



Navigating the Ethical and Research Integrity Landscape in Botswana

– Part II

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Abstract

This study in two parts investigates research ethics and integrity among university students in Botswana, focusing on selected higher education institutions. Using a survey-based design and purposive sampling, the research assesses students' awareness, comprehension, compliance, and challenges regarding research ethics and integrity. Findings reveal a significant gap between knowledge and practice, indicating a need for training and support, supervision issues, ethical clearance challenges, resource limitations, and educational concerns. This first part depicts the review of literature and methodology; second part details the results and recommendations.

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1. Introduction

Ethics and integrity serve as the cornerstone principles underpinning academic research and the broader scientific community. For decades, it has become a predominant topic of discourse in the field of research management, administration and scientific enquiries. This discourse has received enormous attention in academia and in all aspects of life where research is concerned because of its importance in ensuring the credibility and truthfulness of research findings.

According to Akaranga and Ongong'a (2013), ethics refers to the moral rightness or wrongness of doing things. Researchers are professionals and are expected to adhere to a prescribed ethos when conducting research. In the context of research, Dahal and Rijal (2022) defined research ethics as the acceptance of moral obligations, integrity and social responsibility guarded by principles in every part of research activities.

Moreso, based on the definition captured in the mission statement of the World Conference on Research Integrity (2022), research integrity is “principles and standards intended to ensure the trustworthiness and credibility of research.” Research integrity is essential to realising the societal value and benefits of research and is characterised by honesty, responsibility, professional courtesy, fairness, good stewardship, and adherence to established standards and guidelines. This characteristic feature makes the hallmark of good research practice.

Building on this foundation, research ethics and integrity are crucial within higher education institutions, where students actively participate in research endeavours as an integral component of their academic experience. Dhakal (2016) argued that it is of utmost importance to ensure that the pursuit of knowledge is conducted ethically, responsibly and with the highest standards of integrity.

Globally, recognition of research ethics and integrity came to the fore after World War II due to several historical and social factors. This period marked a turning point in the recognition of the need for ethical principles and principles in research activity. The need for research ethics and

integrity has been rooted in a combination of ethical violations, human rights concerns, scientific progress, public awareness, and the need for global standards. This recognition led to the creation of guidelines, regulations and ethical frameworks that still shape research practices worldwide today (University of Nevada, 2022; Akindele & Kerridge 2019).

Also in the African context, research ethics and integrity gained increased attention in the post-colonial era when African universities and research institutions began to understand the importance and necessity of upholding and promoting ethical principles in their research activities. Also, due to the interconnectedness of research activities and collaboration across the globe, adherence to ethical guidelines for research puts Africa on a better pedestal to engage in research activities on a global scale (Akindele & Kerridge 2019).

In response to the dearth of literature and proper documentation of the structure of research ethics and integrity in Botswana, this study examines the state of research ethics and integrity among university students in Africa, with a particular focus on selected Botswana higher education institutions (HEIs). By focusing on selected HEIs, this research explores the awareness, understanding, compliance and challenges related to research ethics and integrity and to contribute to the wider discourse on ethical research practices within the African academic environment. To achieve this aim, the study formulated three key objectives. First, to investigate the awareness, understanding and compliance of research integrity and ethical guidelines among university students in Botswana. Second, to identify the barriers to research integrity and ethical compliance among university students in Botswana and lastly, to formulate strategies for strengthening compliance with research ethics and integrity principles within the Botswana University context.

The findings of this study have the potential to guide educational institutions and inform policy development and stakeholders in designing strategies and interventions that promote a culture of ethical research conduct and integrity in the academic community. After a brief

introduction, the remainder of the paper is organised as follows in two parts. First part: review of relevant literature and methodology; second part: results and discussion of findings, and finally, conclusions and recommendations. This second part continues after the methodological study with the results of the findings.

2. Results and Discussion of Findings

This section presents the findings of the study. The results of this study were obtained by analysing the responses of 135 respondents. The study employed a set of selection criteria during the data collection process. These criteria were employed to ensure the respondents have adequate knowledge, experience, and exposure which can add adequate value to the study.

The findings were presented in three parts. Firstly, the demographic representation and background information was presented. Secondly, the findings were presented in line with the objectives and lastly, the key findings were presented.

Demographic Representation and Background Information

Figure 1 presents the demographic representation and background information needed to better understand the study, such as gender, purpose of pursuing a post graduate study, level of study and field of study. As illustrated in Figure 1, the demographic breakdown reveals that the majority of respondents were females, constituting 60% of the total sample. This observation challenges the prevailing perception of female underrepresentation in the educational system. Contrary to the common belief, our study indicates that females exhibit a greater inclination to pursue further education compared to their male counterparts within the Botswana context. Moreover, the majority of respondents, comprising 80%, are from the field of commerce, with the remaining 20% representing diverse fields such as education, agriculture, and science and technology. Notably, 95% of the respondents are pursuing a master's degree, while 5% are pursuing a doctoral degree. Furthermore, 70% of the respondents embarked on postgraduate studies primarily for career development and progression

purposes. Additionally, 30% pursued postgraduate studies with the aim of academic and personal growth, reflecting their intent to refine their academic skills and expand their knowledge base in anticipation of future opportunities.

