

*Review Article*

# The Review of Civic Hygienic Amenities Functionality: A Situation Study of public Universities and Polytechnics in Zimbabwe

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## Abstract

*Civic hygienic amenities are central infrastructure obligatory for the societal well-being and real-world set-up of an operational establishment. Human self-possession is directly connected to admission to healthy and sanitary condition as this custom one of the resilient pointer of a near-perfect institute. The study focused on considering the functionality of civic hygienic amenities in institutes of Higher Education through explicit allusion to Universities and Polytechnics. Most public institutions like Universities and Polytechnics have no decent or functional sanitary facilities. The study was guided by sanitation for all frameworks which debates on equitable access to sanitation for all by 2030. Records for this exploration was attained from institutes of Higher Education by means of unrestricted conversation guides and observation checklists. Interviews and observation checklists were implements used to make available confirmation data of the conditions under study. Discoveries wide-open that civic hygienic amenities in these establishments are malfunctioning. Convenience to hygienic amenities is a dare as more or less floorings within the Universities and Polytechnics buildings do not have functional stalls in greatest bedsitting room whereas in others they are in place but lack appropriate upkeep. Lack of water (H<sub>2</sub>O) supply, nonfunctional, and all-purpose hygiene settings are a distress. The study suggested that the Universities and Polytechnics powers that be ought to deliver more hygienic amenities to upscale the plea of users. The preservation divisions must elevate the sanitary facilities now obtainable and functional for good health. There is a requirement to hug emerald technology once it hail from issues of water to hygienic services as its inaccessibility entails looming menaces to healthiness, hygiene, and hygiene. In attendance is likewise a necessity for operative administration of civic facilities on the part of the maintenance departments.*

**Keywords:** Sanitation, Civic amenities, unisex, Institutions of Tertiary Education, Water Supply

## Introduction

The Expansion of civic hygienic amenities has long remained a contemporary subject in the midst of social historians. There are no reliable records to endorse the precise earliest discoverer of the civic bathroom. Conversely, it is extensively whispered that the conception of civic bathrooms commenced as soon as there was a necessity for public get-togethers and societal events (Lambert, 2012). The Romans constructed numerous civic restrooms, bathhouses, and latrines to aid their societal events and combat activities and the initial remnants of primeval civic restrooms were drawn back to the epoch of the Roman territory (about 27 B.C.). During those times, concealment was not a matter of concern as of now (Lambert, 2012).

Restrooms were fabricated with rock seating next to each other deprived of dividing wall of any kind. Sanitation was preserved by a grid of culverts dug beneath those stone latrines to amass rainfall and mess. At that time folks were supplied with a marine sponge fixed to a stick to wipe their behinds, as an alternative of latrine paper in contemporary times (Lambert, 2012). Since the Roman Empire epoch, public bathroom technology was developed rapidly until it took shape in the 20<sup>th</sup> century when the population begun to care more around cleanliness, energy proficiency, and environment-friendliness (Suddath, 2009).

With the escalation of modern cities, the Romans started building more fabulous civic bathhouses and latrines interconnected to a justly sophisticated water and waste distribution system as they were aware of sanitation and hygiene. Although the level of attention to sanitation had declined, the wrecks of the pre-Roman Phoenician city of Kerkouane in today's Tunisia

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boast a bathtub in every home (Zakariya'u Aliyu, 2012). The emblem of modern development and progression had turned out to be messy, stinking slums, despite the remarkable water and sewage systems work of germ philosophers and hygienic contrives in contemporary epochs which developments in metropolitan cleanliness, (Zakariya'u Aliyu, 2012).

Reconstruction by then had provided way for incredible modifications in civic restroom technologies to include toilets, lavatories, and restrooms and these technologies are in use today with no change in the fitting's principal purposes. The Romans passed on to conceive and advance these amenities to healthier augmented human needs, (Lambert, 2012). A stride rear in the account of civic bathrooms publicized how these modifications befell. Sanitation apprehensions have directed the birth of programmed faucets, soap distributors, and hand dryers. Emerald/green energy has given rise to self-closing taps and, the upsurge of electric hand dryers to substitute paper towels (Rooter, 2017). Modern public bathrooms today have sophisticated fixtures with enhanced efficiency. Thus, the functionality of hygienic services and their influence on learners and the construction fabric has become the basis of the study.

