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An Equity-based Model of Vandalism in Information and Communication for Development Tele-Centre's: Reflections from the Siyakhula Living Laboratory, Dwesa-Cwebe, South Africa

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Abstract

This study looks at tele-center related vandalism from an equity-based lens. It is noticed that these uncivil acts are common occurrences in information and communication for development (ICT4D) related tele-centers around the globe. Paradoxically, there is very little investigation on the issue. Here an equity-based model of vandalism proposed by Fisher & Baron is used to investigate incidences of vandalism and theft in a rural based ICT4D initiative known as the Siyakhula Living Lab (SLL). The model provides explanation value for the empirical investigation. The study employs a qualitative abductive reasoning approach to gain insight from stakeholders of the ICT4D initiative. For this study four stakeholders of the ICT4D initiative are interviewed, with the help of a semi-structured interview guide. Their responses are thematically analyzed and as a result a narrative emerges about the relationship between inequity and vandalism in the SLL context. The findings reveal that noticed occurrences of vandalism to publicly installed ICT infrastructure as well as a theft incident to an SLL established tele-center, were highly likely as a result of perceived inequity by certain groups in the surrounding communities. It is revealed that due to their existing low level of control at the time of the study, these groups felt compelled to resort to vandalism and theft in order to address the perceived inequity. It is concluded that inequity can indeed spur acts of vandalism especially for groups that perceive themselves as disenfranchised and powerless.

Keywords: Vandalism, equity, control, tele-center, indigenes, ICT4D

Introduction

Tele-center lab introductions in rural settings is a common form of information and communication for development (ICT4D) measure, aimed at providing

access points for rural dwellers to acquire knowledge aimed at expanding their capabilities. At start-up, substantial resources are disbursed by project sponsors to secure and set-up related infrastructure and equipment required to make the tele-centers fully operational. Often times spent resources are donated, and as such there is no expectation for re-imbursement. Given this scenario, one would expect that indigenes who these centers have been set-up for would be appreciative of the opportunity provided – and as a result deem such infrastructural set-ups as community assets – that need to be guarded (Myeni, 2018). This expectation often times does not match outcomes that unfold with respect to the perceived value accorded to the tele-centers by community residents. Quite commonly, after brief periods of operation, tele-center equipment and infrastructure become susceptible to theft and vandalism by indigenes. More often than not, where vandal or theft attempts are successful the tele-centers are left derelict and un-usable. Where such occurrences become habitual, sponsors will eventually get de-motivated, perhaps demoralized and as a consequence abandon such projects.

Numerous studies view vandalism as a recurring problem that tele-centers have to deal with. Authors such as Pade-Khene, Palmer & Kavhai (2010); Pade-Khene (2012); Sieborger (2017) & Myeni (2018), provide indication that it indeed exists. It is therefore surprising that there are no studies proposing conceptual or theoretical lenses through which this unfavorable tele-center related setback can be addressed. Perhaps studies proposing such lenses will ignite discourse on the subject – and consequently, over time theories for investigating the subject will be embraced. Noting this important, yet neglected subject – this manuscript is aimed at discussing an equity-based model of vandalism in ICT4D projects. Equity refers to social justice or fairness, and it is primarily a concept entrenched in the principles of distributive justice (Braveman & Gruskin, 2003).

The manuscript will begin by providing referenced accounts of project stakeholder views on vandalism of tele-center infrastructure. Subsequently, an equity-based model of tele-center vandalism will be proposed. Following this, a summary of the Siyakhula Living Lab (SLL) (*a project aimed at enabling rural communities with tele-center infrastructure*) is provided. Next, the research methodology employed to reflect on the model's applicability in a real-life rural context is discussed. This is followed by a case study of the applicability of the equity-based model of vandalism to the specific context of the SLL. The study will be guided by the following research questions:

- What are project stakeholder views on vandalism of tele-center infrastructure in the Siyakhula living lab?
- How can vandalism incidences in the Siyakhula living lab be explained through an equity-based model of vandalism?

A brief review

This section consists of, i) anecdotal accounts of tele-center related vandalism, ii) an elaborate review of an equity-based view of vandalism, iii) a case study

summary that justifies the empirical site this study focuses on and iv) the methods and materials employed to conduct the study.

