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# Experiences of Youth (Orphans) Leaving Care Homes and Transitioning into Independent Living Situations: A Case Study of SOS Children's Village in Waterfalls, Harare, Zimbabwe

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## Abstract

*The purpose of the study was to explore the views of youth (orphans) leaving care homes and transitioning into independent living situations. A qualitative research approach based on an interpretive phenomenological analysis (IPA) was done using semi-structured in-depth interviews with 11 participants (7 males; 4 females) aged between 17 and 18 years who were purposively selected. Data was transcribed verbatim and thematically analysed. Three major themes emerged from the study: (1) views about the future; (2) preparation for independent living; and (3) evaluation of interventions provided. Key findings indicated that the participants wanted to further their education while others who acknowledged underachieving in school showed interests in self-employment, income generating projects and the desire to connect with their biological parents. Participants were taught life skills such as household chores, filing essential documents, controlling emotions and budgeting. Interventions were viewed as good and necessary. The socioeconomic environment impacted negatively on formal employment prospects and accommodation.*

**Keywords**: Young adult orphans, aftercare care services, institutional care, *ubuntu,* deinstitutionalisation

## Introduction

The purpose of this study was to explore the views of youth (orphans) leaving care homes on transitioning to independent living situations. Youth transition refers to the transition from adolescence to young adulthood, corresponding roughly to the period of 15 to 25 years (Van Breda, 2018). The high unemployment rate among young adults in Zimbabwe is a limiting factor for young people to transition from school or college into the workplace. One of the groups that have

unique challenges and needs is the youth transitioning out of the care system. Orphans are an example of individuals found at care centres. Care leavers are said to be disadvantaged because traditional family options and opportunities to be socialised in their own communities are taken away from them when they enter the care system (Gwenzi, 2015). Circumstances that make care a necessary intervention include, but are not limited to child neglect or abuse, mental illness or crime, behavioural problems and being AIDS orphans. Alternative care for orphans and vulnerable children which includes foster care, residential care, adoption and community because of the inability of the family unit to provide care (Van Breda, 2018). Biehal et al. (1995, as cited in Brenda, 2015) indicate that, upon leaving care, the lack of adequate preparation coupled with the early age at which care leavers are expected to assume full adult responsibilities, have tended to mean that loneliness, isolation, unemployment, poverty, homelessness, movement and "drift" were likely to feature significantly in many of their lives (p. 1). Also, care-leavers often show poorer outcomes than their peers who did not enter the care system in relation to education, crime, substance abuse and finances.

Literature distinguishes between pure orphans and social orphans. Pure orphans are children who are abandoned with no trace of their biological parents (Karandikar & Charegaonkar, 2019); while the deprivation endured by children due to parents' failure to perform their duties or parental negligence is called social orphans (Nar, 2020). There were 153 million orphans worldwide in 2015 of which 17.8 million lost both parents (UNICEF, 2017). Social orphans constitute 90% of the 2.7 million children living in orphanages around the world (Nar, 2020).

In Africa, there were nearly 52 million orphans of which 1.6 million are in Zimbabwe and an estimated 5000 live in Zimbabwean orphanages (NAC, 2011). The high number of social orphans in Zimbabwe might be attributed to absent parents who left the country due to economic hardships in search of greener pastures. Orphanages refer to facilities for short to long-term care of children other than in family settings (Sameena, Raouf, Tabish & Khan, 2016). Children in need of care and protection (for example, victims of abuse, children without biological parents, run away children and missing children) are provided with two forms of alternate care which include residence in child care institutions and foster care (Karandikar & Charegaonkar, 2019). Children in institutional care bring with them common scars inflicted by poverty, abuse, neglect, malnutrition, ill health, emotional trauma and lack of education and interventions in institutions in

the form of attachments with caregivers, ability to regulate emotional or tolerate emotional states, behavioural problems, basic social skills, education and vocational skills training, and career counselling to allow them to be independent (Karandikar & Charegaonkar, 2019).

Child care policies in Zimbabwe include the Zimbabwe Orphan Care Policy of 1999, the Zimbabwe AIDS Strategic Policy of 2006, the National Action Plan for Orphans and Vulnerable Children of 2001, and Basic Education Assistance Module of 2007 (Masuku, Banda, Mabvurira, & Frank, 2012). The Zimbabwe Orphan Care Policy views residential care as the last option in a six tier system of social safety nets for orphans, wherein the first option is biological parents, followed respectively by the extended family, community care, formal foster care and adoption (Velempini, 2014). This was premised on the idea that foster care and adoption should be alternatives for children without extended families and that institutional care be discouraged as long as other options had not been fully explored (Kurevakwesu & Chizasa, 2020). Informal care refers to any private arrangement provided in a family environment whereby the child is looked after on an ongoing or indefinite basis by relatives or friends (informal kinship care) or by others in their individual capacity while formal care is described as care that has been legally sanctioned whether it is placement in family care or in a residential facility (UN General Assembly, 2010).

Institutional care happens to be the most common and visible form in Zimbabwe (Muzingili & Gunha, 2017). The reason given by Kurevakwesu and Chizasa (2020) is the unprecedented decline of the African communitarian way of life, especially the use of values related to *ubuntu*. Due to colonialism, autocratic, corruption and the economic meltdown which resulted in many people leaving the country in search of greener pastures, *ubuntu* declined in Zimbabwe (Kurevakwesu & Chizasa, 2020). *Ubuntu* literally means humanness, 'I am because we are, I can only be a person through others' (Mbigi, as cited in Dziro & Mhlanga, 2018).

## Previous research

Studies across most countries have found that, compared to the general population, most care-leavers have consistently shown poorer outcomes in the following areas of their lives: unemployment, homelessness, lower educational qualifications, early parenthood, engagement in criminal behaviour, proneness to substance abuse, and susceptibility to poorer physical and mental health, social integration, lack of practical skills and direction for the future (Bond, 2020; Cashmore & Paxman, 2006; Courtney & Heuring, 2005; Dickens & Marx, 2020; Stein & Munro,

2008; van Brenda & Frimpong-Manso, 2020). Such situations result in financial difficulties for young people, affecting their ability to access self-supporting scaffolds and this may be attributed to their accelerated and abrupt path into adulthood (Singer & Berzin, 2015) while others in the general population have an extended transition into adulthood (Mendes, Pinkerton & Munro, 2014; Storø, 2017). In their study, van Brenda and Frimpong-Manso (2020) indicated limited social welfare programmes or specific programmes for care-leavers and a weakened ability of family systems to provide informal support. Bailey, Loehrke and French (2012**)** found that care leavers maybe afraid of the future due to tenets of societal pressures luring them into anti-social activities, unfulfilled promises by family members, dropping out of school and begging on the street.

However, other studies indicated that assurances of a safe future in terms of accommodation, feeding and education are critical in the readiness of orphans to leave orphanages (e.g., Mwoma & Pillay, 2015; Ssewamala et al., 2016). The critical issue is feeling ready for unification with biological parents or foster parents (Muguwe et al., 2011). Many speak of their need to trace and connect with their living biological family members after leaving care, often because of the realisation that life was difficult without support (Van Brenda & Frimpong-Manso, 2020) and the need for an identity and sense of belonging (Takele & Kotecho, 2020). But other studies reveal mixed outcomes with the young people reporting both positive and negative of family connections (Mendes et al., 2012). However, those without biological parents are more prone to physical and psychological disorders (Irudayasamy, 2006) due to unresolved childhood traumas (Dumaret et al., 1997).

Kelleher et al. (2000) indicated that successful transition meant that the young person had not been arrested, nor was committed into a mental institution or rehabilitation centre and had managed to get stable employment, while indicators of a failed or struggling transition were those who ended up homeless, engaged in criminal activity and having mental health issues.

Life skills such as how to clean a home, fix bulbs, cook, money management, self-awareness, problem solving, effective communication, conflict resolution, coping with emotions and stress management, prevention from drugs and suicide, among others, need to be provided so that children who grow up in residential care can deal with daily challenges that they may face in future (UNICEF, as cited in Manful et al,, 2015). Such life skills are based on good morals (WHO, 2009-2018). Evidence indicates that care-leavers living in their transitional youth house lacked

preparation in certain independent living skills and the cultural skills needed to function effectively in wider society (Frimpong-Manso, 2012). The skills identified as particularly challenging include handling money and budgeting (Dixon & Stein, 2003). A study conducted by SOS titled, *Lessons from Peer Research* (2012), found that most children in institutional homes had not received information on sexual wellbeing and how to handle relationships, healthy diet and keeping fit. However, Guma (2012) indicated that they had much knowledge on personal hygiene, personal relationships and making friends.

Resilience is evident in African studies as young people are shown relying on their own capacity to create opportunities for themselves rather than on social welfare services (van Breda & Dickens, 2016). Some African youth who leave care exhibit resilience by attaining high educational qualifications and not using drugs (Bukuluki et al., 2020; Dickens & Marx, 2020; Frimpong-Manso, 2020). Their personal motivation, which includes fear of failure and hope for the future, makes them succeed during their transition (van Brenda & Frimpong-Manso, 2020) implying that young people in care view education as a springboard to a better life, and the desire for educational success is strong (Artamonova et al., 2020, p. 4). However, research in European countries indicate that children and young people with experience of out-of-home care do not perform well in school, when compared to their peers (Artamonova et al., 2020) and their chances of moving on to further and higher education are limited (Cameron et al., 2018; Dæhlen, 2015; Forsman et al., 2016).

## Zimbabwean context

The National Residential Care Standards of 2010 (Ministry of Labour and Social Services, 2010b) provides guidance on child protection services in institutions so that when adolescents are discharged from institutions they may not find it difficult to adjust to the local community lifestyle (Muzingili & Gunha, 2017). The Residential Care Standards focuses on children going on holiday and staying with approved foster families in communities for a certain period of time. This pre-community integration and contact process reduces the negative effects of institutionalisation. The leave of absence documents are found at the Department of Child Welfare which grants permission to exit the institution for a specified period. The Zimbabwean policies are silent about the provision of transitional support to those leaving alternative care. This means that these people are not visible to policy makers and service providers resulting in them being highly vulnerable within an already precarious context.

Save Our Souls (SOS) Children's Village is a private, non-denominational organisation that aims to provide care for orphans and vulnerable children through the provision of accommodation and other appropriate forms of care (Muzingili & Gunha, 2017). At an appropriate age, normally at the age of 18, the SOS Village consults with the child and places him/her in a youth house. This would enable the young adult to practise semi-independent living in preparation for independence or exit. To become independent adults, adolescents need to leave their parental home.

The Children's Act specifies that the residential facility from which a person who has outgrown the system is discharged shall work with the person and the Department of Social Services to put in place mechanisms to ensure continuing education, training or work (Chibwana & Gumbo, 2014). Such services provide family environment, psychosocial support and prepare adolescents to adjust to society and be responsible citizens after being discharged (Chinyenze, 2017). Gradual and supported transitions out of institutionalised settings or foster care settings are key to ensure that young adults 'ageing out' of the system prosper in their lives (Cantwell et al., 2012).

Such aftercare care services assists young adults to lead an honest, industrious and useful life. In Zimbabwe, social workers in the Ministry of Labour and Social Services' Department of Social Services assume the role of probation officers and follow court procedures to place and remove children in institutions (Gwenzi, 2019).

This paper adds to the existing literature by exploring how youths in transitional homes perceive discharge/exit from residential care in Zimbabwe in light of the fragile economic climate. The annual inflation in Zimbabwe reached 230% in July 2019 (compared to 5.4% in September 2018), with food prices rising by 319% in July 2019 (World Bank in Zimbabwe, 2019). Extreme poverty is estimated to have risen from 29% in 2018 to 34% in 2019, an increase from 4.7 to 5.7 million people (World Bank in Zimbabwe, 2019). Zimbabwe has a high youth population contributing to 70 per cent of the population of 15.6 million and they are the hardest hit by unemployment (Tambwari, n.d). Zimbabwe can be classified as a fragile state because the state cannot or will not offer basic services and functions to the majority of the population (Warrener & Loehr, 2005) or the state is unable or unwilling to productively direct national or international resources to alleviate poverty (Torres & Anderson, 2004). Transition to independent living in such an environment is critical as institutionalised children come with a history of trauma and abandonment and often have long-term psychological difficulties that are unique to their population (Modi, et al., 2016,

p.87) resulting in them being highly vulnerable within an already vulnerable context (van Breda & Dickens, 2016).

## Research questions

1) How do youth leaving care view about their future in light of the economic conditions?
2) How do they view services aimed at preparing them for independent living?

## Method

The study used a qualitative research approach based on an interpretive phenomenological analysis (IPA). The IPA focuses on exploring how participants make sense of their personal and social world (Smith, 1996). The phenomenological study tries to explore the views of young adult orphans in orphanages about re-integration by getting close to the participant's personal world through a process of interpretive activity. To gather such information, the researchers used semi-structured in-depth interviews with the aim of producing rich and meaningful data from a small number of people (Patton, 2002; Silverman, 2006). This allowed the researchers to examine how participants perceived the particular situations they were facing. Different people have "different perceptions of the world" (Willis, 2007, p. 194) and such a multiple of perspectives can lead to a comprehensive understanding of a situation (Morehouse, 2011). This is appropriate for the study as it sought to understand and interpret orphans' views about re-integration in light of the adverse socio-economic environment in Zimbabwe and to understand the emotions involved in their interpretations (Babbie & Mouton, as cited in Zirima & Nkoma, 2018). This would result in making inferences about the relationships between individuals and their situations

## Participants

An IPA approach uses very small sample sizes, thereby sacrificing breadth for depth (Smith & Osborn, 2008) and, in this research, 11 participants (7males; 4 females) from SOS Children's Village in Harare, Zimbabwe, who were aged between 17 and 18 years were purposely selected and volunteered to participate in the study. This age group was selected because the government stipulates the age of exit as 18 and the participants were living in a transitional home or in the process of leaving care. The time frame of a minimum of 4 years in residential care was chosen because the participants could have experienced some care leaving programmes.

The recruitment of participants was done by social workers at the centre who were debriefed about the goals and procedures of the study. The feelings of youth about to leave care were critical in this study. The interviews lasted between 30 and 58 minutes - depending on the experiences of participants - and these were done at the residential administrative offices on weekends. The sample size provided a sufficient number of variations that were needed to come up with a typical essence (Giorgi, 2008). Table 1 below provides demographic information of participants.

## Procedure

Permission to carry out the research was initially sought from the Provincial Social Welfare Director in Harare and then from the Director at SOS Village in Harare. A preliminary meeting with research participants prior to the actual interview was carried out two weeks before the interview. The meeting provided an opportunity to establish trust with participants, review ethical considerations, complete consent forms, and review research questions, thereby giving participants' time to dwell and ponder on their experiences. In-depth interviews with orphans were conducted in a quiet office at the SOS administrative offices.

## Data collection methods

The primary data sources included orphans aged between 17 and 18 years who were residing at a transitional home in Harare. All interviews were audio-recorded with permission from participants and these were coded. These were then transcribed verbatim. Soon after each interview, key words, phrases, and sentences were transcribed.

## Data analysis

The researchers firstly described their own full personal experiences of youth leaving care so that they avoided interjecting participants' personal experiences into their 'lived experience' stories. This is known as 'bracketing' (Moustakas, 1994).

In order to understand the meaning and content of participants' mental and social world, an IPA involves a two stage interpretation process wherein participants make sense of their world and, in this case, the researchers' roles were to make sense of their participants' sense-making process (Brocki & Wearden, 2006). The standard analytic procedure followed Smith and Osborn (2008) guidelines on verbatim scripts. According to Zirima and Nkoma (2018), the approach focuses on a case-by-case analysis of each individual transcript which is read repeatedly in order for the

researchers to be familiar with the contents. Any significant meanings by the participant were noted down to the left-hand margin of the transcripts. When complete, the transcripts were re-read to note any emerging themes from the initial notes that captured the essence and importance of the text.

## Ethical considerations

Authority to carry out the project was sought from the Director of Social Welfare and the Director at SOS Village. Letter of authority was then given to the Director of SOS Village. A preliminary meeting with research participants prior to the actual interview was carried out 2 weeks before the interview. During the meeting, participants were informed that they could voluntarily participate or withdraw from the study at any time without giving reasons for doing so. A neutral person assisted to serve and assist participants in the completion of consent forms. This assured privacy and confidentiality to participants who were also informed about how data was going to be used and stored. Participants were also assured that there was no perceived harm in participating in the study.

### Credibility

Credibility refers to the meaningfulness of the findings and whether these are well presented (Kitto et al., 2008). The credibility criterion focuses on ensuring that the results of the study are believable from the perspective of the research participants. To achieve credibility of the findings and interpretations, a meeting was convened with participants so that they could reflect on the written preliminary analyses and the compiled themes, so that their views were solicited and incorporated, and what was missing could be added. This member checking process helped researchers to check their own subjectivity and ensure the trustworthiness of their findings (Lincoln & Guba, 1985).

## Results

Three major themes emerged from the study: (1) views about the future; (2) preparation for independent living; and (3) evaluation of interventions provided.

### *Views about the future*

Some participants who were doing their lower and upper sixth forms narrated the need to further their education up to university level. Those who were doing forms 3 and 4 wanted vocational

training in agriculture, motor mechanics and be self-employed. Some indicated the need to avoid drugs. Participants who acknowledged under-achievement in school showed interests in the non-formal sector such as poultry rearing, and the desire to connect with their biological parents.

The following quote from a lower sixth form student summarises the drive and determination that make her study harder, find employment and the need to get married and have children.

