technological advancement in start-up firms (Shahidan et al., 2023). By focusing on these areas, the government can assist techno-business firms in Uganda in navigating technology adoption and commercialisation and foster transformative growth within the industrial sector.

Policy implications

The government and policymakers must ensure the effective enforcement of IP policies to enhance technology adoption and commercialisation in Uganda. Technological and business enterprises in Uganda have encountered significant challenges, necessitating specific policy interventions to promote innovation and economic development. Research indicates that R&D activities, protection of intellectual property, and financial support mechanisms play crucial roles in organisations' innovation and commercialisation efforts (Jjagwe, Kirabira, & Mukasa, 2024b). Policymakers should focus on creating conducive environments

and implementing strategic initiatives to address these issues in the future.

A critical IP policy factor is the need for government intervention through legislative measures to integrate entrepreneurs into the ecosystem. Policymakers should prioritise improving the business environment, increasing the allocation of funds for innovation commercialisation, developing infrastructure for entrepreneurs, and implementing tax incentives for nascent and struggling enterprises (Sutarjo & Bajuri, 2024). Moreover, as demonstrated in the Ugandan context, the government should consider implementing grants or subsidies as primary financial support mechanisms for business operations (Jjagwe, Kirabira, & Mukasa, 2024b).

The policy implications for the adoption and commercialisation of technology within Uganda's techno-business ecosystem underscore the necessity of a consistent and supportive intellectual property (IP) policy environment. This environment should integrate legislative, institutional, and financial frameworks to foster innovation and facilitate market access. Policymakers should prioritise streamlining the technology licensing process to minimise bureaucratic obstacles and enhance decision-making efficiency (Butnik-Siverskyi et al., 2024; Jjagwe, Kirabira, Mukasa, et al., 2024a), thereby expediting commercialisation. Establishing comprehensive IP education and awareness programs is crucial to equip stakeholders including policymakers, entrepreneurs, and the public with a clear understanding of IP rights and their strategic application. Financial support mechanisms, such as subsidies, grants, and improved access to funding, are essential for enabling firms, particularly small and medium-sized enterprises (SMEs), to progress from concept to market.

Moreover, promoting domestic innovation through initiatives such as intellectual property (IP) clinics and innovation zones can significantly enhance local capabilities and the effective utilisation of indigenous technology. Enhancing coordination among regulatory bodies, private sector entities, and enforcement agencies will improve the overall efficiency of the IP systems. Policymakers should also implement mechanisms to leverage the flexibilities of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) for developmental objectives, establish continuous

legislative review processes to adapt to technological and market changes, and integrate competition policies to prevent monopolistic abuses of IP rights. Finally, safeguarding traditional knowledge and biodiversity through sui generis systems and carefully evaluating regional IP frameworks will ensure that Uganda's IP policies align with national development objectives while maximising economic growth and poverty reduction within the techno-business ecosystem.

Limitations of the study

This study provides an in-depth examination of Uganda's IP policy environment, which limits the generalisability of our findings. Multi-country comparative analyses could elucidate whether the identified IP policy environment-contributing factors are globally applicable or specific to Uganda's socioeconomic milieu. Although our quantitative methodology yielded valuable insights into technology adoption and commercialisation, it constrained our ability to explore individual experiences. This study presents a contemporary overview of the determinants of technology adoption and commercialisation in Uganda. However, given the rapid progression of technological advancements and market dynamics, longitudinal studies are essential for monitoring these factors and their effects over time.

Declarations

Data availability statement: The datasets used and analysed in the current study are available from the corresponding author upon reasonable request.

Disclosure statement: The author declare no conflicts of interest.

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References

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- Aktar, Most. A., Harun, M. B., & Alam, Md. M. (2021). *Science, Technology, and Innovation (STI) Policy for Sustainable Development* (pp. 1145–1156). https://doi.org/10.1007/978-3-319-95864-4_59

- Bowman, W. M. (2019). Technological Distribution in Uganda: Information and Communications Technology and the State in an Eastern African Nation. *Review of Policy Research*, 36(6), 835–865. <https://doi.org/10.1111/ropr.12358>
- Butnik-Siverskyi, O., Kirin, R., Doroshenko, O., & Dorozhko, H. (2024). Devising An Economiclegal Approach To The Viability Of Innovative Technology Transfer In The Process Of Its Commercialisation. *Eastern-European Journal of Enterprise Technologies*. <https://doi.org/10.15587/1729-4061.2024.298515>
- Byun, J., Sung, T. E., & Park, H. W. (2018). Technological innovation strategy: how do technology life cycles change by technological area. *Technology Analysis and Strategic Management*, 30(1), 98–112. <https://doi.org/10.1080/09537325.2017.1297397>
- CHANE, M., & Atwal, H. (2023). The Entrepreneurial Ecosystem And The Performance Of Micro And Small Enterprises (MSES) In Amhara Region, Ethiopia: The Political-Legal Perspective. *Journal of Developmental Entrepreneurship*, 2350020. <https://doi.org/10.1186/s13731-023-00334-8>
- Dissanayake, C. A. K., Jayathilake, W., Wickramasuriya, H. V. A., Dissanayake, U., Kopiyawattage, K. P. P., & Wasala, W. (2022). Theories and models of technology adoption in agricultural sector. *Human Behavior and Emerging Technologies*, 2022. <https://doi.org/10.1155/2022/9258317>
- Dutta, S., Lanvin, B., Rivera León, L., & Wunsch-Vincent, S. (2023). *Global Innovation Index 2023: Innovation in the face of uncertainty*. WIPO. <https://www.wipo.int/edocs/pubdocs/en/>
- Fioravanti, V. L. S., Stocker, F., & Macau, F. (2023). Knowledge transfer in technological innovation clusters. *Innovation & Management Review*, 20(1), 43–59.
- GEM. (2022). *Global Entrepreneurship Monitor 2021/2022 Global Report Opportunity Amid Disruption*. 230.
- Holliday, A. (2014). Doing and Writing Qualitative Research. In *Doing and Writing Qualitative Research*. Sage. <https://doi.org/10.4135/9781446287958>
- Jjagwe, R., Kirabira, J. B., & Mukasa, N. (2024a). Contribution of R&D grants and investment to the commercialisation of innovations in Uganda: Lessons from UNCST a science granting council. *African Journal of Science, Technology, Innovation and Development*, 16(7), 1003–1022. <https://doi.org/10.1080/20421338.2024.2406157>