Project stakeholder views on tele-center vandalism

Stakeholders of tele-center projects may include, but are not limited to – project funders, researchers, community recipients of interventions, project implementers and government entities (Osah, 2012). These stakeholders come together with intention to address socio-economic disparity through the introduction of telecommunication infrastructure aimed at providing opportunity for the empowerment of indigenes (*through information provision*) (Osah, 2012; Myeni, 2018). With several ICT4D projects of like characteristics implemented over the years, there have emerged numerous anecdotal accounts and views of stakeholders on vandalism of tele-center project infrastructure. Bailey (2009) while conducting an assessment of issues affecting the social sustainability of tele-centers in developing contexts provides narratives of community recipients of a tele-center initiative in Jamaica. It is stressed that whereas community cohesion serves as a deterrent to tele-center vandalism, such cohesion does not always aid in circumventing sabotage in every instance.

A second anecdote of vandalism is observed in a study focused on an assessment of factors that result in unsuccessful deployment of ICT platforms in rural areas. Here, Foko, Thulare, Legare & Maremi (2017) observe that when ICT infrastructure is not maintained it may lead to vandalism of related equipment, perhaps stemming from a perception by the vandals that such equipment is not valued. In a needs assessment of two rural communities conducted by Pade-Khene (2012) it is revealed by community members that one inhibitor of educational research in rural schools is the vandalization of required infrastructure that may support such research.

Tele-centers often times opt to make use of rural schools as their sites – due to the fact that i) schools represent centralized access points for the community, (ii) they provide the best teaching structures in marginalized areas and (iii) they are usually the first areas to be connected to the national electricity grid in such areas (Osah, 2012). Pointedly, if the most appropriate sites for tele-center initiatives (*rural schools*) are vulnerable to vandal attacks, this is a major problem. Sieborger (2017) makes reference to vandalized telecommunication infrastructure (*land-line telephones*) in the Mbashe municipality of the Eastern Cape of South Africa. Notably, if these lines were present, they could have possibly supported several tele-center connection initiatives that were being planned for in the area. Instead, contingency arrangements had to be made for the use of wireless technologies (Sieborger, 2017) – thus increasing project expenditure. Pade-Khene *et al.* (2010) makes reference to the ‘*tall poppy*’ syndrome thought to be common in poor rural communities where there is little or no development activity. With this syndrome, sections of such communities that appear to prosper more than other sections may evoke feelings of envy that often results in jealousy that may

inspire punitive action by residents of the less prosperous sections (Pade-Khene *et al.*, 2010).

This last point is particularly relevant to the focus of discussion in this manuscript. Keeping in mind that the study seeks to explain vandalism through an equity-based lens, it may help to show the connection between inequity and jealousy – that may potentially fuel punitive actions (*by those thought to be victims of inequity*). According to Yu & Wang (2017) when inequality is perceived to be overwhelmingly glaring, it is highly likely that actors of the perceived injustice (*victims of inequality*) will display acts of jealousy (*which may fuel destructive behavior*). As this relates to tele-center projects, Pade-Khene *et al.* (2010) indicates that indigenes who are selected for ICT related skill development exercises (*aimed at improving their lives*) may provoke jealousy and destructive reactions. This concept may also apply to the tele-centers on a broader scale, where sections of communities where it is decided that tele-center infrastructure should be situated, are viewed as beneficiaries of inequity – who may arouse jealous reactions which may lead to sabotage of situated ICT infrastructure. In fact, many development projects fail for this reason (Pade-Khene *et al.*, 2010). This observed chain of reactions makes it imperative to understand vandalism of tele-center infrastructure from an equity-based lens.

An equity-based view of tele-center vandalism

On a few occasions, vandalism may be viewed as a random act, but for the most part vandalism is an act with associated meaning for both the assailant and community at large (Fisher & Baron, 1982). From the vandals vantage point, vandalism is often a meaningful response to what may be considered to be unfair conditions (Fisher & Baron, 1982). Simply put, vandalism may be perpetuated as a response to perceived inequity. The action often carries a dual message of retaliation and a call for justice. This is not to suggest that vandalism is only spurred by acts of inequity. However, what is being implied is that an equity model covers a broader array of vandalistic incidents and provides more explanatory coherence than any other theories on the subject (Fisher & Baron, 1982).

The underlying motive here for vandalism is a re-establishment of equity. Equity refers to social justice or fairness, and it is primarily a concept entrenched in the principles of distributive justice (Braveman & Gruskin, 2003). This motive however is moderated by primary and secondary variables, which dictate how inequity will be coped with and consequently the possible extent of vandalism. It is imperative to further explain the contributions made by the primary and secondary variables in moderating how inequity will be coped with.

The primary variable relates to the level of perceived control that an individual or group believes that they possess to restore equity (Allen & Greenberger, 1980; Wolff, 2010). In this wise, perceived control may either be – high, moderately low or extremely low (Allen & Greenberger, 1980).