> We were promised continued support in the form of education for an extra 4 years. I work hard in school and, on several occasions, I ask myself: Why is it some students do better than me? This motivates me to study even more …..My aim is to study finance at university and proceed to get employment. I want to be like Chipo who is now at university. However, jobs are hard to come by, but with very good passes you might win. After my education and being gainfully employed….I can then plan to get married and have children. **(Participant 4)**

Participants who were doing forms 3 and 4 showed interests in vocational training and then be self-employed. They also indicated their wish to avoid drugs and crime.

> I see no reason why I should continue with education up to advanced level. That is a waste of time. After my ordinary level, I want to study motor mechanics at a Polytechnic College. I can earn money through self-employment…I do not want to be like others who have left this place who swim in beer and engage in fights. (**Participant 1**)

Participants who viewed themselves as low achievers viewed the non-formal sector as the best option and the need to reconnect with biological parents.

> Academics are not for me but I can use my hands. I am good at practical areas such as agriculture at school. Maybe farming might be good for me. I can learn this informally from others. Also, I want to go back to my parents and maybe stay with them. (**Participant 7**)

> After form 4, I am not so sure what I can do …I have been getting very low grades…but what appears to be the best for me is to venture into income generating projects like poultry rearing or buying and selling goods. If you get that start-up money things can be fine. (**Participant 8**)

Barriers mentioned focused on the economic situation in the country with a very high unemployment rate, cultural practices, concerns about returning home and the level of support provided.

> It is difficult for some of us to have girlfriends from the community. I was once in love with a girl from this community and the parents came to me and said that I do not have a totem and so I cannot hang around with their daughter. The daughter was barred from seeing me. **(Participant, 2**)

> *Hakuna mabasa uko* (literally meaning that - there are no jobs out there). Almost all private companies are closed. Those with degrees are now vendors.... Maybe I can stay longer in school. My parents and brothers drink a lot and are unemployed. They are always arguing and fighting. They cannot support my education. (**Participant 9**)

> Life is going to be tough once I leave. My mother is a cross boarder trader and most of the time I am home alone selling goods like soap, cooking oil, cigarettes and *mazitye* (second-hand clothes). The money is only enough for food and paying rentals and not adequate for paying for my schooling (**Participant 7**)

One participant with unknown biological parents viewed an illegal activity such as money changing as an option to survive in the harsh economic environment.

> Life is going to be difficult out there. People do not assist you. You need to do piece work – like loading river sand, selling airtime and changing money on the black market - in order to provide for your own food and accommodation. (**Participant 5**)

Some participants indicated the need to further their education (because they were promised continued support in education) and get employment while others who acknowledged underachievement in school showed interests in self-employment, income generating projects, not using drugs and the desire to connect with their biological parents. The challenges they anticipated focused on lack of jobs in the labour market, cultural practices, and money to start income generating projects. One participant, maybe due ignorance, showed interest in the illegal activity of money changing in the streets.

***Preparation for independent living***

Some participants indicated that they were taught life skills such as how to do household chores, filing essential documents, sent to buy some groceries, budgeting, personal hygiene, good diet, relationships, HIV, drugs and self-awareness.

The following narratives clearly indicate the preparations they got from social workers or carers and the reasons for doing them.

> They (carers) make sure that you bath yourself, wash your teeth in the morning and evening, make your bed and prepare your own food. This is necessary because it equips me to be able to do these when l am on my own. (**Participant 10**)

> We were assisted to get national identity cards, which l use whenever l go into town to buy a list of groceries…….they write the different types of meals to be cooked for each day of the week on a paper and place it on the kitchen wall…this is good because it teaches us planning for our meals and good diet when we leave. (**Participant 11**)

The following quote indicates that participants were told well in advance that they would be leaving the institution.

> I remember being told some months back that we will be leaving the institution….we were told several times that the identity cards and school certificates need to be placed in a secure place and be easily accessible. (Participant 2)

> They (social workers) told us how to handle relationships, dangers of using drugs, and HIV. (**Participant 4**)

The following participant indicated self-awareness and how to manage his anger.

> Some people like to tease me and I know that I can easily get angry. Whenever they do this, I just keep quiet and move away. (**Participant 3**)

The following narrative indicates that participants were given money and taught how to budget.

> We are given some money every month. We do not have any bank accounts because it is not permissible to open hard currency accounts. So our administration manage the money for us. You need to know how to manage your money after you leave this place – for example buying things like toiletries. (**Participant 7**)

The narratives from participants indicated they were taught life skills such as household chores, filing essential documents, sent to buy some groceries, controlling emotions, budgeting, personal hygiene, HIV, drugs and self-awareness.

***Evaluation of interventions provided***

Participants were asked about their readiness to leave the institution and to evaluate their experiences of preparation services and how these contributed or not to their readiness to leave care. Some participants were ready to leave but others were reluctant. However, others had mixed feelings about leaving. Most participants showed concern about deteriorating economic conditions in country.

> The institution provides continuous counselling for re-integration. After these sessions you know that it is time to face the real world. You may feel low but there is nothing you can do. There is no mealie meal, sugar and the like in the country. These things are found on the black market and are very expensive. You will have to fend for yourself when you are out there. (**Participant 4**)

Some commented on the household responsibilities and the level of discipline provided as good for their preparation.

> I am not sure about my readiness to face the world. However, I am a grown-up person and should leave. The skills they taught me such as cleanliness, making up the bed and

> the like are good for me. Of cause things out there are different. For example, rentals are tagged in hard currencies and most people are unemployed. (**Participant 1**)

The following quotation indicates on how to relate well with the community and the desire to exit.

> This is not an old people's home. One day you will have to leave. They provided us with useful preparation information. We were taught that once you do bad things – know that bad things will follow. Also if you do good things – know that good ones will happen. They said one needs to learn from his mistake and not to repeat that same mistake. (**Participant 6**)

One participant indicated that they were taught about respecting others and the effects of drug misuse. She also mentioned the need for follow-ups for those with medical conditions.

> I am ready to leave. Life is difficult for everyone. We were told to respect other people's property and the dangers of drug use - which is very good – because you will be well prepared in the real world. However, the institution should have follow-ups to see how we will be faring. For example, I have a health condition (asthma) which needs continuous medication. (**Participant 7**)

The following narrative suggest reluctance to leave the institution.

> I do not have any choice but to go and face life out there. I am not good academically and so I cannot proceed with education. There are no industries to cater for most of us and accommodation is expensive…if only they could assist us with accommodation. (**Participant 10**)

Although participants indicated that the institution provided them with some skills for independent living, they showed concern about continued health-care services and expensive accommodation and lack of employment because of the closure of several companies due to poor performance of the country's economy.

## Discussion

The first research question focused on participants' views about the future. Participants who were in their lower and upper sixth forms indicated the need to further their education up to university level. However, most of those doing forms 3 and 4 wanted vocational training. Those who acknowledged underachievement in school showed interest in self-employment, income generating projects, not using drugs and the desire to connect with their biological parents. The challenges they anticipated focused on lack of jobs in the labour market, cultural practices, and money to start income generating projects.

The government of Zimbabwe has social initiatives to integrate orphans into the community such as the National Residential Care Standards of 2010 (Government of Zimbabwe, 2010) that provides guidance on child protection services in institutions so that when young adults are discharged from institutions they will not find it difficult to adjust to the local community lifestyle (Muzingili & Gunha, 2017). The continued support for an extra 4 year period after the age of 18 years in the form of education and vocational training was a relief for those who were good academically. Those who were to leave care at a later stage were more likely to receive ongoing social and economic support thereby ensuring that they pursue their educational or employment related activities (Mendes, 2009). Young adults face high uncertainty after they exit education (Sironi, 2018) such as unemployment and lack of funds to start income generating projects. Those who were underachieving and showing interest in self-employment could be assisted by the Ministry of Small to Medium Enterprises which provides training and financial assistance. This group needs more support so as to prevent them from engaging in social ills such as prostitution, using drugs and stealing.

In Zimbabwe, Dziro and Rufurwokuda (2013) found that care leavers struggle to fit well in the local culture after leaving institutional care because the values taught in institutions are different from those in traditional family settings. Some participants who acknowledged underachievement in school showed interest in self-employment, income generating projects, not using drugs and the desire to connect with their biological parents. In South Africa, Van Brenda and Frimpong-Manso (2020) and Takele and Kotecho (2020) found that many speak of their need to trace and connect with their living biological family members after leaving care. The studies attributed this to the realisation that life was difficult without support and their need for an identity and sense of belonging. Furthermore, some young people have to rely on their own capacity to create opportunities for themselves such as self-employment, rather than on social welfare services (Van Breda & Dickens, 2016). Some participants indicated the need to attain higher qualifications. Some African youth who leave care exhibit resilience by attaining high educational qualifications and not using drugs (Bukuluki et al., 2020; Dickens & Marx, 2020; Frimpong-Manso, 2020). Their personal motivation, which includes fear of failure and hope for the future, makes them succeed during their transition (Van Brenda & Frimpong-Manso, 2020). However, attaining higher educational qualifications does not guarantee employment in Zimbabwe. Unemployment is the most daunting challenge facing Zimbabwean people (Nhundu, 1992). Analysts agree that politics,

poor governance and the weakening of the rule of law are major causes of high levels of poverty and vulnerability in Zimbabwe (Bird & Prowse, 2009). Those participants who indicated underachievement in school showed an interest of joining the informal sector such as poultry rearing and selling second-hand clothes. One participant even indicated a desire to pursue money changing, which is an illegal activity. The unstable economic environment has led to the proliferation of the informal sector and parallel (black) market that absorbed most young people as agents and dealers (Chingarande & Guduza, 2011). Zimbabwe can be classified as a fragile state because the state cannot or will not offer basic services and functions to the majority of the population (Warrener & Loehr, 2005) or the state is unable or unwilling to productively direct national or international resources to alleviate poverty (Torres & Anderson, 2004).

In non-African countries, Mendes et al., (2014) found that those who leave care at a later stage are more likely to receive ongoing social and economic support which can enable them to participate in educational or employment related activities. After they exit education, young adults face high uncertainty (Sironi, 2018) such as unemployment and lack of funds to start income generating projects.

The second research question focused on preparation for independent living. The narratives from participants indicated they were taught life skills such as how to do household chores, filing essential documents, sent to buy some groceries, budgeting, personal hygiene, HIV, drugs and self-awareness. Such life skills are based good morals (WHO, 2009-2018). Guma (2012) found that youth leaving care homes on transitioning to independent living situations had much knowledge about personal hygiene, personal relationships and making friends.

In tandem to the study findings, Vybornova (2016) found that orphans leaving care have great difficulties in finding a job, housing, keeping their own budget and they have inadequate self-esteem, and parasitism. Similarly, Karandikar and Charegaonkar (2019) indicated that a lack of properly planned aftercare services results in problems of shelter, sustenance and finding employment. In Zimbabwe, people may rent a single room, a rough wooden shack outside the main house, or a half room (Meekers & Wekwele, 1997) in hard currency. Furthermore, government policies towards orphans are being restricted due to lack of resources, political interference and lack of accountability and transparency in the community and political leadership

(Ringson, 2017). The lack of properly planned aftercare services results in problems of shelter, sustenance and finding employment (Karandikar & Charegaonkar, 2019).

## Conclusion and recommendations

The study found that young adults in orphanages might appear to ready for exit but they were apprehensive of the multitude of problems in the form of unemployment, accommodation, and healthcare. These were problems compounded by the socio-economic environment in the country. Young people ought to be given opportunities to develop skills that can help them with prospects of self-employment as they leave care. This might be accomplished by consulting with the Ministry of Small to Medium Enterprises that provides training and financial support to people in need of self-employment. Similarly, the Women's Bank provides financial assistance at reasonable rates for those in need of assistance to venture into self-employment. Assistance in finding part-time work while in institutional care might be helpful. Social and intellectual empowerment is critical in improving future aspirations of orphans. Equipping these adolescents with vital skills such as technical training might assist them to realise a brighter future through self-employment. Small families with a stable income are recommended for foster care in this economic environment. Also, allowing some care leavers to return to the SOS Village and narrate their successful experiences to orphans might provide a source of motivation.

## Further research

The study focused on a small sample size of orphans at a particular institution. Further studies ought to compare views on transition from dormitory (wherein children are housed in dormitories and share communal dining and living areas) and family-based residential care (which replicates nuclear family settings with smaller units and children having a parent or guardian figure facilities). Views of carers and social welfare officers could also be incorporated in such studies.

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# Limiting Lung Radiation during Breast Cancer Radiation Treatment Using Machine Learning

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## Abstract

*The linear accelerator (LINAC) produces x-rays which affect other non-cancerous areas during breast cancer treatment. The lung is highly affected during this process. Many women with breast cancer receive radiation therapy, which may increase the risk of subsequent primary lung cancer, pneumonitis, and lung fibrosis, as some normal or healthy cells in the area can also be damaged by radiation. In breast cancer treatment, breathe adapted radiotherapy enhances minimal effect on healthy tissue on the affected side, especially if the tumour is on the left breast where lung tissue is located. In this research, a prototype was developed to mimic this system. During inhalation, the lung inflates and, if radiation meets the inflated lung, a bigger portion will wear away as opposed to exhalation (when lung deflates). Basically, the principle is to run and turn the beam of the LINAC and radiate during exhalation when the lung is deflated. The input to the system is the pressure sensor which shows the breathing in and out. Outputs are the buzzer, which rings when abnormality occurs; a bulb shows or represents the LINAC and the LCD screen which shows when x-ray is on or off. The system is controlled by an Arduino Nano programmed using C-language. There is a voltage regulator to regulate the voltage and capacitor to filter the voltage. The circuit is based on the atmega328 microcontroller combined with the Arduino nano, and it uses pressure difference to check whether the patient is breathing in or out. Then based on that information the x-ray can then be directed onto the target area on the patient. On the circuit, a small lamp will be used to simulate the x-ray as an x-ray machine is complex to design and it will need more time and resources.*

**Keywords**: Linear accelerator, machine learning, X-ray, breast cancer treatment

## Introduction

Breast cancer radiation with a tangential photon field is typically used as an adjuvant to breast-conserving surgery to improve local control and perhaps survival in healthy women (Pedersen *et al.*, 2004). When one has cancer, usually the doctor prescribes a treatment which depends on the type and stage of the disease. The type of treatment is determined by the size and location of the tumour in the breast, as well as the findings of laboratory tests performed on cancer cells and the disease's stage, or extent (Lickiss, 1977). Radiation therapy, which employs high-energy X-rays to destroy cancer cells while limiting damage to healthy cells, is one way to treat breast cancer. It is frequently administered over a period of one to six weeks after a lumpectomy (partial mastectomy) to treat the residual breast tissue. Radiation is applied to the afflicted breast as well as the lymph nodes axillary to the arm and above the supraclavicular region. The majority of women with a tiny, early-stage tumour are ideal candidates for this kind of treatment (Dixon *et al.*, 2001). Using radiation treatment on women with cancer of the left breast poses a risk to the heart and the lung, owing to their proximity with the breast, as they may fall into the radiation field. Women may be at higher risk of coronary heart disease if their hearts are exposed to radiation during breast cancer therapy (Roos *et al.*, 2018). If a patient is also undergoing chemotherapy at the same time, or if they have underlying conditions that put them at risk of heart disease, radiation may increase the danger even more. The overall risk of heart damage owing to radiation is determined by several factors which include the radiation dose and the amount of heart exposed to radiation. This risk; however, is always present whether high or low doses are used (Oliver *et al.*, 2007). Also to note with accurate treatment planning where organs at risk are contoured the risk of exposure to the heart or lungs will be very minimum and will not exceed the dose limit for the organs at risk. However, artificial intelligence (AI) could be the way to go.

## Respiratory Gating

Radiation therapy involves giving high doses of radiation beams directly into a tumour. The radiation beams change the DNA makeup of the tumour, causing it to shrink or die. A tumour can sometimes move during treatment, especially if it is in an area of the body that naturally moves because of respiration, such as the breast, abdomen or lungs. Breathe adapted radiotherapy offers a significant potential for improvement in the irradiation of tumour sites affected by respiratory motion such as breast tumours. An example of breathe adapted radiotherapy (BART) is respiratory

gating. This is an innovative process that uses advanced computer software to guide the delivery of radiation as a patient breathes.

## DIBH treatment

Respiratory deep inspiration breath Hold (DIBH) is a specific radiation therapy technique for breast cancer treatment to spare doses to the heart and lungs. Using the DIBH technique, the radiation is delivered only at certain points during the patient's breathing cycle of inspiration and expiration. The patient is asked to take a deep breath in and hold their breath for about 20 seconds. This, in turn, will limit the amount of the heart and lung that is exposed to the radiation beam, since taking a deep breath in will allow these organs to move out of the treatment field. DIBH can be also used to minimise internal organ motion for other body sites such as the stomach, pancreas and liver (Chi *et al.*, 2015). Figure 1 shows the DIBH versus free breathing. One common element of treatment for breast cancer is adjuvant radiation. It has been demonstrated that adding radiation therapy following breast-conserving surgery lowers the local recurrence rate and increases long-term survival. The quality of treatment planning and delivery of radiation therapy depends on the precise delineation of target volumes and organs at risk, which is achieved with innovative technology. This makes it possible to precisely mould the radiation beam to fit the anatomy of every single patient. Target volumes in breast conserving surgery include the surgical bed and mammary gland; in mastectomy, the chest wall; and, if necessary, regional lymph nodes (axillary, supra- and infraclavicular, and internal mammary). Lungs, thyroid, brachial plexus, heart, spinal cord, and oesophagus are among the organs at danger. In this study, the focus is on using machine learning to limit lung consumption during radiation.