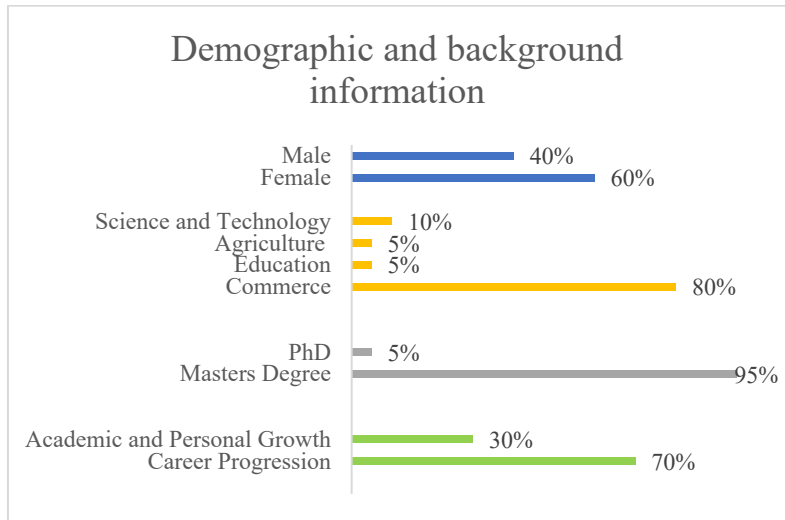


Figure 1. Percentage representation of the demographic and background information

Discussion in Line with Study Objectives

The study had three objectives which were to investigate the awareness, understanding and compliance of research integrity and ethical guidelines among university students in Botswana: to identify the barriers to research integrity and ethical compliance among university students in Botswana and to formulate strategies for strengthening compliance with research ethics and integrity principles within the Botswana University context.

Objective 1: To investigate the awareness, understanding and compliance of research integrity and ethical guidelines among university students in Botswana.

This objective is pivotal to understanding the landscape of research ethics and integrity in Botswana, as such, key construct and questions were formulated

to capture respondents' perception on the subject matter. These perceptions are presented in Table 1.

Firstly, the respondents were asked if they were familiar with the concept of research ethics and its importance to academic research and understood the consequences of violating ethical principles in their academic work. The result from Table 1 shows that both statements received the highest percentage (86.8%) of agreement, indicating that most participants are familiar with the concept of research ethics and recognize its importance in academic research. More so, it suggests that a substantial portion of participants were aware of the potential consequences of violating research ethics principles in their academic work. Also, while slightly lower than the previous statements, a majority (69.1%) still actively seeks information and resources related to research ethics, indicating a proactive approach to staying informed on ethical considerations. This is similar to the findings of Hunt and Godard (2013) who argued that the availability of procedural ethics, norms and standards promotes the awareness of research ethics among researchers.

On the contrary to the high level of awareness of research ethics among the study participants, less than half of the participants (46.3%) feel there is a culture of research ethics awareness and discussion in their higher institutions of learning. This implies that research ethics is not a culture that perpetuates the ways research is conducted in the higher educational institutions in the Nation. In sum, the significant construct with the highest percentage of agreements and relationship is that participants are familiar with the concept of research ethics and the consequences that follow when violated.

Secondly, the study investigated the participants' understanding of research ethics which takes it a step further above awareness. It is apparent from Table 1 that only 65.2% of the participants have a clear understanding of the ethical guidelines and principles that govern research activities in an academic setting as compared to 86.8% of the participants' level of awareness. Also, 51.1% of the participants understand the process and steps involved in obtaining ethical approval for research projects at their higher institution of learning, which is at a border line. Similarly, Participants' understanding of the potential ethical dilemmas that may arise during research activities and

how to address them appropriately received the lowest agreement score of 49.6%. This implies that most of the participants conducted research despite their lack of understanding of the ethical clearance process nor the ethical dilemma arising during research. This begs the question, how ethical is the research conducted by these students and how reliable are their findings? This is in line with the notion of MacNeill et al. (2020), whose arguments were that capacity building on research ethics is the logical way to instil the understanding of research policies, guidelines and ethically sound research culture in researchers.

Thirdly, even though the majority of the participants were familiar with the concept of research ethics, they were further probed to assess their understanding of research integrity principles. The study tested the principles set out in the WCRI documentation (WCRI, 2022). As shown in Table 1, only 34.8% of the respondents were familiar with the concept of research integrity and its importance to academic work. Also, only 25.9% of respondents can distinguish between proper research practice and potential violations of research integrity. These questions reveal that most respondents are unaware of the concept of research integrity as compared to the concept of research ethics. The seven principles of research integrity that were further tested include professional conduct, fair treatment, responsible resource management, honesty in reporting, adherence to standards, personal accountability and respect for others.

The findings regarding the seven principles of research integrity shed light on the varying degrees of emphasis and commitment among respondents. Fair treatment, honesty in reporting, and respect for others emerge as the top-rated principles, with 55.6%, 59.3%, and 57.8%, respectively. These high rankings suggest a strong collective dedication to ensuring equitable and respectful treatment of individuals involved in research, emphasizing the importance of transparent reporting, and recognizing the value of professional courtesy and respect for colleagues' work. The prominence of these principles implies a shared commitment to fostering a positive research culture characterized by fairness, transparency, and mutual respect. This is similar to the argument of Horn et al. (2022) that research integrity is essential in achieving the economic and societal value of research. More so, the WCRI

(2022) mission statement alluded that the consistent compliance with principles such as fair treatment, honesty in reporting and professional respect and courtesy for others are fundamentals of a good research practice.

Conversely, professional conduct, responsible resource management, adherence to standards, and personal accountability received comparatively lower rankings, with 34.8%, 39.3%, 40.0%, and 47.4% respectively. This suggests that there may be areas for improvement in aspects such as consistently displaying professional courtesy, prudent management of research resources, upholding established research standards, and personal ownership of research integrity principles. The lower rankings do not necessarily indicate a lack of awareness but may point towards opportunities for targeted interventions and training to enhance practices related to these principles. Addressing these areas could contribute to a more comprehensive and uniformly strong adherence to research integrity across all dimensions, reinforcing the ethical foundation of academic research within the surveyed community.