Perceived control here refers to efficacy possessed by a person or group that they can effectively modify arrangements and their consequent outcomes related to inequity – thus creating the inherent belief that they can influence how equity will be restored (Fisher & Baron, 1982). This definition when reflected upon with reference made to the continuum of perceived control (*high, moderately low or extremely low*), provides logical elucidations of how vandalism may occur – more so as a coping mechanism to experienced inequity (Little & McGivern, 2014). With inequity occurrences, where there is perceived high control, an individual or group is more likely to resort to more tactful (*constructive*) strategies for dealing with the experienced inequity. Tactful is often associated with more cost-intensive (*in the sense of delayed manifestations*) means of addressing inequity (Fisher & Baron, 1982).

For instance, a person or group may engage in rigorous studies aimed at legally dealing with inequity, or initiating constructive dialog (*with the identified perpetrators of inequity*) over a lengthy period of time. The challenge here though is that acquiring capacity to undertake these actions is resource intensive (*e.g. time and financial wise*). Case in point – if a person needed to become proficient in strategies aimed at legally navigating inequity, he/she must invest in study-time and perhaps financially as well (*for study material and formalized training*). Given this synopsis, it is evident that whereas considered to be the more desired control measure, high control is not always easy to acquire (*especially for disadvantaged areas where tele-centers are typically situated*) (Kapondera & Namusanya, 2017).

Dealing with high levels of inequity but with a moderately low level of perceived control, will evoke some level of vandalism. In this instance, individuals or groups conclude that they are being unfairly treated and that either because of structural constraints which impede more tactical actions on their part or for personal reasons – they believe that their best recourse is some form of vandalism (Fisher & Baron, 1982). With this scenario, the mindset is to restore equity with the most immediate and relatively inexpensive approach (Cohen, 1973). This is what Fisher & Baron term to be acquisitive/ideological vandalism. They believe that this form of vandalism will likely trigger some form of equity restoration by the parties responsible for inequity.

Then along the continuum of low control, a person or group may resort to more vindictive or malicious forms of vandalism where their control is perceived to be so low that it influences emotions of anger that results in pursuit of revenge (Cohen, 1973). Characteristically, vindictive forms of vandalism tend to occur when the potential vandals hope to get some psychological respite (*that the vandals believe will be achieved through revenge*) (Walster, Bersche & Walster, 1973). Note that the aim here is not equity restoration, but more psychological satisfaction attained through the perception that society is being paid back for the way it has treated them (Fisher & Baron, 1982). Such extreme levels of vandalistic actions will likely evoke negative reactions (*emotions of anger*) from the parties thought to be

responsible for inequity (IBID). Essentially, such reactions may jeopardize any potential for equity restoration (*resulting in antagonism by both actor groups*).

Lastly, with respect to the primary moderating variables, where control is perceived to be extremely low, victims of inequity may degenerate to states of apathy and helplessness (Fisher & Baron, 1982; Zur, 1995). Where this happens, parties thought to be responsible for inequity may in-fact be unaware of the perceived injustice felt by the victims of inequity. On the flip side, the responsible entities may be aware but decide not to take any action where they view the victims as content with the status quo or where they view them as harmless.

In addition to the primary moderators, there also exist secondary moderating variables, which may affect how vandalism occurs as well as its intensity. One particularly important secondary moderating variable is the extent of re-enforcement or physical protection provided at the facility that is a target of vandalism (Geason & Wilson, 1990). Physical re-enforcements may act as a deterrent to vandal attacks – however, they may also challenge potential vandals to resort to more destructive actions (Fisher & Baron, 1982). For instance, where the vandals conclude that they cannot gain access to the target facility, they may decide to resort to arson. Essentially, the extent of physical protection will either dissuade or further provoke would be vandals (Allen & Greenberger, 1980). As part of physical re-enforcement, where there is surveillance in place a facility is less likely to be a target (Isnard, 2001).

Still related to secondary moderating variables, the extent to which a facility is considered to be well maintained may influence whether or not an act of vandalism will occur (Foko *et al.*, 2017). According to Fisher & Baron (1982) dilapidated facilities are often times targets for more vindictive and malicious vandalism incidents due to the fact that the assailants are less apprehensive, bearing in mind that the state of the facility creates a perception that there is little to no concern for the target (*and as such less fear of repercussion*) (Perkins, Florin, Rich, Wandersman & Chavis, 1990).

