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Assessing the effect of open distance and E-learning (ODeL) in enhancing women's access to higher education in Zambia

Mwansa Patrick [1, *], Chanda Chansa Thelma [2] and Loveness Ngulube [3]

[1] Department of Education and Social Sciences, Chreso University, Lusaka, Zambia.
[2] School of Postgraduate Studies & Research, Chreso University, Lusaka, Zambia.
[3] Department of Education, Chreso University, Lusaka, Zambia.

Abstract

Gender inequality remains a significant issue in developing nations, where many women face social, cultural, and political stigmas, stereotypes, and subjugations. Lack of education is a primary cause of these inequalities, disproportionately affecting women. Highly educated women are often perceived as rude, uncooperative, and incapable of managing household duties, discouraging some women and their parents from pursuing higher education. This study aimed at assessing the effect of Open Distance and E-Learning (ODeL) in enhancing women's access to higher education in Zambia. The study utilized a desk review methodology, examining relevant empirical literature to identify main themes and extract knowledge gaps. The study found that women are significantly marginalized by conventional learning systems at the university level, with restrictive socio-economic factors being the primary barriers to accessing tertiary education. The study further established that ODeL provide women with the flexibility to study while working and managing family responsibilities. ODeL helps women overcome constraints related to time, space, resources, and socio-economic barriers, significantly contributing to their empowerment. The study therefore recommends pursuing policies and programs to develop information and communication technology (ICT) and open distance education to broaden access to quality educational opportunities for women in higher education.

Keywords: Access; E-learning; Gender Inequality; Higher Education; Open Distance Learning

1. Introduction

Historically, women have faced numerous barriers to accessing higher education, including socio-cultural constraints, economic limitations, and geographic challenges. Traditional educational models often require physical presence, which can be restrictive for women due to household responsibilities, childcare, and societal expectations. Open Distance and E-Learning (ODeL) has consequently emerged as a transformative approach in the realm of higher education, offering unprecedented opportunities for women to access educational resources and attain higher degrees (Chanda & Phiri, 2024). This study therefore was conducted to assess the effect of ODeL in enhancing women's access to higher education in Zambia by focusing on the barriers it helps to overcome, the advantages it provides, and its broader socio-economic implications.

From the time immemorial, women have occupied a very significant proportion of the human society. The 2022 Zambian census figure reveals that the women folk constitute over fifty one percent (51%) of the nation's population (Zambia Statistics Agency, 2022). This figure reveals that the country cannot experience any meaningful development without the support of the women folk. Education is regarded all over the world as a basic tool for empowering, enhancing the status of women and bringing them into the main path of development (Ngulube et al, 2024). Education not only

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* Corresponding author: Mwansa Patrick

provides basic knowledge and skills for the women but it empowers women to take rightful place in society and development process, (Daniel, 2012) since education is an instrument for national development. It is often said that if you train a man, you train an individual but if you train a woman, you train a nation. Therefore, women education serves as a fundamental human right and a developmental necessity.

Higher education, to be certain, by itself, is not a panacea, but is a necessary condition for the advancement of women in society. It is undeniable that the social function of women's education is that cultural and scientific knowledge can promote the development of women's understanding of various issues that affect not only them but others as well. Chanda & Ngulube (2024)'s study noted that women in leadership roles have long been a topic of discussion and analysis, reflecting both progress and persistent challenges in achieving gender equality in various spheres of society. One notable aspect is the increasing recognition of the value that women bring to leadership positions, including their unique perspectives, collaborative approaches, and empathetic leadership styles. Higher education can enhance women's awareness of political participation and improve the quality of participation. It can also promote the development of social material production. And because of this the number of higher learning institutions has seen an increase over the past years. According to Mlambo & Mabunda (2021), the role of higher education as a powerful instrument and mediator of social change has been highlighted. A major finding is that participation in higher education enables women to impact on a number of discriminatory practices simultaneously and thereby effect change for the better. In other words, women who are educated are more likely to be listened to; their views are increasingly respected which means that they are able to make a contribution to society. This is like an upward spiral, resulting in greater opportunities for women's participation in all aspects of life.

