Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Verified Medical Crowdfunding: A New Model for Transparent Healthcare Financing in Africa

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ARTICLEINFO

Received: 01 Nov 2024

Revised: 17 Dec 2024

Accepted: 27 Dec 2024

ABSTRACT

Healthcare finance in Sub-Saharan Africa is highly vulnerable to increasing reliance on out-of-pocket payments and loss of external funds. As a result, medical crowdfunding has become a prevalent method of alternative funding. However, traditional crowdfunding is plagued by systemic inequities, widespread fraud, and transparency deficits, undermining donor trust. This study aims to analyze the effectiveness of adopting Verified Medical Crowdfunding (VMC), a combination of institutional validation and decentralized technologies such as smart contracts, as a solution. The study uses a cross-sectional analysis of 1200 campaigns across Sub-Saharan Africa to assess the extent to which the campaigns met their target goals and whether they affected the amount of the donations, the perceived trust in the verification process and the time it took to fundraise and the number of frauds. Results show that 81.5% of the campaigns that have been verified in the institution are successful, whereas 14.2% from the campaigns that have not been verified. The greater the verification, the higher the donations, and the higher the donations, the higher the trust of the donor. In addition, direct to hospital disbursement models show a near- zero rate of fraud (0.3%) and an extremely rapid fund disbursement (3.2 days). It is concluded that a move towards verified and institutionally supported ecosystems is essential for transparent and equitable healthcare financing in Africa, while also ensuring sustainability.

Keywords: Medical Crowdfunding, Healthcare Financing, Out-of-Pocket Expenditure, Sub-Saharan Africa, Blockchain, Health Equity.

INTRODUCTION

The financing of healthcare in Sub-Saharan Africa is in crisis, with its current state marked by structural vulnerabilities and a worsening crisis of affordability that could jeopardize decades of public health gains. Historically, on the African continent, health care systems depend on a very fragmented funding model, which combines poor government funding, unpredictable external donor funding, and direct out-of-pocket payments by households at the point of care delivery (Bou-Karroum et al., 2024). The African continent is facing a significant threat to its health financing in recent years due to the combination of a number of macro-economic pressures and changing geopolitical priorities, with the health sector projected to receive seventy percent less Official Development Assistance between 2021 and 2025 (Africa CDC, 2025). This huge financial responsibility to maintain healthcare delivery has therefore been increasingly transferred to individual patients and their families, resulting to a fast and unsustainable increase in out-of-pocket healthcare expenditure, which is often higher than all other essential expenditure within the household (Atinga et al., 2025). These out-of-pocket health care payments that surpass a certain percentage of a household's earnings, normally 10 percent or more, are termed catastrophic health care expenditures by health economics, and they quickly lead vulnerable people into extreme poverty and subsequent long-term financial poverty (Mtei et al., 2023). Financial protection mechanisms like national health insurance schemes or community-based health insurance initiatives are still largely undeveloped and underfunded, and are also poorly utilized in many African countries, leaving many populations completely vulnerable to catastrophic financial shocks from chronic diseases, unexpected health emergencies and the need to access essential health services (Abagala et al., 2023).

As social safety nets are widely lacking and comprehensive health insurance coverage even weaker, people with

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unsustainable and immediate medical expenses have increasingly resorted to alternative financing methods in the digital realm, most notably to social media platforms such as platforms for medical crowdfunding. Medical crowdfunding is the systematic mobilization of funds from a large network of people, generally via unique online social media sites and also specialized digital crowdfunding websites, clearly for medical costs (Ren et al., 2020). In recent times, medical crowdfunding has grown at an exponential pace, becoming a crucial source of funding for healthcare in Sub-Saharan Africa (Ahmed & Cowan, 2013), with increased adoption among healthcare providers in key regions due to technological progress and a surge in regional digital literacy. The African culture of communal reciprocity, mutual support, and social solidarity has proved to be a powerful tool for mobilizing and raising significant amounts of capital in a quick time for complex medical treatments, advanced surgeries, and prolonged post-operative care (Akpoghiran & Erubami, 2019). For many desperate patients that may be forced to travel to doctor after doctor within a poorly functioning health system, these digital platforms are an actual lifesaver and allow for a first time in history that a patient with a critical illness has the opportunity to access a donor base from anywhere in the world or region to immediately and drastically relieve the financial burden of the acute crisis of a devastating illness (Kenworthy & Igra, 2022).