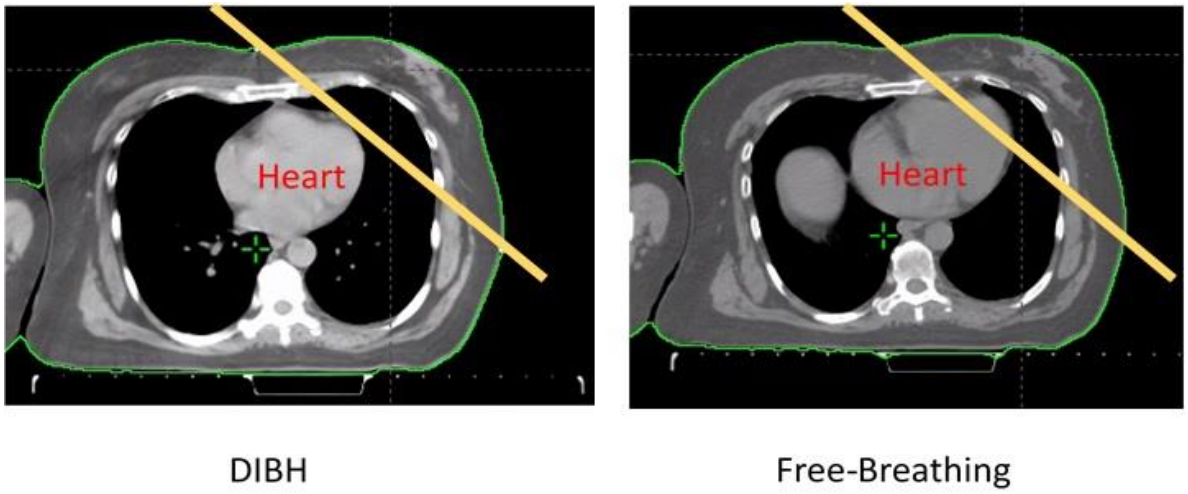


**Figure 1: : DIBH vs Free breathing**

(Source: Czeremszyńska et al., 2017)

## Breast cancer radiation treatment

Broadly speaking, there are two types of radiation therapy used to treat breast cancer: **external beam radiation** and **brachytherapy** (also known as internal radiation therapy) (Chen *et al.*, 2021). In this research, the authors will concentrate on external beam radiation.


**Figure 2: External beam radiation, brachytherapy and proton beam therapy(Czeremszyńska et al., 2017) b LINAC being inclined during breast cancer treatment to avoid much tissue damage**

## Problem statement

During radiotherapy treatment using a linear accelerator, exposing the lungs is unavoidable and this incidental exposure may increase the risk of subsequent primary lung cancer, pneumonitis and lung fibrosis.

## Aim

The aim of this study was to develop a machine learning based system that monitors breathing in cancer patients and determines when beam should be applied to spare the lung during breast cancer external beam radiation.

## Objectives of the research

The study objectives were to:

i) Create and implement an algorithm that obtains the breathing rate from the voltage signals recorded by the sensor(s),
ii) Establish breathing patterns of patients undergoing treatment,
iii) Develop a microcontroller-based prototype that will demonstrate how the system will work.

## Literature review

Breasts are a pair of structures on the pectoral region of the anterior thoracic wall (Swanson, Kim and Glucksman, 2010). They can be found in both males and females; however, they are more pronounced in females after puberty. The mammary glands; the most important tissues in lactation, an auxiliary gland of the female reproductive system, are found in the breasts of females (Barret *et al.*, 2016). The breast is placed on the anterior thoracic wall, it runs horizontally from the sternum's lateral border to the mid-axillary line and vertically between the 2nd and 6th costal cartilages (Academy et al., 2016). It superficially connects the pectoralis major, serratus anterior and the external oblique muscles. The breast can be divided into two sections: the upper and lower portions. The largest and most visible component of the breast is the circular body. The nipple, which is largely made up of smooth muscle fibres, is located in the centre of the breast. The areolae are a pigmented patch of skin that surrounds the nipple. Within the areolae, there are numerous sebaceous glands, which increase during pregnancy and secrete an oily material that serves as a protective lubricant for the nipple (Academy et al., 2016).

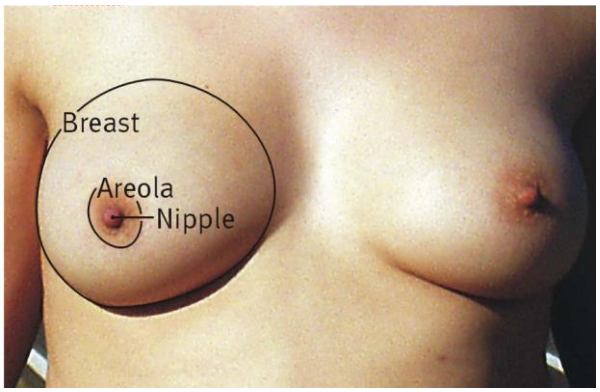


**Figure 3: Surface anatomy of the breast**

As the nipple grows, it appears as bilateral bands of thickened epidermis called the mammary lines or mammary ridges. In the 7th week the lines extend from the base of the forelimb to the region of the hindlimb on both sides of the body(Losi *et al.*, 2018). Greater part of the mammary lines disappears as soon as the nipple forms, leaving a small portion in the thoracic region and penetrates the underlying mesenchyme. It then forms 16-24 sprouts which are canalised to form lactiferous ducts by the end of the prenatal life. Initially, the lactiferous ducts open into a small epithelial pit which shortly after birth is transformed into a nipple by proliferation of underlying mesenchyme. At birth, lactiferous ducts have no alveoli therefore no secretory apparatus. At puberty; however, increased concentration of oestrogen and progesterone stimulate branching from the ducts to form alveoli and secretory cells (Atun *et al.*, 2015).

**Table 1: Breast composition**

| | **Gland part** | **Drainage** |
|---|---|---|
| 1 | Central and lateral parts | 75% drain into pectoral group of axillary nodes then into apical |
| 2 | Upper part | Drains into apical group (directly) of axillary lymph nodes |
| 3 | Medial part | Drains into internal thoracic (parasternal) lymph nodes, forming a chain along the internal thoracic vessels |
| | | Some lymphatics from the medial part of the gland pass across the front sternum to anastomose with that of opposite side. So, cancer can spread from one breast to another. |
| 4 | Inferomedial part | Anastomose with lymphatics of rectus sheath and linear alba, and some vessels pass deeply to anastomose with the sub-diagrammatic lymphatics. |

## Machine learning in breast cancer treatment

Utilising machine learning algorithms for classification of illness qualities and anticipating medical endpoints (for example, tumour recurrence hazard) relies vigorously upon imperatives to the classifier model itself. Generally, machine learning algorithms are organised to investigate training information, distinguish examples and connections, and devise models that relate the information to estimated results. As a rule, machine learning algorithms are prepared to discover the connection between the independent variable(s) "X" and result/dependent variable(s) "Y." The independent variables (that is, "X" variables) are known as descriptors, provisions, or attributes and are retrieved from estimated perceptions or models. In the radiomics setting, these may incorporate surface elements and shape descriptors. Right names of information tests (that is, factor "Y") are alluded to as the ground truth and are bound to exact results, classes, or occasions. These might incorporate clinical endpoints, for example, tumour recurrence, death, or proportions of medication obstruction. Ground facts may likewise be tissue characterisations, for example, harmless versus dangerous sorts. Ground truth names are otherwise called "gold standard' classifiers and frequently require manual assessment or contribution from human (expert) partners (Tran *et al.*, 2019).

Machine learning algorithms to obtain breathing rate from voltage signals

Machine learning is the consequence of trend acknowledgment and the assumption that computers can figure out how to execute an assignment. As a field of AI, machine learning is the capacity of a machine to learn, distinguish, and group from being presented to explicit information in an intuitive manner, and to learn and settle on dependable choices as well as to adjust when presented with new information. This method can be helpful for automatic trend acknowledgment in respiratory signals, for example, sleep apnoea, respiratory trend, and talking recognition (Hu *et al.*, 2020).

### Feature extraction

To begin with, for machine learning characterisation, a few elements should be given to the arrangement algorithm. These components should be retrieved from the original signal, and they should be picked for better outcomes.

For instance, when working with a wearable acoustic sensor (Rahman, 2017) meaning to perceive action designs like sitting, eating, and drinking and respiratory examples like murmuring, deep breath, and coughing, the elements retrieved from the sensor signals were identified with time, frequency, and cepstral.

**Microcontrollers and opto-coupling**

Opto-isolators or Opto-couplers, are comprised of a light transmitting gadget, and a light acute gadget, all enveloped within one package; however, with no electrical association between the two, simply a light emission (Hanna, 2021). The light emitter is almost consistently a LED. The light acute gadget might be a photodiode, phototransistor, or more recondite gadgets, for example, thyristors, TRIACs and so on. The optocoupler typically found in switch mode power supply circuit in numerous electronic hardware. It is associated in the middle of the essential and auxiliary part of force supplies. The opto-coupler application or capacity in the circuit is to:

1) Monitor high voltage
2) Output voltage sampling for regulation
3) System control micro for power ON/OFF
4) Ground isolation

**Biosensors and breast cancer treatment**

Regardless of the developing benefits of distinguishing breast cancer biomarkers, generally utilised symptomatic tests are ineffectively acute, confounded, tedious, expensive, just as high danger of false positive and negative (Jain, 2014). There is thusly yet a basic requirement for basic and quick acute and explicit strategies. Until this point, the distinguishing proof of oncogenetic biomarkers has been founded on the investigation of natural material gained through tumour tissue biopsy. Chemically changed cathodes were unmistakable in investigations with biosensors and electroanalysis. It is a moderately present-day strategy for anode frameworks that has a wide range of examination and clinical applications. For breast cancer identification, various kinds of nanoparticles have been secured to electrochemical biosensors utilising distinctive explicit biomarkers, for example, c-erbB-2 oncogene, and various antigens and antibodies. The review by Chen et al. (2014) alludes to the grouping of the oncogene c-erbB-2 in the saliva of ladies with breast cancer. In any case, because of the low centralisation of this biomarker, various tests were

expected to work on a biosensor dependent on a fluorogenic arrangement, just as to plan a sign intensification plot utilising a sign transducer test equipped for recognising the oncogene in the example of DNA present in saliva.

## Materials and methods

The research was done at one central hospital using the current LINAC machine for radiotherapy. Objectives 1, 2 and 3 were prepared and done. MATLAB was used to prepare the algorithm and check how the lung blows high and low. The demonstration used to show the system comprises the components below.

**Table 2: Components to make the prototype**.

| | Name of component | Specification |
|---|---|---|
| 1. | LCD | To show X-ray on / off |
| 2. | Arduino Nano controller | To control the circuit |
| 3. | Pressure sensor | As input to get the patient information whether breathing in or out |
| 4. | Buzzer | To show the abnormality of the patient |
| 5. | Bulb | Turns on when the radiation passes and off when it does not pass |

### Suggested solution

The lung is always a concern when treating breast cancer and it should only receive 65Gy or less of dose, which, if exceeded, could highly affect it (Appendix 1). An algorithm is to be developed that determines breathing patterns and pattern of ECG to be followed. Table 2 shows the different components used to test the system.

Parameters to control: Radiation beam

Parameters to measure: Breathing rate

### Signal and data processing

To process data and signals to detect and establish breathing patterns, MATLAB was used in the project to analyse the ECG signal.

**Filtering:** A capacitor is used to minimise high-frequency noise, preserving the sensor signal

**Amplification**: To amplify low amplitude signals for example, high-impedance voltage amplifiers.

## Results and discussion

In this study the researchers managed to come up with breathing rate using ECG pattern. This helped to tell whether the pressure was high or low, and therefore objective 1 fulfilled. After the breathing rate, patterns were obtained, and the signals were done thereby fulfilling objective 2. Objective 3 was to come up with a micro-controller-based system and this was done with pictures attached.

**Create and implement an algorithm that obtains the breathing rate from the voltage signals recorded by the sensor(s), process data and signals that detect and establish breathing patterns**

- The voltage signal used for this research was from an ECG machine. An electrocardiogram (ECG) is a simple test that can be used to check heart's rhythm and electrical activity of the heart.
- The sensors used to record the signal were taken to be electrode pads attached to the skin. Electrical leads carry the signal from the patient to the ECG monitor. The ECG machine stores the information about the heart electronically, which could be analysed by a professional when the test is complete.
- MATLAB was used in the project to analyse the ECG signal
- The signal data was acquired by a health care professional and uploaded to phyiso.net.org and, to bring it to be used in MATLAB, it was copied and pasted from the site and saved it as a txt. file in the working directory of MATLAB as shown below:

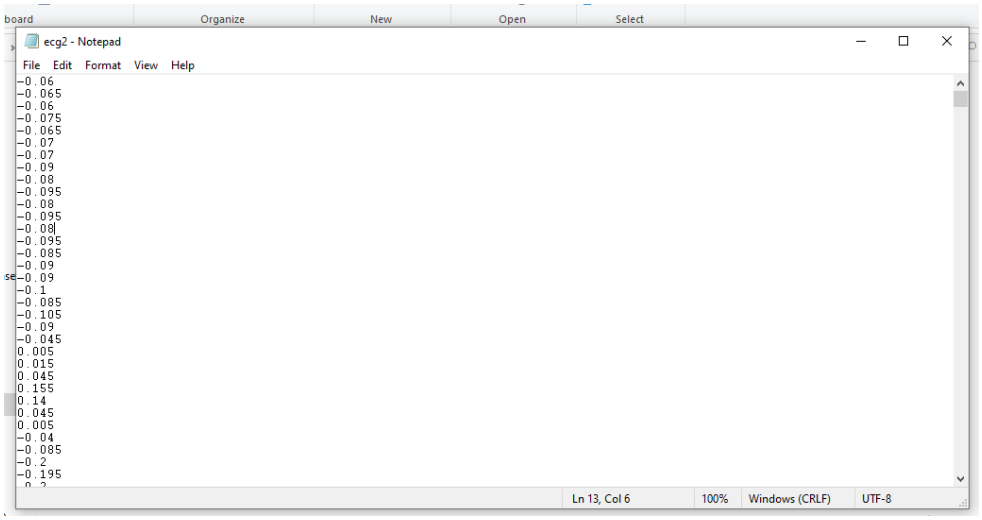


**Figure 4: 6000 ECG machine data samples captured by a professional to be analysed using MATLAB**

(Source: https://eleceng.dit.ie/dorran/matlab/ecg.txt)

- After bringing the data into MATLAB, process data and signals that detect and establish breathing patterns using the following algorithm. A heart rhythm plot should result with an accurate count of the sampling data.

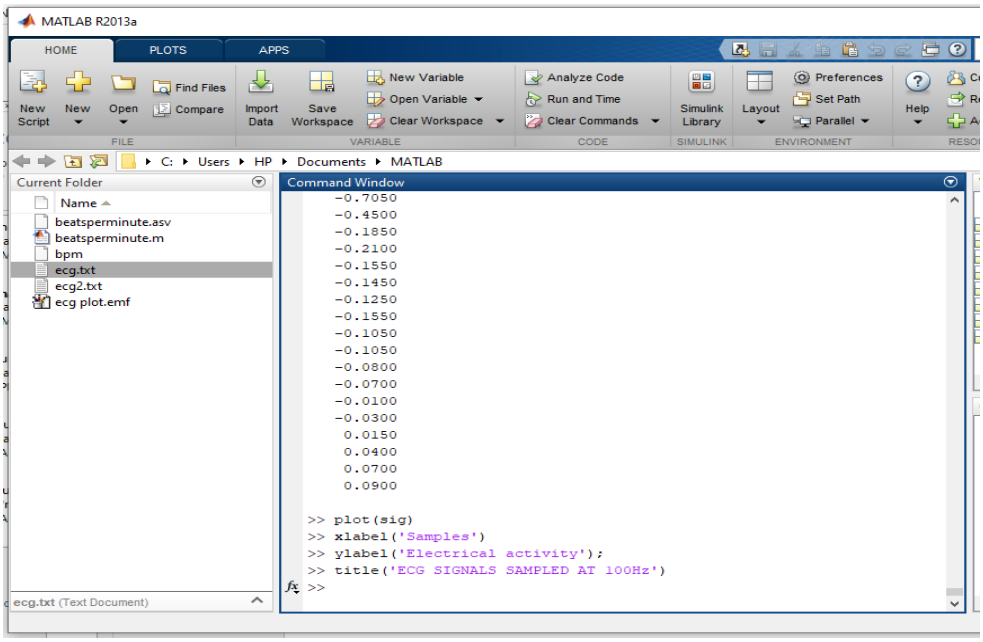


**Figure 5: Algorithm for processing data signals**

- The heart rhythm plot from the ECG data that shows 6000 samples was processed.