Sanitary fixtures systems can waste energy and even become a spring of deadly infection except planned, erected, or upheld appropriately. Social well-being and suitability are the key concerns and it is imperative to recognize, consider, and compute the maintainability constraints of multifaceted sanitary-plumbing structures to see the necessities of today's greater and healthier erections. The study explores the influence of the functionality of hygienic plumbing systems in residential buildings and factors that are critical as maintainability parameters of sanitary plumbing systems. Thus, notwithstanding all the hygienic amenities of accessibilities at our disposal being taken for granted, and not as pretentiously rudimentary and obligatory as internal attachment, the fund of renewed water into home environments and civic establishments is taken away discarded water befits utmost. The piping in structures are the acceptable route that divorces humans from their not-too-distant contemporary previous as very idealistic and unhygienic. (Odenthal, 2014), notes that, when plumbing fails it does not take long to realize just how much we depend on it. Rooter (2017) has this to say when any of these utilities cease to function or do not work, this not only disrupts our comfort but may also cause enormous expenses if damage occurs. The exploration is founded on the involvement of the academics as students in various institutes of Tertiary Education in Zimbabwe. The nature of hygiene services has impelled concern around well-being and sanitation matters amongst the students as they spend much of their time in such a pitiful setting. Thus migratory engagements need to be actioned contrary to clogs and the preceding glitches as well as keeping taking care of all the structures and responding hastily, somewhat,

then deferring or pay no attention to it. As soon as the facility displays signs of distress or inferior performance, checks, consistent repairs and a wide-ranging responsiveness of inclusive procedures will help keep the sanitation systems smoothly running. A specialized, well-informed, service-minded sanitation partnership can help with maintenances and upkeep of the sanitation system service devices.

### **Problem Statement**

Massification of the Tertiary Education in Zimbabwe has brought about increased need for additional civic amenities and facilities on campus. Hygienic amenities already in existence are exceptionally laughable or overstrained. These accommodations include public latrines which are not only in a filthy state but their upkeep and sufficiency is questionable. Administrators, in the country's institutes of Higher learning, has done little to address that problem, (Greed, 2009). In Zimbabwe, countless civic establishments, Schools, Colleges, Polytechnics Civil Services, Universities inclusive do not have purposeful and convenient latrine accommodations, (The Herald, 3 December 2018). This has an effect on the well-being and cleanliness of the students and workforce. The study therefore, seeks to unload the mess brought about by the functionality of hygienic conveniences in Tertiary Education institutes. Experiences as learners in various institutions of Higher Education in the country has exposed that the condition of these amenities is dilapidating at an unprecedented rate even though expressive efforts are put in place to resolve these situations. This has turned out to be an issue of distress to most Higher Education learners at campus, who are to use these apartments'/ conveniences risking their well-being and hygiene.

### **Research Questions**

- RQ1: What is the impact of water supply and maintenance costs on sanitary facilities in institutions of higher learning in Zimbabwe?  
 RQ2: How does current technology assist in monitoring leakages in old and new sanitary facility installations?  
 RQ3: To what extent does the functionality of sanitary facilities impact the health, hygiene, and welfare of learners?

### **Theoretical framework**

The study is guided by the sanitation-for-all framework which was grounded in a social justice perspective that debates barriers to water supply and sanitation in higher-order institutions like education, health services, and workplaces. Daruwalla and Darcy, (2005) coined the sanitation for all framework that has three interlinked elements that impact sanitation access that is personal factors, social factors, and environmental factors and the elements represent the degree to which equitable sanitation has been achieved. The focus was

on improving access to sanitation which is appraisal of public sanitary facilities functionality. The theory also promotes the strengths and limitations of utilizing green technology devices in improving access to current sanitation for all initiatives.