In Zambia, the Education Statistics Bulletin of 2020 report revealed gender disaggregated data on education that compared to their male counterparts, women have, for the most part, attained only low levels of formal education. Despite its free education policy at all levels of schooling, access to education for all remained unattainable, more so for girls and women, the female literacy rate is low (Chanda, 2023a). According to UNESCO (2022), Zambia has an adult literacy rate of 87.5%. While the male literacy rate is 91%, and for females is 84.3%. The statistics indicated a wider gender disparity of male being more literate as compared to females. The following reasons as stated by Satayanarayana and Emmanuel (2009); Chanda & Madoda (2024) are some of the reasons for educational backwardness of women in Zambia like in many other developing countries:

- General indifferences to the education of girls
- Social resistance arising out of fears and misconceptions that education might alienate girls from traditions and social values and lead to maladjustment, conflicts and non-conformism
- Early marriage and social inhibitions against girls pursuing education after marriage
- Prevalence of child labor among girls belonging to weaker sections and hard domestic chores which some of the unmarried girls are required to perform
- Prevailing notions that sole occupation of women is to bear children, look after her husband and children, and thus be restricted to domestic work
- Discrimination against women's labor in both organized and unorganized sectors in matters of recruitment, training and promotion
- Many girls and their parents find that school's curriculum does not conform adequately to their needs and interests
- Unsuitable and inflexible social timing and inadequate facilities for girls in schools particularly in coeducational schools

World Bank (2021) still contributing to the above assertions indicates that in Zambia women and girls experience low literacy levels, as well as low levels of educational enrolment at the secondary levels. Although gender parity has been attained at the primary school level, as children progress through the education system, the percentage of female learners significantly drops. Chanda (2023b) alluded that a dropout is a pupil who was enrolled in the beginning of the school year and has left before the end of the school year, and was not enrolled elsewhere. Dropout rate on the other hand refers to leaving, dropping out of school without completing a high school education or equivalent credential such as a General Educational Development (GED) certificate.

At the tertiary level, it is also obvious that the traditional universities in totality cannot provide access to the number of applicants who intend to acquire university education in Zambia. The fact still remains that the challenge of mass access to university education in Zambia would continue to increase by the day as long as the higher education learning is tied only to admission into the four walls of the conventional universities, be it government or privately owned (Azevedo, at el, 2020). To this effect, in Zambia like many other countries most Universities have introduced Open Distance and e-

Learning (OdeL) programmes that have been designed to increase access to higher education, especially for non-traditional students (Mlambo & Mabunda, 2021).

In a recent survey on the 4 importance of various goals to institutions' Open Distance and e-Learning programs (a high proportion of which use online technology as a primary or supporting medium of instruction), two out of three United States of America four-year public institutions indicated that increasing student access was a very important goal; either by "making courses available at convenient locations" (72%), or by "reducing time constraints for course taking" (66%), (Demuyakor, 2020). The corresponding figures for four-year private institutions were also high (65% and 61% respectively). In Europe, as well, there is abundant evidence to show that widening access to their programmes and to their related academic resources is an important objective of many universities Open Distance and e-learning strategies; reaching new groups of students (women and other marginalized groups) is an additional and closely related goal (UNESCO, 2002). According to Demuyakor (2020), Open Distance and e-Learning (ODeL) offers opportunities for countries to meet the new and changing demands for education and training. ODeL is both complementary and under certain circumstances an appropriate substitute for the face-to-face methods that still dominate most educational systems. The advantages of ODeL are seen more in terms of the learner through more freedom of access, and thereby a wider range of opportunities for learning and qualification. The barriers that may be overcome by distance learning include not only geographical distance, but also other confining circumstances, such as personal constraints, cultural and social barriers and lack of educational infrastructure (Ali, 2020).

For the student, it is often a cheaper alternative to pursuing a course through conventional methods (Chanda, 2024a). Since many people cannot afford to leave their work in order to study, it is important that distance education and training may be combined with work. Distance and Open learning may also mean a more learner centered approach, allowing greater flexibility and choice of content as well as more personal organization of the learning programme (UNESCO 2015). Various studies have argued that the universalization of education and its worldwide acceptance as a continuous or lifelong undertaking, coupled with concerns about educational access and equity (Zhu & Liu, 2020) as well as the prevailing level of poverty, necessitate the use of various education delivery approaches to enable all citizens to benefit from this public good.

The conventional system caters for the needs of full-time learners from a specific age group enrolled in recognized institutions of learning at various levels of the education system: primary, secondary and tertiary (Chanda, 2024b). The requirements of such a system, usually determined by the relevant school/university boards, largely excludes many people outside traditional school-going age groups, those who are unable to fulfil essential eligibility requirements, and those who need education and training to gain competence in jobs and upgrading of their qualifications and training (Mitra & Mitra, 2020).