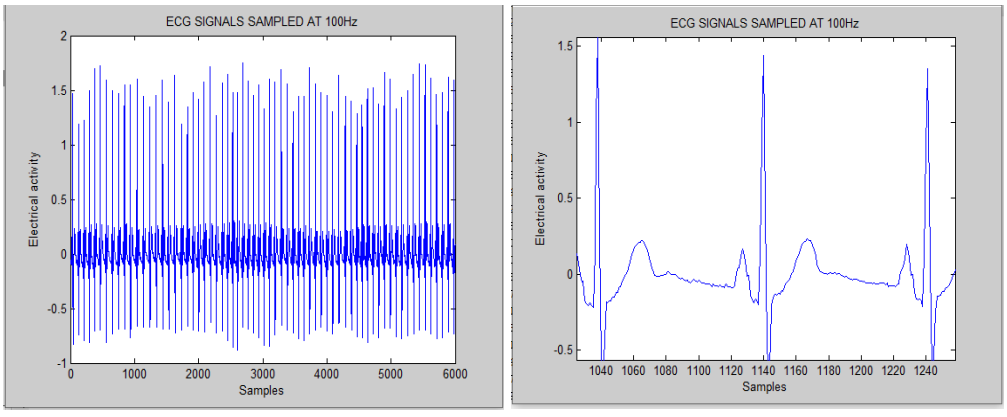


**Figure 6: Established breathing patterns plot b. ECG signals sampled at 100Hz**

- The zoomed showing clearer indication of heart rhythm is shown in Figure 6b:
- After processing the data signals use the following algorithm to determine the beats per minute from the electrical leads voltage signals as shown below.

- This algorithm counts the dominant peaks in the signal and corresponds them to heart beats. Peaks are defined to be samples greater than their nearest neighbour on both sides and greater than 1. *A for loop is used* in MATLAB
- After determining the dominant peaks (distinguishable heart beats); divide the beats by the signal duration (in minutes). Use the variable N to store the length of the signal so that you can divide N by the sampling rate fs(Hz) and by 60 to get duration in minutes
- Finally, to obtain the breathing rate from the signal divide beat count by duration in minutes.
- The MATLAB code is shown below:

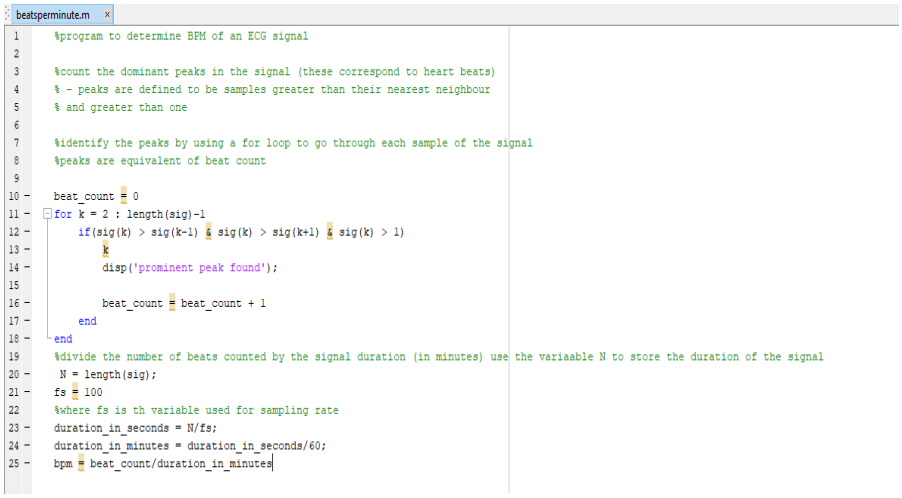


**Figure 7: MATLAB algorithm coding for determining breathing rate in beats per minute**

- The results were displayed as follows:

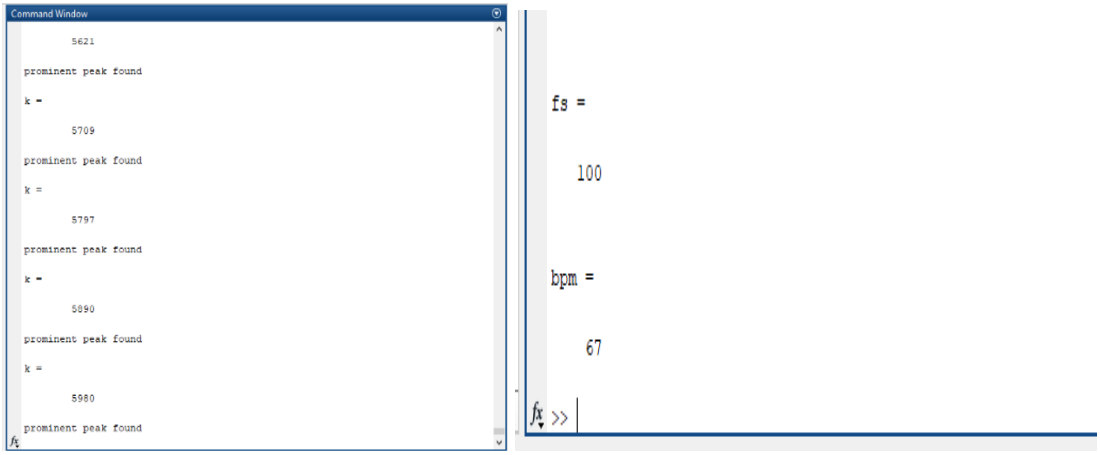


**Figure 8: Results of the coding**

In conclusion, the analysis of the ECG signal is shown below:

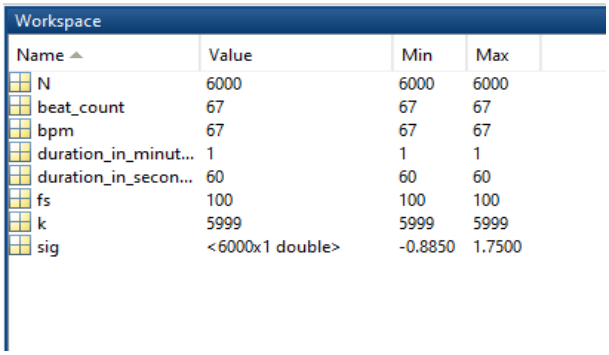


**Figure 9: Workspace for the BART**

## BART Summary

Breathe adapted radiotherapy techniques benefit many developments in breast cancer treatment. However, appropriate methods customised to each patient must be developed. These techniques are essential to reduce acute and late toxicity including cardiac and pulmonary during breast cancer treatment.

## Microcontroller based system

An Arduino Nano based system was developed as shown in Figure 10 below.

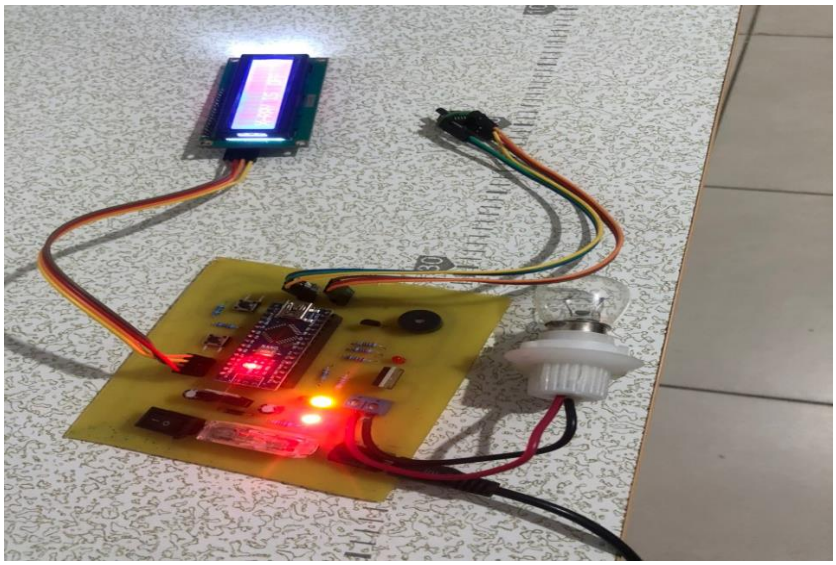

**Figure 10: Micro-controller-based system**

**How the system works**

The circuit is based on the atmega328 microcontroller combined with the Arduino nano, and it uses pressure difference to check whether the patient is breathing in or out. Based on that information, the x-ray can then be directed onto wherever it is to be directed on to the patient. On the circuit, a small lamp will be used to simulate the x-ray. This is mainly because the x-ray machine is complex to design, and it will need more time and resources. The system has proved to work in the prototype stage, and it will be a good idea if resources are in place to do this research in detail. The Arduino nano was used because the data to be stored is not much and it performs well. The ECG was only used as demonstration to show rhythmic movements of the breathing in and out of any person which gives an idea for the design.

## Recommendations and conclusion

The system was done as prototype and the researchers highly recommend further investigation to implementation stage. This system will be very useful if used in breast cancer treatments and ECG measurements. This will be helpful to know rhythmic contractions and expansions of the human body. The bulb will be a sign that shows radiation is going on and shows accepted radiation that does not affect the lung.

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# List of Appendices

## Appendix 1

**Table 4.1** Estimated tolerance doses for various organs expressed as different parameters with dose delivered with 2 Gy/fraction. These have wide confidence limits and vary with age, individual sensitivity, vascular status and with other treatments given

*Individual organ tolerances*

| OAR | TD5/5 (Gy) | TD50/5 (Gy) | DVH Vx % or mean dose in Gy | Tolerance dose (Gy) |
|---|---|---|---|---|
| Spinal cord | 5 cm 50<br>10 cm 50<br>20 cm 47 | 70<br>70 | | 45–50<br>40–44 (>15 cm)<br>EUD = 52.5 |
| Brain | Whole 45<br><1/3 60 | | | 50–60 |
| Brainstem | 1/3 60<br>2/3 53<br>3/3 50 | 65 | V60 < 0.9 mL | 54<br>1% up to 60 |
| Peripheral nerves | | | | 60 |
| Pituitary gland (hormone production) | | | | 20–24 |
| Permanent hair loss | | | | 45–55 |
| Optic nerve | | | | 50–55 |
| Optic chiasm | | | | 50 |
| Lacrimal gland | | | | 32–35 |
| Lens | | | | 10 |
| Retina | Whole 45 | | | 45–50<br>Small volume <60 |
| Cornea | | | | <48 |
| Cochlea | | | | 50 |
| Parotid | 2/3 32<br>3/3 32 | 46<br>46 | V30 <45% | 24 |
| Epiphyses before fusion in children | | | | 10 |
| Femoral heads | | | V50 <50 | |
| Heart | 1/3 60<br>2/3 45<br>3/3 40 | 70<br>55<br>50 | V40 <30<br>V30 <40–45<br>V20 <50 | $D_{max}$ <60 |
| Lung | 1/3 45<br>2/3 30<br>3/3 17.5 | 65<br>40<br>24.5 | V30 <10–15<br>V20 <25<br>Mean 10 | |
| Kidney | 1/3 50<br>2/3 20–30<br>3/3 23 | 40<br>28 | Mean 17.5 Gy | |

# Demographic Differences of Resilience at Work among Supervisory and Managerial Employees in Zimbabwean Public Listed Companies

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## Abstract

*Resilience at work can be conceptualised as the capacity of employees, facilitated and supported by the organisation, to utilise resources to positively cope, adapt and thrive in response to changing workplace circumstances. Because the world of work is competitive and dynamic, resilience at work is now recognised as a defining characteristic of employees who deal well with the stresses and strains of the modern-day workplace. Resilience at work is particularly key in work environments characterised by volatility, uncertainty, complexity, ambiguity, diversity and dynamics (VUCAD[2]) such as common in Zimbabwe. Employees in Zimbabwe have often been described as resilient. This study used an online cross-sectional survey to establish objective resilience at work levels amongst supervisory and managerial employees in public listed companies in Zimbabwe. A convenient sample of 342 was used; 188 (55%) male and 154 (45%) female. The resilience at work scale was used as the research instrument. Results showed that resilience at work for 34% was high, and for 51% was moderate and for 15% was low. Scores in each of the seven dimensions of the scale were also comparatively high. It was found that gender, marital status and educational level subgroups did not yield significantly different means. However, significant mean differences were found for age, work experience and job level. It is recommended that objective assessment of resilience be included in selection and or development initiatives. It is also important to establish the relationship between resilience at work and job performance. Over and above, it is recommended that further studies on resilience involving all job levels and across all sectors be carried out.*

**Keywords**: Resilience at work, VUCAD[2], Supervisory and managerial employees, Public listed companies

## Background

Resilience at work is now recognised as a defining characteristic of employees who deal well with the stresses and strains of the modern workplace (Craig, 2019). Resilience refers to the person's capacity to respond to pressure and the demands of daily life. The daily life encompasses work and non-work activities. Dictionary definitions include concepts like flexibility suppleness, durability, strength, speed of recovery and buoyancy (Craig, 2019). In short, resilience affects our ability to 'bounce back'. Resilience at work is a capability that helps us to understand how employees manage daily adversities, learn from, and rebound, while proactively preparing for future challenges (Malik & Garg, 2018). The resilience at work concept is embedded within positive psychology. Resilience is important in fostering and maintaining employee well-being and performance (Turner et al., 2021).

At work, resilient people are better able to deal with the demands placed upon them, especially where those demands might require them to be dealing with constantly changing priorities, a heavy workload or increased non-work demands (Craig, 2019). Work resilience is one of the core constructs of positive organisational behaviour (Luthans, 2002), and has been defined as positive adaptation in the face of adversity (Sutcliffe & Vogus, 2003). Given today's disruptive and adverse work environment, the of interest scholars and practitioners in workplace resilience has greatly increased in recent years (King et al., 2015).

Early resilience research focused on individual level dispositional or trait-like resilience, defining it as a personality characteristic that moderates the negative effects of stress and promotes adaption (Wagnild & Young, 1993). Some of the characteristics commonly associated with resilience were autonomy, self-esteem, internal locus of control and self-efficacy (Wagnild & Young, 1993). Although research, in particular within positive psychology, continues to add to the exhaustive list of personal qualities associated with resilience, such as optimism (Peterson, 2000) and self-determination (Schwartz, 2000), researchers have recognised the contribution of other protective forces such as family, culture and community (Cicchetti, 2010). According to Bonanno and Mancini (2008), the combination of these socio-contextual factors helps or hinders the resilience of individuals through the presence or absence of useful resources.

Employee resilience is conceptualised herein as the capacity of employees, facilitated, and supported by the organisation, to utilise resources to positively cope, adapt and thrive in response

to changing work circumstances. Resilience is viewed as a transformational process in which individuals not only cope and successfully deal with change but also learn from it and adapt accordingly to thrive in the new environment (Lengnick-Hall et al., 2011; Richardson, 2002).

The development of resilience at work means that employees can utilise past experiences with change and adversity to be more flexible and adaptable in the future (Avey et al,, 2009), which in turn facilitates successful negotiation of challenges. The focus is on resilience as something that can be developed, rather than a stable trait. Over and above, the focus is on the organisational environment which influences the level of employee resilience through the provision of enabling factors. Therefore, organisations should allow open, supportive, collaborative learning. Organisational resources and practices can be viewed as enabling conditions for the development of a resilient workforce (Shin et al., 2012), which in turn determines organisational capacity to overcome challenges and, ideally, to create a competitive edge. Resilience at work is key for success in the Zimbabwean context which can be classified as an environment characterised by volatility, uncertainty, complexity, ambiguity, diversity and dynamics ($VUCAD^2$). Sanhokwe and Takawira (2022), using a sample of Zimbabwean employees drawn from all sectors, found that resilience at work scores were 8.6% low, 56.4% moderate and 35% high. Evidence shows that resilience is positively associated with work happiness, job satisfaction, job performance, and organisational commitment (Mayfield, 2019; Smith et al., 2020; Walpita & Arambepola, 2020). In addition to being a significant predictor of job performance, resilience at work has also been found to be associated with work engagement (Dai et al., 2019; Kašpárková et al., 2018; Smith et al., 2020). Chadwick and Raver (2020) and Malik and Garg (2020) reported a positive relationship between resilience and innovative work behaviour. Research has produced mixed findings in relation to resilience at work and demographic variables. Sanhokwe and Takawira (2022) concluded that age, gender, job level and sector of work were not significant variables in influencing resilience at work. For Craig (2019), gender did not differentiate resilience at work scores. Findings also showed no differences in job resilience, work-life balance and work values based on age, gender, length of service and department assigned (Padios et al., 2022). Further research yielded consistent findings that gender, marital status and educational level did not yield significant differences in resilience at work (Asadi et al., 2023). Hayes et al. (2020) found that resilience at work varies by job level and type of work but not by gender, age or whether one belongs to a team or not. Contradictory results show that the employee's age has a significant main

effect on workplace resilience (Bose & Pal, 2020). These findings provided useful insight for the study.

## Aim of the study

This research sought to establish the resilience at work levels amongst supervisory and managerial employees in public listed companies in Zimbabwe and to determine whether their employees from different genders, ages, marital statuses, job levels and job tenures significantly differ in resilience at work levels.

## Objectives

The objectives of the study were:

1) To establish the resilience at work levels amongst supervisory and managerial employees in public listed companies in Zimbabwe.
2) To explore resilience levels across each of the seven scale dimensions public listed companies in Zimbabwe.
3) To investigate whether employees from different genders, ages, marital statuses, job levels and job tenures differ with regards to their resilience at work levels.

## Hypothesis

$H_0$: There are no significant differences between individuals from different ages, genders, marital statuses, job levels and job tenures regarding resilience at work.

H1: There are significant differences between individuals from different ages, genders, marital statuses, job levels and job tenures regarding resilience at work.