Lastly, testing compliance among participants is paramount to fully understanding the landscape of research ethics and integrity in the Nation. As such, the findings from Table 1 reveal an alarming and concerning result. The findings suggest a complex landscape in terms of the participants' compliance with ethics and research integrity guidelines. Most respondents, 54.8%, indicate a strong commitment to seeking ethical approval as required by university guidelines before initiating research projects. This high percentage suggests a prevalent awareness and compliance with the foundational step of obtaining ethical approval, showcasing a responsible approach to research conduct.

However, obtaining ethical approval is not all that it is in ethics and research integrity, rather, compliance with the established ethical and integrity guidelines during the entire research process ranging from identification and formulation of a research problem or question, followed by an extensive review of existing literature to establish a theoretical framework, the design of a methodological approach, including data collection methods and analysis techniques, to address the research question and systematically collecting,

analysing, and interpreting data, leading to the formulation of conclusions and insights is important.

As such, the results in Table 1 also reveal areas where compliance with ethical guidelines is less consistent. Notably, a portion of respondents acknowledge occasional deviations from ethical guidelines and protocols during various stages of the research process, such as data collection, analysis, and reporting. For instance, 14.8% admit to occasionally deviating from ethical guidelines, while 5.2% admit to occasionally proceeding without obtaining informed consent from participants. Additionally, a subset of respondents, ranging from 7.4% to 14.1%, admit to occasionally resisting feedback and guidance from mentors and supervisors, overlooking potential ethical challenges, and wavering in their commitment to upholding research ethics.

These findings imply that while there is a commendable overall commitment to the foundational step of obtaining ethical approval, there are instances where researchers may face challenges or make occasional lapses in adherence to ethical guidelines. Majority of these challenges are similar to those of Petillion et al (2017) and Huang et al (2021)

Table 1: Key construct and questions to capture awareness, understanding and compliance.

Key construct on the level of awareness of research ethics structure amongst participants	Frequency (%)
I am familiar with the concept of research ethics and its importance in academic research.	118 (86.8)
I am aware of the specific ethical guidelines and principles that researchers should follow when conducting academic research.	104 (76.5)
I understand the potential consequences of violating research ethics principles in my academic work.	118 (86.8)
I feel adequately informed about the procedures and processes for obtaining ethical clearance for my research projects.	84 (61.8)
I actively seek information and resources related to research ethics to ensure the ethical	94 (69.1)
I feel that there is a culture of research ethics awareness and discussion among students at my university.	63 (46.3)

Key construct on the level of understanding of research ethics structure amongst participants	Frequency (%)
I have a clear understanding of the ethical guidelines and principles that govern research activities in an academic setting.	88 (65.2)
I can accurately explain the importance of obtaining ethical clearance before conducting research projects.	80 (59.3)
I am familiar with the process and steps involved in obtaining ethical approval for research projects at my university.	69 (51.1)
I understand the potential ethical dilemmas that may arise during research activities and how to address them appropriately.	67 (49.6)
I feel confident in my ability to design research studies that adhere to ethical standards and principles.	76 (56.3)
Key construct on the level of understanding of research integrity principles amongst participants	Frequency (%)
Understanding Research Integrity: I am familiar with the concept of research integrity and its importance in academic work.	47 (34.8)
Ensuring Integrity: I can distinguish between proper research practices and potential violations of research integrity.	35 (25.9)
Professional Conduct: I consistently display professional courtesy in my interactions with fellow researchers and collaborators.	47 (34.8)
Fair Treatment: I am dedicated to treating all individuals involved in my research fairly and respectfully.	75 (55.6)
Responsible Resource Management: I view prudent management of research resources and funding as crucial for research integrity.	53 (39.3)
Adherence to Standards: I consistently uphold established research standards and guidelines to ensure the credibility of my work.	54 (40.0)
Honesty in Reporting: I am aware of the consequences of academic misconduct, including plagiarism and fabrication of data.	80 (59.3)

Personal Accountability: I take personal ownership of upholding research integrity principles throughout my research projects.	64 (47.4)
Respect for Others: I believe professional courtesy and respect for others' work are integral to preserving research integrity.	78 (57.8)
Key construct on the level of compliance with ethics and integrity guidelines amongst participants	Frequency (%)
I rarely initiate any research project without seeking ethical approval as required by university guidelines	74 (54.8)
I seldom overlook the ethical considerations and potential consequences of my research activities.	39 (28.9)
I occasionally deviate from ethical guidelines and protocols when collecting, analysing, and reporting research data.	20 (14.8)
I sometimes proceed without obtaining informed consent from participants before involving them in my research projects.	7 (5.2)
I occasionally disregard confidentiality and data protection standards while handling sensitive research information.	11 (8.1)
I sometimes overlook the potential ethical challenges that may arise during my research and fail to take steps to address them.	19 (14.1)
I occasionally resist feedback and guidance from mentors and supervisors regarding the ethical aspects of my research.	10 (7.4)
I sometimes waver in my commitment to upholding research ethics guidelines and being an ethical researcher.	17 (12.6)

Source: Authors compilation (2024)

Figure 2 clearly captures the trend in the level of awareness, understanding and compliance with ethics and research integrity. The results reveal that, on average, 72% of the respondents in the sampled higher institutions of learning were aware of research ethics and structure, suggesting a widespread awareness within this academic community. Moreover, 56% demonstrated a good understanding of research ethics, indicating a substantial connection between awareness and comprehension of the ethical framework. However, a notable distinction emerges as only 44% demonstrated an understanding of research integrity principles, signalling a potential lack of emphasis on this

aspect and highlighting a possible confusion among participants regarding the differentiation between research integrity and ethics.