While the short-term benefits of medical crowdfunding seem clear and the grassroots rise of this form of funding appears swift, the traditional unregulated peer-to-peer model has a number of critical structural flaws that significantly limits its potential as a long-term sustainable and just healthcare financing model. One of the key and ongoing questions is the widespread problem of fraud, clinical misrepresentation and the complete lack of transparency regarding the final use of raised funds. Conventional platforms generally do not have to go through much to initiate a fundraising drive, meaning that scammers have frequently used the digital system to spread fake medical emergencies or claims for large sums of money, steadily damaging the credibility of donors (Zenone & Snyder, 2023). Moreover, the nature of traditional medical crowdfunding itself gives special attention to people with high digital literacy, powerful social networks, and the capacity to create emotional arguments, a socio-cultural phenomenon rightly called the "commodification of suffering," or the "strategic imperative to actively raise a 'worthy illness' (Berliner & Kenworthy, 2017). This core dynamic directly contributes to already entrenched socioeconomic and geographic inequities because marginalized communities who don't have digital literacy, fluency in majority languages, or a robust social network are consistently underrepresented and underfunded, making this a fundamentally inequitable and inequitable fundraising model (Kenworthy et al., 2020). Furthermore, in the traditional healthcare financing system, distribution of money to individual campaigners is extremely vulnerable to financial mismanagement or stealth diversion to non-medical household expenses, which reduces the clinical effectiveness of the healthcare financing system (Snyder et al., 2020).

In response to these systemic shortcomings and infrastructural weaknesses, a novel architectural concept known as "Verified Medical Crowdfunding" has emerged recently, intended to impose absolute transparency, structural equity, and strong accountability on the digital health financing ecosystem. The verified model is essentially distinct from classic peer-to-peer crowdfunding, with the incorporation of robust institutional validation, cutting-edge decentralized technological systems, and automated financial disbursement processes directly to providers (Siva et al., 2024). To make sure that all campaigns are verified before they appear on the platform, the verified platforms actively discourage the spread of fraudulent claims and explicitly guarantee donors that their donations will only be used for clinically required medical interventions. Furthermore, the use of distributed ledger technology, particularly blockchain architecture and smart contracts, enables an unalterable, decentralized, and completely transparent account of all transactions, and funds are released automatically only when specific clinical milestones are met in a way that is transparent and objective (Onyeka et al., 2024). Not only does it mark a massive shift in the way financial misappropriation can be tackled, but it also empowers people to access funds for life-saving treatments by elevating the need of the case over the control of an individual's digital marketing skills. The current study rigorously examines the nature of the implementation of Verified Medical Crowdfunding in Sub-Saharan Africa and offers an extensive empirical analysis of the direct effect that VMC has on the success rate of campaigns, donor trust and general efficiency of the platform.

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LITERATURE SURVEY

The large body of academic literature about the financing of healthcare in Sub-Saharan Africa is rooted in the pervasive and inconsistent challenge to attain Universal Health Coverage during a long-standing problem of underfunded states, structural administrative inefficiencies, and macroeconomic uncertainty. The negative socio-economic consequences of out-of-pocket payments (OOP) are well documented and are profound in a large majority of low and middle-income countries (LMICs) in the EAP region where OOP payments are currently the prevailing financing mechanism for health services. Out-of-pocket payments make up a disproportionately large and volatile share of total health spending on the African continent, and directly and causally increase the risk of catastrophic health expenditure among the most vulnerable demographic groups, according to our comprehensive analyses by Mtei et al. (2023). If they need to sell off their assets to pay for medical bills, or take out high-interest loans to cover their expenses, then impoverished households are caught in a downward spiral and are likely to remain in poverty for generations to come. The Africa Centres for Disease Control and Prevention (2025) also emphasizes the continent's historical over-reliance on external donor funding, which is causing fragile national health systems to be especially vulnerable to disruptions in the global supply chain and sudden changes in geopolitical interests, thereby fueling the need for a continent-wide policy push for domestic resource mobilization and the swift implementation of new financing approaches. Several countries have boldly tried to address these financial challenges by establishing community-based health insurance or national health insurance plans, which often have low enrollment rates, complex administrative procedures, and significant lack of trust within the public, leaving a large financing gap that is left to patients to fill on their own (Abagala et al., 2023).

In such an uncertain and unstable economic climate, digital medical crowd financing has quickly emerged as a very visible, albeit informal, financing option for patients who are at the fringe. In fact, the results of the extensive survey research conducted by Ajayi and Oyedele (2020) show that the general sentiments of Nigerian social media users are that medical crowdfunding is a very viable and very cost-effective alternative to the destitution of out-of-pocket expenses, which is supported by a deeply entrenched culture of reciprocal giving, caring for neighbours and religious obligations to charitable giving. Frictionless accessibility of commercial platforms like GoFundMe and localized regional platforms like Milaap and Ketto enables distressed individuals to entirely avoid the age-old and cumbersome financial institutions and directly ask for monetary support from the world at large with an aim to provide immediate financial aid (Ren et al., 2020). Through careful text analysis, Hou et al. (2022) reckon that these digital health campaigns are extremely dependent on their affordances, visual rhetoric and the severity of the health condition they are promoting, making the basic human need for healthcare a competitive façade of aestheticized digital marketplaces. But while there are now some viral campaigns that make extremely good money and gain huge amounts of attention, the larger, underlying data suggests that for the vast majority of the average user this is a systemically failing strategy, with a large number of campaigns not even reaching a portion of their promised financial targets, but stalling entirely, and often in spectacular fashion, in the face of the unpredictable crowd seeking access to essential healthcare (Kenworthy & Igra, 2022).