UNESCO (2015) report indicates that in the conventional approach the learner has to be on campus, to register as a fulltime student and to attend face-to-face lectures. Open Distance and e-Learning in this respect would be more appropriate to marginal populations, especially women, who in certain communities are limited by culture, poverty and tradition to access regular higher education institutions. Women face challenges of multiple roles that may limit their ability to access traditional mediums of higher education that may mean leaving work, home, or family.

Powell & Bodur (2020) argues that men constitute the first and underlying cause of gender (and perhaps every other form of) inequality. "It has become the prevailing custom in many societies that the male, gradually but determinedly acquired and retained decision within the family and other institutes of the society". Chanda et al (2023) noted that the effects of poverty on children are wide reaching and can lead to lifelong struggles, especially when the young people don't receive full education they deserve. Poverty and education are always inextricably linked in developing countries, this is because people living in poverty families may stop going to school so that they can either help their families at home or work to survive, which leaves most of them without the proper literacy and numeracy life skills they need to advance their careers. Making decisions in such private and public matters definitely translates into holding and retaining the power to control most affairs. And little surprise, such decisions of cause, would always be more beneficial to the male. Kerres (2020) further argues that women, no matter how educated, do not belong to the Boys'/Men's clubs, where important information is shared and crucial decisions are made. Most of these decisions may result in the marginalization of women. Studies by Hochschild (1989), involving research on women's work and family life, introduced the idea of the 'second shift', this being the home shift that women do following formal paid employment. This 'shift' involves tasks traditionally undertaken by women linked to family and community, including housework, and childcare.

The American Association of University Women (AAUW) believes that education forms a 'third shift', as more and more women see education as key to future opportunity and economic wellbeing and are embarking on distance education,

adding study and research to their other roles. While studies by Kwapong (2007) and later by AAUW are based on research undertaken in the United States of America, their findings are relatively universally applicable. Due to their multiple existing roles, women are particularly 'vulnerable to negative effects of adding a new role such as student to their already busy lives' (Ali, 2019).

Open Distance and e-Learning as a strategy to broaden access to higher education, especially for marginalized populations such as women, have been promoted worldwide, particularly in the last two decades. This has been mainly due to what has been perceived as the failure of the traditional higher education structures to recruit students in equal proportions from different socio-economic groups. Free and open societies should promote social mobility by developing talent in every social and ethnic group this is an issue which needs to be addressed by schools, universities, employers and governments (Abrioux & Ferreira, 2009). It is important that higher education institutions design strategies to recruit students from a wider range of students, including those from ethnic and cultural minorities, who are underrepresented in higher education.

According to Van Der Vlies (2020), any society committed to promoting equity must ensure that their education system, including their tertiary education sector, is accessible to students from the broadest spectrum of underrepresented and traditionally-excluded groups such as women. Ibid (2020) argues that supporting the opportunity to seek the benefits affordable by tertiary education in an equitable manner is reasonable and important, as well as just, based on the widespread evidence of the many public and private benefits of attaining a college degree. On a broader level, the public, societal benefits accrued by having higher levels of education present in the workforce include lower unemployment rates, increased tax revenues, greater civic and volunteer participation and lessened dependency on social services. Studies on access to higher education show that, by 2009, most countries had made significant efforts to increase female participation in higher education. However, South Asia and Sub-Saharan Africa still had considerably fewer females enrolled in tertiary education in comparison to the proportion enrolled in other regions. Chanda et al (2023b)'s study revealed that the prevalence of child marriage has been consistently higher in sub-Saharan Africa than elsewhere. Girls married early are more likely to experience violence, abuse and forced sexual relations. Child marriages jeopardize girls' rights, such as the right to education, because new brides are usually forced to drop out of school to bear children and to provide household labor.

Studies undertaken in developed countries show that women enthusiastically and successfully take advantage of Open Distance and e-Learning opportunities. For example, studies in North America, New Zealand, the United Kingdom and the Netherlands show that women outnumber men in enrolments in distance courses, ranging from 61%- 78% in selected universities. Enrolment for women in some of the larger Open Distance and e-Learning institutions varied from 50% at the Open University in the United Kingdom, 54.7% at UNED Spain and 38% at the Open University in the Netherlands (Murphy ,2020). Some socio-cultural factors confine women to the lower levels of education system. Early marriages, where younger girls (under 15 years) are often married off to older wealthy men in order to fetch a good dowry is a major factor behind girls' low performance, drop-out and withdrawal from school. Thus, lack of money is an excuse for reluctant parents and families to invest in the girls' education because they do not perceive the value of education for girls and also because of the socio-cultural perception about the role of women in society.