Most importantly, the findings underscore a significant gap between knowledge and actual practice. Despite the high levels of awareness and understanding, the result suggests that there is not a commensurate culture of compliance with research ethics and integrity among the respondents. Particularly striking is the fact that, on average, only 18% of respondents fully complied with all aspects of ethics and research integrity in their research processes. This plain contrast indicates a disconnect between theoretical knowledge and practical compliance with ethical guidelines and integrity principles, pointing to the need for targeted interventions to bridge this gap and foster a more robust culture of research integrity within academic institutions. Similarly, studies such as those of Risal (2015) and Dhakal (2016) argued that until a culture of ethics and research integrity is thoroughly built and embedded in researchers, the issue of misconduct and unethical research processes will continue to be prevalent news.

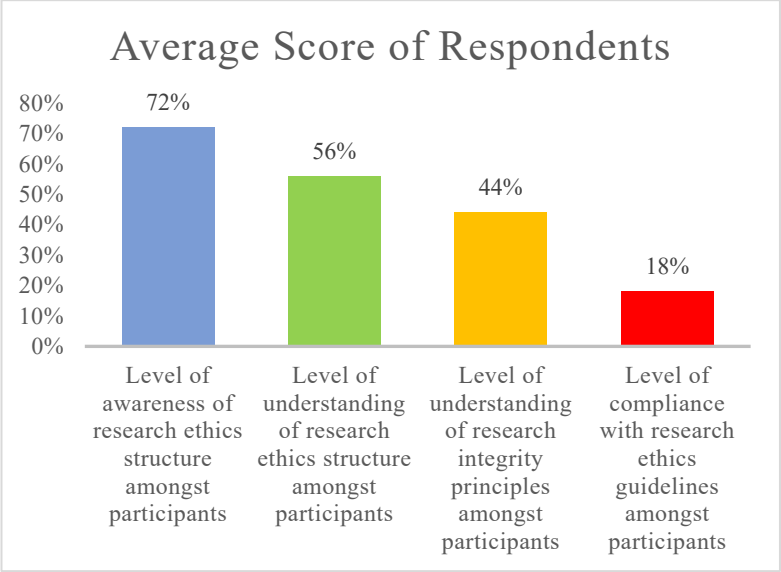


Figure 2. Percentage representation of the average score of respondents

Objective 2: To identify the barriers to research integrity and ethical compliance among university students in Botswana.

Despite the level of awareness and understanding of research ethics and integrity amongst the participants as shown in Table 1, numerous barriers impede the full compliance of research integrity principles and ethical guidelines. Some of the key challenges identified by the respondents are presented in Table 2.

The survey results highlight series of factors contributing to unintentional ethical violations among students engaged in academic research. A pervasive theme is the lack of awareness and understanding of specific research ethics and integrity guidelines, as evidenced by 85.9% of respondents acknowledging this as a contributing factor. This suggests that a substantial portion of students may engage in unintentional ethical lapses due to a deficit in their knowledge of the specific guidelines and principles governing research conduct. Additionally, the prevalence of insufficient guidance and training on research ethics (89.6%) amplifies the importance of robust educational programs to equip students with the necessary ethical framework and tools to navigate complex dilemmas in their research endeavours.

Institutional shortcomings also emerge as significant contributors to unintentional ethical violations, with 85.2% citing a lack of institutional structures, systems, and guidelines regarding research ethics and integrity. This underscores the need for educational institutions to establish comprehensive frameworks and support systems that not only communicate ethical expectations but also provide practical guidance on navigating ethical challenges. Furthermore, the pressure to achieve high academic performance stands out as a prominent external factor (73.3%), potentially driving students to take shortcuts that compromise research integrity. This implies a need for academic institutions to address the broader culture of achievement and consider how it may inadvertently foster unethical practices, emphasizing the importance of balancing academic rigor with ethical considerations. The findings also illuminate the impact of resource constraints, heavy workloads, fear of failure, and peer dynamics on research integrity. The high percentages associated with these factors (73.3% to 83.0%) underscore the

multifaceted nature of challenges faced by students. Studies such as those of Huang et al (2021) and Makhoul et al (2014) have argued that universities over the years have faced challenges in establishing research ethics and integrity support structures even though they have proved to be essential for universities to ensure that student research is ethically sound.

Table 2: Key construct on the barriers to research integrity and ethical compliance

Key construct on the barriers to research integrity and ethical compliance amongst participants	Frequency (%)
Lack of awareness and understanding of specific research ethics and integrity guidelines contributes to unintentional ethical violations.	116 (85.9)
Lack of institutional structures, systems, and guidelines regarding research ethics and integrity contributes to unintentional ethical violations.	115 (85.2)
Pressure to achieve high academic performance can lead to shortcuts that compromise research integrity.	99 (73.3)
Limited access to resources and materials may tempt students to engage in unethical practices such as plagiarism.	99 (73.3)
Insufficient guidance and training on research ethics make it challenging to navigate ethical dilemmas	121 (89.6)
Time constraints and heavy workloads may lead to inadequate attention to proper citation and attribution.	112 (83.0)
Fear of failure or rejection may push students to take unethical shortcuts in their research work.	100 (74.1)
Limited understanding of the consequences of academic misconduct hinders students' commitment to research integrity.	101 (74.8)
Peer pressure and competition among students can lead to sharing of work and ideas without proper attribution	93 (68.9)
Inadequate supervision and guidance from faculty members contribute to challenges in upholding research integrity.	109 (80.7)

Source: Authors compilation (2024)

To validate the feedback in Table 2, the respondents were further probed to provide the main barriers they encounter in complying with research ethics and integrity principles. The emerged responses with similar occurrences are

summarised into sub themes and are diagrammatically represented in Figure 3.

The five themes that emerged from the numerous responses obtained from the study participants are insufficient research training and support, supervision issues, ethical clearance challenges, resource and infrastructure limitations and educational and curriculum issues.