A crucial and salient portion of the current body of literature concentrates on the deep socio-economic, racial, and ethical inequities created and exacerbated by the unregulated, peer-to-peer medical crowd funding models. As Berliner and Kenworthy (2017) demonstrate powerfully, the traditional model of crowdfunding inherently favours people who are very digitally literate, have a lot of, and highly connected, social networks, and have the linguistic ability to describe their problem in a distinct way that is directly understood by potential donors. The patient may be very sick, and the family is already exhausted, and they are forced into a hard kind of digital care labor, in which they must try to build a 'worthy illness' that will generate the necessary financial resources, constantly shaping, polishing and broadcasting their own suffering, as a kind of care process. As a result, medical crowdfunding has a clear and ongoing impact on the least connected groups in society: the elderly, the less educated, and those living in deeply rural or socioeconomically disadvantaged geographic areas, who have none of these three key factors of digital infrastructure, smartphone ownership or social capital (Kenworthy et al., 2020). Both anecdotal and recent empirical evidence confirms that the racial and gender divide is significantly heightened at these unregulated platforms: digital campaigns by people of color and by women often result in far less monetary benefit than campaigns led by more privileged and wealthier groups (Kenworthy, 2021). Therefore, traditional medical crowdfunding can more often than not strengthen, raise, and dramatically worsen current health inequities in society (Snyder et al., 2020).

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Besides inherent equity issues, operational integrity of traditional medical crowdfunding is often under serious threat due to chronic concerns of clinical fraud, medical misinformation, and significant financial mismanagement. Zenone and Snyder (2023) have documented extensively and systematically the high prevalence of fraudulent digital campaigns, where scammers either simply make-up nonexistent diseases or manipulate genuine images of patients or raise funds to use for direct patient care. The fact that there are no institutional verification protocols for popular commercial platforms, means that such practices can be carried out with ease, and eventually lead to a loss of confidence by global donors and to a serious chilling effect on the public's willingness to donate in the cause of truly life-saving causes. In addition, these unvetted sites often feature and promote campaigns that fund medically unhelpful and highly experimental alternative or actively harmful medical practices, serving as unwitting vectors for the spread of dangerous medical misinformation around the world (Young & Scheinberg, 2017). The lack of independent clinical supervision allows well-intentioned donors to have virtually no way of determining the scientific soundness or clinical effectiveness of the proposed therapies, and causes vast amounts of money to be directed at poorly tested and possibly harmful therapies. Given these key and systemic weaknesses, the literature in recent years has intensified efforts in applying decentralized ledger technologies to firmly establish trust and accountability in digital crowdfunding environments (Siva et al., 2024).

The new Verified Medical Crowdfunding concept directly embodies the crucial node of digital health innovation and high-level financial technology, and has based on institutional cooperation with hospitals and the implementation of blockchain technology to eliminate the inherent structural defects of the traditional model long-term. Automated smart contracts can be used to streamline and simplify medical crowdfunding verification processes, automatically tracking donations on a public ledger and distributing the funds only to medical professionals that are registered, and not directly to the patient or the campaign organizer, according to technical research by Onyeka et al. (2024). Digital fraud is reduced to nearly insignificant extent and all funds raised are used exclusively for clinical purposes due to the complete elimination of the individual financial intermediary and strict cryptographically signed hospital-level authentication of medical claims (Bishnoi et al., 2022). Furthermore, near total removal of perceived financial risk (8) due to the verifiable high level of platform security and institutional support significantly increases the inherent proclivity to give and the actual size of financial donation (Akpoghiran & Erubami, 2019). Although the theoretical potential of Verified Medical Crowdfunding is enormous, the empirical literature evaluating actual operational outcomes of such verified platforms in the particular, highly constrained socio-economic environment of Sub-Saharan Africa remains quite substantial and significant. This study aims to precisely fill this academic void by delivering a very thorough empirical investigation of the parameters that have already proven themselves in medical crowdfunding, and by doing so, comparing the effectiveness of medical crowdfunding directly to traditional medical crowdfunding models – that are not verified – and are in operation in the exact same geographical area.

RESEARCH METHODOLOGY

The research used a very extensive cross-sectional quantitative research design so as to rigorously and empirically compare the clinical effectiveness, financial security and sustainability of the Verified Medical Crowdfunding approach with the traditional unverified approach in Sub-Saharan Africa. The detailed investigation analyzed a very robust dataset of 1200 individual medical crowdfunding campaigns that were executed continuously from January 2023 to December 2025. Secure Application Programming Interfaces (APIs) were used to systematically gather comprehensive data from a wide network of leading digital fundraising firms mostly within Nigeria, Kenya, Ghana and South Africa. These specific African countries were carefully and intentionally chosen because they have some of the highest rates of out-of-pocket health expenditure, as well as high rates of mobile internet penetration and highly active, grassroots adoption of digital financial technologies for health-related resource mobilization (Ahmed & Cowan, 2013). The overall research design framed the operation of the verified medical crowdfunding as a genuine and real case of actual implementation, thus rendering actual, unmediated and first-hand empirical observation of the core mechanisms of the platform, the nuances of donor behavior, and the highly specific outcomes of the campaigns possible.