## Participants

The study focused on supervisory and management employees in public listed Zimbabwean companies. A convenient sample of 342 participants was used. Permission to research was sought for and granted by the relevant authorities, that is, the academic institution (Appendix 1) and the Medical Research Council of Zimbabwe (MRCZ) (Appendix 2). Letters of permission were obtained from organisations (Appendix 3). However, other organisations simply agreed to notify their employees of the study and allowed them to make an individual decision to participate in the study. Having obtained consent from organisations, an online link was shared for participants in those organisations to participate in an online cross-sectional survey. The online survey had an

informed consent form which one had to agree to proceed (Appendix 4). Of the 342 participants, 188 (55%) were male and 154 (45%) were female. The age distribution was 4.1% (below 25 years); 32.5% (25-30 years); 34.5% (31-40 years); 20.2% (41-50 years) and 8.8% (Above 50 years). Of the 342 study participants, 34.5% were single, 60.8% were married, 4.1% were divorced and 0.6% were widowed. In terms of highest educational level attained, 1.5% attained a high school certificate, 0.6% vocational training, 7.3% diploma/higher national diploma, 47.7% university degree and 43% had a post-graduate qualification. The distribution for work experience was 4.4% (1 year), 29.5% (2-5 years), 33.9% (6-15 years), 21.9% (16-25 years) and 10.2% (above 25 years). Of the total participants, 21.6% were skilled employees, 37.4% were supervisors, 28.9% were middle managers and 12% were top managers. The researcher is unaware of the identity of participants nor the spread of participants across the organisations.

## The research instrument

The study employed the resilience at work scale (R@W Scale) developed by Winwood et al, (2013). The scale has 21 items and uses a 7-point scale. Table 1. Below shows the dimensions.

**Table 1: Resilience at work scale dimensions**

| Dimension | Items | Description |
|---|---|---|
| Living authentically | 1,2,3 | Highlights the role of mindset (personal values, deploying personal strengths) and emotional intelligence. |
| Finding one's calling | 4,5,6,7 | Hinged on spirituality i.e. work that has a purpose, having a sense of belonging, and alignment of an individual's core values and beliefs. |
| Maintaining perspective | 8,9,10 | Employee's capacity to positively reframe adversities, keep on with solutions in the face of adversities, and thus create the momentum to manage any negativity. |
| Managing stress | 11,12,13,14 | Ensuring positive management of work and nonwork activities. |
| Interacting cooperatively | 15,16,17 | Focus on work styles with a bias on deliberately seeking feedback and work-level specific advice as well as support, while supporting others |
| Staying healthy | 18,19 | Focuses on the importance of being physically and healthy conscious. |
| Building networks | 20,21 | Focuses on developing and leveraging personal support networks within and outside the workplace. |

Sanhokwe and Takawira (2022) highlight that the resilience at work scale (R@W Scale) has strong psychometric properties in a Zimbabwean setting. Reliability of the full instrument was .77 and reliability of the subscales ranged from .70 to .74. Exploratory factor analysis confirmed the seven-

factor structure with 57% total variance explained. Results of the bifactor model also confirmed the multi-dimensional structure of the scale. Scalar equivalence and bias were also tested for using a sample of Zimbabwean employees drawn from the government sector, non-governmental sector and private sector. The R@W scale showed strong construct validity with an average variance extracted (AVE) of .58 with the seven latent factors having AVEs above .5. Coupled with the aforementioned composite reliability scores the scale showed convergent validity in a Zimbabwean setting. To confirm discriminant validity, low correlations were yielded (.01 to .59) among the seven latent factors. This indicates that each latent factor uniquely measures a specific variable. Table 2 below shows the cut scores for the total average resilience at work scores.

**Table 2: Resilience at work cut scores**

| R@W Description | Range |
|---|---|
| High | 5,36-7,00 |
| Moderate | 3,69-5,35 |
| Low | ≤3,68 |

## Data Analysis

The Kaiser-Meyer-Olkin (KMO) sampling adequacy test was done to establish the suitability of the dataset (Cerny & Kaiser, 1977). The Cronbach's alpha reliability was used to establish the internal consistency of the full scale and each of the seven dimensions of the scale. For descriptive frequency tables, the mean and standard deviation for the full scale and each of the seven dimensions were used. For inferential statistics, the *t-test* for independent samples was used for the demographic variable gender. For age, marital status, job level and job tenure the one-way analysis of variance (One-Way ANOVA) was used. For demographic variables that had statistically significant mean differences, a *post-hoc* test (Tukey's Honestly Significant Difference) was used to determine which of the specific groups differed from each other.

## Results

A KMO score of .824 confirmed the suitability of the dataset for the study. The full scale had a Cronbach's alpha reliability of .840. Table 3 shows the dimensions of the scale, the items in each dimension and the reliability scores.

**Table 3: Resilience at work scale dimensions**

| Dimension | Items | Cronbach's Alpha |
|---|---|---|
| Living authentically | 1,2,3 | .774 |
| Finding one's calling | 4,5,6,7 | .819 |
| Maintaining perspective | 8,9,10 | .766 |
| Managing stress | 11,12,13,14, | .814 |
| Interacting cooperatively | 15,16,17 | .762 |
| Staying healthy | 18,19 | .814 |
| Building networks | 20,21 | .821 |

The reliability scores were higher than the reported range .70 to .74 in a Zimbabwean context (Sanhokwe & Takawira, 2022) but relatively lower compared to the reported range of .81 to .92 in the original study (Winwood et al, 2013). Table 4 summarises resilience at work levels across the sample.

**Table 4: Resilience at work summary**

| R@W Description | Range | Frequency | Percentage |
|---|---|---|---|
| High | 5,36-7,00 | 116 | 34% |
| Moderate | 3,69-5,35 | 173 | 51% |
| Low | ≤3,68 | 53 | 15% |
| | | 342 | |

The minimum scores, maximum scores, mean and standard deviations for the dimensions of resilience at work are shown in Table 5.

**Table 5: Resilience at work descriptive summary**

| | N | N of Items | Minimum | Maximum | Mean | *Std. Deviation* |
|---|---|---|---|---|---|---|
| Living Authentically | 342 | 3 | 6.00 | 15.00 | 12.7281 | 1.71564 |
| Finding One's Calling | 342 | 4 | 4.00 | 20.00 | 15.2544 | 3.05131 |
| Maintaining Perspective | 342 | 3 | 3.00 | 15.00 | 9.1901 | 2.09499 |
| Managing Stress | 342 | 4 | 7.00 | 20.00 | 14.8713 | 2.97218 |
| Interacting Cooperatively | 342 | 3 | 6.00 | 15.00 | 12.4766 | 1.71017 |
| Staying Healthy | 342 | 2 | 2.00 | 10.00 | 7.2690 | 1.73396 |
| Building Networks | 342 | 2 | 2.00 | 10.00 | 7.7661 | 1.50004 |

Table 6 is a summary of the responses to the R@W Scale.

**Table 6: Resilience at work Responses Summary**

| | | Strongly Disagree | Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| | **Living authentically** | | | | | | | |
| 1 | I have important core values that I hold fast to in my work life | 1% | 1% | 3% | 4% | 10% | 48% | 33% |
| 2 | I am able to change my mood at work when I need to | 1% | 5% | 2% | 9% | 13% | 51% | 19% |
| 3 | I know my personal strengths and I use them regularly in my work | 0% | 1% | 2% | 4% | 7% | 45% | 41% |
| | **Finding one's calling** | | | | | | | |
| 4 | The work that I do helps to fulfill my sense of purpose in life | 2% | 4% | 6% | 7% | 5% | 44% | 32% |
| 5 | My workplace is somewhere where I feel that I belong | 4% | 5% | 3% | 24% | 4% | 44% | 16% |
| 6 | The work that I do fits well with my personal values and beliefs | 2% | 5% | 4% | 13% | 8% | 50% | 18% |
| 7 | Generally, I appreciate what I have in my work environment | 2% | 6% | 3% | 11% | 7% | 53% | 18% |
| | **Maintaining perspective** | | | | | | | |
| 8 | When things go wrong at work, it usually tends to overshadow the other the other parts of my life | 2% | 25% | 7% | 11% | 8% | 38% | 9% |
| 9 | Nothing at work ever really "fazes me" for long | 3% | 12% | 7% | 23% | 9% | 38% | 8% |
| 10 | Negative people at work tend to pull me down | 6% | 40% | 10% | 18% | 5% | 11% | 10% |

| | | Strongly Disagree | Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| | **Managing stress** | | | | | | | |
| 11 | I make sure I take breaks to maintain my strength and energy when I am working hard | 3% | 10% | 2% | 8% | 5% | 59% | 13% |
| 12 | I have developed some reliable ways to relax when I am under pressure at work | 2% | 11% | 3% | 13% | 2% | 55% | 14% |
| 13 | I have developed some reliable ways to deal with the personal stress of challenging events at work | 1% | 9% | 5% | 10% | 5% | 53% | 17% |
| 14 | I am careful to ensure that my work does not dominate my personal life | 2% | 14% | 3% | 16% | 4% | 46% | 15% |
| | **Interacting cooperatively** | | | | | | | |
| 15 | I often ask for feedback so that I can improve my work performance | 1% | 9% | 4% | 9% | 4% | 52% | 21% |
| 16 | I believe in giving help to my colleagues, as well as asking for it | 0% | 3% | 1% | 3% | 8% | 49% | 36% |
| 17 | I am very willing to acknowledge others' effort and successes in my workplace | 0% | 1% | 1% | 4% | 2% | 53% | 39% |
| | **Staying healthy** | | | | | | | |
| 18 | I have a good level of physical fitness | 2% | 12% | 5% | 8% | 7% | 49% | 17% |
| 19 | I am careful about eating well and healthily | 2% | 11% | 6% | 18% | 4% | 43% | 16% |
| | **Building networks** | | | | | | | |
| 20 | I have friends at work whom I can rely on to support me when I need it | 1% | 7% | 4% | 9% | 12% | 51% | 16% |
| 21 | I have a strong and reliable network of supportive colleagues at work | 1% | 6% | 3% | 14% | 7% | 51% | 18% |

It was found that there were no significant differences in resilience at work between males and females. The results show t = .786 $p$ = .433. The mean for males was 79.93 (SD 10.17) and for females was 79.10 (SD 9.23). Results also show no significant differences in means in regard to marital status F(3,341) = 2.653 $p$=.05 and highest educational level F(4,341) = 2.203 $p$=.068. Statistically significant mean differences were obtained for age F(4,341) = 4.516 $p$=.001; work experience F(4,341) = 3.016 $p$=.018 and job level F(3,341) = 8.282 $p$=.00. Table 7 shows that a significant mean difference was found between the subgroups 25 -30 years and 41 -50 years in resilience at work level.

**Table 7: Tukey's HSD summary for age**

| | **<25 Years** | **25-30 Years** | **31-40 Years** | **41-50 Years** | **>50 Years** |
|---|---|---|---|---|---|
| **<25 Years** | - | Not Significant | Not Significant | Not Significant | Not Significant |
| **25-30 Years** | | - | Not Significant | -5.39 (p=.001) | Not Significant |
| **31-40 Years** | | | - | Not Significant | Not Significant |
| **41-50 Years** | | | | - | Not Significant |
| **>50 Years** | | | | | - |

Statistically significant mean difference in resilience at work levels based on work experience was found between 2-5 years group and 6-15 years group as shown in Table 8.

**Table 8: Tukey's HSD summary for work experience**

| | **1 Year** | **2-5 Years** | **6-15 Years** | **16-25 Years** | **>25 Years** |
|---|---|---|---|---|---|
| **1 Year** | - | Not Significant | Not Significant | Not Significant | Not Significant |
| **2-5 Years** | | - | -3.81 (p=.018) | Not Significant | Not Significant |
| **6-15 Years** | | | - | Not Significant | Not Significant |
| **16-25 Years** | | | | - | Not Significant |
| **>25 Years** | | | | | - |

Based on job level, significant mean differences were found between supervisors and middle managers, and between supervisors and top managers as shown in Table 9.

**Table 9: Tukey's HSD summary for job level**

| | **Skilled Employee** | **Supervisor** | **Middle Manager** | **Top Manager** |
|---|---|---|---|---|
| **Skilled Employee** | - | Not Significant | Not Significant | Not Significant |
| **Supervisor** | | - | -5.45 (p=.00) | -6.41 (p=.00) |
| **Middle Manager** | | | - | Not Significant |
| **Top Manager** | | | | - |

## Discussion

Resilience levels of Zimbabwean managerial and supervisory employees in public listed companies were generally strong and comparable to earlier findings (Winwood et al, 2013; Sanhokwe & Takawira, 2022). Therefore, the above-mentioned employees may be expected to positively cope, adapt and thrive in response to challenging work circumstances. However, the 15% in the low category is far higher than the range of 7% - 10% in most comparable studies. Effort may be placed in initiatives to improve the resilient levels of employees found in this category. Four of the seven dimensions are generally high and within previous reported levels. However, maintaining perspective, managing stress and staying healthy though still high were reportedly relatively lower (Craig, 2019; Sanhokwe & Takawira, 2022). This could indicate a plea for help from the employees in Zimbabwean public listed companies to be assisted in those dimensions.

Maintaining perspective maybe expected to be lower as it focuses on reframing after setbacks and minimising negativity around the individual because reframing cycles are more frequent in VUCAD[2] environments such as Zimbabwe. Because of work schedules, mastering stress is difficult due to inadequate time for relaxation and recovery. The perception among supervisory and managerial employees is that they could allocate more time to physical fitness and getting adequate sleep compared to now. However, most of these employees also spent their time in non-work activities (Allen & Martin, 2017). In line with existing literature, the study found no significant differences in resilience levels based on gender, marital status and educational level (Sanhokwe & Takawira, 2022; Molazem et al., 2023; Padios et al., 2022. However, work experience and job level were statistically significant in line with findings by Hayes et al. (2020).

In terms of age, the study findings (significant differences between age groups) were contrary to the afore-mentioned studies but in line with findings by Bose and Pal (2020). This could be because of promotions (higher job levels) based on seniority in most Zimbabwean organisations (Nharirire, 2022). This would impact on the individual's ability to deal with changing or adverse work circumstances. This finding is also in line with the view that employees can utilise past experiences with change and adversity to be more flexible and adaptive in future (Avey et al., 2009). It is possible that, by going through multiple adverse economic turmoil cycles in Zimbabwe, more senior employees have developed better resilient strategies.

## Recommendations

Resilience at work plays a key role in productivity and employee wellbeing. Organisations can therefore include objective assessments of resilience to aid employee selection and or employee development. An intervention plan can be drafted for each employee based on the overall score and each dimensional score. However, it is also critical to establish through research the strength of the relationship between resilience at work and job performance. Organisations running initiatives to improve resilience at work for employees should consider age, work experience and job level as key variables in such initiatives. The study used a convenience sampling and therefore is prone to sampling bias. A research based on a probability sampling technique is recommended. It is recommended that further research involving all job levels and employees across all sectors be done to further the understanding of resilience at work. It is also recommended that research be done to establish the relationship between resilience at work and other variables such as stress, burnout, emotional intelligence, organisational citizenship behaviour and work to non-work interface management.

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## Appendix 1: Institutional Permission

University of Zimbabwe
P.O. Box MP167
Mt Pleasant
Harare
Zimbabwe

Telephone: 303211 Ext 14026
Telex: 26580 UNVIZ ZW
Telegrams: UNIVERSITY
Fax: (263) (4) 333407

UNIVERSITY OF ZIMBABWE

APPLIED PSYCHOLOGY DEPARTMENT

3 February 2022

TO WHOM IT MAY CONCERN

RE: PERMISSION TO CONDUCT AN ACADEMIC STUDY

Simbarashe Mazani (R036155C) is a part-time University of Zimbabwe student studying towards a Doctor of Philosophy in Social Studies in the Department of Applied Psychology. He wishes to undertake a study entitled "Performing well at work and enjoying a fulfilling private life: Creating a practical workplace model for work-nonwork interface management''.

The findings of the study will be used for academic purposes only and will remain anonymous. Should you have any issues that require clarification do not hesitate to contact:

The Chairperson
Department of Applied Psychology
University of Zimbabwe
Box MP167
Mt Pleasant
Harare

Tel: 303211 Ext. 14025/6

The Department greatly appreciates your kind assistance to the 9tudent.

Yours faithfully

UNIVERSITY OF ZIMBABWE
Department of Applied Psychology
OFFICIAL

DR S MHIZHA
CHAIRPERSON, DEPARTMENT OF APPLIED PSYCHOLOGY

## Appendix 2: MRCZ Permission

Telephone: 08644072773/0242791193
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

**Medical Research Council of Zimbabwe**
**20 Cambridge Road**
**Avondale**
**Harare**
**Zimbabwe**

**APPROVAL**

**MRCZ/A/2890** **30 May 2022**

**Simbarashe Mazani**
UZ – Department of Psychology
P.O Box MP 167
Mt Pleasant
Harare

**RE: - Performing well at work and enjoying a fulfilling private life: creating a practical workplace model for work-nonwork interface management**

Thank you for the application for review of research activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:

1. Full Research Protocol Version 2.2 dated 17/05/2022
2. Informed Consent Form Version 1.2 dated 17/05/2022
3. Biographical Data Questionnaire Version 1.1 dated 17/05/2022
4. Work-nonwork Interface Management Scale Version 1.2 dated 17/05/2022
5. Emotional Intelligence Scale Version 1.2 dated 17/05/2022
6. Resilience at Work Scale Version 1.2 dated 17/05/2022
7. General Efficacy Scale Version 1.2 dated 17/05/2022
8. Tough-Mindedness Scale Version 1.2 dated 17/05/2022

- **APPROVAL NUMBER : MRCZ/A/2890**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING : Full Board**
- **MEETING DATE : May 26, 2022**
- **APPROVAL DATE : May 30, 2022**
- **EXPIRATION DATE : May 29, 2023**

After this date, this project may only commence upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
- **MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (0242) 791193/08644073772 or by e-mail on mrcz@mrcz.org.zw

**Other**

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- **In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement.**

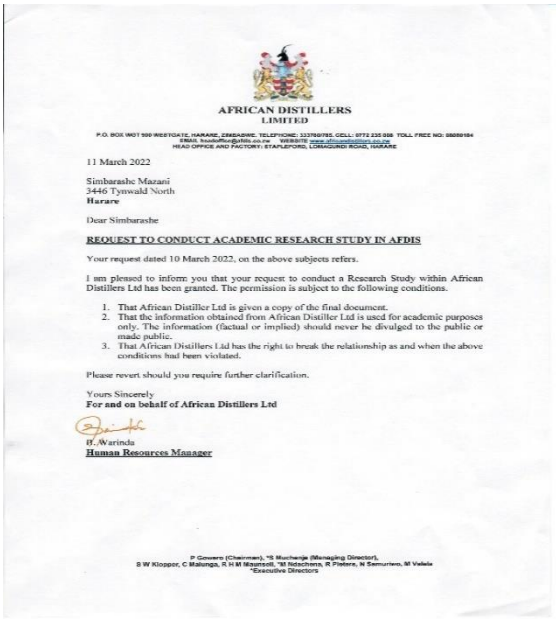
Yours Faithfully

.....
**MRCZ SECRETARIAT**
**FOR CHAIRPERSON**
**MEDICAL RESEARCH COUNCIL OF ZIMBABWE**

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
30 MAY 2022
APPROVED
20 CAMBRIDGE ROAD, AVONDALE, HARARE

**PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH**

## Appendix 3: Organisations Permission Letters



AFRICAN DISTILLERS LIMITED

11 March 2022

Simbarashe Mazani
3446 Tynwald North
**Harare**

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY IN AFDIS**

Your request dated 10 March 2022, on the above subjects refers.