- Jjagwe, R., Kirabira, J. B., & Mukasa, N. (2024b). Innovation and Commercialisation Characteristics of Techno-Business Firms in Uganda: An Overview of Firm Processes, Strategies, and Challenges. *East African Journal of Interdisciplinary Studies*, 7(1), 278–296. <https://doi.org/10.37284/eajis.7.1.2148>
- Jjagwe, R., Kirabira, J. B., Mukasa, N., & Amanya, L. (2024a). The drivers and barriers influencing the Commercialisation of innovations at research and innovation institutions in Uganda: a systemic, infrastructural, and financial approach. *Journal of Innovation and Entrepreneurship*, 13(1), 78. <https://doi.org/10.1186/s13731-024-00435-y>
- Jjagwe, R., Kirabira, J. B., Mukasa, N., & Okure, M. (2024b). National innovation system for resilience, transformation and sustainable development in Uganda: contextual analysis of the factors, actors and associated linkages. *International Journal of Innovation Science*. <https://doi.org/10.1108/IJIS-09-2023-0197>
- Kim, M., Park, H., Sawng, Y., & Park, S. (2019). Bridging the gap in the technology Commercialisation process: Using a three-stage technology-product-market model. *Sustainability*, 11(22), 6267. <https://doi.org/10.3390/su11226267>
- Ma, P. (2020). Challenges and countermeasures of intellectual property rights in network environment. *Data Processing Techniques and Applications for Cyber-Physical Systems (DPTA 2019)*, 1139–1144. https://doi.org/10.1007/978-981-15-1468-5_133
- Manly, B. F. J. (2015). The design and analysis of research studies. In *The Design and Analysis of Research Studies*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511608384>
- Mattia Fosci, Lucia Loffreda, A. C., & Naidoo, N. (2019). *Assessing the needs of the research system in Uganda*. (October). https://assets.publishing.service.gov.uk/media/5ef4adad86650c129b9af059/NA_report_Uganda__Dec_2019_Heart_.pdf
- Mogull, S. A. (2021). Technical content marketing along the technology adoption lifecycle: experience report. *Communication Design Quarterly Review*, 9(2), 27–35. <https://doi.org/10.1145/3453460.3453463>
- MOJCA. (2019). *National Intellectual Property Policy* (Number May). <https://ursb.go.ug/wp-content/uploads/2019/09/National-IP-Policy-Uganda-May-2019.pdf>

- Nahikiriza, D. (2023). Policy Implementation Performance in Developing Countries: The Study of Uganda among East African Countries. *East African Journal of Interdisciplinary Studies*, 6(1), 162-169. <https://doi.org/10.37284/eajis.6.1.1309>
- NPA. (2007). *Uganda Vision 2040*. National Planning Authority. <http://www.npa.go.ug/uganda-vision-2040/>
- NPA. (2020). Third National Development Plan (NDP-III) 2020/21-2024/25. In *National Planning Authority* (Number January). http://www.npa.go.ug/wp-content/uploads/2020/08/NDPIII-Finale_Compressed.pdf
- Okumu, I. M., & Buyinza, F. (2020). *Performance of Small and Medium-sized Enterprises in Uganda: the Role of Innovation*. AERC. <https://aercafrica.org/wp-content/uploads/2020/01/Research-paper-363.pdf>
- Okwakol, M. N., Ujeyo, M. S. S., Atibuni, D. Z., Biira, S., & Waako, P. (2022). Overcoming policy and practice fragility and enhancing security of science, technology and innovation educational achievement for females in Uganda. <https://doi.org/10.60682/fct8-4j30>
- Onapa, M. O., Sebbale, S., & Aguirre-Bastos, C. (n.d.). *Harnessing science and technology knowledge for sustainability in Uganda*. https://www.researchgate.net/publication/352573489_Chapter_7_Harnessing_science_and_technology_knowledge_for_sustainability_in_Uganda
- Ongâ, G. O., & Abbey, K. (2019). Internal control and quality service delivery in a public health sector: A case study of a Local Government in Uganda. *African Journal of Business Management*, 13(16), 557-563.
- Pererva, P., Ievsieiev, A., Maslak, M., Tkachov, M., & Tkachova, N. (2024). Formation Of Intellectual Property Commercialisation Strategies. *Eastern-European Journal of Enterprise Technologies*. <https://doi.org/10.15587/1729-4061.2024.296836>
- Plotz, T. (2020). Are Concept Maps a Valid Measurement Tool for Conceptual Learning? A Cross-Case Study. *EURASIA Journal of Mathematics, Science and Technology Education*, 16(1).
- Salmon, M., Stephen, E., Rose, K. N., & Edward, B. (2020). *The portrait of Uganda's informal sector: What main obstacles do the sector face?* <http://dx.doi.org/10.1080/23322039.2020.1843255>
- Shahidan, N. H., Latiff, A. S. A., & Wahab, S. A. (2023). Sustainable technology development during intellectual property rights commercialisation by university startups. *Asia Pacific Journal*

- of *Innovation and Entrepreneurship*, 17(3/4), 176–194. <https://doi.org/10.1108/APJIE-07-2023-0142>
- Stubbs, W., Dahlmann, F., & Raven, R. (2022). The purpose ecosystem and the United Nations sustainable development goals: Interactions among private sector actors and stakeholders. *Journal of Business Ethics*, 180(4), 1097–1112. <https://doi.org/10.1007/s10551-022-05188-w>
- Sutarjo, S., & Bajuri, D. (2024). How Start-up Ecosystem and Public Administration Support Entrepreneurs in Surviving the Valley of Death. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, 9(2), 481–488. <https://doi.org/10.24815/jimps.v9i2.30311>
- Tahir, M., Gen, L. L., Ali, M., & Asif, M. (2022). A Comparative Analysis on the Protection of Property Rights and the Intellectual Property Rights: a Pak-Chinese Legal Perspective. *International Journal of Law and Politics Studies*, 4(1), 59–64. <https://doi.org/10.32996/ijlps>
- Tweheyo, G., Abaho, E., Verma, A. M., & Musenze, I. A. (n.d.). Institutional Factors And Commercialisation Of University Research Outputs And Innovations In Uganda. <https://doi.org/10.46609/IJSSER.2024.v09i02.001><https://doi.org/10.46609/IJSSER.2024.v09i02.001>
- UNCTAD. (2020). *Policy Review* (Vol. 9, Number 4). <https://unctad.org/publication/science-technology-and-innovation-policy-review-uganda>. <https://doi.org/10.1080/02673039408720804>
- United Nations. (2016). *United Nations Agenda 2030 for sustainable development*. <https://sdgs.un.org/2030agenda>
- United Nations. (2020). *United Nations Sustainable Development Cooperation Framework 2021-2025*. <https://uganda.un.org/en/170858-uganda-un-sustainable-development-cooperation-framework-2021-2025>
- Uyarra, E., Zabala-Iturriagagoitia, J. M., Flanagan, K., & Magro, E. (2020). Public procurement, innovation and industrial policy: Rationales, roles, capabilities and implementation. *Research Policy*, 49(1), 103844.
- World Bank. (2021). *Uganda Economic Update, 17th Edition, June 2021*. <https://openknowledge.worldbank.org/handle/10986/35689>
- Zhu, H., Zhao, S., & Abbas, A. (2020). Relationship between R&D grants, R&D investment, and innovation performance: The moderating effect of absorptive capacity. *Journal of Public Affairs*, 20(1), e1973. <https://doi.org/10.1002/pa.1973>