While early marriage takes many different forms and has various causes, one issue is paramount. Whether it happens to a girl or a boy, early marriage is a violation of human rights. (Chanda, 2024c) alluded that early marriage in Zambia lied at the intersection of broad set of problems facing girls. The practice violated girls' human rights, curtails their schooling, harms their health and sharply constrains their future. The high status accorded to marriage and motherhood in many communities' impacts negatively on female participation in education (Kapasia et al., 2020). There is also strong belief that once married, girls become part of another family and parental investment is lost (Sahu,2020). Moreover, highly educated women are often perceived as rude, uncooperative, and incapable of managing household duties, discouraging some women and their parents from pursuing higher education.

1.1. Statement of the Problem

Despite the potential of Open Distance and e-Learning (ODeL) to expand access to higher education for women, significant barriers persist in fully realizing this potential. While ODeL offers flexible learning opportunities that can accommodate the diverse needs of women, factors such as limited digital infrastructure, socioeconomic disparities, gender-based stereotypes, and inadequate support systems hinder women's full participation and completion of ODeL programs. Consequently, there is a substantial gap between the potential and actual effect of ODeL in enhancing women's access to higher education. Chanda et al (2023c) alluded that socioeconomic factors encompass a broad range of elements that influence individuals and communities' well-being, opportunities, and overall quality of life. These factors include income level, educational attainment, employment status, access to healthcare, housing stability, and

social support networks. Mbithi (2013) added that these play a significant role in shaping people's access to resources, opportunities for advancement, and their ability to meet basic needs. Socioeconomic disparities can contribute to unequal distribution of wealth and opportunities, leading to systemic inequalities and barriers to social mobility. Therefore, this study sought to assess the effect of Open Distance and E-Learning (ODeL) in enhancing women's access to higher education in Zambia.

Objectives of the Study

- To assess the effect of ODeL in enhancing women's access to higher education in Zambia.
- To analyze the effectiveness of ODeL in improving academic performance and educational outcomes for women in Zambia.

2. Methodology

The study adopted a desktop literature review method (desk study). This involved an in-depth review of studies related assess the effect of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education. Three sorting stages were implemented on the subject under study in order to determine the viability of the subject for research. This is the first stage that comprised the initial identification of all articles that were based on assess the effect of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education from various data bases. The search was done generally by searching the articles in the article title, abstract, keywords. A second search involved fully available publications on the subject on the effect of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education. The third step involved the selection of fully accessible publications. Reduction of the literature to only fully accessible publications yielded specificity and allowed the researcher to focus on the effect of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education which was split into top key words. After an in-depth search into the top key words (Open distance Learning, e-learning, enhancing access, women, higher education, education equality), the researcher arrived at 5 articles that were suitable for analysis. The 5 articles were findings from Getrude et al., (2021) who conducted a study to assess the implementation of learner support services in distance teacher education programs in selected public colleges of education in Zambia. The study found that both students and teacher educators were aware of Learner support services (LSS) although the majority of the distance teacher education students indicated that LSS was not well implemented. Others stated that giving of modules and also going to the college to revise after paying money was what constituted Learner support services.

Wanjiru (2018) conducted a study that sought to examine determinants of how government online services are utilized in Kenya with a focus on National Transport and Safety Authority Nairobi. The researcher adopted the Technology Acceptance Model Theory (TAM) of Vankatesh & Bala (2008). This theory explained how users take time to accept and make use of any new technology at their disposal. The study used a qualitative and descriptive survey research design. The study also established that digital culture has a significant effect on utilization of online government services. Further, the study found that e-governance implementation has a significant effect on utilization of online government services.

Horspool & Lange (2012) conducted a study set out to ascertain the types of learner support services offered to open, distance and e-learning students as well as identify learner support services that the students and the administrators felt were essential for effective learning. The study adopted a descriptive survey design. Purposive sampling was used to select three public universities offering open, distance and e-learning programmes, namely Egerton University, Kenyatta University and the University of Nairobi. The study found out that the administrators were aware of the essential learner support services but were limited by other factors that were beyond their control. The study recommends that; institutions offering open, distance and e-learning programmes should constantly assess the value of learner support services offered by constantly seeking the students" opinion and offer few but essential learner support services that are of high quality, adequate, of good quality and satisfactory to the students.