Secondary moderating variables may also include what Fisher and Baron refer to as group variables. Group variables may be distinguished as one of two types – i) *group consisting of host community of the facility or infrastructure targeted* and ii) *the vandal group* (Geason & Wilson, 1990; Perkins *et al.*, 1990). With respect to the community group, research suggests that groups that are cohesive, possess a sense of community and are passionate about taking responsibility for their community are less likely to be vandalized than community groups that do not possess these qualities (Perkins *et al.*, 1990). Therefore, even in instances of perceived low levels of control by would be vandals – where they recognize that a community or group is cohesive, they are highly likely to think twice about possible repercussions of their potential deviant act. Vandals though feel more enabled where they perceive that there are more people (*a group*) that share the same sentiments of their characteristically immoral nature (Fisher & Baron, 1982).

In the absence of such a group, they are less likely to carry out their plans. This is in line with assertion by Hochbaum (1954), that social groups form very strong referent points, which consequently increases the confidence levels of particular members – who are emboldened by the fact that other members share in their social reality. Here the social reality of a perceived low level of control by the group, as well as the enablement that comes through the belief that there is strength in numbers, may prompt would be vandals to carry out their planned acts. Furthermore, the feeling of de-individualization that group actions support, provides a perception that anonymity can be achieved (Fisher & Baron, 1982). Juxtaposed with a potential vandal act to be carried out by an individual – one may conclude that with the latter scenario there is more likelihood to expose identity as well as determine responsibility. Such responsibility cannot easily be determined where the assailants constitute a large group (Fisher & Baron, 1982). Figure 1 below depicts a temporal flow of events in an equity-based model of vandalism.

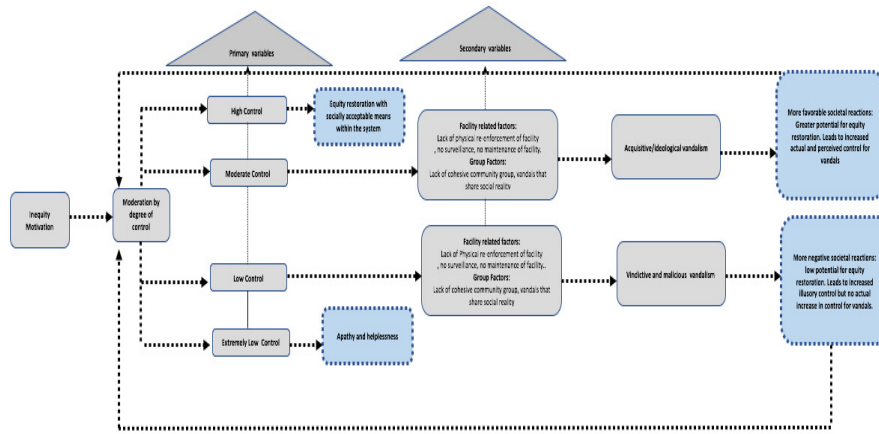


Figure 1: Temporal flow of events in an equity based model of vandalism (adapted from (Fisher & Baron, 1982)

The background provided on equity’s role in vandalistic acts supports investigation (*by acting as a framework*) of recurrent tele-center vandalism in the Dwesa-Cwebe region of the Eastern Cape of South Africa (Collins & Stockton, 2018). An abductive reasoning approach enables explanation of tele-center vandalism from project implementers perspectives as well as views from indigent community champions. Employment of this equity-based framework as a reference tool, will aid in providing a probable explanation of experienced vandalism incidents of tele-center setups executed by the SLL initiative in the Dwesa-Cwebe region.

Tele-center vandalism – A case of the Siyakhula living lab

The Siyakhula Living Lab was established in 2005 as a joint venture between the Telkom Centers of Excellence in the Computer Science departments at the University of Fort Hare and Rhodes University (Osah, 2012). The primary objective of the *living lab* was to develop and test a distributed, multi-purpose community communication platform that would serve indigent and semi-impooverished communities in South Africa (Pade-Khene *et al.*, 2010). ‘*Siyakhula*’ is a Xhosa word, which when translated to English means ‘*we are growing*’ (Pade-Khene, Mallinson & Sewry, 2008). This name was deliberately selected to reflect the ambition to achieve growth in innovation as well as remain sustainable within the communities of focus. The project initiators intentionally selected the Dwesa-Cwebe region of the Eastern Cape of South Africa to implement a proof of concept of the project’s aspiration – with intention to scale the concept to other parts of South Africa at a later period.