- Ziebermayr, T. (2021). Protecting intellectual property rights of industrial software. *Procedia Computer Science*, 180, 862–866. <https://doi.org/10.1016/j.procs.2021.01.336>
- Zinych, L. V. (2021). Possibilities Usage Blockchain Technology For Protect Intellectual Property Rights In Ukraine. *Actual Problems of Improving of Current Legislation of Ukraine*, (55), 14–21. <https://doi.org/10.15330/apiclu.55.14-21>

TRADEMARK INFRINGEMENT IN THE GAMBIAN PHARMACEUTICAL SECTOR: AN EXAMINATION OF PREVALENCE AND CONTRIBUTING FACTORS

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Abstract

Trademark infringement in the pharmaceutical industry presents a significant challenge that leads to economic losses for businesses and public health risks. This study examined the level of trademark infringement in the Gambian pharmaceutical sector, established the factors that lead to such infringements and proposed ways of enhancing the protection and enforcement of trademark rights in the industry. The study employed a mixed-method approach, combining both qualitative interviews with industry stakeholders, and collection of quantitative data on trademark infringement cases to determine the extent of such infringement in the Gambian Pharmaceutical industry. The findings indicate that insufficient enforcement, limited awareness on both the side of consumers and business, and limited drug testing and distribution control aggravate the prevalence of the infringement. Additionally, inadequate coordination between intellectual property offices, pharmaceutical regulators, and other relevant stakeholders hinders the effective enforcement of trademark laws in the pharmaceutical industry. Guided by these findings, this study recommends the amendment of the legal and regulatory framework to align with emerging challenges and enhanced collaboration among the relevant stakeholders to improve enforcement. Furthermore, it also recommends increased public and industry awareness to help businesses and consumers recognise trademark infringements.

Keywords

Trademark, Infringement, Prevalence, Pharmaceutical

Introduction

Trademarks play a fundamental role in the modern economy, serving not only to protect intellectual property rights (IPRs) but also to maintain consumer trust across industries. Their significance is even more pronounced in the pharmaceutical sector, which serves as the bedrock of public health, influences national well-being, and directly impacts patient safety (Saxena, Balani, & Srivastava, 2022). In this sector, trademarks help consumers distinguish between pharmaceutical products, reducing the risk of confusion that could lead to severe health outcomes. The quality assurance function of trademarks is crucial, especially in pharmaceuticals, where brand recognition underpins consumer trust and assists in informed medication choices (Bone, (2012). Beyond mere brand identity, trademarks in the pharmaceutical industry serve as vital assurances of product quality, regulatory compliance, and efficacy (Editorial, 2024 (1)). Given that product selection and brand recognition in pharmaceuticals are intrinsically linked to perceptions of drug efficacy and safety, trademarks play an indispensable role in influencing health outcomes. They offer buyers confidence in the safety and effectiveness of branded medications compared to alternative generic or unidentified products (Saklani, 2023).

Moreover, trademarks embody the reputation and reliability of a pharmaceutical brand. Certification marks, in particular, help reduce medication errors by signaling quality assurance, compliance with regulatory standards, and commitment to consumer safety (Kalra, 2024). In saturated pharmaceutical markets, especially those flooded with generics, clear product differentiation through trademarks is critical to ensuring that consumers can make safe and informed choices (Intertek, 2024). Trademarks further act as a frontline defense against counterfeit and substandard products by providing clear indications of authenticity, aiding consumers and healthcare professionals in identifying legitimate pharmaceuticals (Lunney, 2023). Incentivising innovation is another important function of trademarks. By protecting pharmaceutical companies' investments

in research and development, trademarks enable these firms to safeguard their products from competitors and counterfeiters (Rhombus Pharma, n.d.). This protection stimulates the continued development of new, high-quality medications, thereby advancing public health objectives.

Despite the highlighted roles trademarks play, trademark owners and consumers face significant challenges within the pharmaceutical industry, including the genericisation of branded drugs, widespread trademark infringement, the proliferation of counterfeit products, and difficulties in enforcement (Editorial, 2024 (2)). A considerable portion of substandard and counterfeit medication cases globally has been linked to trademark infringement, a phenomenon highlighted by the World Health Organization (WHO, 2017). Although developed countries have made significant strides in addressing these issues, developing nations, including The Gambia, continue to grapple with severe challenges. With a population of approximately 2.5 million people, The Gambia has limited pharmaceutical infrastructure, comprising only four main government referral hospitals and over 170 registered drugstores, but no local pharmaceutical manufacturers. The country's reliance on imported medicines, coupled with the absence of domestic testing laboratories to authenticate imports, creates a fragmented supply chain vulnerable to the infiltration of counterfeit and trademark infringing drugs (Shola, 2023).

The consequences of this vulnerability are profound. Trademark infringement deprives IPRs holders of economic benefits and damages brand reputation, while exposing consumers to serious health and safety risks associated with counterfeit, fake, and substandard products. The WHO estimated in 2017 that about 10.5% of medicines worldwide are either substandard or falsified (Pathak, 2023), a figure that is even higher in low- and middle-income countries, especially in Africa (Wada et al., 2022). This prevalence is associated with grave outcomes, including the deaths of approximately 122,350 children under the age of five annually in sub-Saharan Africa due to poor-quality medicines (Pathak, 2023).