Insufficient Research Training and Support

Numerous participants indicated that lack of seminars, workshops, and tutorials for students to enhance their research skills, limited time for one-on-one consultations with lecturers in research training skills, unavailability of direct assistance from lecturers, leading to disruptions in student learning, lack of prior learning teaching on academic research and writing and incompetent lecturers not fully versed in ethics supervision are major factors limiting them in compliance with research ethics and integrity principles. This is similar to the findings of Tammeleht et al (2022) and Rissanen and Löfström (2014) who identified lack of training as key challenges in research ethics and integrity.

Supervision Issues

A few participants highlighted the issues around supervision as key barriers. They reported that research supervisors taking too long to provide feedback, potentially leading to frustration and unethical shortcuts by students, late feedback from supervisors demotivating students, and some supervisors not actively assisting students until close to submission times are all factors contributing to unethical behaviors. This finding is similar to the conclusions of Ntoyanto-Tyatyantsi (2023) who argued that although supervisors are expected to support and guide their students thoroughly on research ethical matters, there is very limited support from supervisors.

Ethical Clearance Challenges

Some participants reported that delays in the approval of ethical clearance by the ethics clearance committee pose as a major area of concern which can

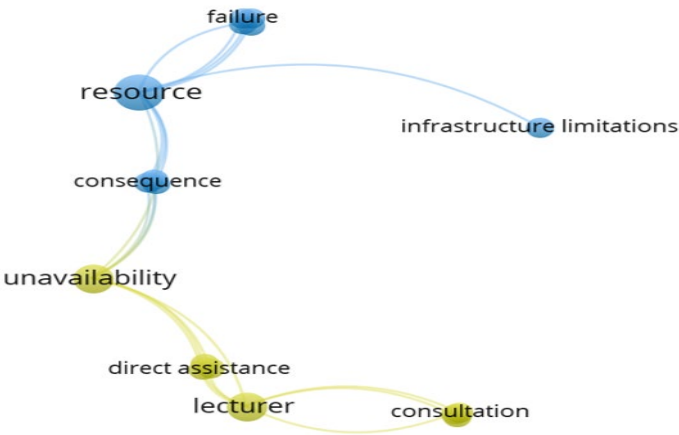
lead to unethical behaviors on the part of the students. This is similar to Koepsell et al (2014)'s argument on the perceived ethical reviews processes.

Resource and Infrastructure Limitations

A few participants opined that unavailability of resources, such as literature on ethics and its consequences and limited places for resources and Internet challenges contributing to fear of failure can lead to unethical behaviours on the part of the students. This is in line with Tammeleht et al (2022), whose findings alluded that students from various universities are not exposed to similar level of infrastructural support that can assist in promoting ethical practices among researchers.

Educational and Curriculum Enhancements

Some participants reported that lack of integration of research ethics and integrity into the undergraduate curriculum is a major bottleneck for their understanding of it at postgraduate level. Also, students are not taught about how to handle ethical challenges in a timely manner and improper induction of students into the principles guiding research, emphasizing the need for orientation on research integrity at the beginning of their post graduate studies are major factors limiting them in compliance with research ethics and integrity principles. This finding is similar to Rissanen and Löfström (2014) who in their study investigated the teaching of research ethics and found the challenge of curriculum that does not foster reflective researchers who consider research-related decisions in light of pragmatic, philosophical, ethical, and moral perspectives encompassing all aspects in the research process.



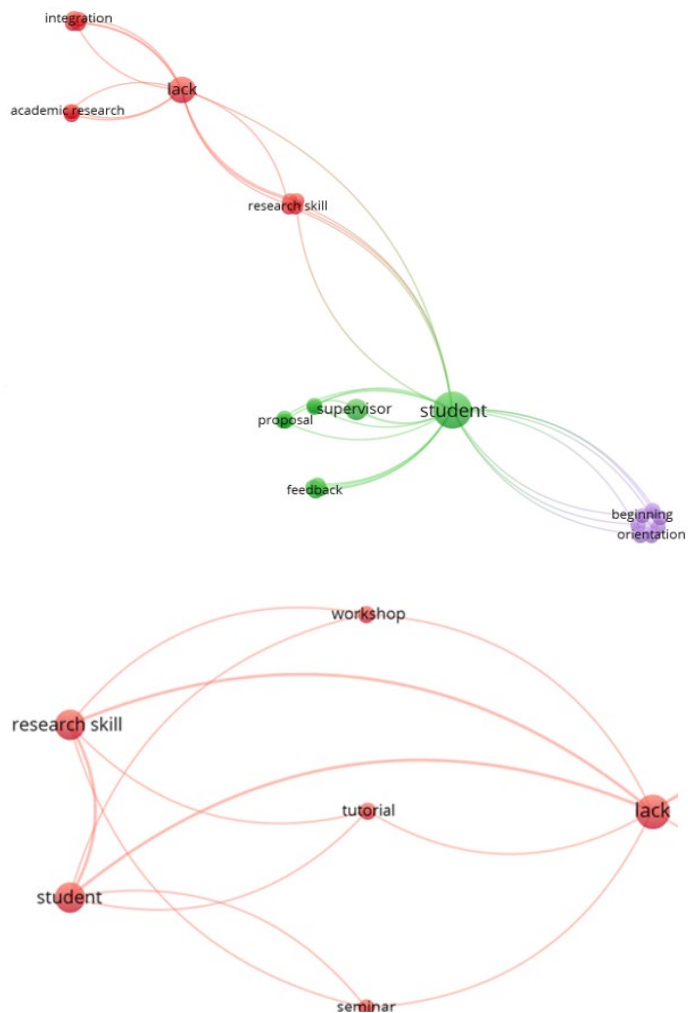


Figure 3: Emerged subthemes on barriers to research integrity and ethical compliance among participants

Objective 3: To formulate strategies for strengthening compliance with research ethics and integrity principles within the Botswana University context.