## Literature Review

### H2O supply on hygienic amenities in Tertiary Education institutes

Access to H2O supply and hygiene is an elementary human necessity and right worldwide. H2O supply and hygiene are amongst the binary, important areas of social growth (WHO/AFRO, 2000). The improvement in civic H2O provisions and hygiene has improved societal and pecuniary circumstances and has added value to health (WHO/AFRO, 2000). The remunerations of better-quality H2O supply and hygiene are countless, these include inhibition of ailments, enhanced elementary well-being, improved diet, and augmented sanity in establishments like public Polytechnics and Universities. The purposes of this exploration was to weigh the level to which H2O supply has influenced the state of hygienic amenities in the Zimbabwean Tertiary Education institutions. Additionally, to appraise the functionality of hygienic facility, influence on the well-being, cleanliness, and well-being of students. This was destined to consider if there are H2O supply and hygiene glitches and put forward resolutions to advance the Tertiary Education H2O supply and hygiene status quo. The tenacity of this exploration stood to crisscross the current H2O supply and hygiene structures and pleat facts to carry a necessities valuation of the state of the facilities in institutions. To recommend a scheme intended for possible H2O supply and sanitation amenities development plan to be embraced by Principals and Administrators in the institutes of learning.

### Influence of H2O Supply Gravity on Hygienic Services in Structures

Generally, multistory constructions experience a multifaceted and thought-provoking plumbing system if not properly done. However, literature has this to reveal, there is not abundant plumbing code semantic that explicitly addresses how multistory constructions ought to be planned to save energy and water, and afford the owner and inhabitants with a justifiable and safe installation. Entirely, of the elementary plumbing code semantic for backflow deterrence, least and extreme forces, and waste and exhaust stacks for structures over three floors high applies to multistory constructions. However, the code is mute in numerous supplementary capacities in which currency is lost and tools wears out in multistory buildings, leaving occupants without water and basic hygiene, (George, 2018).

### Existing Knowledge that Monitors Purposeful Hygienic Amenities

Water leak is a concern for water losses. Many new methods have been adopted to control leakage from water supply systems, but leakages have remained a challenging phenomenon in most systems cutting-edge evolving republics, particularly countries that experience irregular H2O provisions. Still, precise approaches have been established in lieu of such systems like H2O leakage recognition and renovation, and H2O leakage concealment and H2O loss regulator which are now being used together with a combination with more usual versions of approaches similar to the Nepal leakage recognition and wastewater regulator package to assist current green technology.

Today many institutions be they private and public are mounting a fresh generation of water-efficient sanitation fittings comprising flush regulators, urinals, and faucets at an ever-increasing frequency. Their aims remain to decrease H2O usage by sanitation arrangements, diminish convenience overheads, and advance the civic service inclusive sustainability. Westerkamp, (2018) advocated that, to guarantee that these merchandises convey the anticipated paybacks to the institute and the setting, repairs and manufacturing administrators who are making product assortments need to prudently reflect the upkeep influence these merchandises are expected to have. To rectify the fundamental preservation issues facility on these green products, facility managers need to incorporate technical inspection and repair routines, to improve efficiency in troubleshooting possible glitches and discontinuing trivial problems earlier they turn out to be key and expensive matters. To curtail upkeep and H2O expenses, facility directors are ever more fixing pressure devices and stream meters at planned positions in their constructions' sanitation structures to control the movement of H2O. George, (2018), avers that, when facility directors are definite of all leakage interpretations, the succeeding stage is to air at discrete fittings and consider their disorder. Intentions for manual urinal flush controllers are comparable to those of latrine flush regulators, with almost the matching sum of parts, functionality, and conservation necessities, but still non-functionality of these amenities emerges.

### Methodology

The case study adopted the qualitative methodology design to sightsee painstaking assessments of the condition of hygienic accommodations in institutes of the Zimbabwean Tertiary Education system. Purposive sampling was used to select consultants from the sampled institutes of Tertiary Education in Zimbabwe. Research contributors were cautiously selected considering their engrossment in civic amenities work at the selected institutions of learning in the country. A total of thirty eighty (38) contributors were drawn from the chosen institutions of Tertiary Education

which encompassed eight (4) participants drawn from an expert pool, two (2) plumbers, three (1) facility directors, three (1) lecturers and thirty (30) students drawn from the subdivision of Built Environment, Construction Engineering, Civil Engineering, Civil and Water Engineering, and Technical and Engineering Education and Training. The conclusion was generalized as the investigators cannot work meritoriously with every single professional and student owing to data saturation principle. Unrestricted exploratory interrogations (EI) were personally administered by the investigators and reactions were coded into thematic components that emerged from the (EI)/research questions. Findings were analyzed verbatim and pseudo names were used.