Statement of the problem

A tragic illustration of these dangers occurred in The Gambia in 2022, where approximately 66 children died from acute kidney injury (AKI) linked to the consumption of contaminated cough syrup (Ceesay, 2022). This devastating incident prompted the WHO to issue a global alert on October 5, 2022, warning of the potential link between four specific syrups and the deaths of Gambian children between July and September 2022 (World Health Organization, 2022). The disaster underscored the urgent need for stronger pharmaceutical quality control and trademark enforcement mechanisms.

Further complicating the situation, The Gambia's Medicines Control Agency (MCA) issued another communication on October 4, 2024, alerting the public to the circulation of medical products that had degraded before their expiry dates, rendering them substandard (MCA, The Gambia, 2024). Additionally, low-quality antibiotics and other medications continue to circulate in the market undetected, posing latent risks to public health (Gulumbe & Adesola, 2023). As demonstrated by the 2022 syrup tragedy, without evident and immediate adverse effects, contaminated products often remain unnoticed until catastrophic events occur.

Purpose of the study

The study sought to examine the prevalence of trademark infringement within the Gambian pharmaceutical sector, identify the key factors contributing to this challenge, and propose practical measures to enhance trademark protection. The study contributes to the existing body of literature by raising consumer and stakeholder awareness about the critical importance of trademark enforcement in safeguarding public health and ensuring pharmaceutical integrity.

Methodology

The study employed a mixed-methods research design, integrating both qualitative and quantitative approaches to comprehensively assess the prevalence of trademark infringement within the pharmaceutical sector and the contributing factors. Data was collected from stakeholders within The Gambia's trademark office and medical industries through interviews and a self-administered questionnaire, which was disseminated electronically via email, WhatsApp and google forms. The questionnaires consisted of structured, semi-structured, and open-ended questions tailored to assess respondents' views on the state of trademark infringement, its contributing factors, and the effectiveness of existing legal frameworks in protecting pharmaceutical products. Additionally, telephone interviews were conducted to follow up on unclear questionnaire responses and to collect supplementary information where necessary.

The study used a combination of probability and non-probability sampling techniques, specifically simple random sampling and purposive sampling. Purposive sampling enabled the deliberate selection of knowledgeable participants with relevant expertise in trademark and pharmaceutical practices, ensuring rich qualitative insights. Simultaneously, simple random sampling enhanced the generalisability of quantitative findings by minimising selection bias among broader industry members. The sample size for the study was determined based on a standard rule of thumb for exploratory research, suggesting a minimum of 10% of the population size. Accordingly, a total of 38 respondents were selected, ensuring a manageable yet statistically acceptable sample for preliminary analysis. This sample size was considered adequate for achieving a 5% margin of error at a 95% confidence level, aligning with Krejcie and Morgan's (1970) sample size determination guidelines.

The study used both frequency distribution and thematic methods of data analysis. The frequency distribution was used to analyse quantitative data. Thematic analysis on the other hand was used in the analysis of the qualitative data which involves searching across a data set to identify emerging themes and patterns.

Results and discussion

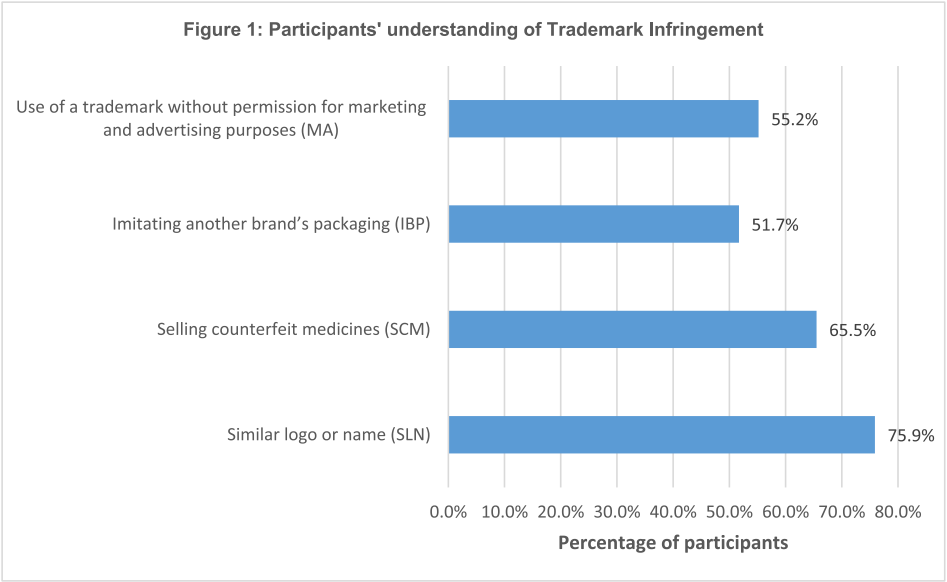
The study set out to examine the prevalence of trademark infringement within the Gambian pharmaceutical sector, identify key contributing factors, and propose strategies to enhance trademark protection. The research achieved a commendable 76% response rate, with 29 out of 38 questionnaires successfully completed and returned. This is particularly notable given the challenges associated with maintaining long-term stakeholder engagement in areas such as consumer protection and trademark enforcement. This response rate significantly exceeds the typical 24% benchmark for similar surveys, establishing a strong foundation for capturing diverse stakeholder perspectives across various sectors in The Gambia (Zdep, 1986). This positive outcome underscores the effectiveness of the survey design and reflects a growing interest among stakeholders in discussions surrounding consumer rights and trademark protection.

The demographic breakdown of respondents provides a well-balanced representation of relevant sectors, with a gender distribution of 55% male to 45% female, consistent with trends in regulatory and medical fields where male respondents often outnumber females (Laguna-Goya & de Andres-Trelles, 2014). Additionally, the study captured a wide range of professional experience, from less than one year to over 16 years, enriching the data with perspectives from both seasoned professionals and newcomers. This variation is crucial for understanding the complexities of trademark infringement, as it provides insights into evolving industry practices and attitudes (Zaichkowsky, 2020). This comprehensive approach not only strengthens the study's findings but also reflects shifts in the landscape of trademark law over time.