Specifically, the Mbashe municipality located in the Dwesa-Cwebe region was strongly considered due to the noticed developmental challenges it was thought to be beleaguered by. These challenges included bad transportation infrastructure, limited access to government services, high unemployment rates, poor education and health care facilities and high levels of migration (Osah, 2012). It was thought that the limited opportunity within the area to generate requisite knowledge and experience (Pade-Khene & Sewry, 2012), needed to address identified challenges – further exacerbated the state of affairs. However, notwithstanding these negatives, potential the area possessed to become a lucrative tourist hub – due to its unspoiled natural scenic beauty – was also taken note of (Osah, 2012).

To facilitate community indigene participation in the project, the SLL’s initiators committed to strategically enable the set-up of tele-centers in certain communities within the Mbashe municipality. At the height of the project, sixteen schools were selected as points of presence (*representing the projects presence in the area as evidenced through set-up tele-centers*) (Osah, 2012; Pade-Khene & Sewry, 2012). Notably, for a number of reasons majority of these points of presence never became operational. Chief amongst reasons was the non-availability of ICT equipment (*computers*) at these sites. It was intended that each community where points of presence were to be hosted would make arrangements for their computers, while the project would provide the necessary network infrastructure to access the internet. This was the decided strategy to ensure that the project would spread to as many communities in the region – notwithstanding its incapacity to provide computers to all communities selected as points of presence. Whereas intent on adhering to this approach to tele-center set-up (*for selected villages*), concessions were made for a few point-of-presence localities.

Particularly, two points of presence geographically situated at high points of sight, and as such selected to host the worldwide interoperability microwave access (WI-MAX) (*that provided internet services to all the surrounding communities*), were further incentivized with provided computers by the

project. This was done to ensure that they would not feel left out. The line of reasoning here was that notwithstanding the potential incapacities of the specific communities hosting the WI-MAX infrastructure to provide computers for themselves, tele-centers had to be present in their communities. It was anticipated that it would have been frowned upon by indigenes of the two communities hosting the WI-MAX technology – if they were expected to host the internet enabling infrastructure for the entire Mbashe municipality and not have tele-centers established in their specific communities. For that reason, the project decided to provide them with computers.

Due to resource constraints on the part of the project and the community, only six of the sixteen points of presence ever commenced operation (Osah, 2012). This sort of outcome may be interpreted negatively by observant indigenes in a region. For instance, communities (*villages*) in the Mbashe municipality that were not selected to host points of presence, or those which whereas selected – could not commence operation due to the inability to secure computers – would become upset and perhaps envious of those that were. Pade-Khene *et al.*, (2010) likens this to the ‘*tall poppy*’ syndrome common in rural communities that are characterized by little or no development. In these communities, strata perceived to be more prosperous may be viewed unpleasantly. In this instance, specific communities where SLL points of presence became operational (*six communities*), would risk the likelihood of being perceived as being favored over others. Allegedly connected, were the heightened occurrences of vandalism of ICT infrastructure in the area. At the time of the researcher’s involvement with the project it was strongly believed by SLL tele-center champions and some other key project stakeholders that the perpetrators of the experienced vandalism incidents were from other neighboring communities. Reflecting on this suggestion with reference made to the equity-based view of vandalism, it is considered that perhaps the mischief related incidents were carried out as a result of perceived inequity by the perpetrators (*possibly due to the fact that their specific villages were not selected by the project, or even if selected did not have resources to secure ICT equipment to host points of presence*). Given this scenario, an abductive reasoning approach is employed to discuss the findings of this reflection.

Methods and materials

Empirical investigation for this study is achieved through qualitative abductive reasoning. This reasoning propagates the view that with the observance of findings deemed to be factual, inference to the best explanation should be made for such findings (Arrighi & Ferrario, 2008; Awuzie & McDermott, 2017). Here, noted acts of vandalism to SLL related ICT infrastructure are articulately narrated through inference to the best possible explanation. This explanation is underpinned by the equity based model of vandalism proposed by Fisher & Baron (1982). With abduction, a logical connection is formed between observed findings and theoretical propositions in an iterative fashion

(Walsham, 2006; Lipscomb, 2012; Pade-Khene *et al.*, 2020). It was decided that to explain tele-center vandalism (an unpredictable phenomenon), inference to a cogent elucidation should be resorted to (Arrighi & Ferrario, 2008; Yu, DiGangi & Jannasch-Pennell, 2008), considering that no other empirically backed premise has been provided for such acts as they relate to tele-centers in underserved communities. Expectantly, the empirical findings serve to support plausible articulations for further inquiry (de Regt, 1994).