Mbithi, (2013) conducted a survey of Open, Distance and Electronic Learning Mode in Kenyan Universities with a bias to Administration, Delivery and Evaluation functions. The research design was descriptive and the respondents were selected using stratified random sampling. The study found out that Kenyan Universities lack some more effective interactive modem information technologies as compared to Open Universities from developed countries. Sona, (2013) conducted a study that sought to establish the effect of Inquiry-Based Teaching (IBT) on the teaching methods, establish the effect of academic best practices on the learning culture and investigate the effect of IBT on policy formulation of Kenyatta University City Campus. The researcher used case study research design purposively selected 120 respondents. This comprised of 100 students selected from four departments, 10 administrators and 10 lecturers. Primary data was collected using self-administered questionnaires. The results indicate that internet use have had a

negative effect on the learning and as well teaching within the City Campus. Internet also had influenced learning abilities of students by reducing class attendance by avoided lessons since they could easily access notes online, lack of in-depth research from different source (prefer internet) among other negative aspects.

3. Findings and Discussions

3.1. Effect of ODeL in Enhancing Women's Access to Higher Education

The effect of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education in Zambia can be significant, considering various factors that contribute to its impact. The study identified 4 main factors that have impacted to its effect. Socio-cultural Factors was found to be the highest at 40%, Accessibility and Flexibility at 25%, Cost-effectiveness at 20%, and Technological Advancements at 15%. Figure1 below summarized these findings;
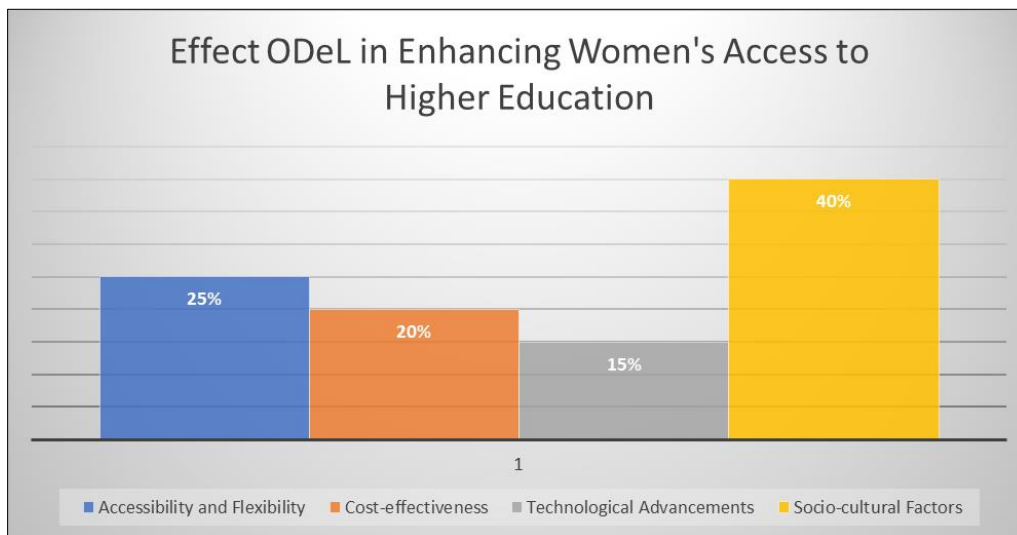
Figure 1 Effect of Odel in Enhancing Women's Access to Higher Education

According to study findings, socio-cultural factors play a significant role in influencing the impact of Open Distance and e-Learning (ODeL) on enhancing women's access to higher education in Zambia. Traditional gender roles and expectations often restrict women's opportunities for education, as they are frequently tasked with domestic responsibilities and caregiving roles that limit their time and mobility (Chanda, 2023c). ODeL offers a flexible alternative, allowing women to balance their educational pursuits with these obligations, thereby overcoming geographical and temporal barriers. Additionally, the anonymity and reduced physical presence required by ODeL can help mitigate societal stigmas or biases that women might face in traditional educational settings, fostering a more inclusive environment (Traifeh & Meinel, 2018). However, cultural attitudes towards technology and internet usage can also influence the effectiveness of ODeL, as women may face resistance or lack of support from their families or communities. Therefore, the success of ODeL in enhancing women's access to higher education in Zambia is deeply intertwined with the socio-cultural context, requiring concerted efforts to address and transform these underlying cultural norms and attitudes.