Prevalence of trademark infringement within the Gambian pharmaceutical sector

This section presents the results of the assessment of the prevalence of trademark infringement within the Gambian Pharmaceutical Industry. The data collected provided insight into the prevalence of counterfeit and substandard pharmaceutical products in the Gambian Pharmaceutical sector. Participants were first asked to explain their understanding of trademark infringement. The majority of the participants (75.9%) as shown in Figure 1, defined

trademark infringement as “using a similar logo or name that causes consumer confusion.”

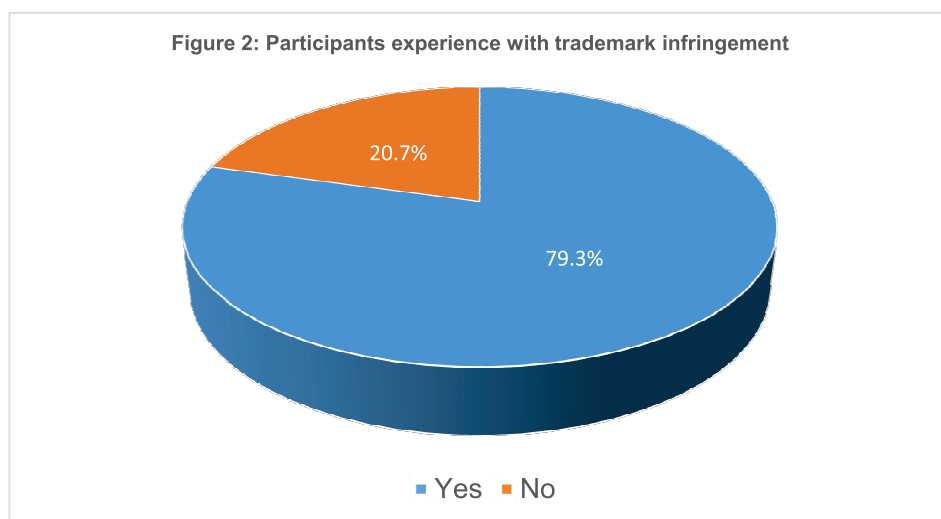


This aligns with existing literature, which highlights the growing awareness of the risks associated with trademark misuse and counterfeiting. Research has emphasised the critical relationship between consumer confusion and trademark protection, suggesting that educational initiatives could be instrumental in raising awareness, particularly in regions where trademark infringement is pervasive (Bone, 2012). These initiatives could include workshops, informational campaigns, and collaborations with local businesses to foster a deeper understanding of IPRs and their importance in maintaining brand integrity.

Furthermore, a significant proportion of the respondents (65.5%) identified “selling counterfeit medicines under a registered trademark” (SCM) as a form of trademark infringement. This finding is consistent with the growing recognition among industry professionals that counterfeit products are a major concern in the pharmaceutical sector (Haq & Muselemu, 2018 and Cockburn et al., 2005). The unauthorised use of established trademarks on counterfeit goods poses severe risks to public health, making the detection and prevention of such violations a key regulatory challenge.

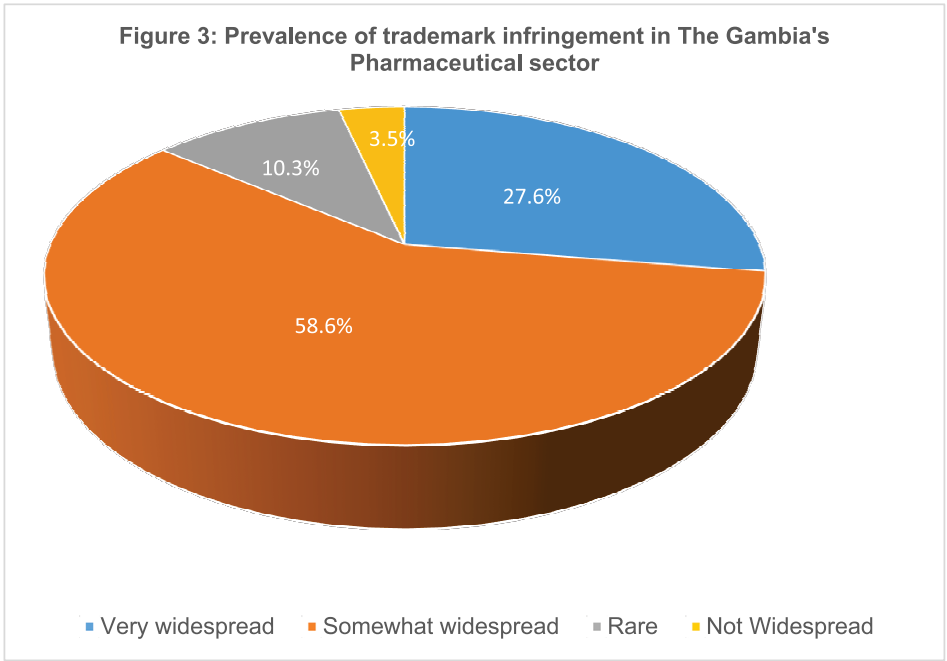
Additionally, 55.2% of respondents associated “the use of a trademark without permission for marketing and advertising purposes” (MA) as a form of infringement, while 51.7% identified “manufacturing pharmaceutical products that imitate another brand’s packaging” (IBP). These responses reflect a broader understanding of trademark infringement that includes not only the unauthorised use of logos and names but also the imitation of brand identity through packaging and advertising practices. The use of imitation packaging or unauthorised marketing materials often misrepresents a product’s origin and association, misleading consumers and violating IPRs (Krasnikov & Jayachandran, 2022).

Participants were also asked if they had encountered or heard about trademark infringement in the Gambian Pharmaceutical sector. The results in Figure 2 show that 79.3% of respondents reported encountering or hearing about trademark infringement cases in The Gambia’s pharmaceutical sector, suggesting that infringement is a recurring issue within the industry. This finding aligns with global trends in developing pharmaceutical markets, where weaker regulatory enforcement contributes to higher rates of counterfeiting (Glass, 2014). However, 20.7% of respondents reported no direct or indirect experience with trademark infringement cases, indicating potential gaps in awareness or reporting, especially among smaller institutions or those less involved in the regulatory aspects of the industry.



This disparity highlights the need for further investigation into the factors that prevent certain stakeholders from recognising or reporting trademark violations.