A single case study of vandalism to SLL related ICT infrastructure served as the strategy for the empirical investigation. Notwithstanding widespread criticism on the possibility of generalizing single cases, such cases may be generalized to theoretical propositions (Yin, 2009). The case study's confirmed suitability for answering how questions (Yin, 2013; Pade-Khene, Sieborger, Ngwerume & Rusike, 2020), such as the core question this study is focused on informed its selection. In retrospect of the adopted empirical approach, rich data was elicited from the perspectives of project participants about vandalism to SLL related ICT infrastructure. Data collection methods employed included, semi-structured interviews and document analysis. This triangulation of data collection approaches aided in strengthening conclusions made from the empirical exercise (Creswell, 2003). To determine appropriate participants considered suitable to participate in the semi-structured interview sessions, the purposive sampling and snowball sampling techniques were used in tandem.

Purposive sampling was instrumental in ensuring that the selection of participants would be focused on candidates thought to be sufficiently knowledgeable on the issue of concern – in order to provide reliable answers to the causes of vandalism in the SLL context (Tongco, 2007). Snowball sampling aided systematic selection, by providing opportunity for other relevant participants to be pointed out by initially identified participants (Enserink, Hermans, Bots, Kwakkel, Koppenjan & Thissen, 2010). The study consisted of 4 participants. Specifically, two SLL project employees (*systems software developer and communications officer*) were purposely selected as participants due to their knowledge of activities at established SLL tele-centers. These participants were instrumental in recommending (snowballing) that two indigene project champions of SLL (*for the purpose of this study they will be referred to as champion's A and B*) established tele-centers, who were noted to be very active and enthusiastic about the project also be included as participants. These participants were interviewed severally over a 4-month period.

This exercise was underpinned by the characteristically open ended semi-structured interview guide (Gillham, 2000), which allowed the researcher to present a uniform set of questions to which participants answers presented distinct levels of depth (Turner, 2010). Participants were interviewed individually. Questions contained in the interview guide were informed by propositions made by the equity-based model. These centered mainly on the noticed incidences of vandalism of SLL related ICT infrastructure, perceptions of how equitable point of presence selections were in the Mbashe municipality,

perceived levels of control exhibited by indigenes of the Mbashe municipality, perceived attitudes of community indigenes towards the establishment of tele-centers, and measures taken to secure tele-centers upon notice of vandalism attempts.

As indicated, the data collection exercise was also supported by document analysis. Related empirical research outputs that broach the topic of vandalism and theft within Mbashe municipality were consulted. Specifically, research by Thinyane (2009), Pade-Khene *et al.*, (2010), Gumbo, Jere & Terzoli (2012) & Sieborger (2017) which touch on experienced vandalism and theft in the SLL were studied. These provided historical context on vandalism of ICT equipment in the Mbashe municipality – where the SLL is predominantly domiciled. Furthermore, propositions made by the equity-based model were referenced to explain the determined incidents of vandalism.

Analysis of data was also underpinned by abductive reasoning, premised on Yin's (2013) explanation building analysis approach, and open and closed thematic analysis. The approach supports the development of an explanation overtime, by demonstrating the role that causal links play in the phenomenon of tele-center vandalism (Pade-Khene *et al.*, 2020). The researcher repeatedly engaged in discursive reflections on interview responses, with inference from the equity-based model of vandalism around cogent reasons for vandalized tele-center equipment in underserved communities (IBID). Notwithstanding reference to the equity-based model the researcher was deliberate about keeping an open mind, so as not to ignore emergent patterns not proposed by the referenced equity model.

Ethical principles were adhered to in conducting the research. This included application and subsequent ethical clearance from the ethical clearance committee at the university where the author was affiliated with when the study was conducted. Additionally, the research ensured that ethical principles such as informed consent, anonymity and protecting participants from harmful effects were taken into consideration.

Results and discussion

This section answers the two research questions posed in the introduction section.

Research question 1:

What are project stakeholder views on vandalism of tele-center infrastructure in the Siyakhula living lab?

Stakeholders of the SLL project indicate that vandalism is one of the challenges that they have had to deal with. Specifically, it is revealed that telecommunication infrastructure is routinely vandalized. As stated by one of the project employees (the communications officer) – vandalism impedes the project's progression trajectory. He elaborates by illustrating the direct influence of the destruction of telecommunications infrastructure on the projects anticipated progress. According to him, an existing

telecommunications infrastructure potentially provides one less thing to worry about, while articulating a strategy to connect a rural community to the internet. Where telecommunications infrastructure is functional, options such as the dial-up, integrated services digital network (ISDN), and the digital subscriber line (DSL) can easily be adopted to enable internet access for an underserved community such as the one being focused on. However, noting that the telecommunications infrastructure is routinely vandalized a more expensive alternative (a worldwide interoperability microwave access (WI-MAX) installation) had to be resorted to for internet provision.