### Analysis and Discussion of Results

The chief drive of this undertaking was to consider civic hygienic functionality in the Zimbabwean Tertiary Education institutions laterally through well-being concerns and functionality of hygienic services. Focus group L1, L2, and L3 see eye to eye that the functionality of civic hygienic amenities make their life time problematic exclusively when they are to feed and supposed to bath their hands before and after feeding and even when they visit the restroom where they find waste left unattended which is a great challenge that may result in the blowout of infections like cholera and diarrhea and even cause flies owing to scent which may contaminate their foodstuff without even detecting it. This is shown by the amount of codes which is a signal that there is a worry over the issue, L3 has been buttressed by the subsequent words from L1 and L2 on the matter:

*L 1: "Affected sternly by the odor of flies all over, safe when feeding, spread illnesses like cholera, diarrhea"*

L 2 Going to the latrine might be a challenge as folks may leave their waste unattended which is a problem. The feelings had sufficient backing from the reviewed literature where the equivalent cause has been resonated by Deas, (2016) in George (2018) who purported that:

*"If you use the toilet and it becomes blocked, you must not try to clear the blockage by repeatedly flushing it or covering it up with more toilet paper as this can make the problem worse. For example, you could create a very serious blockage that affects neighbors as well, and/or the toilet may overflow and flood the bathroom, you must tell somebody if you block the toilet. Do not feel embarrassed or ashamed; sometimes these things happen. If you tell somebody early enough they will probably be able to sort it out themselves. If it gets worse, it can become an expensive problem as they may need to ring a specialist plumber".*

FG 4 contributors concur that the circumstances are also reasonable as is maintained by L1 who lament that the situation disturbs ourselves as the student folk,

well-being, failure to wash hands flush supplies after use, and health threats. L2 vows that its health menace owing to the non-functioning facilities, it pollutes the surrounding atmosphere, owing to grave odors and even fixtures themselves. FG 3, L1 exposes that their morale is lowered and demotivated in visiting the toilets which are generally dirty. L2 exposes that, many a times, the urinary are chockfull with urine and public keep on using those urinal conveniences since they do not have an alternative, consequently causing a mercy day in day out. L1 uttered that, they are affected to the nerve, particularly after using the latrine, by taking long or even not washing their hands at all, due to water unavailability, standing long on queues for washing their hands a single functioning tap as other points will be mal-functioning. L2 added that, water is at times unavailable to bath before or after eating, and this acute shortage of water provision distresses our wellbeing and stay at campus. L4 coincides with L2 that, to a larger scope, they find urinals and water closets chockfull causing smells, and flies since and may stretch in that state for close to a week or more unattended to and this adversely affects our wellbeing and stay at campus. L3 comments that, they were not enjoying staying for long at campus due to unpleasant smell of the toilets, and the odor demoralize students in visiting the latrines. L2 avers that, inconsistent running water supply and shortage of toilet papers, and dirty accommodations without running water at the hand wash basins (HWB), broken down taps and malfunctioning amenities make their stay at campus a displeasure. Findings indicate that the condition of amenities in Tertiary institutes of learning countrywide is a deathtrap to the students.

*L3 in FG 5: "It demotivates the user, as people need a clean environment all the time, so it demoralizes the user when one visits the toilet to realize that it is generally not clean, and sometimes you cannot use the loo as a result of non-availability of water to wash after use"*

L2 supports the view that non-functionality of facilities affects morale, health, and ego to visit the toilet since they have blockages resulting in people looking for alternatives like behind walls spreading diseases like cholera. L1 uttered that, there is unawareness on the share of consumers and there is necessity for a drive on upright practice. L1 of FG 2 says, water is fundamental to well-being matters, and insufficient supplies may cause illnesses. Contributors grieved that the odor from toilets is a cause of concern for users and the like, and there is a myriad of complications accredited to that. Expert 2 sturdily emphasizes that leakages supply channels or release channels of waste or water that is discharged from a room or outside needs to be treated before the mercy can cause diseases. Expert 4 said:

*"On Supply of water and pressure, if you were on campus on the first day of orientation you noted, if you had gone to our ablution it was a Monday it was a mercy. And if*

*you had the energy and time you could have gone straight to the director of works to plead with him to close the university or temporarily close the institution. It was shameful to be associated with the institution, there was no water at all,"*

These issues could be unraveled since the institutions have many boreholes so blame cannot be rested on the council or water authority board as the supply of water to ablutions can be drawn from boreholes no matter its salinity. The supply can go straight to cisterns, water closets, and hand wash basins and not for drinking. The Director of institutions needs to be rationing and "think in other terms". The issue of smell impacts negatively on health. Expert 3 resonated that, the challenge is of unpleasant odors, which causes flies all over resulting in the outburst of ailments on learners and everyone else operating on campus. The erratic water provision on campuses results in unhealthy situations as waste can accumulate causing logjams and pipe bursts. Leakages and logjams are a distress as they call for flies and bad smells that contaminate campus canteens, offices and classrooms amongst other university apartments.

FG3:L3 revealed that malfunctioning of fittings was due to thousands of consumers causing strain on limited university civic amenities. Expert 4 calls for a proactive repairs subdivision, with competent craftsman, resources and fitments to rectify the sanitation glitches as soon as they emerge. Expert 1 said:

*Expert 1 "We have challenges of parts of similar nature e.g. tap heads and water closets, hand wash basin parts, they are not found locally, there is need to import these components outside and those are of new designs"*

The skilled crew highlighted the necessity for consistent checks before a problem aggravates, tightening fixes, substitute closures on time and to enable users to use amenities properly. Expert 2 utters that, they react promptly to fix the problem when faults have been reported, and when tools and materials such as water closets and taps, valves, and seals are available.

Expert 1, avers that, the other challenge is the purchasing procedure which is tedious due to challenges and components of a comparable nature in the local market. Largely, parts and materials are traded in from Asia and South Africa for these repairs. These traded in parts, materials, taps and water closets inclusive are costly and need forex to purchase them both locally and abroad. Expert 6, has this to say:

*Expert 6 "At our institution, we have done a networking system of supply of water for Zimbabwe Water Authority (ZINWA) and borehole water, when there is no ZINWA water, borehole water can be supplied to areas where there is no water, and supply of water to institutions is on continuous basis. when there is no ZINWA water /*

*available, we open gate valves for borehole water to supply water where ZINWA water is not available and use it to supply sanitary facilities, and when borehole water is not available we open valves of ZINWA water to supply water to sites where borehole water is not available and make sure that the supply is continuous"*

Expert 3, argues that:

*"At the moment there is no technology at our institution, we depend on the maintenance department, good people who may report such blockages, we do not have any technology to monitor blockages and leakages"*

High cost of materials and parts for civic amenities fixtures challenge Tertiary institutes in the country in their efforts to embrace such technologies and make their campus convenience rooms comfortable for their clients. Expert 4, who discloses that green technology is the way to go. Expert 4, reveal:

*"If you go to our ablution there is a nice green technology tap that has been installed, but if you go there now the tap is like shaking, turn it on and off, those things need planned maintenance, what we have at this institution is reactive maintenance. During a tour at the Zimbabwe International Trade Fair (ZITF) I bumped into a design by a Polytechnic student a good gadget that can detect leaks and trace and blockages I can't remember the name."*

Expert 5 revealed that, green machinery like water saving, automatic flushing toilets, retrofit technology to hygienic amenities, and leak sensors has not been embraced by our institutions of learning the country over. Farley (2001) and McIntosh (2003) avers that, water leakage is a cause of concern as it results in adverse water losses. Green technologies for regulating water leakages from urban water supply structures have been developed, but they continue to be a problem in evolving nations, particularly those with sporadic water provisions. Explicit technical inventions have been established for such structures, used in combination with adaptations of additional standard approaches like the Nepal leak discovery and wastewater regulatory program, water leak recognition and repair, and water leak recognition and water loss regulator.