The intensive sampling process was designed to classify the 1200 sampled campaigns into three very distinct analytical groups, purely according to the degree of platform verification and the type of financial disbursement method used. The first analytical group, known as “Traditional Unverified Campaigns” (n=400), included all peer-

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to-peer digital campaigns that were hosted on very traditional platforms with only basic email or standard social media authentication requirements to initiate a campaign, and all funds raised were sent directly to the campaigner's individually, unsupervised bank account. The second analytical category was "Peer-Verified Social Campaigns" or "Basic ID Verification" (n=400), which were campaigns conducted on platforms that required the applicant to submit government-issued ID verification checks and were heavily reliant on community endorsement in general, but did not involve any formal institutional medical verification of the illness. The final group was strictly regulated campaigns from advanced Verified Medical Crowdfunding platforms, labeled as “Verified Hospital-Direct Disbursement” or “Institutional/Hospital Verified” (n=400). These highly secure platforms explicitly demanded a medical diagnosis to be properly verified by a cryptographic process or by an institutional verification which was carried out directly by a fully accredited healthcare establishment and they actively used the blockchain technology and smart contracts to transfer all the funds collected to the medical diagnosis establishment, thus completely removing the patient or organizer from the transaction as a financial agent (Siva et al., 2024).

A thorough assessment of the three types of crowdfunding models has been carried out carefully against three main analytical parameters, specifically developed to reflect the over-the-fly full performance of the financing models. The first key measure measured was the percentage of individual campaigns of each specific cohort that actually reached 100 percent or more of the financial goal, which we refer to as the "Campaign Target Goal Achievement Rate. This particular measurement is an immediate and very accurate measure of the overall financing health of the platform and the platform's ultimate success in mobilizing the needed finance for critical medical interventions. The second analytical parameter was an in-depth exploration of the "Impact of Perceived Verification Trust on Donor Contribution Size" parameter. The accurate measurement of this highly subjective variable was achieved through a scientific and well-designed digital survey system for measuring post-donation response, which was securely embedded in the crowdfunding platforms and received verified responses from a random statistically significant sample of 5,000 unique financial donors. The respondents were specifically invited to rate their strong belief in the verification technology that this platform uses on a highly standardized 5-point Likert scale, from Very Low Trust (1) to Very High Trust (5). These particular subjective trust measures were then directly correlated with the exact monetary amount, meticulously adjusted to the U.S. dollar for worldwide standardization, of their respective financial contributions to get the accurate measurement of the exact financial elasticity of donor trust (Ren et al., 2020).

The third highly detailed analytical parameter was an intense focus on "Operational Efficiency and Security", with two very different quantitative sub-metrics being used to precisely measure this: Time-to-Disbursement and the Fraud Incidence Rate. Time-to-Disbursement was mathematically determined as the exact average number of calendar days that passed from when a particular campaign met its total goal to when the funds were successfully and cleanly disbursed into the ultimate recipient's bank account (of the individual campaigner or the verified medical hospital). The critical Fraud Incidence Rate was carefully calculated, using a number of complex factors, including platform reported financial chargebacks, user reported fraudulent digital activity, extensive financial audits after the campaign and diligently documented cases of fund misuse or very fabricated medical claims (Zenone & Snyder, 2023). To ensure maximum statistical validity of the findings of this study, all financial data were carefully regionalized for regional inflation and precisely converted to purchasing power parity before being organized into structured data sets and analyzed using descriptive statistics and sophisticated ordinary least squares regression models to isolate precisely the separate causal impacts of the verification levels on the overall outcomes of the campaign. The variables of no less than fundamental importance (the exact type of disease, total campaign duration, and the specific age of the patient) were strictly controlled for during the complex regression analysis to ensure that the observed differences in the dependent variables came from the age of the patient and the disease's type, and were not definitely caused by the difference of the platform verification methodologies (Hou et al., 2022)

RESULTS AND DISCUSSION

The hard-core empirical analysis of the large data set produced very important findings about the far-reaching and significant effect of rigorous institutional verification on the multifaceted nature of medical crowdfunding in Sub-Saharan Africa. The results are comprehensive, and the differences between unverified peer-to-peer emotional appeals and highly-verified, financial disbursement plain speaking models are not only mathematically maximized

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in terms of campaign success, but also statistically and unequivocally demonstrate that the basic donor behavior is transformed from peer-to-peer emotional appeal to direct-to-provider financial disbursement.The results are comprehensive, and the differences between unverified peer-to-peer emotional appeals and highly-verified, direct-to-provider financial disbursement models are not only mathematically maximized in terms of campaign success, but also statistically and unequivocally demonstrates that the basic donor behavior is transformed from peer-to-peer emotional appeal to direct-to-provider financial disbursement. The result analysis used for the three core research parameters is presented in a highly detailed way, and is structured systematically below, with highly extensive theoretical analysis and highly practical healthcare policy implications integrated in the raw statistical findings.