Noting the potential for vandalism to impede project success, the second project employee (*systems software developer*) pointed out that project interventionists need to stay resilient. He believes that interventionists who are not resilient may get demoralized and consequently quit, where they notice that their endeavors to make progress is often sabotaged. He stressed that there was a need to sensitize indigenes on the importance of ICT4D projects to the overall welfare of such communities. This as he stated, would create a more personal sense of responsibility for project related infrastructure – rather than one that is imposed.

Research question 2:

How can vandalism incidences in the Siyakhula living lab be explained through an equity-based model of vandalism?

Data elicited confirmed multiple incidences of vandalism to telecommunications infrastructure in the Dwesa-Cwebe region (where the SLL is domiciled), as well as a theft incident at an SLL established tele-center. Specifically, vandalistic acts committed were more to the installed ICT support infrastructure (telephone lines capable of supporting dial up and DSL connections for internet access), whereas ICT hardware (computers) were targeted for appropriation (*theft*). It was determined that with respect to the recorded theft incident, the perpetrators committed this act with intent to acquire paraphernalia that they perceived to possess some value. As proposed by Fisher & Baron (1982), theft (*an acquisitive action*), is a possible response to inequity – where the victims of inequity believe that their locus of control is moderately low. Granted, theft may be spurred by greed even in the absence of inequity, however, the chain of evidence in this case suggests that the act may have been likely as a result of inequity. Here, it is believed that a perceived act of inequity motivated a response from the perpetrators considered to possess moderately low levels of control (Fisher & Baron, 1982).

As revealed from the data collected, it was determined that the theft incident to a SLL established tele-center was orchestrated by assailants from outside the village where the tele-center was hosted. Thankfully, the assailants were traced. This was confirmed by all interviewed stakeholders. It is suggested that they confessed to being jealous through remarks implying that if their village was not selected as a point of presence to host a tele-center, other villages did not deserve that privilege. This line of thinking is consistent with

findings by Pade-Khene *et al.*, (2010) about the ‘tall poppy syndrome’ – believed to be prevalent in rural communities like the Mbashe municipality. With this syndrome, sections of a community who appear to be perceptibly better off than others may be viewed as benefiting at the expense of others. Such views may evoke jealousy which may result in punitive action taken by the self-proclaimed victims. Evidently, this is a thought process that is parallel with what the equity-based model of vandalism proposes. As part of its proposition the model suggests that where individuals or groups possessing moderately low levels of control perceive that they are victims of inequity, they may resort to unconstructive actions such as theft – aimed at equity restoration.

Recorded vandalism occurrences of ICT infrastructure (*telephone lines for digital subscriber line (DSL) connections*) in the Dwesa-Cwebe region noted by Thinyane (2009), Pade-Khene *et al.* (2010) Gumbo *et al.* (2012) & Sieborge (2017) were also considered to be likely attributed to perceived inequity. Both project champions (from within the community) who served as participants in this study also shared this view. Champion A stated the following:

“These people who engage in these acts do not come from here. Maybe they come from villages where they do not have computer lab. They come in the night, commit these bad acts, and leave before daybreak. They are not happy because their villages do not have these technologies.”

The train of thought here is that the vandals come from other villages within Mbashe municipality. It is also suggested that they come from villages where SLL established tele-centers are not hosted and that these acts serve to express dissatisfaction at the perceived inequity tied to decisions by SLL management about where points of presence were established. It is not unreasonable to think that village indigenes from communities within Mbashe municipality whose villages were not selected to host points of presence may wonder why their villages were not selected, and may in fact perceive this to be an inequitable gesture. Looked at through Fisher & Baron's (1982), equity-based model, this may explain how the vandal incidents are tied to inequity. Also important to keep in mind is the fact that at the time of the study, for the indigenes in the surrounding areas of the Mbashe municipality there was a characteristically shared low level of control that permeated the community (Thinyane, 2009; Pade-Khene *et al.*, 2010; Sieborger, 2017) .