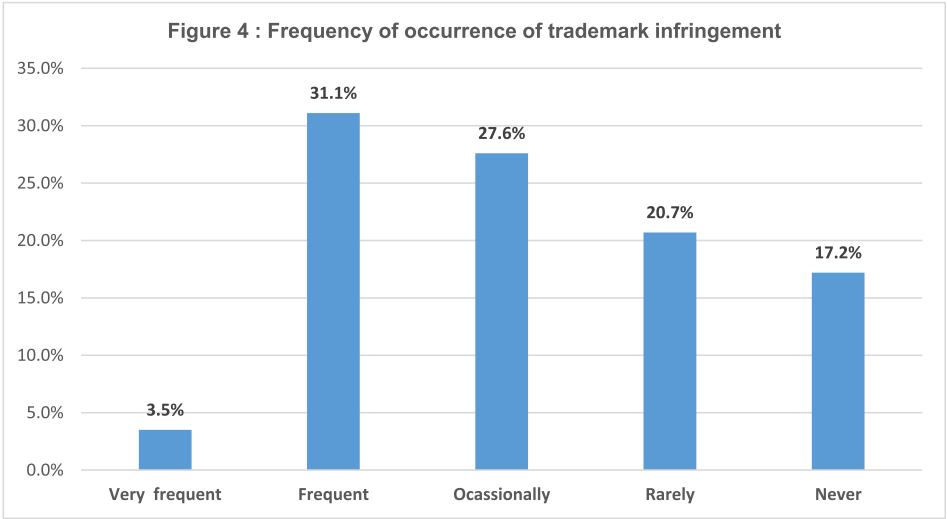
Further analysis as shown in Figure 3, revealed that 58.6% of respondents viewed trademark infringement as “somewhat widespread,” while 27.6% described it as “very widespread.”



This variance likely reflects differences in stakeholder engagement with enforcement mechanisms. The results further indicate that 86.2% of participants consider trademark infringement a significant issue within The Gambia’s pharmaceutical industry, aligning with findings from Brennan (2015) on the paradox of trademarked pharmaceuticals.

Concerning frequency of trademark infringement, participants were further asked to indicate how often they encountered or heard about trademark infringement issues in the pharmaceutical industry. The results in Figure 4 showed that 3.5% of the participants reported encountering trademark infringement more frequently (several times per month) while 31.1% reported one occurrence

every month suggesting that the issue is a recurring problem rather than an occasional one.



The responses also indicate variability in perceptions of the frequency and severity of trademark infringement, emphasising the need for more comprehensive data on the issue’s true extent in the sector (Ekeigwe, 2019).

Factors contributing to trademark infringement in the Gambian pharmaceutical sector

The study also identified several key systemic, regulatory, economic, and socio-cultural factors that contribute to the high prevalence of trademark infringement in the Gambian pharmaceutical industry as follows:

(i) Lack of IP rights awareness

A significant 65.67% of respondents pointed to a lack of awareness about IPRs, particularly trademarks, as a major contributing factor. Many pharmaceutical companies either fail to register their trademarks due to limited understanding of the process or undervalue its importance, leaving them vulnerable to counterfeiters. This finding resonates with the International Federation of Pharmaceutical Manufacturers & Associations (2022), which highlights the role of IP in the biopharmaceutical sector.

(ii) Consumer unawareness of counterfeit drugs

Similarly, consumer awareness of counterfeit drugs remains insufficient. Consumers were unaware of the risks posed by substandard pharmaceuticals marketed under misleading branding, thus unknowingly fueling demand for counterfeit products. This lack of understanding about trademarks and their role in consumer protection is a primary driver of trademark infringement in the sector.

(iii) Weak enforcement of IP Laws

A concerning 53.2% of participants identified weak enforcement of IP laws as another significant factor facilitating trademark infringement. It was reported that regulatory bodies tasked with trademark protection often lack the necessary resources, expertise, and infrastructure to effectively monitor and regulate the pharmaceutical market. In some cases, corruption within enforcement agencies exacerbates the problem, with customs officers and regulatory personnel reportedly accepting bribes to overlook violations. This corruption undermines the integrity of the enforcement system, allowing counterfeit pharmaceuticals to infiltrate the market and increase consumer confusion (Hellstrom, 2011). This aligns with findings in the International Journal of Drug Policy (2021), which emphasise the role of weak enforcement mechanisms in fostering a proliferation of counterfeit drugs.

Furthermore, 51% of the participants indicated that the legal framework for IP protection in The Gambia also proves inadequate in addressing the specific challenges posed by trademark infringement in the pharmaceutical sector. It was further reported that, while general IP laws exist, they do not comprehensively address the unique needs of the pharmaceutical industry, particularly when it comes to dealing with counterfeit and substandard medications. Only 49% of respondents expressed confidence in the current legal framework's ability to protect trademarks effectively. This gap in the legal structure leaves businesses vulnerable to infringement and fails to provide sufficient deterrence against counterfeiting. These findings echo Andanda (2016), who explored the balance between trademark protection and public health concerns, noting similar challenges in Kenya and South Africa.

(iv) Improper testing and distribution of pharmaceutical products

The study also highlighted that improper testing and distribution of pharmaceutical products contribute significantly to trademark infringement. Specifically, 53% of respondents reported that drugs entering the market without adequate safety and efficacy testing pose considerable public health risks. Counterfeit drugs often bypass rigorous testing, creating a false sense of security among consumers and contributing to trademark violations. Research results published in the *Travel Medicine and Infectious Disease* (2024) emphasise the correlation between counterfeit drugs and increased health risks, including treatment resistance, allergic reactions, and even death (Feeney et al., 2024). These risks are compounded by the lack of robust testing mechanisms in place to prevent substandard products from entering the market.

The porous nature of The Gambia's borders and the inefficiency of border enforcement mechanisms were identified by 46% of participants as significant contributors to trademark infringement. Weak border controls, coupled with poor coordination between regulatory bodies, facilitate the smuggling of counterfeit pharmaceuticals into the country. These illicit products then enter the market, often sold alongside legitimate drugs, making it difficult for both consumers and law enforcement to distinguish between the two. The smuggling of counterfeit drugs, driven by economic incentives and gaps in border enforcement, remains a persistent challenge for the country's pharmaceutical sector.