Furthermore, the findings showed that accessibility and flexibility are pivotal factors in the effectiveness of Open Distance and e-Learning (ODeL) in enhancing women's access to higher education in Zambia. ODeL provides a unique opportunity for women, particularly those in remote or rural areas, to pursue higher education without the need to relocate or commute long distances, which often pose significant barriers (SADC, 2022). The flexibility of ODeL allows women to balance educational pursuits with other responsibilities, such as family care and employment, which are typically more demanding on women. Van Der Vlies (2020) added that this mode of learning also accommodates various learning paces and schedules, enabling women to tailor their education around their personal and professional lives. By breaking down geographical, temporal, and socio-economic barriers, ODeL serves as a transformative tool in promoting gender equality in education and empowering Zambian women to attain higher education and, consequently, better socio-economic opportunities.

The findings also revealed that Open Distance and e-Learning (ODeL) has significantly enhanced women's access to higher education in Zambia, primarily due to its cost-effectiveness. Traditional higher education often entails high expenses related to tuition fees, accommodation, transportation, and other living costs, which can be prohibitive for many women, particularly those from low-income backgrounds. ODeL reduces these financial barriers by allowing women to study from home, thereby eliminating the need for commuting and on-campus housing. This flexibility enables them to balance their educational pursuits with domestic responsibilities and employment, further reducing the opportunity costs associated with full-time, on-campus education (UNESCO, 2002). Additionally, the availability of digital resources and online courses often comes at a lower cost compared to physical textbooks and in-person classes, making higher education more affordable (Chanda et al, 2024). By lowering these financial barriers, ODeL has become a crucial enabler for women seeking to advance their education and improve their socio-economic status in Zambia.

Moreover, technological advancements have significantly enhanced women's access to higher education in Zambia through Open Distance and e-Learning (ODeL). The proliferation of digital technologies, including affordable smartphones, widespread internet connectivity, and e-learning platforms, has enabled women to overcome traditional barriers to education, such as geographical constraints and societal expectations. Online courses and virtual classrooms offer flexible learning schedules, allowing women to balance their studies with domestic responsibilities (Tanyanyiwa, Itai & Madobi, 2021). Additionally, the use of multimedia resources and interactive tools has improved the quality and engagement of educational content, making it more accessible and appealing to women. These advancements have not only expanded educational opportunities but also empowered women by providing them with the skills and knowledge necessary to compete in the modern workforce (Chanda & Ngulube, 2024). Consequently, ODeL has become a vital instrument in promoting gender equality and fostering socio-economic development in Zambia.

3.2. The Effectiveness of ODeL in Improving Academic Performance and Educational Outcomes for Women

The study results showed that economic empowerment is a significant outcome of Open Distance and e-Learning (ODeL) in improving academic performance and educational outcomes for women in Zambia. By providing flexible learning opportunities, ODeL enables women to pursue education while managing familial and economic responsibilities. This model reduces barriers such as geographic constraints, high transportation costs, and time limitations, which often hinder women's access to traditional education (Daniel, 2010). With the ability to balance work and studies, women can acquire higher qualifications, improve their skills, and enhance their employability. This increased access to education contributes to greater financial independence and upward mobility, allowing women to support their families and participate more actively in economic development. Furthermore, the financial benefits of ODeL are reinforced by its relatively lower costs compared to conventional education systems, making it a viable option for women from diverse socio-economic backgrounds (Mpolomoka et al., 2023). Through economic empowerment, ODeL not only enhances educational outcomes but also fosters gender equality and drives societal progress in Zambia.

Additionally, flexibility in learning is a pivotal aspect of the effectiveness of Open, Distance, and e-Learning (ODeL) in enhancing academic performance and educational outcomes for women in Zambia. One of the community members narrated that:

"This mode of learning allows women to balance their educational pursuits with other responsibilities, such as caregiving, employment, and household management, which are often significant barriers to traditional education".

With ODeL, learners can access course materials and participate in learning activities at their convenience, enabling them to study at their own pace and in environments that suit their personal circumstances. This flexibility is particularly beneficial in addressing challenges faced by women in rural and underserved areas, where access to physical educational institutions is limited (Sampa, 2023). By reducing the need for frequent travel and accommodating diverse schedules, ODeL creates an inclusive learning environment that empowers women to pursue higher education and improve their socio-economic prospects. Furthermore, the ability to integrate digital tools and resources enhances engagement, promotes self-directed learning, and ultimately contributes to improved academic outcomes and greater participation in lifelong learning opportunities for women (Horspool & Lange, 2012).