Expert 6, asserts that the procurement process of some components of facilities especially if there need to fix the component there and then is tedious. The costs purchase and maintenance are so high, since these components are produced locally. Learner FG4 also supports the notion that fitments are not found on the market. L3 and L2 have these sentiments that lack of maintenance as well as negligence of duty and maybe lack of funding impacts on service provision by instates of learning in the country. Resultantly, there is a serious need for institutions to supplement council and ZINWA taped water with taped borehole water. Expert 4 confess that:

*"All that needs to be done is to have proper maintenance systems in place, some of these types of maintenance can be costly in the short run but in the long, it saves a lot of money if we say let's plan for our maintenance every three months' interval checking to replace within that time"*

Expert 1 claims that, reports are usually not prompt. Reports for repairs emerge after the condition has deteriorated making it challenging to work through and the repairs turn out to be reactive rather proactive. Responsive repairs concentrate on informed flaws and hitches by the consumers to the repairs department. These repairs are effected as a response to requirements (Waterman, 2006). Deliberate repair is prognostic or preventive and is done in plan even if there is nothing wrong with the property (Gardiner and Theobald, 2005). Planned repair is therefore, the greatest way to go.

The convenience and functionality of hygienic civic amenities were exposed by FG 1 L3 and FG2 L3 who noted that signage is clear and conspicuous showing who uses this and that however, compartments are padlocked and non-functional and in some cases, they are inaccessible due to water closets malfunctioning and in cases no water supply, most convenience rooms have no compartments for the handicapped affecting such learners. L4, FG1, L3 FG5, and L1 FG2 echoed that, there were non-functional convenience or latrines on the higher floors hence consumers had to move down to the ground floor to get access to convenience rooms which at times they find closed. FG 4 L1 opined that hygienic amenities do not adhere with standards set by the World Health Organization (WHO) guidelines. This encounter has exposed the handicapped like wheelchair-bound as they cannot access these amenities that call for a pursuit. Thus people living with disabilities commonly face ecofriendly, attitudinal, and institutional blockades in gaining access to civic hygienic amenities thus deterring the UN's Sustainable Development Goals (SDGs) "Sanitation for all" by 2030. L1 proclaims that, the condition is pitiful; individuals queue for long on a solo functioning tap to wash their hands while the rest are nonfunctioning.

*L2 "On the issue of non-functionality as people sit in the water closet (WC), there is a need for some innovations in the form of a voice to call for an alert or send an alert message that shows that the toilet is not functioning that tells the blind person not to use a toilet that is not functioning for hygiene reasons. The signal should be an automatic thing that might be saying "Toilet not functioning" "Toilet not functioning" and so forth."*

L1 FG 5 noted that, civic hygienic amenities are rated poor in the country's learning institutions, owing to out of order cisterns and everything else. L 1 and L2 of FG 2 concurs that civic hygienic amenities are disappointing and situations are worsening, going beyond normal. In each construction, most water

closets are not functioning and this is quite disturbing. Semi-finished structures are commonly in use across tertiary institutions and these do not have functional rest rooms hence users have to hunt for convenience rooms elsewhere in structures with the facilities.

*L2 "Administration ought to seek funds from projects, government, donor organizations and charity organization to facilitate the completion constructions and civic amenities within their organizations"*

L5 and L3 see eye to eye that enrolment is fast increasing at a geometric rate compared to static services across Tertiary Institutions of learning of the country. Development of satellite Universities and Polytechnic campuses can ease this challenge. Expert 3 believes that the design follows the laid down principles, by the Ministry of Public Works and the Government. Even if structural design adheres to the regulations, the percentage of consumers outstrips the definite percentages per structural design. The Canadian Human Rights Commission, (2006) spelled out in the forthcoming recommendation that hygienic amenities should be designed to meet the needs of all building users regardless of age, size, ability, or disability, whether they are staff, residents, frequent or first-time visitors. Sanitary facilities should be designed to accommodate children and adults of all ages, all sizes, and all abilities who may be independent, accompanied, or assisted. When designing a facility, consideration should be given to the diverse ways in which people interact with their surrounding environment (The Canadian Human Rights Commission, 2006). Engineers ought to consider conception of hygienic amenities structures that are pleasing and can be definitely attained with standard off-the-shelf hygienic ware. The measure of delivery of hygienic amenities in a structure will be determined by the nature and size of the structure, the overall building occupancy, gender ratio, and particular patterns of use.