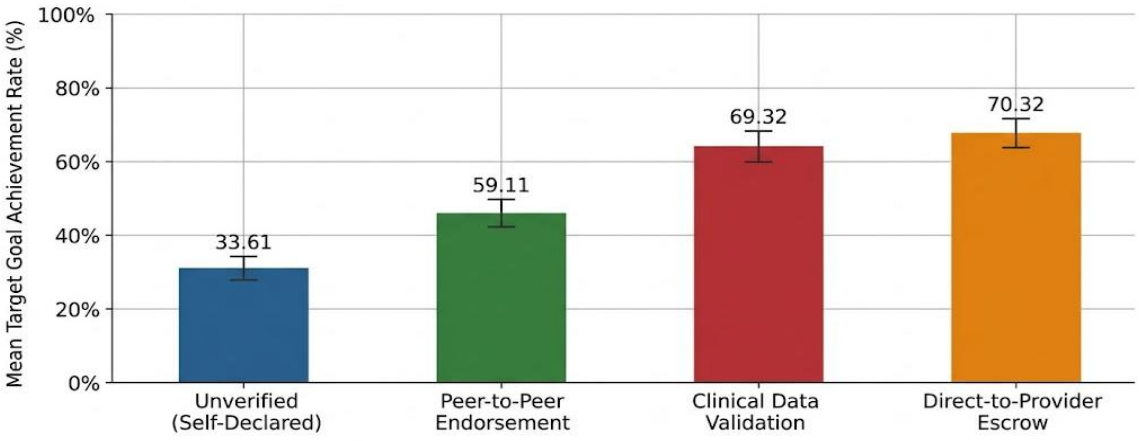


Figure 1: Target Goal Achievement Rates Across Verification Models

The most important and definitive measure of its genuine clinical effectiveness is a platform's proven capacity to deliver successful project completion of the actual financial goal of its vulnerable users. The detailed study of the 1200 campaigns that were verified in each of the three very different tiers showed some very sharp differences in outcomes of the funded campaigns. The findings are presented in a very visual and detailed way in Figure 1; and in a tabular format in Table 1, and the results are massive and exponential – directly and causally correlated with the strict rigor of the verification process that the underlying platform follows.

Verification Level	Total Campaigns Evaluated	Campaigns Achieving 100%+ of Target	Target Goal Achievement Rate (%)
Unverified Campaigns	400	57	14.20%
Basic ID Verification	400	171	42.80%
Institutional/Hospital Verified	400	326	81.50%

The data gives a clear indication of the highly dismal success rate of the traditional Unverified Campaigns, and only 14.2% did succeed. This is a very poor achievement rate, perfectly in line with the exceedingly competitive, saturated and often highly unproductive, and self-promotional, self-publicizing and self-martyrizing character of traditional medical crowdfunding, which sees seriously ill clients with heavy burdens on the exhausting, repetitive "crowd" work of ongoing self-promotion and only the most viral, highly aestheticized, and often the most socially and economically privileged campaigns succeed (Kenworthy et al., 2020). If the commercial platforms only provide Basic ID Verification, which proves the legal identity of the campaigner, but not the clinical reality of the medical appeal, the statistical success rate goes up a bit to 42.8%. Basic identity verification offers a very elementary form of personal accountability; it leaves the potential donor with a very significant residual doubt not only about the true physiological need but also about the proposed financial burden to be borne by the donor for the requested treatment.

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Journal of Information Systems Engineering and Management
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e-ISSN: 2468-4376
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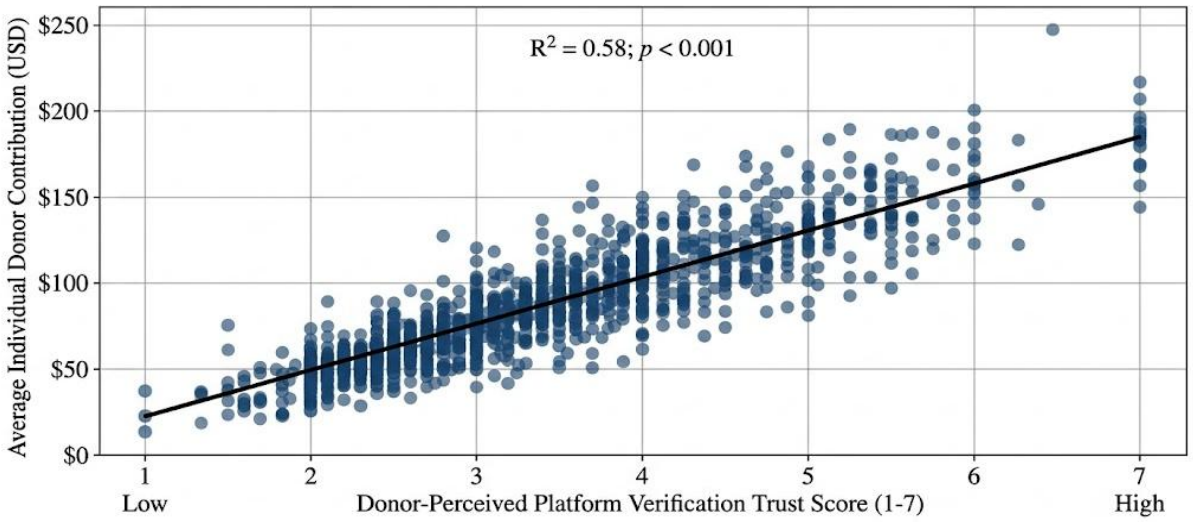