I am pleased to inform you that your request to conduct a Research Study within African Distillers Ltd has been granted. The permission is subject to the following conditions.

1. That African Distiller Ltd is given a copy of the final document.
2. That the information obtained from African Distiller Ltd is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That African Distillers Ltd has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of African Distillers Ltd**

R. Warinda
**Human Resources Manager**

FIRST MUTUAL

Go Beyond

FIRST MUTUAL HOLDINGS LIMITED, First Mutual Park, 100 Borrowdale Road, Borrowdale, Harare, Zimbabwe.
P O Box BW 178, Borrowdale, Harare.
Tel: +263 (242) 886000 - 17 | E-mail: info@firstmutual.co.zw | Website: www.firstmutual.co.zw

23 March 2022

3446 Pine Street
Tynwald North
Harare

Dear Mr. S. Mazani

**REQUEST TO CARRY OUT ACADEMIC RESEARCH AT FIRST MUTUAL HOLDINGS LIMITED**

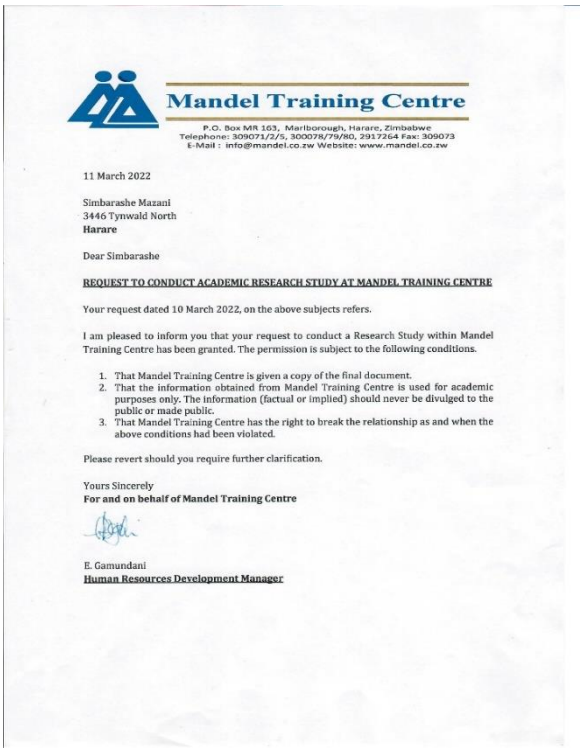
On behalf of First Mutual Holdings Limited, I am writing to formally acknowledge receipt of your academic research proposal and indicate our awareness of the research proposal.

We take note that you are a part-time student at the University of Zimbabwe studying towards a Doctor of Philosophy in Social Studies in the Department of Applied Psychology. You intend to undertake a study entitled, "**Performing well at work and enjoying a fulfilling private life: Creating a practical workplace model for work-nonwork interface management.**" You intend to conduct your research by administering an online survey to our employees. You will avail copies of the final research project to participating organizations and extent an offer of two free presentations to assist employees with work-nonwork interface management at agreed dates.

Subject to the foregoing conditions, please be advised that you have been granted permission to conduct your academic research at our organization.

If you have any questions or concerns, please feel free to contact the undersigned.

Pfungwa Dhliwayo
Group Human Resources Executive
First Mutual Holdings Limited



Mandel Training Centre

P.O. Box MR 163, Marlborough, Harare, Zimbabwe
Telephone: 309071/2/5, 300078/79/80, 2917264 Fax: 309073
E-Mail : info@mandel.co.zw Website: www.mandel.co.zw

11 March 2022

Simbarashe Mazani
3446 Tynwald North
**Harare**

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY AT MANDEL TRAINING CENTRE**

Your request dated 10 March 2022, on the above subjects refers.

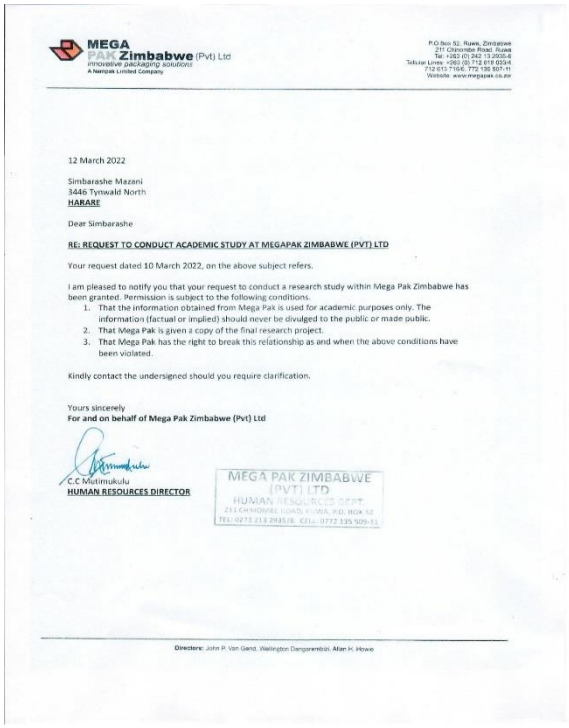
I am pleased to inform you that your request to conduct a Research Study within Mandel Training Centre has been granted. The permission is subject to the following conditions.

1. That Mandel Training Centre is given a copy of the final document.
2. That the information obtained from Mandel Training Centre is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That Mandel Training Centre has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of Mandel Training Centre**

E. Gamundani
**Human Resources Development Manager**



MEGA PAK Zimbabwe (Pvt) Ltd
innovative packaging solutions
A Nampak Limited Company

12 March 2022

Simbarashe Mazani
3446 Tynwald North
**HARARE**

Dear Simbarashe

**RE: REQUEST TO CONDUCT ACADEMIC STUDY AT MEGAPAK ZIMBABWE (PVT) LTD**

Your request dated 10 March 2022, on the above subject refers.

I am pleased to notify you that your request to conduct a research study within Mega Pak Zimbabwe has been granted. Permission is subject to the following conditions.

1. That the information obtained from Mega Pak is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
2. That Mega Pak is given a copy of the final research project.
3. That Mega Pak has the right to break this relationship as and when the above conditions have been violated.

Kindly contact the undersigned should you require clarification.

Yours sincerely
**For and on behalf of Mega Pak Zimbabwe (Pvt) Ltd**

C.C Mutimukulu
**HUMAN RESOURCES DIRECTOR**

MEGA PAK ZIMBABWE (PVT) LTD
HUMAN RESOURCES DEPT
211 CHINOMBE ROAD, P.O. BOX 52
TEL: 0772 213 2935/8, CELL: 0772 135 509-11

## Appendix 4: Organisations Permission Letters

From: Nyasha Muchinouta
Sent: Thursday, March 31, 2022 11:55 AM
To: Simbarashe Mazani
Subject: Re: FW: Research Request

Good day

We acknowledge receipt of your letter requesting to carry out research in the company.

We are happy for you to proceed as per request. As agreed, kindly share research findings once the study is completed.

Regards
Nyasha

**Nyasha Muchinouta**
Human Resources and Administration Manager
Cell:

Seed Co Limited
Sherwani Road, Stapleford P.O Box
Wst: 84, Westgate, Harare, Zimbabwe
Telephone: + 263 4 308881/8, 308127
Switchboard Cell:
Email: seedco@seedcogroup.com

IT STARTS WITH THE RIGHT SEED
www.seedcogroup.com/zw

**Simbarashe Mazani**

From: Edwin Nharirire
Sent: Monday, 14 March 2022 11:38
To: Simbarashe Mazani <jimazani@gmail.com>
Subject: Permission to Carry out Research in TSL Limited

Dear Simbarashe

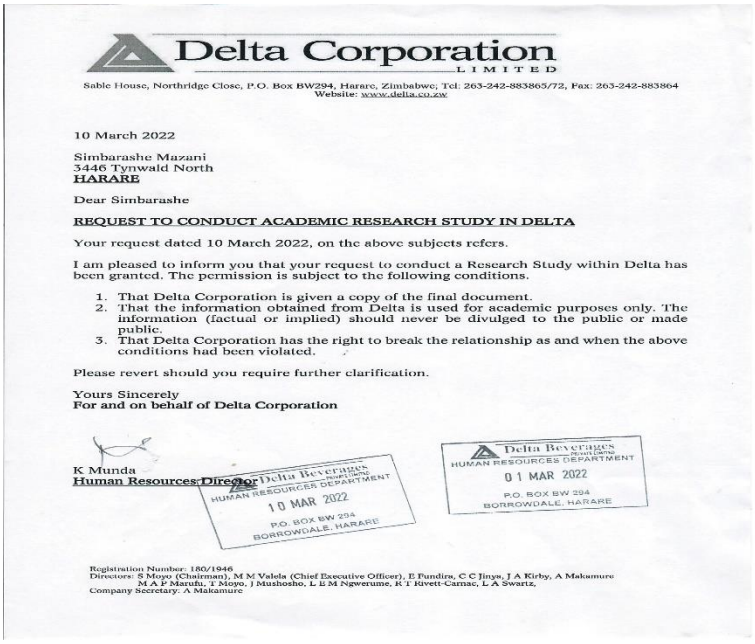
We acknowledge receipt of your letter requesting to carry out research in the company.

I would like to notify you that we are happy for you to go ahead and distribute your survey questionnaires as per the request. We urge you to also maintain high level of confidentiality on individual employee information as well as ensure that you also give us a summary of your findings for our information.

Regards

TSL

**Edwin Nharirire**
*Group Human Resources Executive*



Delta Corporation
LIMITED

Sable House, Northridge Close, P.O. Box BW294, Harare, Zimbabwe; Tel: 263-242-883865/72, Fax: 263-242-883864
Website: www.delta.co.zw

10 March 2022

Simbarashe Mazani
3446 Tynwald North
HARARE

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY IN DELTA**

Your request dated 10 March 2022, on the above subjects refers.

I am pleased to inform you that your request to conduct a Research Study within Delta has been granted. The permission is subject to the following conditions.

1. That Delta Corporation is given a copy of the final document.
2. That the information obtained from Delta is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That Delta Corporation has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of Delta Corporation**

K Munda
**Human Resources Director**

Delta Beverages
HUMAN RESOURCES DEPARTMENT
10 MAR 2022
P.O. BOX BW 294
BORROWDALE, HARARE

Delta Beverages
HUMAN RESOURCES DEPARTMENT
01 MAR 2022
P.O. BOX BW 294
BORROWDALE, HARARE

Registration Number: 180/1946
Directors: S Moyo (Chairman), M M Valela (Chief Executive Officer), E Pundira, C C Jinya, J A Kirby, A Makamure
M A P Marufu, T Moyo, J Mushoshe, L E M Ngwerume, K T Rivett-Carnac, L A Swartz,
Company Secretary: A Makamure

## Appendix 5: Informed Consent Form

Version 1.2 17/05/2022 MRCZ /A/2890

Page 1 of 4

**INFORMED CONSENT FORM**

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
30 MAY 2022
APPROVED
20 CAMBRIDGE ROAD, AVONDALE, HARARE

**Project Title: Performing well at work and enjoying a fulfilling private life: creating a practical workplace model for work-nonwork interface management**

Principal Investigator **Simbarashe Mazani,** [*Ph.D*]
Phone number(s) **0717534464 & 0773755857**

**What you should know about this research study:**

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- Routine care is based upon the best-known treatment and is provided with the main goal of helping the individual clients. The main goal of research studies is to gain knowledge that may help future clients.
- We cannot promise that this research will benefit you. Just like regular care, this research can have side effects that can be serious or minor.
- You have the right to refuse to take part or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care or employment in your organisation.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

**PURPOSE**

You are being asked to participate in a research study of Work-nonwork Interface Management. The purpose of the study is to investigate the relationships between work-nonwork interface management and emotional intelligence, tough-mindedness, self-efficacy and work resilience. You were selected as a possible participant in this study because you are a permanent employee in a publicly listed private company in Zimbabwe. The study will involve 300 participants.

Version 1.2 17/05/2022 MRCZ/A/2890

**PROCEDURES AND DURATION**

If you decide to participate, you will receive a link to an online portal with the research questionnaire. You will be expected to respond to closed-ended questions by choosing responses on options given. The questionnaire consists of a biographical form, a Work-nonwork Interface Management Scale, Emotional Intelligence Scale, Resilience at Work Scale, Self-Efficacy Scale and Tough-Mindedness Scale. You are expected to respond to all scales. The study will take an average of 25 minutes to complete. You will be expected to participate once.

**RISKS AND DISCOMFORTS**

Although, the researcher does not reasonably for see any risk or discomfort to the participants; it is expected that there will be inconveniences associated with connecting to the online platform and the data costs for the duration of the participation. The researcher has however made attempts to use the shorter but reliable versions of instruments.

**BENEFITS AND/OR COMPENSATION**

We cannot and do not guarantee or promise that you will receive any benefits from this study mainly because all participants will remain anonymous. However, the researcher has guaranteed two free presentations to participating organisations to help employees who choose to attend the presentations to manage their work and nonwork activities in a psychologically healthy way.

**CONFIDENTIALITY**

If you indicate your willingness to participate in this study by signing this document, we plan to disclose only the research findings of all participants or subgroups with numbers exceeding 30. Your responses cannot be reported separately neither can they be identified with you. The research supervisors an Medical Research Council of Zimbabwe will have access to research data.

**ADDITIONAL COSTS**

It is expected that there will be data costs associated with connecting to the research portal when responding to the study questionnaire.

**IN THE EVENT OF INJURY**

There is no risk of injury that is anticipated from participating in the study.

**VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with your organisation. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

**ADDITIONAL ELEMENTS**

You can withdraw at any stage of the research if you experience discomfort. There will be no negative consequences associated with withdrawing from the research.

**SIGNATURE PAGE**

**Performing well at work and enjoying a fulfilling private life: creating a practical workplace model for work-nonwork interface management**

**Version 1.2 17/05/2022**

**OFFER TO ANSWER QUESTIONS**

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

**AUTHORIZATION**

You are making a decision whether or not to participate in this study. By clicking agree on the online portal it indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (242)791792 or (242) 791193 and (263) 8644073772. The MRCZ Offices are located at Number 20 Cambridge Road, Avondale in Harare.

# Work and Nonwork Interface Management among Supervisory and Managerial Employees of Public Listed Companies in Zimbabwe

***Simbarashe Mazani[1], Edwin Nharirire[2] & Gwatirera Javangwe[3]***

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[2]Department of Applied Psychology, University of Zimbabwe; Registered Occupational Psychologist (AHPCZ)

[3]Department of Applied Psychology, University of Zimbabwe; Registered Forensic Psychologist (AHPCZ)

## Abstract

*Work and nonwork (also work-nonwork) interface management offers an alternative view to the work-life balance concept. The view is that employees do not attempt to find balance, but actively manage dynamic interfaces between work and nonwork activities. Work-nonwork interface management can be defined as an individual's ability to manage a dynamic boundary between their work and nonwork activities. Organisations require employees who can manage the interface between work and nonwork activities. This study used an online cross-sectional survey to establish work-nonwork interface management amongst supervisory and managerial employees of public listed companies in Zimbabwe. A convenient sample of 342 was used, that is, 188 (55%) male and 154 (45%) female. The work-nonwork interface management scale was developed and used as the research instrument. Results showed that, cumulatively, 61% had scores below average and 20% showed strong work-nonwork interface management. Interface management was comparatively stronger for work-spiritual and work-income generating activities dimensions and comparatively weaker for work-spouse and work-family dimensions. Participants highlighted that their ability to use technology (78%) and COVID-19 induced regulations (61%) assisted them to better manage the interface. It was found that gender, marital status, age, work experience and educational level subgroups did not yield significantly different means. However, job level had significantly different means. It is recommended that objective assessment of interface management be included in staff recruitment, onboarding, promotion, training and development initiatives. It is important to establish the relationship between work-nonwork interface management and job performance and include all job levels across all sectors.*

**Keywords**: Work-nonwork interface management, dynamic boundaries, cross-sectional survey, public listed companies.

## Introduction

The ideal scenario for an employee is when one is at their productive best at work and still have adequate time to enjoy satisfying nonwork activities (Frone, 2003). However, in most instances, employees struggle in dealing with the often conflicting demands of work and nonwork activities (Grywacz & Carlson, 2007). The boundaries between work and nonwork activities continue to change dramatically over time due to many factors, chief among them being technological advancement. A more radical impact factor is the COVID-19 pandemic which brought in an urgent need for teleworking, working from home, flextime working, working on call, working on standby and virtual teams. Work-nonwork interface management can be defined as an individual's ability to manage a dynamic boundary between his/her work and nonwork activities (Greenhaus & Allen, 2017). Work–nonwork interface is the intersection of work and personal life. There are many aspects of one's personal life that can intersect with work including family, leisure, religion, social, academic activities and health (Greenhaus & Allen, 2011).