Measures for Enhancing Trademark Protection

According to 80% of the participants, addressing these challenges requires a multifaceted approach, including stronger enforcement of IP laws, heightened public awareness, and increased collaboration between governments, pharmaceutical companies, and healthcare providers. Participants also stressed the importance of legislative reform, improved enforcement of existing laws, and more comprehensive stakeholder education. These measures align with previous research advocating for a combination of regulatory and educational measures to combat counterfeit drugs (Gerhardt, 2017).

Conclusion

This study has highlighted the pervasive and significant issue of trademark infringement within The Gambia's pharmaceutical sector. Key drivers of this problem include insufficient public awareness, weak enforcement mechanisms, and the lack of a robust legal framework specifically tailored to address the challenges posed by counterfeit pharmaceuticals. The implications of these violations extend far beyond IP concerns, posing considerable risks to public health, consumer safety, and the overall integrity of the pharmaceutical market. Counterfeit drugs, often indistinguishable from legitimate products, not only compromise the health of consumers but also undermine trust in the healthcare system. The findings from the study underscore the urgent need for reform, with a particular focus on strengthening IP protections within the pharmaceutical industry.

Recommendations

Based on the findings of the study, several strategic recommendations are put forth to address the issues of trademark infringement and counterfeit pharmaceuticals in The Gambia:

1. **Enhancement of Legal Frameworks:** It is imperative that The Gambia develops and implements comprehensive, context-specific legislation that addresses the unique challenges of counterfeit pharmaceuticals. These laws should focus on the protection and enforcement of trademarks in the pharmaceutical sector, providing clear protocols for registration, monitoring, and prosecution of violations.
2. **Strengthening Enforcement Mechanisms:** The government must prioritise the strengthening of enforcement agencies responsible for IP protection. This includes increasing financial and technical resources for regulatory bodies, facilitating specialised training for enforcement officers, and establishing anti-corruption initiatives to ensure that IP laws are applied effectively and impartially.

- 3. Public Awareness and Education Initiatives:** Public awareness campaigns are crucial to inform consumers about the dangers posed by counterfeit drugs and the importance of recognising legitimate pharmaceutical products. These initiatives should aim to foster a culture of informed consumerism, encouraging individuals to make safer purchasing decisions and reducing demand for counterfeit goods.
- 4. Collaborative Stakeholder Engagement:** A coordinated, multi-stakeholder approach is necessary to address the issue of trademark infringement comprehensively. Key stakeholders such as government agencies, pharmaceutical companies, healthcare providers, and civil society should collaborate to create a unified strategy for tackling counterfeit pharmaceuticals. This collective effort should focus on information sharing, joint enforcement, and public education.
- 5. Comprehensive Legislative and Regulatory Reform:** Legislative reforms should be prioritised to establish a more robust regulatory environment that not only safeguards IP but also ensures fair competition within the pharmaceutical industry. Regulatory frameworks should be regularly updated to address emerging challenges in the fight against counterfeit drugs, ensuring they remain relevant and effective.

By adopting these recommendations, The Gambia can establish a more effective regulatory framework that protects IP, promotes the delivery of safe and authentic pharmaceutical products, and ultimately safeguards public health. These reforms will not only bolster the integrity of the pharmaceutical market but also contribute to improved health outcomes, stimulate innovation, and foster a competitive, fair, and transparent industry.

References

- Andanda, P. (2016). *Striking a Balance between Protecting Trademarks and Public Health Interests in Combating Trade in Counterfeit Medicines: Lessons from Kenya and South Africa*. *Journal of African Law*, 60(2), 312–338. <https://doi.org/10.1017/S0021855315000297>
- Bone, R. G. (2012). Taking the Confusion Out of “Likelihood of Confusion”: Toward a More Sensible Approach to Trademark Infringement. *Northwestern University Law Review*, 106(3), 1307–1378.
- Brennan, H. (2015). The cost of confusion: The paradox of trademarked pharmaceuticals. *Michigan Telecommunications and Technology Law Review* 22(1), 1-52.
- Ceesay, M. (2022, October 7). *Fake Drugs in the Gambia: Intellectual Property as a Solution*. Retrieved September 25, 2024 from The Fatu Network: <https://fatunetwork.net/fake-drugs-in-the-gambia-intellectual-property-as-a-solution/>
- Editorial. (2024 (1), April 23). *Trademarks*. Retrieved October 9, 2024 from IP Law Mastery: <https://iplawmastery.com/trademarks-in-pharmaceuticals/>
- Editorial. (2024 (2), April 23). *Understanding Trademarks in Pharmaceuticals and their Importance*. Retrieved November 1, 2024 from IP Law Mastery: <https://iplawmastery.com/trademarks-in-pharmaceuticals/>
- Ekeigwe, A.A. (2019). *Drug manufacturing and access to medicines: the West African story. A literature review of challenges and proposed remediation*. *AAPS Open* 5, 3 <https://doi.org/10.1186/s41120-019-0032-x>
- European Union Intellectual Property Office. (2022). *Africa IP country fiche: The Gambia*. European Union Intellectual Property Office. https://intellectual-property-helpdesk.ec.europa.eu/system/files/2022-05/Africa_IP-Country-Fiche_Gambia.pdf
- Feeney, A. J., Goad, J. A., & Flaherty, G. T. (2024). Global perspective of the risks of falsified and counterfeit medicines: A critical review of the literature. *Travel Medicine and Infectious Disease*, 61, 102758. <https://doi.org/10.1016/j.tmaid.2024.102758>
- Gerhardt, D. R. (2017). Trademarks as Entrepreneurial Change Agents for Legal Reform. *North Carolina Law Review*, 95(5), 1519. <https://scholarship.law.unc.edu/cgi/viewcontent.cgi?article=4962&context=nclr>