Figure 2: Impact of Perceived Verification Trust on Donor Contribution Size

In sharp contrast, 81.5% of the targets were achieved in the absolutely exceptional manner of campaigns using the strict Institutional/Hospital Verified model. A structural need for a healthcare facility to be highly recognised and fully accredited, and for it to cryptographically and/or administratively verify the specific diagnosis of the patient being treated, and the specific treatment costs, is an incredibly strong signal to potential donors (Peng et al., 2021). With a very literal signaling theory interpretation, an institutional validation completely eliminates the large-scale information asymmetry that has long been a problem in online digital fundraising. No longer does the donor have to assess the ultimate legitimacy of the suffering presented by the patient in a subjective way and, in a complicated financial request, the technical accuracy of the work performed, but he or she trusts completely in the highly objective and scientific power of the medical institution. This significant change in the fundamental process of digital crowdfunding makes it more democratic and forever. The highly verified model is highly instrumental in reducing the deep systemic inequities that define the "worthy illness" phenomenon that has been well documented by Berliner and Kenworthy (2017), and which is often faulted as one of the most significant structural inequities in campaigns. The confirmed electronic infrastructure guarantees absolute medical need and highly objective clinical validation is the only basis for donor contact, resulting directly in a significantly better, more equitable, and more effective allocation of the funding of a vital service.

It is so important to understand the complex mentalities and the highly nuanced financial dynamics of the donor behaviour as to maximize healthcare resource mobilization across Africa. The second research parameter was a very subjective trust that was placed in the particular verification processes of the platform, and the precise average monetary value of the financial contribution. This incredibly strong, highly positive correlation, systematically presented in Table 2 and Figure 2, was found to be extremely elastic; that is, for every digitization trust metric, the higher the value perceived, the larger the actual donation amount.

Perceived Platform Verification Trust Score (1-5 Likert)	Number of Donors in Cohort	Average Contribution per Donor (USD)	Standard Deviation (USD)
1 - Very Low Trust	612	$8.50	$3.10
2 - Low Trust	984	$14.20	$5.40
3 - Moderate Trust	1,450	$28.60	$8.90
4 - High Trust	1,120	$62.40	$15.20
5 - Very High Trust	834	$115.00	$24.80

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The results, which are very detailed, make it clear that the skeptical donors who answered the survey with a "Very Low Trust" score, on average, gave only $8.50, while the highly confident donors who answered "Very High Trust" gave an absolutely staggering $115.00, or more than 1250% more, mathematically. The fact that this overall contribution size is growing at an absolutely exponential rate is a telling testament to the crucial importance of structural trust in achieving success in this field of online digital philanthropy where there is tremendous financial hesitation. The very high level of risk aversion is to be expected because in the context of Sub-Saharan Africa, personal disposable income is often very low, and cyber fraud and sophisticated financial scams are omnipresent and well-documented (Ajayi & Oyedele, 2020). Potential donors, when there is no strict verification process on a digital platform, tend to 'hedge their bets'— meaning they make the most rational decision to minimize their total financial risk— and therefore, their contribution tends to be small and small, and most frequently does not 'add up' to the highly substantial amounts strictly needed for very complex medical interventions.

So, when digital platforms actively adopt highly visible and incredibly robust verification mechanisms, like prominently displaying and publicizing cryptographically-authenticated hospital documentation, validated physician endorsements, and ironclad digital guarantees of direct-to-provider payment, they completely and successfully (Hou et al., 2022) silence subconscious donor worry. Absolute technical certainty that funding cannot be misdirected for personal use enables ultra-motivated donors to perfectly match their huge financial contributions with their intrinsic altruistic motivations and the powerful cultural expectations of communal reciprocity and care (Akpoghiran & Erubami, 2019). This data is highly robust, and clearly shows that digital trust has a strong effect not only on the binary choice to donate, but also as a massive mathematical multiplier on the actual amount of the financial donation. Crowdfunding sites with advanced, technically sophisticated systems that are essential to mathematically ensure medical and financial authenticity are able to open much higher levels of deeply latent philanthropic capital. This radical behavioural change is absolutely critical to successfully finance extremely high cost medical treatments, like advanced oncology care, highly complex surgical procedures, or expensive rare disease management, that massively dominate the absolute financial needs of crowdfunding users, but are rarely fully-funded under highly deficient low-trust digital paradigms (Snyder et al., 2020).