Global changes, including disasters and pandemics (such as COVID-19) have forced organisations to adopt strategies involving their workforce such as flextime working, working from home, virtual meetings, working on standby just to mention a few (Wajcman, 2014). Such strategies require employees who can manage the interface between work and nonwork activities to be productive. Therefore, work nonwork interface management is key to both productivity and employee wellbeing (Ammons, 2013). Though topical for a long time, the scientific discussions on this area have evolved. Initial research studies focused on work-family conflict (Adebola, 2005; Allen et al., 2000; Kossek & Ozeki, 1998) and later, work-life conflict (Ammons, 2013; Bellavia & Froone, 2005). Other scholars later pursued the idea that employees attempt to 'balance' between work and life roles (work-life balance) and this view gained popularity (Frone, 2003; Grywacz & Carlson, 2007). Some scholars however argue that employees do not attempt to find a 'balance' between work and life, but they attempt to manage a dynamic interface between work and nonwork activities (Allen & Martin, 2017; Bogaerts et al., 2018). Managing work and nonwork activities has always been core to occupational psychology mainly because indicators of good management are linked to greater employee commitment, job satisfaction (Allen et al., 2000) and organisational citizenship behaviour (Organ, 2005). Many employees in today's workforce are facing the challenge of managing the boundaries around their work and nonwork roles in a way that promotes positive outcomes in their work, family, and personal life (Capitano et al., 2017). Since the world

of work has become more complex and boundaries between work and nonwork have been altered by technology and new work practices, it therefore becomes important to not only predict employees who would perform well in their role, but to predict those who would also manage effectively work and nonwork activities.

The view that there is conflict between work and family roles is relatively narrow because there are other activities that employees participate in that interfere with both work roles and family roles, for example, part time studies (Bogaerts et al., 2018). On the other hand, classifying all activities outside of work as 'life' is problematic because work would have to be a dimension outside life (Allen & Martin, 2017). The study distinguishes between work (formal employment) and nonwork activities (any other activities outside of formal employment). This enabled the researchers to create interfaces and therefore discuss the management of those interfaces. However, the boundaries are still not clear cut. Technological advancement has led to more flexible ways of doing work such as virtual working, working from home and flextime, which have significantly altered the boundary between work and nonwork roles. The study was based on objectivism because it objectively sought to build knowledge by testing specific research hypotheses related to work-nonwork interface management to assist in the practice of occupational psychology. Testing of the research claims and literature assumptions also made the research epistemological in nature.

The research was based on the work-nonwork boundary management fit theory by Bogaerts et al. (2018), who posited that an employee's preference for a certain degree of segmentation or integration of work and nonwork life is an individual need on which fit perceptions are based. Work-nonwork boundary management fit is thus defined as an employee's psychological experience of congruence between his/her personal boundary management preference and the boundary management supplies of his/her work environment. The experience of work-nonwork boundary management fit derives from the underlying process of cognitive comparison of an employee's need for integration (or segmentation) and perceived boundary management supplies as provided by the workplace (Bogaerts et al., 2018). It is now a business and social imperative to help workers to manage their work and nonwork lives. Halpern (2005) suggests that workers are faced with a major challenge of combining work and family roles. Research mainly shows that indicators of balance are linked to greater employee commitment, job satisfaction and OCB (Allen

& Martin, 2007). A gap in literature exists regarding objective measurement of work-nonwork interface management at dimensional level.

A gap in literature exists regarding the dimensional approaches to assessment of work-nonwork interface management. Most available scales available yield composite scores (Wepfer et al., 2018). A gap in literature also exists regarding the influence of demographic variables on work-nonwork interface management. The study also sought to establish the influence of gender, chronological age, marital status, job level and job tenure in managing the work-nonwork interface in a Zimbabwean context.

Gender was defined in terms of being male or female (Haig, 2004). According to Anastasi and Urbina (1997), chronological age refers to one's age as calculated from the date of birth and indicated by number of years. Work experience referred to the total number of years for which the research participant had been employed, whether employment service was broken or continuous (Kolz, McFarland, & Silverman, 1998). Job level refers to a category or rank in classification of jobs based on their superiority and importance of their contribution to organisational goals (Tesluk & Jacobs, 1998). Marital status is the legally defined marital state. There are several types of marital status: single, married, widowed, divorced, separated and, in certain cases, registered partnership (Haig, 2004). Educational level refers to the highest educational qualification attained by the individual (Haig, 2004).

## Aim of the study

This study sought to establish the work-nonwork interface management levels amongst supervisory and managerial employees of public listed companies in Zimbabwe, and to determine whether employees from different genders, ages, marital statuses, job levels and job tenures significantly differ in work-nonwork interface management levels.

## Objectives

The objectives of this study were:

1) To establish work-nonwork interface management levels amongst supervisory and managerial employees of public listed companies in Zimbabwe.

2) To investigate interface management levels across each of the six work-nonwork interface management scale dimensions amongst supervisory and managerial employees of public listed companies in Zimbabwe.
3) To investigate whether employees from different genders, ages, marital statuses, job levels and job tenures differ with regards to their work-nonwork interface management levels.

## Hypothesis

$H_0$: There are no significant differences between individuals from different ages, genders, marital statuses, job levels and job tenures regarding work-nonwork interface management.

H1: There are significant differences between individuals from different ages, genders, marital statuses, job levels and job tenures regarding work-nonwork interface management.

## Participants

The study focused on supervisory and managerial employees in public listed companies in Zimbabwe. A convenient sample of 342 participants was used. Permission to research was sought for and granted by the relevant authorities, that is, the academic institution (Appendix 1) and the Medical Research Council of Zimbabwe (MRCZ) (Appendix 2). Permission was also sought from organisations through formal letters. Letters of permission were obtained from organisations (Appendix 3). However, other organisations simply agreed to notify their employees of the study and allowed them to make an individual decision to participate in the study. Having obtained consent from organisations, an online link was shared for participants in those organisations to participate in an online cross-sectional survey. The online survey had an informed consent form which one had to agree to proceed (Appendix 4). Of the 342 participants, 188 (55%) were male and 154 (45%) were female. For age, the distribution was 4.1% (below 25 years), 32.5% (25-30 years), 34.5% (31-40 years), 20.2% (41-50 years) and 8.8% (above 50 years). Of the 342 study participants, 34.5% were single, 60.8% were married, 4.1% were divorced and 0.6% were widowed. In terms of highest educational level attained, 1.5% had a high school certificate, 0.6% had vocational training, 7.3% had a diploma/higher national diploma, 47.7% had a university degree and 43% had a post graduate qualification. The distribution for work experience was 4.4% (1 year), 29.5% (2-5 years), 33.9% (6-15 years), 21.9% (16-25 years) and 10.2% (above 25 years). Of the total participants, 21.6% were skilled employees, 37.4% were supervisors, 28.9% were middle managers and 12% were top managers.

## The research instrument

The original instrument was constructed from 52 items administered to 132 people from various occupations in the private sector. Through confirmatory factor analysis, the items were reduced from 58 to 42. The 42 items were classified into six interfaces, namely work-spouse/partner, work-family, work- spiritual, work-academic, work-income generating activities and work-domestic and leisure. The full instrument had a Cronbach's alpha of .79 and for the interfaces work-spouse/partner .709, work-family .731, work-spiritual .74, work-academic .72, work-income generating activities .716 and work-domestic and leisure .73. With the full scale and the subscales above .70 the instrument shows good internal consistency. Exploratory factor analysis confirmed the six-factor structure with 59% total variance explained. Results of the bifactor model also confirmed the multi-dimensional structure of the scale. The work-nonwork interface scale showed strong construct validity with an average variance extracted (AVE) of .55 with the six latent factors having AVEs above .5. Coupled with the aforementioned composite reliability scores the scale showed convergent validity. To confirm discriminant validity, low correlations were yielded (.01 to .52) among the six latent factors. This indicates that each latent factor uniquely measures a specific variable.

The overall scores were obtained by adding scores on each facet taking into consideration reverse scoring. Table 2 shows cut-off scores for the work-nonwork interface management scale.

**Table 1: Cut-off scores for work-Nonwork Interface Management Scale**

| Description | Range |
|---|---|
| Very Weak | <95 |
| Weak | 95-110 |
| Moderately Low | 111-120 |
| Moderate | 121-130 |
| Strong | 131-150 |
| Very Strong | >150 |

## Data analysis

The Statistical Package for Social Sciences (SPSS Version 25) was used for data analysis. The Kaiser-Meyer-Olkin (KMO) sampling adequacy test was done to establish suitability of the dataset (Cerny & Kaiser, 1977). The Cronbach's alpha reliability was used to establish the internal consistency of the full scale and each of the seven dimensions of the scale. For descriptives,

frequency tables, the mean and standard deviation for the full scale and each of the six dimensions were used. For inferential statistics, the *t-test* for independent samples was used for the demographic variable gender. For age, marital status, job level and job tenure the one-way analysis of variance (One-Way ANOVA) was used. For demographic variables that had statistically significant mean differences, a *post-hoc* test (Tukey's Honestly Significant Difference) was used to determine which of the specific groups differed from each other.

## Results and discussion

Table 2 shows the reliability of the full scale and the subscales.

**Table 2: Reliability for work-nonwork interface management scale**

| Interface | Cronbach's Alpha | Cronbach's Alpha Based on Standardised Items | No of Items |
|---|---|---|---|
| WNIM Full Scale | .829 | .850 | 42 |
| Work-Spouse/Partner | .758 | .772 | 7 |
| Work-Family | .772 | .783 | 6 |
| Work-Spiritual | .801 | .822 | 7 |
| Work- Academic | .799 | .804 | 8 |
| Work-Income Generating | .771 | .796 | 6 |
| Work-Domestic & Leisure | .813 | .829 | 8 |

Table 3 is a summary of the sample scores for work-nonwork interface management based on the aforementioned cut-off scores.

**Table 3: Work-nonwork interface management overall scores summary**

| | Range | Frequency | Percentage | Cum% |
|---|---|---|---|---|
| **Very Low** | **<95** | **17** | **5%** | **5%** |
| **Low** | **95-110** | **78** | **23%** | **28%** |
| **Lower Average** | **111-120** | **115** | **34%** | **61%** |
| **Upper Average** | **121-130** | **66** | **19%** | **81%** |
| **Strong** | **131-150** | **50** | **15%** | **95%** |
| **Very Strong** | **>150** | **16** | **5%** | **100%** |
| **Total** | | **342** | **100%** | |

As shown in Table 3, 20% of the sample showed strong work-nonwork interface management. Cumulatively 61% of the sample had scores lower than average indicating that respondents generally struggle in managing the interface between work and nonwork activities. Frequency tables were generated for each dimension of work-nonwork interface management, and the summary is presented in Table 4 below.

**Table 4: Descriptive statistics for work-nonwork interface management dimensions**

| | Items | Cronbach's Alpha | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| Work-Nonwork Interface Management | 42 | .851 | 71 | 172 | 120.47 | 16.032 |
| Work-Spouse | 7 | .772 | 9.00 | 28.00 | 17.4912 | 2.86933 |
| Work-Family | 6 | .783 | 6.00 | 25.00 | 15.8333 | 3.66464 |
| Work-Spiritual | 7 | .822 | 9.00 | 28.00 | 17.4912 | 2.86933 |
| Work-Extra Income Activities | 6 | .804 | 8.00 | 24.00 | 16.1433 | 2.53768 |
| Work-Academic | 8 | .796 | 9.00 | 33.00 | 21.5497 | 3.82332 |
| Work-Domestic and Leisure | 8 | .829 | 8.00 | 39.00 | 25.2018 | 5.08320 |
| Valid N (342) | | | | | | |

For the *work-spouse/partner* dimension the key highlights are that 73% of respondents indicated that their partner/spouse is clear on the demands and nature of their work role. On the other side, 69% indicated they have cancelled or rescheduled arrangements with spouse/partner due to work obligations. More than half of the participants (59%) also highlighted that they are often interrupted by work calls as they enjoyed quality time with spouse or partner. For the work-family dimension, most respondents indicated that they struggled to attend family events (54%) and important events for their children (55%) because of work obligations. Almost half of the participants (52%) have had to ask someone to help with their children due to changing work demands. A summary of the work-spiritual interface reveals that 59% highlighted that their work did not interfere with spirituality; and 61% of respondents highlighted that their work schedule allowed them to practise spiritual activities. Some 56% of the participants indicated that their work allowed them to be the spiritual person they would want to be. On the other hand, 55% did not find it easy to use work resources to plan or attend religious meetings while 53% highlighted that they thought about work whilst busy with spiritual matters.

The major highlights for the work-academic activities interface are that 65% of participants used company resources to facilitate academic studies and 62% indicated that work experience had improved their academic performance. However, 61% indicated that they were often assigned work whilst attending to important academic issues. Most key dimensions for work-income generating activities appeared to be positively rated by respondents. These included use of work resources and connections to further income generating activities (54%), good planning to ensure both thrive (62%), no intention to quit job to pursue income activities fulltime (60%), and use of technology to ensure seamless transition (57%). However, 56% of the respondents highlighted that they struggled to perform and focus if things did not go well in their income generating activities. On the *work-domestic & leisure* dimension the major highlights are working from home assisting in domestic obligations (59%), use of technology efficiently to interchange seamlessly between two dimensions (61%), brilliant work ideas coming whilst enjoying leisure activities (66%), and meeting individuals who have assisted with work ideas on leisure trips (68%). However, 68% noted that they had to cancel/ reschedule planned leisure activities because of work demands, 57% did not use company resources to plan and carry out leisure activities and 53% struggled to plan work to have adequate time for leisure. On *use of technology*, 78% of the respondents indicated that their ability to use technological gadgets had assisted them to manage the transition between work and nonwork activities. Some 61% indicated that regulations due to COVID-19 restrictions helped them to better manage their work and nonwork schedules. Only 19% indicated that the regulations enforced due COVID-19 restrictions were not helpful in managing work-nonwork schedules.

Results show that there were no significant differences in work-nonwork interface management between males and females. The results show that t = .264 p =.792. The mean for males was 120.68 (SD of 17.198) and for females was 120.21 (SD of 14.534). It was also found that there were no statistically significant differences in work-nonwork interface management amongst subgroups based on *age* $F(3,341) = 2.575$ $p=.05$; *marital status* $F(3,341) = 2.070$ $p=.104$; *educational level* $F(3,341) = .510$ $p=.728$ and *work experience* $F(3,341) = 1.414$ $p=.229$. Statistically significant mean differences were obtained based on *job level* $F(3,341) = 5.864$ $p=.001$. Results showed significant mean differences between skilled employees and supervisors, middle managers and supervisors and between top managers and supervisors. Table 13 is a summary of these differences.

**Table 5: Tukey's HSD summary for job level**

| | Skilled Employee | Supervisor | Middle Manager | Top Manager |
|---|---|---|---|---|
| **Skilled Employee** | - | -8.415 ($p \leq .005$) | Not Significant | Not Significant |
| **Supervisor** | | - | -6.195($p \leq .005$) | -7.316 ($p \leq .005$) |
| **Middle Manager** | | | - | Not Significant |
| **Top Manager** | | | | - |

The current study is the first and only research study assessing work-nonwork interface management across six dimensions. Other measures yield composite scores (Wepfer et al., 2018; Allen & Kiburz, 2012). A gap in literature existed in the measurement of work-nonwork interface management at dimensional level. Although the number of dimensions is not important, it is critical to establish the work- nonwork interfaces that individual employees struggle in managing and assist them to better manage. Results are consistent with available literature in that they show that employees engage in multiple roles (Allen & Martin, 2017) and often struggle with conflicting demands of work and no-work roles (Bogaerts et al., 2018). There is therefore a need for organisations to assist employees in achieving harmonious interfaces between work and nonwork activities. Employees who feel that their interface management needs are met by their work environment have access to organisation resources that allow them to manage interfaces better (Bogaerts et al, 2018).

The perception amongst participants was that rescheduling arrangements with spouse or partner because of work obligations and the interruption by work calls during quality time were the major factors negatively affecting the work-spouse interface. These findings are consistent with literature available on work- family conflict (French & Johnsen, 2016; Palm et. al, 2019). A key mitigatory factor is when the spouse or partner is clear on the demands and nature of the participant's role. The study provides insights showing that the work-family interface is negatively affected by failure to attend family events, failure to attend children's events and changing arrangements due to change in work demands. This insight is key in assisting organisations to design interventions concerning work schedules and managing change in work routines (Allen & Martin, 2017). Considering nonwork roles before changes is critical because certain changes, for example, promotion to work in another location may be more economically expensive than benefits accruing from such promotions.