- Glass, B. D. (2014). Counterfeit drugs and medical devices in developing countries. *Research and Reports in Tropical Medicine*, 5, 11-22. <https://doi.org/10.2147/RRTM.S39354>
- Gulumbe, (., & Adesola, (. (2023). Revisiting the blind spot of substandard and fake drugs as drivers of antimicrobial resistance in LMICs. *Annals Of Medicine & Surgery*, 122-123. Retrieved September 06, 2024 from https://journals.lww.com/annals-of-medicine-and-surgery/fulltext/2023/02000/revisiting_the_blind_spot_of_substandard_and_fake.9.aspx
- Hellstrom, W. J. G. (2011). The growing concerns regarding counterfeit medications. *The Journal of Sexual Medicine*, 8(1), 1-3. <https://doi.org/10.1111/j.1743-6109.2010.02135.x>
- International Federation of Pharmaceutical Manufacturers & Associations. (2022). The role of intellectual property in the biopharmaceutical sector. *International Federation of Pharmaceutical Manufacturers & Associations*. <https://www.ifpma.org/publications/the-role-of-intellectual-property-in-the-biopharmaceutical-sector/>
- Askew, R., Griffiths, B., Bone, M. (2022). The importance of PEOPLE who use drugs within drug policy reform debates: Findings from the UK Drug Policy Voices online survey. *International Journal of Drug Policy*, 105, 103711. Retrieved February 16, 2025, <https://doi.org/10.1016/j.drugpo.2022.103711>.
- Intertek, A. (2024, May 11). *Certification Marks are evidence that a product conforms to applicable safety, quality, or performance standards*. Retrieved October 30, 2024 from Intertek: <https://www.intertek.com/product-certification-marks/>
- Kalra, A. (2024, August 7). Pharmaceutical Industry and ensuring Regulatory Compliance. *Lawrbit Global Compliance Network*, pp. 1-5. Retrieved October 30, 2024.
- Laguna-Goya, N., & de Andres-Trelles, F. (2014). Sex as a variable in medicines assessment reports for licensing in the European Union. Can gender bias be excluded. *European Journal of Clinical Pharmacology*, 70(5), 519-525. <https://doi.org/10.1007/S00228-014-1646-5>
- Lunney, G. S. (2023). *Introduction to the research handbook on the law and economics of trademark law*. In *Research Handbook on the Law and Economics of Trademark Law*. <https://doi.org/10.4337/9781786430472.0007>
- Pathak, P. G. (2023). Tackling Counterfeit Drugs: The Challenges and Possibilities. *Pharmaceutical Medicine*, 281-290. Retrieved

- September 6, 2024 from <https://link.springer.com/article/10.1007/s40290-023-00468-w>
- Rhombus Pharma. (n.d.). *The importance of trademarks in the pharmaceutical industry. Gujarat, India*. Retrieved October 30, 2024 from <https://www.rhombuspharma.com/importance-of-trademarks-in-the-pharmaceutical>
- Saxena K, Balani S, Srivastava P. (2022). The role of pharmaceutical industry in building resilient health system. *Front Public Health*. Retrieved March 30, 2025 from doi: 10.3389/fpubh.2022.964899
- Saklani, A. (2023, July 3). *Aggarwals & Associates. From Aggarwals & Associates, Advocates & Solicitors*: <https://aggarwalsandassociates.com/importance-of-pharmaceutical-trademark-and-its-registration/>
- Shola, L. (2023, November 18). AL Jazeera. Retrieved September 16, 2024 from Al Jazeera: <https://www.aljazeera.com/features/2023/11/18/gambia-parents-fight-for-children-in-landmark-trial-on-india-syrup-deaths>
- Wada Y.H., Abdulrahman A, Muhammad M.I, Owanta V.C, Chimelumeze, P.U, & Khalid G.M. (2022). Falsified and Substandard Medicines Trafficking: A wakeup call for the African Continent. *Public Health in Practice*, 3, 1-4. Retrieved March 06, 2025 from <https://doi.org/10.1016/j.puhip.2022.100240>
- World Health Organisation (WHO). (2017). *1 in 10 Medical Products in Developing Countries Is Substandard or Falsified*. WHO. Retrieved October 12, 2024 from <https://www.who.int/news/item/28-11-2017-1-in-10-medical-products-in-developing-countries-is-substandard-or-falsified>
- Zaichkowsky, J. L. (2020). *The Psychology Behind Trademark Infringement and Counterfeiting*. Psychology Press. <https://doi.org/10.4324/9781315820965>
- Zdep, S. M. (1986). Enhancing Response Rates On Surveys Among Business Executives. *Journal of Business & Industrial Marketing*, 1(1), 47-50. <https://doi.org/10.1108/EB006012>



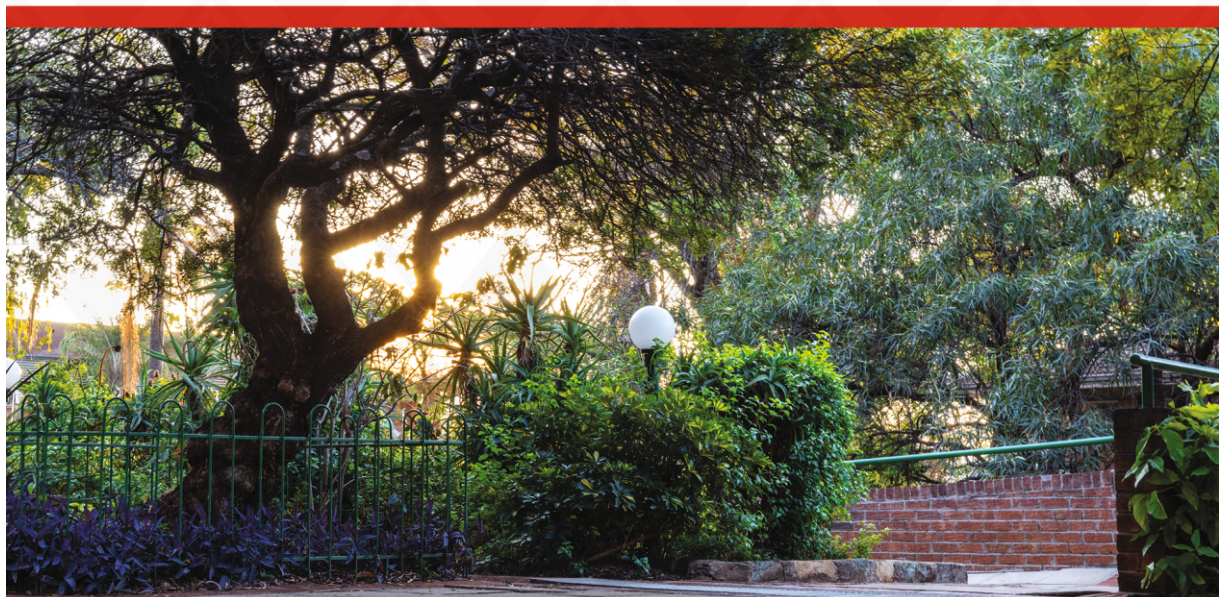
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