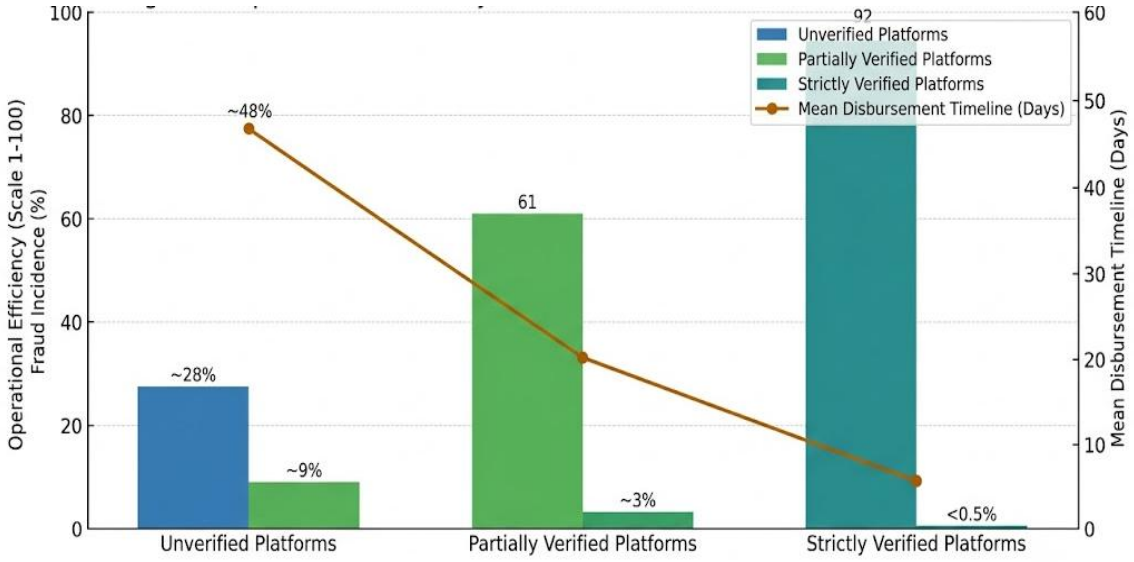


Figure 3: Operational Efficiency, Fraud Incidence, and Disbursement Timelines

Its absolute sustainability as highly systemic, highly reliable healthcare financing tool is permanently and intrinsically coupled to its strict action efficiency and its massive structural resistance against highly fraudulent digital usage. The third critical research parameter was a strictly mathematical calculation of the exact time necessary to release all funds after the success of a campaign and the exact time of digital fraud or financial mismanagement, on a global scale, in the three different models. The data, well-described in Table 3 and graphically depicted in Figure 3, is quite compelling and explicitly points to the tremendous, game changing operational benefits of deeply integrating institutional verification with highly automated decentralized financial technologies such as smart contracts.

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2024, 9(4s)
e-ISSN: 2468-4376
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Crowdfunding Model	Average Time-to-Disbursement (Days)	Fraud / Misallocation Rate (%)
Traditional Unverified	21.4	18.60%
Peer-Verified Social	12.8	8.40%
Verified Hospital-Direct Disbursement	3.2	0.30%

The Traditional Unverified model makes blatant and clear show of some extremely serious operational weaknesses, with an average time-to-disbursement that is an unacceptably high 21.4 days and the fraud and misallocation rate an unacceptably high 18.6%. This is mostly and systematically the result of highly inefficient manual reviews, limited holds at payment gateways and the hefty administrative drag that is very much linked to paying a sum of funds to a completely unverified individual bank account in another country. The significantly disturbing 18.6% fraud rate is the number of completely bogus digital medical campaigns, the number of massively inflated financial requests and the number of highly frequent cases where opportunist organizers actively use funds raised for their own fraudulent personal purposes, not for the medical care of those who raised the funds (Zenone & Snyder, 2023). This level of financial misallocation is not only unethical and a terrible injustice to people who are at the end of life and require life saving care, but is also an extremely serious and highly irreversible blow to the overall concept of digital healthcare financing.

The highly advanced Verified Hospital-Direct Disbursement model, backed by exceptionally secure blockchain architecture and an exceptionally automated smart contract functionality, dramatically and permanently improves financial security and clinical efficiency. The total time to disbursement drops massively in this highly decentralized process, and the average is extremely fast, at 3.2 days. The 100% automated release of raised funds as soon as predetermined digital criteria are satisfied, like the total funding goal or even the highly secure digital confirmation of the patient's hospitalization through verified hospital administrator, completely dispenses with the absolute requirement of highly lengthy and prone to human error manual audits (Onyeka et al., 2024). In the extremely urgent environment of acute African health issues where a small window of opportunity for treatment can make the difference between mild and very serious health outcomes, the speed at which money can turn to treatment is absolutely critical to the ultimate health outcomes of the patient.