As proposed by the equity-based model, a high level of control refers to efficacy possessed by people – which makes them believe that they can effectively modify arrangements and their consequent outcomes related to inequity through tactful strategies like – *filing a court case, gaining proficiency in legal negotiation, or intellectual dialog* (Fisher & Baron, 1982). All of these options require sufficient levels of education and knowledge acquisition (Fisher & Baron, 1982), which at the time indigenes of the Mbashe municipality were largely not privy to (Pade-Khene *et al.*, 2010; Osah, 2012;

Sieborger, 2017). This would have made it very unlikely at the time for villages (*within Mbashe*) not selected as points of presence to engage in constructive highly intellectual dialog with SLL project representatives about their concerns of their villages not being selected as points of presence (*especially if not directly approached by project representatives*). According to the equity-based model of vandalism, where a high level of control is lacking, vandalism may be resorted to as an expression of 'medium or low levels of control' aimed at orchestrating restoration of equity (Fisher & Baron, 1982). Pointedly, vandalism attacks and the theft incident to the SLL established facility and the related infrastructure may have been masterminded to express dissatisfaction with the perceived inequity (*of not being selected to host tele-centers*). For instance, the researcher at some point asked the SLL communications officer if he also believed that the perpetrators of the vandal and theft incidences came from neighboring villages and what he thought their motive was. In response he stated the following:

“Yes, I believe that they come from other villages. They may be doing this to show us that they are unhappy that computer-labs were not set up in their own villages. That is possibly their way of getting our attention.”

To further prevent vandal incidents from recurring, all operating SLL tele-centers implemented better physical security measures, such as door re-enforcements of computer rooms, moving computers to locked offices at the close of the day, appointing a local vigilante to man tele-center facility and prompting local residents to report any noticed irregularities (Gumbo *et al.*, 2012). These measures seemed to curtail further theft attempts. In reflecting on this outcome, it cannot be determined how true Fisher & Baron's (1982) assertion is on possible ways assailants may react when target facilities are physically re-enforced and there is notice of heightened security at target facilities. They suggest that such actions may lead to vindictive vandalism. If this was the case, perhaps there would have been accounts of arson or extensive damage to SLL established tele-centers. However, this never happened, hence further supporting the view that the theft incident may have been aimed at equity restoration. With respect to vandalism, there were other reported incidents of vandalism to ICT infrastructure even after the implemented security measures. This would be expected noting that infrastructure such as telephone lines would usually be run through public spaces that cannot be entirely protected. Perhaps addressing issues of inequity will provide a lasting solution.

With this particular study, the influences of other secondary moderating variables on vandal incidents were not focused on. Also, it was not determined whether or not extreme levels of inequity results in apathy and feelings of helplessness on the part of the victims of inequity. As such, these variables should be considered in future empirical studies on tele-center vandalism. Notwithstanding these limitations, there are noticed implications for research

and practice. As related to implications for ICT4D research, the findings suggest that there is plausible reason to believe that inequity may be a primary catalyst for tele-center vandalism and theft. With this revelation, one is forced to wonder why there is little research on the subject. Note, research on the issue is not solely to be aimed at addressing just the vandalism dimension, but also the inequity facet. Remember, the fundamental agenda that drives ICT4D initiatives such as tele-center projects is the provision of equitable development (*with particular focus on the marginalized who are often considered to be victims of inequity*). Thus, in meeting this mandate, it is important not to forget that even in disenfranchised communities, some may perceive themselves as more marginalized than others. In this light, ICT4D practitioners should be careful to ensure that they do not end up enabling the same societal ill (*inequity*) that they are primarily set-up to confront. For practitioners this implies that they must be sensitive to perceived biases that may be felt when selecting locations for tele-center set-up.

Conclusion

Applied to the SLL context, it is observed that noticed vandalism and theft incidences in this context were likely related to perceived inequity. It is suggested that the incidences are primarily thought to have transpired due to the low levels of control possessed by indigenes within Mbashe municipality to deal with the perceived inequity that they felt they were faced with. Project teams hoping to establish tele-centers need to ensure that there is a thorough profiling exercise to determine various socio-economic groups that exist within a community. With such revelation, measures should be taken to ensure that there are no biases against any of the groups – in terms of opportunity to benefit from the project. This will ensure that certain groups do not feel slighted. Moreover, even when there are cogent reasons for selecting particular locations over others within a community, this must clearly be communicated to those neighboring localities who perhaps may perceive themselves as being overlooked (*victims of inequity*). Furthermore, such localities should be briefed and constantly reminded – that they will be beneficiaries of the initiative in the long run.

This study is unique, in that no ICT4D projects have approached incessant vandalism occurrences from an equity-based lens. This however is perhaps even more important for ICT4D projects noting that their primary mandate is to reduce inequity through the employment of ICTs. The findings here call for more intense research aimed at investigating the role that inequity plays in noticed incidences of tele-center vandalism. Also, the findings call for a need to generate more practice-based investigations to inform how tele-center implementers should address issues of perceived inequity.

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