To overcome the identified barriers, participants aligned their level of agreements to the suggested strategies in Table 3. The results show the importance of targeted interventions to cultivate a culture of ethical research practices among students. The overwhelming support for comprehensive workshops and seminars on research ethics (96.3%) suggests a strong appetite among students for educational initiatives that deepen their understanding and commitment to ethical research. Incorporating research ethics education into academic curricula (94.8%) is viewed as a foundational approach to instill ethical principles from the outset of students' academic journeys. This implies that educational institutions should prioritize the integration of research ethics content into their formal educational programs to ensure a holistic and sustained focus on ethical considerations throughout students' academic experiences.

More so, the endorsement of establishing a dedicated research ethics committee at the university level (94.8%) reflects the recognition of the need for institutional support, guidance, and oversight for students' ethical research endeavors. This emphasizes the role of universities in creating structures that provide a framework for ethical conduct and ensure consistent adherence to research integrity principles. Furthermore, the acknowledgment of the positive influence faculty members can exert as ethical role models (88.1%) highlights the importance of faculty engagement in fostering a culture of ethical behavior. Encouraging faculty to demonstrate and uphold ethical standards in their own research practices can serve as a powerful model for students.

The call for a reward system for students who consistently uphold research integrity as well as sanctions for students who violate them (85.9%) emphasizes the potential motivational impact of recognizing and celebrating ethical behavior. This implies that institutions should consider implementing mechanisms that incentivize and reinforce ethical conduct as much as sanctions among students. Additionally, the endorsement of various

initiatives, such as online resources for proper citation, campus-wide awareness campaigns about the consequences of academic misconduct, mentoring programs, and collaborations with external stakeholders, further illustrates the dynamic nature of strategies needed to promote research ethics. Overall, these findings provide valuable guidance for educational institutions seeking to enhance ethical research practices and foster a culture of integrity among their student community.

Table 3: Key construct on the strategies for strengthening compliance with research ethics and integrity principles.

Key construct on the strategies for strengthening compliance with research ethics and integrity principles	Frequency (%)
Offering comprehensive workshops and seminars on research ethics would enhance students' understanding and commitment to ethical research practices.	130 (96.3)
Incorporating research ethics education into academic curricula can create a culture of ethical research from the start of students' academic journey.	128 (94.8)
Establishing a dedicated research ethics committee at the university level would provide support, guidance, and oversight for students' ethical research endeavours	128 (94.8)
Encouraging faculty members to serve as ethical role models through their own research practices would positively influence students' behaviour.	119 (88.1)
Introducing a reward system for students who consistently uphold research integrity as well as sanctions for students who violate them could motivate ethical behaviour among peers.	116 (85.9)
Providing online resources and guidelines for proper citation and referencing would support students in maintaining research integrity.	127 (94.1)
Creating a campus-wide awareness campaign about the consequences of academic misconduct would deter students from unethical practices	115 (85.2)
Developing a mentoring program where senior students guide their juniors on ethical research practices could foster a sense of responsibility.	123 (91.1)

Strengthening collaboration with external stakeholders, such as industry professionals, can provide real-world examples of the importance of research ethics.	123 (91.1)
Implementing a transparent and accessible reporting mechanism for research misconduct would ensure swift and appropriate action.	122 (90.4)

Source: Authors compilation (2024)

To validate the feedback in Table 3, the respondents were further probed to provide their personal strategies for solutions to the barriers of compliance with research ethics and integrity principles. The emerging responses with similar occurrences are summarised into sub themes and are diagrammatically represented in Figure 4. The five themes that emerged from the numerous responses obtained from the study participants are education and awareness, time allocation and research period, support and mentorship, training and professional development and technology and resources. These findings are similar to the recommendations provided in studies such as those of Van den Hoven et al (2023), Ntoyanto-Tyatyantsi (2023), Tammeleht et al (2022), Huang et al (2021), Hofmann and Holm (2019), Kouritzin and Nkagawa (2018) and Rissanen and Löfström (2014).

Education and Awareness

Numerous participants proposed that research ethics should be taught as a fundamental module, starting at the basic educational level. Also, participants alluded that the emphasis on the importance of policies governing academic research, and their implementation should be publicized for better awareness.

Time Allocation and Research Period

Some participants suggested a dissertation period of one year to allow time to properly conduct research and to prevent students from working under pressure. Other participants urged lecturers to give research work a larger time frame for completion.

Support and Mentorship

Participants emphasized close support and mentorship for students. They also called for school management to provide assistance and resources to improve student research and minimize unethical practices. They also recommended that lecturers should give practical approach to research integrity to enhance the practice of research ethics and integrity and for lecturers to always be available for assistance.

Training and Professional Development

Numerous participants proposed for lecturers to have refresher courses to ensure they are capable of guiding students on ethical matters. Other participants suggested to review and update the research strategy to incorporate new ethical guidelines.

Technology and Resources

Some participants call for provision of gadgets and Internet connection to students to ensure thorough research without shortcuts. Others call for assistance from school management with certain resources such as robust library materials and access to databases to conduct their research.

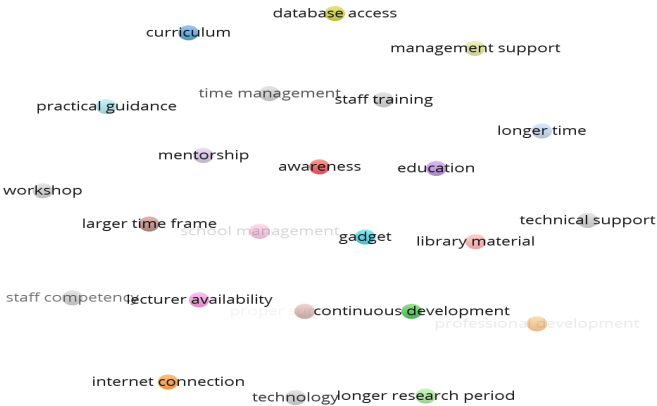


Figure 4: Emerged subthemes on suggested strategies for strengthening compliance with research ethics and integrity principles.