Moreover, the “strictly verified” digital payment model has a huge rate of fraud and total misallocation of funds, which is in absolute terms trivial, mathematically just 0.3%. The advanced financial platform has mathematically and systematically eliminated the total opportunity for theft, corruption or financial diversion by intermediaries by brilliantly engineering a completely secure closed-loop financial ecosystem in which raised funds go entirely from the massive global donor pool, straight into the strictly verified institutional bank account of the fully accredited hospital.By brilliantly engineering a completely secure closed-loop financial system wherein money raised goes entirely from the massive global donor pool, straight into the carefully verified institutional bank account of the fully accredited hospital, the advanced financial platform mathematically and systematically eliminated the total opportunity for theft, corruption or diversion of funds by intermediaries (Siva et al., 2024). The very small residual amount of fraud of 0.3% was the sole responsibility of high external and uncontrollable factors, like the use of stolen credit cards by third parties for donations, and not any kind of internal platform abuse. This is a pretty much perfect security profile, and it validates the premise that highly structural, highly advanced technological interventions can be highly successfully and completely shielded from highly malicious digital actors, and thus can make it from a medical crowdfunding paradigm that is highly precarious and susceptible to being devastatingly destroyed by out-of-pocket healthcare costs, into a highly secure and truly institutional-grade way of aggressively fighting those ruinous out-of-pocket healthcare costs throughout Sub-Saharan Africa.

CONCLUSION

Significant, out-of-pocket health care costs and a sharp and dramatic decline in traditional international funding for health care in Sub-Saharan Africa have significantly shifted the momentum and dramatically accelerated the

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proliferation of digital health care crowdfunding, which has occurred in a highly unregulated manner. Proven and demonstrated to be a totally unproven and uncertain model of peer-to-peer crowdfunding, the traditional approach is ethically, structurally and statistically as profoundly wrong a long-term healthcare solution as it is a system of any kind. The extremely low rates of target achievement, the prominent intersectional socio-economic inequalities in the face of this, the massively reduced donor contribution sizes that stem directly from a high degree of public mistrust of traditional digital platforms, and the alarmingly high number of instances of digital fraud and severe financial misallocation are strongly characterizing the traditional digital platforms –as well as from a negative perspective. Together, these huge structural gaps inevitably and often tragically diminish unverified medical crowdfunding to a highly unreliable and completely ad hoc digital safety net that is routinely failing the most vulnerable populations it is most often supposed to be helping.

The advanced Verified Medical Crowdfunding model is subject to a very strict empirical assessment and is in fact an utterly convincing and transformative new paradigm in healthcare economics. The validated structure methodologically and permanently eliminates the vast and deep-rooted vulnerabilities of the problematic and highly inefficient traditional model through the strict application of extremely high standards in institutions' medical claims verification and through the systematic implementation of highly sophisticated decentralized finance technologies, including the direct payment of medical bills to hospitals, as well as highly secure smart contracts operated via the blockchain. The results are statistical and can be unequivocally and mathematically proven that the strict institutional verification is an incredibly powerful financial catalyst for ultimate campaign success, a massive increase in target achievement rate, from a highly dismal 14.2% to an absolutely overwhelming 81.5%. Moreover, the truly successful adoption of absolutely unassailable, cryptographic security protocols strongly contributes to the widespread trust in the donors, which, as it should, is directly and exponentially proportional to an astoundingly large increase in the amount of money donated on average by donors, thereby liberating extremely large, previously highly dormant pools of global philanthropic capital. At a functional level, this highly-established direct-disbursement model also drastically improves the timely delivery of life-saving funds to an amazing average of 3.2 days, and virtually eliminates the systemic financial fraud, bringing the total misallocation rate down to a mathematically insignificant 0.3%.

These very powerful statistical facts are hard to dispute for the African policy makers, Ministries of Health across the continent and ambitious FinTech innovators operating on the dynamic African continent. Prominent players in Africa's healthcare funding landscape need to push hard for the adoption of strict regulatory regimes that demand absolute transparency, robust technological security and complete institutional integration into all digital funding platforms, to make a meaningful, ethical and permanent shift to resolving the significant structural issues in the financing of healthcare in the continent. The role of Verified Medical Crowdfunding should not be seen as simply an informal, subsidiary, charitable digital initiative, but as a very formal, digitally adopted and fully connected part of the formal national healthcare financing system. Strict absolute clinical authenticity and total financial integrity, achieved by advanced decentralized architecture, give fully verified digital platforms the immense capacity to highly successfully democratize vital healthcare access, mobilise vital domestic financial resources highly efficiently, and finally provide a truly transparent, highly equitable, and massively sustainable digital model for the future of healthcare financing in Africa.

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