The study also noted that the implementation of Open Distance and e-Learning (ODeL) in Zambia has significantly contributed to a reduction in dropout rates among women, demonstrating its effectiveness in improving academic performance and educational outcomes. By offering flexible and accessible learning opportunities, ODeL accommodates the unique challenges faced by women, such as balancing education with family responsibilities, overcoming geographical barriers, and managing financial constraints. Tait (2018) supported this finding by stating that this inclusive approach allows women to pursue their education without the need to relocate or abandon their household duties, which are common factors contributing to high dropout rates. Additionally, the ability to learn at their own pace

and access educational resources online enhances their engagement and motivation to complete their studies (Zawacki-Richter & Qayyum, 2019). As a result, ODeL empowers women with the skills and knowledge necessary for personal and professional growth, fostering greater gender equity in education and contributing to the broader socio-economic development of Zambia.

Furthermore, accessibility and inclusivity are pivotal factors in the effectiveness of Open, Distance, and e-Learning (ODeL) in improving academic performance and educational outcomes for women in Zambia. ODeL provides a flexible learning framework that allows women, particularly those in rural areas or with caregiving responsibilities, to access quality education without the constraints of traditional classroom settings. UNESCO (2002) added that this flexibility enables women to balance their educational pursuits with personal and professional responsibilities, addressing barriers such as financial limitations, societal expectations, and geographical distance. Additionally, ODeL platforms often incorporate inclusive approaches, such as diverse course materials and language options, which cater to the needs of women from various socio-economic and cultural backgrounds (Chanda, 2024d). By eliminating these barriers, ODeL empowers women to gain skills and qualifications that enhance their academic success and career opportunities, contributing significantly to their personal development and the broader goals of gender equity and national development.

The respondents also pointed out that increased enrollment is a significant indicator of the effectiveness of Open Distance and e-Learning (ODeL) in improving academic performance and educational outcomes for women in Zambia. One of the lecturers explained that:

"By eliminating many barriers associated with traditional education, such as the need for physical attendance, ODeL creates opportunities for women who might otherwise be excluded due to geographic, financial, or societal constraints. Women in rural areas or those with caregiving responsibilities can access quality education at their convenience, enabling them to balance academic pursuits with personal obligations".

Additionally, the flexibility of ODeL allows learners to progress at their own pace, fostering a more inclusive environment where women feel empowered to pursue higher education and acquire skills relevant to the job market. This increased accessibility not only leads to higher enrollment rates but also promotes lifelong learning, ultimately contributing to improved educational outcomes and socio-economic empowerment for women (Kwapong, 2007).

The respondents added that access to quality resources plays a crucial role in enhancing the effectiveness of Open Distance and e-Learning (ODeL) in improving academic performance and educational outcomes for women in Zambia. ODeL platforms, when equipped with comprehensive learning materials, digital libraries, and interactive tools, enable women, especially those in remote areas, to engage in self-paced learning and access educational content that may otherwise be unavailable to them through traditional means. Horspool, A., & Lange (2012) observed that this accessibility ensures that women, who often face social, economic, and geographic barriers, can pursue higher education without the constraints of physical campus attendance. Furthermore, the availability of well-structured online courses, tutorials, and academic support systems enhances their ability to grasp complex concepts, apply knowledge, and develop critical thinking skills. These resources not only improve academic performance but also foster greater participation in the workforce and contribute to women's empowerment (Chanda & Ngulube, 2024). The success of ODeL in Zambia hinges on continuous investment in digital infrastructure, curriculum development, and training for both students and instructors, ensuring that women can fully leverage these resources to enhance their educational outcomes and overall quality of life.