3. Conclusion and Recommendations

Moving towards academic integrity and upholding high ethical research standards as an institution necessitates an institutional approach involving the active participation of academic staff, support staffs and students in delineating and embracing ethical dynamics for institutional advancement. This assertion espoused a-priori is premised on the importance of shared responsibility and recognition that academic integrity and ethical principles form the foundational pillars essential for fostering institutional growth and reputation.

The study investigates the state of research ethics and integrity among university students in Africa, with telescopic insights from selected Botswana Higher Educational Institutions. Through a meticulous analysis, the research reveals a significant gap between theoretical knowledge and practical implementation. Despite a commendable level of awareness and understanding, the findings indicate a conspicuous absence of a corresponding culture of adherence to research ethics and integrity among the surveyed respondents. This plain contrast indicates a disconnect between theoretical knowledge and practical compliance with ethical guidelines and integrity principles, pointing to the need for targeted interventions to bridge this gap and foster a more robust culture of research integrity within academic institutions.

Furthermore, the study identifies several significant barriers hindering the realization of research integrity and ethical compliance among students. These barriers include inadequacies in research training and support, challenges related to supervision, ethical clearance constraints, resource and infrastructure limitations, as well as educational and curriculum concerns. Recognizing these barriers is crucial in devising effective strategies to enhance research integrity and ethical conduct within the academic landscape of Botswana.

The study thus recommends that emphasizes should be placed on the critical importance of awareness, comprehension, and adherence to research integrity principles in safeguarding institutional reputation and fostering a conducive

research ethics environment. It highlights the necessity for a nuanced examination of barriers to research integrity and ethical compliance among university students in Botswana. Accordingly, the study advocates for multifaceted interventions to address these challenges, including educational initiatives, adequate time allocation for research endeavours, provision of support and mentorship, investment in training and professional development, and utilization of technology and resources to facilitate ethical research practices.

Consequently, compliance with ethics and integrity guidelines among participants is crucial for ensuring ethical efficacy throughout the research process. Therefore, there is a pressing need for sufficient research training and support, timely supervisory feedback to discourage unethical shortcuts, and addressing ethical clearance challenges and resource limitations through market-driven responses within Higher Educational Institutions in Botswana. Effective strategies not only promote compliance with research ethics and integrity principles but also advocate for enhancements in educational and curriculum development, particularly in the era of artificial intelligence, to be clearly articulated and implemented within Higher Educational institutions in Botswana. By embracing these recommendations, institutions can cultivate a culture of research integrity and ethical conduct, thereby strengthening their academic standing and contributing to the advancement of knowledge and societal well-being.

Despite the uniqueness of the study, the study was conditioned by two main limitations. Firstly, the sample representativeness was a limitation to the study. While the study focuses on selected higher education institutions (HEIs) in Botswana, the findings may not fully capture the diversity of experiences and perspectives of researchers across all HEIs in the country. The sample may inadvertently exclude students from certain demographics or institutions, potentially skewing the results and limiting the generalizability of the findings to the broader population of university students in Botswana. Future research in similar area can extend the sample size to include all registered universities and other research institution in the study to increase the sample size and possibility of generalisation. Lastly, the study's findings may also be influenced by contextual factors specific to each sampled

educational institution. Research ethics and integrity practices may vary across different academic disciplines, institutions, and regions within the country. Additionally, cultural norms, institutional policies, and socio-economic factors could impact students' attitudes, behaviours, and perceptions towards research ethics and integrity. Future research in similar area could account for some of these contextual nuances to enhance the study's insights and applicability to other settings and context.

4. Bibliography

- Akaranga, S.I. and Ongong, J.J., 2013. *The phenomenon of examination malpractice an example of Nairobi and Kenyatta universities* (Doctoral dissertation, University of Nairobi).
- Akindele, A.T. and Kerridge, S., 2019. “Benefits of Research Management and Administration for African Universities – The Way Forward”. *Selected Papers For*, p.201.
- Alba, S., Verdonck, K., Lenglet, A., Rumisha, S.F., Wienia, M., Teunissen, I., Straetmans, M., Mendoza, W., Jeannetot, D., Weibel, D. and Mayanja-Kizza, H., 2020. “Bridging research integrity and global health epidemiology (BRIDGE) statement: guidelines for good epidemiological practice”. *BMJ Global Health*, 5(10), p.e003236.
- Dahal, B. and Rijal, S., 2022. “Research integrity: learning from collective action in Nepal”. *Facets*, 7(1), pp.236-246.
- Dhokal, R.K., 2016. “Responsible practice of research: Safeguarding research integrity and publication ethics”. *Journal of education and research*, 6(2), pp.1-11.
- Fouka, G. and Mantzorou, M., 2011. “What are the major ethical issues in conducting research? Is there a conflict between the research ethics and the nature of nursing?” *Health science journal*, 5(1), p.3.
- Guillemin, M. and Gillam, L., 2004. “Ethics, reflexivity, and ‘ethically important moments’ in research”. *Qualitative inquiry*, 10(2), pp.261-280.