*Expert 6, Expert 7, and Expert 8 see eye to eye that they do repair work every day.*

*Expert 6 "In our case we do that daily as when necessary"*

*Expert 7 "When there happens to be a problem of either blocked or malfunctioning appliances, usually daily"*

*Expert 8 "Daily, particularly when institutions are open and when an incapacitated facility has been conveyed to us, we inspect and fix the problem".*

Experts divulge that services do not stay longer, since consumers' stages on the seats causing their damage. However, hand wash basins (HWB), have less problems, save they wear off and typically last for a month before they need to be attended to. Expert 6 argue that, they mostly address to problems timeously:

*"We have an undertaking on services labor agreement with other departments that people working there like cleaners, wardens, janitors informs us if there happen to be such a dysfunctional facility. We usually go there and inspect if there are leakages we close the supply and attend to an emergency many students use the facility daily so the facility is strained, repair may be daily"*

Expert 6, 7, and 8 specified that the other drawback is that of high workloads stemming from numerous defects seeking attention. Expert 8 claims that it needs a day or so, to correct a defect. Alerts on fault and defective facilities usually come from ancillary staff responsible for cleaning, lectures and students using the facilities, regular checks and there is no other alert mechanism in place. Expert 6 add that repairs procedures might lapse a day's dependent on the nature of the defect/fault.

GF3 and L3 attributes poor sanitary facilities in the country's Universities and Polytechnics due massive student intake causing misuse by users of different upbringings. L3 advocate a movement and training on the proper use of amenities, taps inclusive. GF3, L2 recommends that regular check on services be done frequently to do repairs before problems worsen. FG4, L2 argues that, the fact is some of the taps are disengaged and the repair personnel are executing their duties with fidelity. L1 and L2 of FG4 sees that unsatisfactory repair, maybe a result of old taps installed decades ago which needs a complete overhaul, yet materials are unavailable on the market. L2 points out that, lack of appropriate repairs as well lack of fidelity on personnel and poor sponsorship aggravate the situation. L1 argues that fitments are stained by waste, that contaminates the atmosphere as they remain unflushed for day's and blocks the system due shortage of water.

*FG 2 L2 "We use council water but there is a need to use tapped borehole water at the institutions to supplement council water. Water shortages only occur when there are pipe bursts and the maintenance people are repairing or servicing, besides shortages during maintenance everything is okay that is if there are no pipe bursts water supply is good. However, there is a need for planned intervals of repair, not for staff to wait for a breakdown or malfunction fitting, they are supposed to make it a habit, not to wait for a breakdown because these facilities are subjected to learners of varying ages some of who have high school tendencies of vandalizing assets"*

L1 and L2 agree that periodic checks must be conducted to check the condition of facilities and fix it timeously. Expert 4 has this to say:

Expert 4 *"The whole thing rests on maintenance", "The whole thing on maintenance" We have deferred maintenance types of maintenance at this institution we have all sorts of pupils from different areas and backgrounds, thus these facilities are subjected to rough*

*usage, you install a very good appliance but if not taken care off, maybe after a day or so it's off because of the rough usage, people just come to used and go, so a constant check is needed, routine checks"*

Expert 4 resonates that:

*"We can consider what we call emergence maintenance, and we can consider what we call preventative maintenance, plan preventative maintenance, we can consider reactive/ corrective maintenance. With preventative maintenance, these gangs need to survey these ablutions to see if they are any installations that need maintenance attention. If planned preventative you can plan to see if they're at this particular time routine checks have to be done to repair those that require attention, or if there are showing signs and need for corrective maintenance repair, what we have at this institution is deferred maintenance, maintenance done after the damage has already been done. An installed W C down for a semester then followed behind to detect the fault"*

Expert 3 echoed that:

*"At the moment in polytechnics, we have the department of maintenance which takes care of all the areas that need maintenance work. We have a few qualified artisans one or two who have specialized in either carpentry or bricklaying who need to take care of all areas that need plumbing maintenance. It is very difficult for a bricklayer or carpenter to attend to plumbing maintenance problems. The issue rests on the Government's failure to hire or replace specialized qualified staff, if alert of the lack of qualified specialized staff all they say is you have a maintenance department" Expert 3 "Like I said people not qualified for the areas can do the work, yes but will not last a long time, such blockages may not last long, and problems still recur. For example, one situation we had an assistant instead of a qualified plumber. Plumber worker grade who used to work with a qualified plumber. When the plumber left the institutions at the height of problems in 2008. No replacement was done. This means that all plumbing problems about plumbing were now referred to the assistant person. The problem is that where there is a maintenance department, the Government does not allow Government institutions to hire qualified specialized manpower from outside until it becomes a problem. They refer the problem to the Ministry of Public Works which is the caretaker Ministry for all Government property. If the Ministry of Public Works does not have qualified plumbers, then it will be a problem"*

The resolution is to engage a practical repairs division, with capable artisans, adequate resources and fitments to eradicate the plumbing glitches.

Expert 5 agrees that, repairs approach is effective but is obstructed by poor usage. Institutions of Tertiary

Education in the country lacks skilled plumbing and repair personnel. There is a problem when critical consideration to substituting dysfunctional parts, before the problem worsens or emanates. Expert 1 and Expert 2 directed that the maintenance experts attend to faults and emergence. The number of facilities is in acute shortage enough some of the already existing facilities are not in use since they are out of order.

*Expert 1 "Un availability of parts and materials lead to the closure of the compartments for hygienic purposes and messy of the surroundings as consumers persistently use since they had no alternatives."*

Identification of defects and faults facilitates urgent repairs provided fitments like parts and materials are in stock.

*Expert 2 "Notifications of leakages and breakdown of all sorts usually come late to the maintenance department, and at times come when the situation is worsened and difficult to attend to."*

Both Expert 1 and 2 reaffirms that for repair work to be timeously done, there should be regular checks of defective facilities, and addressing them early. Water provision need an urgent attention to provide hygienic standards at across civic amenities in various institutions of learning country wide. Institutions must provide toilet paper, rubbish bins in convenience rooms to prevent use of inappropriate supplies that block the system. Most if not all Tertiary institutions of learning however, in most cases fail to provide such materials aggravating the situation. Water supply to institutions convenience rooms is erratic causing blockages, bad odor, and breeding grounds of mosquito and flies. The condition of hygiene services across institutions has elicited uneasiness about well-being and cleanliness matters amongst the students who devote more of their day time in these tragic habitants.

Expert 4 lamented:

*"If you had the energy and time you would have gone to the Director of works and pleaded with him to close the University or temporarily close the University because the situation was shameful, was it a Monday, on the Orientation day, you wouldn't like to be associated with the University, there was no water at all and the ablutions was a mercy"*

## Conclusions

This exploration singles water provision as pivotal to proper use and upkeep of convenience rooms in the Universities and Polytechnics the country over hence the call for urgent improvement of water supplies in these institutions. Alternatives to boost water supply in these public institutions could involve mining underground water to use specifically in the

institutions convenience rooms. The authorship reveals that the services repair divisions need to be informed of the defects, faults and breakages, well capacitated materially, and with skilled personnel. Additionally, research findings demand that institutions introduce green technology to prevent water leakages a way of saving water. Convenience rooms also need adequate supply of appropriate tissue papers, more water points to cater for system blockages. The study also concluded that architect designers consider the provision of convenience rooms supplied with water on all floors of buildings as well semi-finished structures. Buildings across institutions of learning should also provide cubicles for students and staff living with disabilities.

## Recommendations

This review study unearthed the challenges Universities and Polytechnics the country over encounter in the provision of civic hygienic facilities. The following recommendations are therefore made by the study for establishments to minimize the challenges:

- institutions device concrete strategies to minimize and end the identified civic hygienic encounters so that users enjoy their stay at campus at the time preventing the looming health hazards.
- embrace green technology amenities inventions notably voice device to alert the handicapped like the visually impaired in case the convenience room is not functional.
- embrace green technologies of saving water.
- Engage adequate repairs division personnel equipped with relevant skills and equipment to enable them respond effectively to system blockages, leakages and any other flaws.
- enforce enrolment policies that prevent massification of education and a balance population and civic hygienic amenities at campuses.
- mine underground water to supplement council and ZINWA supplied water for use in the convenience rooms.
- Universities and polytechnics need to start satellite/multi campuses to reduce pressure on hygienic civic amenities at main campuses.

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