Moreover, the study revealed that the generational impact of Open, Distance, and e-Learning (ODeL) in improving academic performance and educational outcomes for women in Zambia is profound, as it extends beyond individual learners to influence families and communities. ODeL enables women, often restricted by traditional roles and socio-economic barriers, to access higher education and develop their skills while balancing family responsibilities. This empowerment translates into improved literacy and earning potential, fostering economic stability and greater involvement in decision-making processes within households (Kapasia et al., 2020). Furthermore, educated women tend to prioritize their children's education, breaking cycles of poverty and creating a ripple effect of improved educational outcomes across generations. The flexible nature of ODeL ensures inclusivity, allowing women from diverse backgrounds to pursue academic goals at their own pace, thereby contributing to the creation of an educated and skilled female workforce essential for national development (Mlambo & Mabunda, 2021).
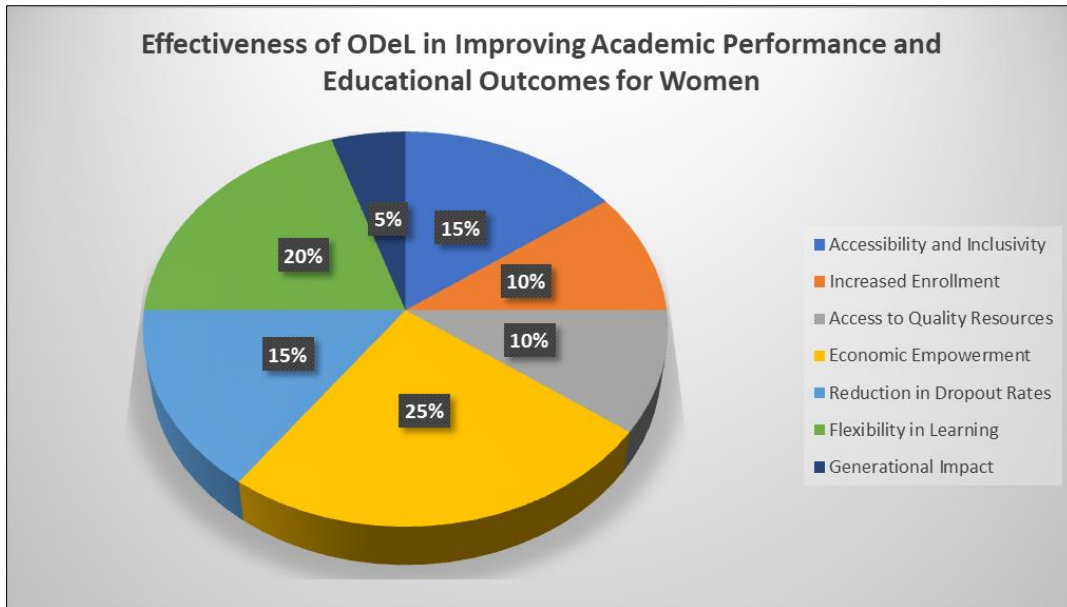
Figure 2 The Effectiveness of ODeL in Improving Academic Performance and Educational Outcomes for Women in Zambia

4. Conclusion

The implementation of Open Distance and E-Learning (ODeL) has significantly enhanced women's access to higher education in Zambia by addressing traditional barriers such as geographical limitations, financial constraints, and socio-cultural challenges. Through the flexibility and accessibility provided by ODeL, more women, including those in rural areas or those balancing family and work responsibilities, have been able to pursue tertiary education. The mode of learning has also empowered women by providing opportunities for skill development, career advancement, and socio-economic mobility. However, challenges such as limited digital literacy, inadequate infrastructure, and the digital divide must be addressed to fully realize the potential of ODeL in promoting gender equity in education. Strengthening technological support systems, fostering inclusive policies, and increasing awareness about the benefits of ODeL are essential steps in ensuring its continued success in transforming women's access to higher education in Zambia.

Recommendations

The following are actions that should be taken on the basis of the findings of this study;

- Improving Technological Infrastructure and Accessibility:

The government and educational institutions should invest in expanding and upgrading internet connectivity and digital infrastructure, especially in rural and remote areas.

- Targeted Awareness and Support Programs:

The educational institutions should establish awareness campaigns and outreach programs specifically aimed at women to inform them about the benefits and opportunities provided by ODeL. These programs should include mentorship, career guidance, and counseling to help women navigate the challenges of online learning.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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Authors' Short Biography

	Mwansa Patrick, specializes in Social Sciences; Civic Education and Project management. Currently he is heading the department of Education and Social Sciences at Chreso University.
	Chanda Chansa Thelma specializes in Education and Social Sciences. She has lectured and still lecturing at the University level under the school of Postgraduate Studies & Research as well as the department of Education, Business and Social Sciences.
	Loveness Ngulube, specializes in Education Management and has been in this profession for over 30 years now. She has been a School Principal, School Coordinator and Education Faculty Dean at Chreso University.