- Hofstee, E., 2006. *Constructing a Good Dissertation: A Practical Guide to Finishing a Master's, MBA or PhD on Schedule*. EPE.
- Horn, L., Alba, S., Blom, F., Faure, M., Flack-Davison, E., Gopalakrishna, G., IJsselmuiden, C., Labib, K., Lavery, J.V., Masekela, R. and Schroeder, D., 2022. *Fostering Research Integrity through the promotion of fairness, equity and diversity in research collaborations and contexts: Towards a Cape Town Statement* (pre-conference discussion paper).
- Huang, J. and Wang, Y., 2023. "Examining Chinese social sciences graduate students' understanding of research ethics: implications for their research ethics education". *Humanities and Social Sciences Communications*, 10(1), pp.1-8.
- Huang, J., Zhou, Y. and Sheeran, T., 2021. "Educational researchers' ethical responsibilities and human subjects' ethical awareness: implications for research ethics education in China." *Ethics & Behavior*, 31(5), pp.321-334.
- Hunt, M. R. and Godard, B., 2013. "Beyond procedural ethics: foregrounding questions of justice in global health research ethics training for students". *Global Public Health*, 8(6), 713-724. <https://doi.org/10.1080/17441692.2013.796400>
- Kaur, J., 2014. "A comprehensive review on metabolic syndrome". *Cardiology research and practice*, 2014.
- Koepsell, D., Brinkman, W.P. and Pont, S., 2014. "Human research ethics committees in technical universities." *Journal of Empirical Research on Human Research Ethics*, 9(3), pp.67-73.
- Kovacs, G., 1991. "The Question of Ultimate Meaning in Emmanuel Levinas." *Ultimate Reality and Meaning*, 14(2), pp.99-108.
- Lin-Hi, N. and Blumberg, I., 2018. "The link between (not) practicing CSR and corporate reputation: Psychological foundations and managerial implications." *Journal of Business ethics*, 150, pp.185-198.

- MacNeill, K., Bolt, B., Barrett, E., McPherson, M., Sierra, M., Miller, S., Ednie Brown, P. and Wilson, C., 2020. “An ethical engagement: creative practice research, the academy and professional codes of conduct”. *Research Ethics*, 17(1), 73-86.
<https://doi.org/10.1177/1747016120915950>
- Makhoul, J., El-Alti, L., Qutteina, Y., Nasrallah, C., Sakr, C., Nakkash, R. and Alali, K., 2014. “‘Protecting’ or ‘policing’ academic researchers’ view of IRBs in an Arab context”. *Journal of empirical research on human research ethics*, 9(5), pp.25-35.
- Mazonde, I.N., Sugarman, J. and Malete, J., 2007. *Implementing ethics policies in developing countries: ploughing on parched ground?*
- Mouton, J., 2012. *How to Succeed in Your Masters and Doctoral Studies. A South African Guide and Resource Book*. Van Schaik.
- Mugenda, O.M. and Mugenda, A.G., 2003. *Research methods: Quantitative & qualitative approaches* (Vol. 2, No. 2). Nairobi: Acts press.
- Neuman, W. L., 2011. *Basics of Social Research: Qualitative and Quantitative Approaches (2nd ed.)*. Pearson Education.
- Ongong’a, J.J. and Akaranga, S.I., 2013. *Work ethics for lecturers an example of Nairobi and Kenyatta universities*.
- Owakah, F.E. and Aswani, D.R., 2011. “The ethics of deontology in corporate communication.” *Thought and Practice*, 3(1), pp.115-129.
- Petillion, W., Melrose, S., Moore, S.L. and Nuttgens, S., 2017. “Graduate students’ experiences with research ethics in conducting health research”. *Research Ethics*, 13(3-4), pp.139-154.
- Resnik, D.B. and Stewart Jr, C.N., 2012. “Misconduct versus honest error and scientific disagreement.” *Accountability in research*, 19(1), pp.56-63.
- Resnik, D.B., 2011. “Scientific research and the public trust”. *Science and engineering ethics*, 17, pp.399-409.
- Journal of Ethics in Higher Education* 6(2025)

- Risal, P., 2015. "Research misconduct: The cardinal sin". *Annals of Clinical Chemistry and Laboratory Medicine*, 1(2), 1-2.
- Rissanen, M. and Löfström, E., 2014. "Students' research ethics competences and the university as a learning environment". *International journal for educational integrity*, 10(2).
- Saunders, M.N. and Thornhill, A., 2011. "Researching sensitively without sensitizing: Using a card sort in a concurrent mixed methods design to research trust and distrust". *International Journal of Multiple Research Approaches*, 5(3), pp.334-350.
- Schroeder, D., Chatfield, K., Singh, M., Chennells, R. and Herissone-Kelly, P., 2019. *Equitable research partnerships: a global code of conduct to counter ethics dumping* (p. 122). Springer Nature.
- Shah, N., 2011. "Ethical issues in biomedical research and publication". *Journal of conservative dentistry: JCD*, 14(3), p.205.
- Speklé, R.F. and Widener, S.K., 2018. "Challenging issues in survey research: Discussion and suggestions." *Journal of Management Accounting Research*, 30(2), pp.3-21. <https://doi.org/10.2308/jmar-51860>.
- Tammeleht, A. and Löfström, E., 2023. "Learners' self-assessment as a measure to evaluate the effectiveness of research ethics and integrity training: can we rely on self-reports?". *Ethics & Behavior*, pp.1-22.
- Tammeleht, A., Löfström, E. and Rodriguez-Triana, J.M.J., 2022. "Facilitating development of research ethics and integrity leadership competencies." *International journal for educational integrity*, 18(1), p.11.
- University of Nevada, Division of Research and History of Research Ethics. 2022. Accessed on the 15 August 2022 at History of Research Ethics | Division of Research | University of Nevada, Las Vegas (unlv.edu).
- Van den Hoven, M., Lindemann, T., Zollitsch, L. and Prieß-Buchheit, J., 2023. "A Taxonomy for Research Integrity Training: Design,

Conduct, and Improvements in Research Integrity Courses.” *Science and Engineering Ethics*, 29(3), p.14.

World Conferences on Research Integrity, Mission, WCRI. 2022. Accessed on 15 August 2023 at <https://www.wcrif.org/foundation/mission>.

5.Short Biography

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