It was found that work-spiritual interface management was strong because of work schedules allowing employees to practice spiritual activities and limited interference between work and spirituality. However, employees highlighted that they still thought about work obligations when busy with spiritual matters. A knowledge gap existed for this dimension. Evidently, several employees were engaged in academic studies to develop themselves. Work experience and use of company resources to enhance academic studies were found to be strong. Organisations can utilise opportunities to assist employees in academic studies to aid development and motivation (Capitano et al., 2017). Assigning employees work whilst they are attending to important academic issues is detrimental to both job performance and academic performance. This benefits neither the employee nor the organisation. The research also offers insights into the work-income generating activities interface. Positive outcomes are that employees used work resources and connections to advance income activities, they planned so that both thrived, and used technology to conduct both seamlessly. Because of this management, only 23% had thoughts of quitting their jobs to focus on their income generating activities. Employees knew they needed both the formal role and an income generating activity to aid survival and possibly make a saving in a $VUCAD^2$ environment. However, organisations ought to manage such income generating activities so that they are not counterproductive (Bogaerts et al, 2018).

It was found that working from home assisted employees to get more domestic obligations done. However, there is a need to establish the impact on job performance using objective criteria before investing in such initiatives. Technology is also critical in managing the interface. It was found that leisure trips assisted in generating work ideas and creating interactions with individuals who assisted with work. On the other hand, cancellation of trips due to work commitments, failure to plan work, to have adequate leisure time and failure to use company resources to carry out hobbies negatively affected management of this interface. It is important that organisations invest in technological gadgets and training because it would aid employees in interface management. Though COVID-19 regulations assisted in work-nonwork interface management, organisations need to consider those interventions that improve productivity and adapt permanently. Of the demographic variables, only job level was significant in mean differences. Interventions of work-nonwork interface management ought to factor in job level. Such differences may emanate from varying degrees of autonomy in managing work schedules (Bogaerts et al., 2018).

## Conclusion and recommendations

Work-nonwork interface management plays a key role in both job performance and employee wellbeing (Allen & Martin, 2017). Organisations can therefore include objective assessments of work-nonwork interface management to assist employees to manage interfaces better. An intervention plan can be drafted for each employee based on the overall score and each dimensional score. Technology is central to work-nonwork interface management. Organisations should therefore train employees and provide technological gadgets that assist employees to be productive and to transition almost seamlessly where possible. Organisations in Zimbabwe should also shift to reward systems that are based on hours of attendance variable pay systems based on performance. Reward systems based on attendance often hinder good work now interface management an also do not improve productivity. However, it is also critical to establish through research the strength of the relationship between work-nonwork interface management and job performance. Organisations running initiatives to improve work-nonwork interface management for employees should consider job level as a key variable in such initiatives. The study used a convenience sampling and therefore prone to sampling bias. A research based on a probability sampling technique is recommended. It is recommended that further research involving all job levels and employees across all employment sectors be done to further the understanding of work-nonwork interface management. It is also important to establish the relationship between work-nonwork interface management and other variables such as stress, burnout, emotional intelligence, resilience at work and organisational citizenship behaviour.

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## Appendix 1: Institutional Permission

University of Zimbabwe
P.O. Box MP167
Mt Pleasant
Harare
Zimbabwe

Telephone: 303211 Ext 14026
Telex: 26580 UNVIZ ZW
Telegrams: UNIVERSITY
Fax: (263) (4) 333407

UNIVERSITY OF ZIMBABWE

APPLIED PSYCHOLOGY DEPARTMENT

3 February 2022

TO WHOM IT MAY CONCERN

RE: PERMISSION TO CONDUCT AN ACADEMIC STUDY

Simbarashe Mazani (R036155C) is a part-time University of Zimbabwe student studying towards a Doctor of Philosophy in Social Studies in the Department of Applied Psychology. He wishes to undertake a study entitled "Performing well at work and enjoying a fulfilling private life: Creating a practical workplace model for work-nonwork interface management''.

The findings of the study will be used for academic purposes only and will remain anonymous. Should you have any issues that require clarification do not hesitate to contact:

The Chairperson
Department of Applied Psychology
University of Zimbabwe
Box MP167
Mt Pleasant
Harare

Tel: 303211 Ext. 14025/6

The Department greatly appreciates your kind assistance to the 9tudent.

Yours faithfully

UNIVERSITY OF ZIMBABWE
Department of Applied Psychology
OFFICIAL

DR S MHIZHA
CHAIRPERSON, DEPARTMENT OF APPLIED PSYCHOLOGY

## Appendix 2: MRCZ Permission

Telephone: 08644072773/0242791193
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

**Medical Research Council of Zimbabwe**
**20 Cambridge Road**
**Avondale**
**Harare**
**Zimbabwe**

**APPROVAL**

**MRCZ/A/2890** **30 May 2022**

**Simbarashe Mazani**
UZ – Department of Psychology
P.O Box MP 167
Mt Pleasant
Harare

**RE: - Performing well at work and enjoying a fulfilling private life: creating a practical workplace model for work-nonwork interface management**

Thank you for the application for review of research activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:

1. Full Research Protocol Version 2.2 dated 17/05/2022
2. Informed Consent Form Version 1.2 dated 17/05/2022
3. Biographical Data Questionnaire Version 1.1 dated 17/05/2022
4. Work-nonwork Interface Management Scale Version 1.2 dated 17/05/2022
5. Emotional Intelligence Scale Version 1.2 dated 17/05/2022
6. Resilience at Work Scale Version 1.2 dated 17/05/2022
7. General Efficacy Scale Version 1.2 dated 17/05/2022
8. Tough-Mindedness Scale Version 1.2 dated 17/05/2022

- **APPROVAL NUMBER : MRCZ/A/2890**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING : Full Board**
- **MEETING DATE : May 26, 2022**
- **APPROVAL DATE : May 30, 2022**
- **EXPIRATION DATE : May 29, 2023**

After this date, this project may only commence upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
- **MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (0242) 791193/08644073772 or by e-mail on mrcz@mrcz.org.zw

**Other**

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- **In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement.**

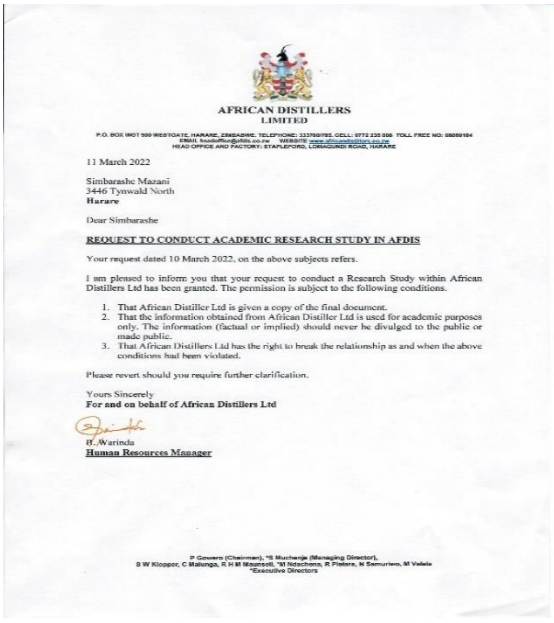
Yours Faithfully

.....
**MRCZ SECRETARIAT**
**FOR CHAIRPERSON**
**MEDICAL RESEARCH COUNCIL OF ZIMBABWE**

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
30 MAY 2022
APPROVED
20 CAMBRIDGE ROAD, AVONDALE, HARARE

**PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH**

## Appendix 3: Organisations Permission Letters



AFRICAN DISTILLERS LIMITED

11 March 2022

Simbarashe Mazani
3446 Tynwald North
**Harare**

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY IN AFDIS**

Your request dated 10 March 2022, on the above subjects refers.

I am pleased to inform you that your request to conduct a Research Study within African Distillers Ltd has been granted. The permission is subject to the following conditions.

1. That African Distiller Ltd is given a copy of the final document.
2. That the information obtained from African Distiller Ltd is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That African Distillers Ltd has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of African Distillers Ltd**

R. Warinda
**Human Resources Manager**

FIRST MUTUAL

Go Beyond

FIRST MUTUAL HOLDINGS LIMITED, First Mutual Park, 100 Borrowdale Road, Borrowdale, Harare, Zimbabwe.
P O Box BW 178, Borrowdale, Harare.
Tel: +263 (242) 886000 - 17 | E-mail: info@firstmutual.co.zw | Website: www.firstmutual.co.zw

23 March 2022

3446 Pine Street
Tynwald North
Harare

Dear Mr. S. Mazani

**REQUEST TO CARRY OUT ACADEMIC RESEARCH AT FIRST MUTUAL HOLDINGS LIMITED**

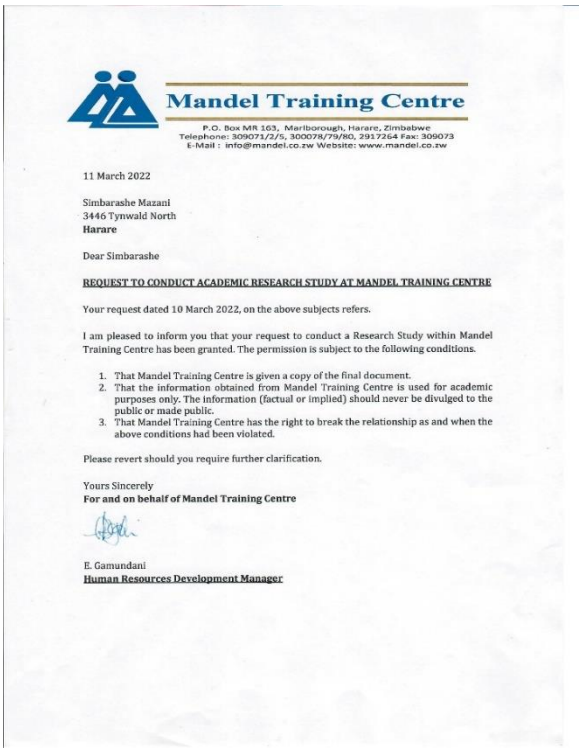
On behalf of First Mutual Holdings Limited, I am writing to formally acknowledge receipt of your academic research proposal and indicate our awareness of the research proposal.

We take note that you are a part-time student at the University of Zimbabwe studying towards a Doctor of Philosophy in Social Studies in the Department of Applied Psychology. You intend to undertake a study entitled, "**Performing well at work and enjoying a fulfilling private life: Creating a practical workplace model for work-nonwork interface management.**" You intend to conduct your research by administering an online survey to our employees. You will avail copies of the final research project to participating organizations and extent an offer of two free presentations to assist employees with work-nonwork interface management at agreed dates.

Subject to the foregoing conditions, please be advised that you have been granted permission to conduct your academic research at our organization.

If you have any questions or concerns, please feel free to contact the undersigned.

Phungwa Dhliwayo
Group Human Resources Executive
First Mutual Holdings Limited



Mandel Training Centre

P.O. Box MR 163, Marlborough, Harare, Zimbabwe
Telephone: 309071/2/5, 300078/79/80, 2917264 Fax: 309073
E-Mail : info@mandel.co.zw Website: www.mandel.co.zw

11 March 2022

Simbarashe Mazani
3446 Tynwald North
**Harare**

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY AT MANDEL TRAINING CENTRE**

Your request dated 10 March 2022, on the above subjects refers.

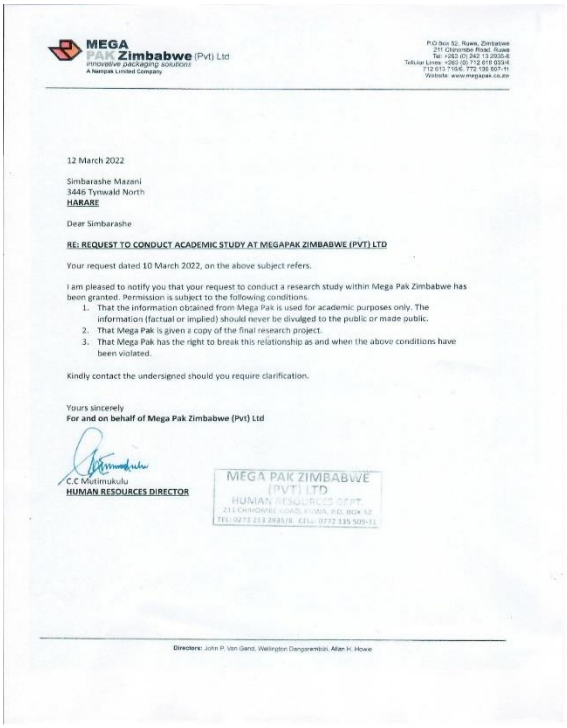
I am pleased to inform you that your request to conduct a Research Study within Mandel Training Centre has been granted. The permission is subject to the following conditions.

1. That Mandel Training Centre is given a copy of the final document.
2. That the information obtained from Mandel Training Centre is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That Mandel Training Centre has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of Mandel Training Centre**

E. Gamundani
**Human Resources Development Manager**



MEGA PAK Zimbabwe (Pvt) Ltd
innovative packaging solutions
A Nampak Limited Company

P.O.Box 52, Ruwa, Zimbabwe
211 Chirombe Road, Ruwa
Tel: +263 (0) 242 13 2935-8
Telkan Lines: +263 (0) 712 618 833/4
712 613 7164, 772 135 507-11
Website: www.megapak.co.zw

12 March 2022

Simbarashe Mazani
3446 Tynwald North
HARARE

Dear Simbarashe

**RE: REQUEST TO CONDUCT ACADEMIC STUDY AT MEGAPAK ZIMBABWE (PVT) LTD**

Your request dated 10 March 2022, on the above subject refers.

I am pleased to notify you that your request to conduct a research study within Mega Pak Zimbabwe has been granted. Permission is subject to the following conditions.

1. That the information obtained from Mega Pak is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
2. That Mega Pak is given a copy of the final research project.
3. That Mega Pak has the right to break this relationship as and when the above conditions have been violated.

Kindly contact the undersigned should you require clarification.

Yours sincerely
**For and on behalf of Mega Pak Zimbabwe (Pvt) Ltd**

C.C Mutimukulu
**HUMAN RESOURCES DIRECTOR**

MEGA PAK ZIMBABWE (PVT) LTD
HUMAN RESOURCES DEPT
211 CHIROMBE ROAD, RUWA, P.O. BOX 52
TEL: 0272 213 2935/8, CELL: 0772 135 509-11

Directors: John P. Van Gend, Wellington Dangarembizi, Allan H. Howe

## Appendix 4: Organisations Permission Letters

**From:** Nyasha Muchinouta
**Sent:** Thursday, March 31, 2022 11:55 AM
**To:** Simbarashe Mazani
**Subject:** Re: FW: Research Request

Good day

We acknowledge receipt of your letter requesting to carry out research in the company.

We are happy for you to proceed as per request. As agreed, kindly share research findings once the study is completed.

Regards
Nyasha

**Nyasha Muchinouta**
Human Resources and Administration Manager
Cell:

Seed Co Limited
Sherwani Road, Stapleford P.O Box
Won 84, Westgate, Harare, Zimbabwe
Telephone: +263 4 308881/8, 308127
Switchboard Cell:
Email: ycoko@seedcogroup.com

IT STARTS WITH THE RIGHT SEED
www.seedcogroup.com/zw

**Simbarashe Mazani**

**From:** Edwin Nharirire
**Sent:** Monday, 14 March 2022 11:38
**To:** Simbarashe Mazani <jimazani@gmail.com>
**Subject:** Permission to Carry out Research in TSL Limited

Dear Simbarashe

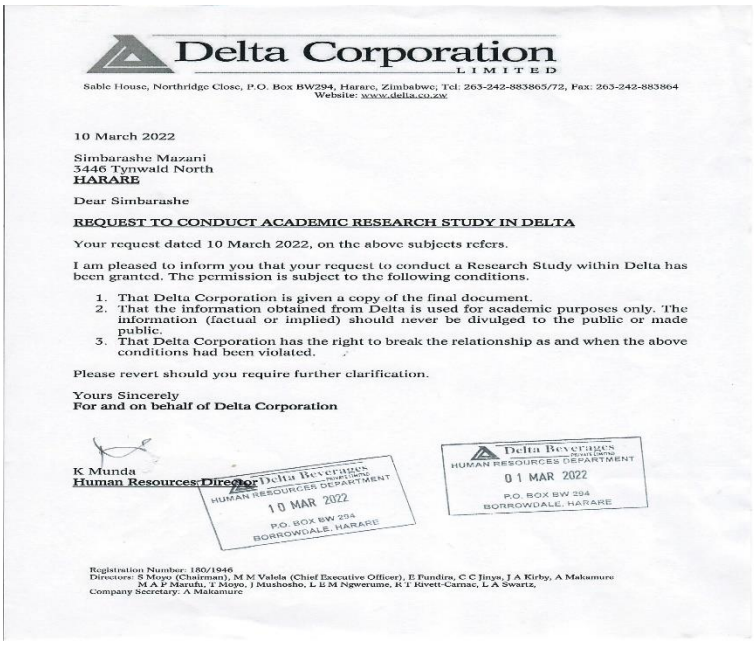
We acknowledge receipt of your letter requesting to carry out research in the company.

I would like to notify you that we are happy for you to go ahead and distribute your survey questionnaires as per the request. We urge you to also maintain high level of confidentiality on individual employee information as well as ensure that you also give us a summary of your findings for our information.

Regards

TSL

**Edwin Nharirire**
*Group Human Resources Executive*



Delta Corporation
LIMITED

Sable House, Northridge Close, P.O. Box BW294, Harare, Zimbabwe; Tel: 263-242-883865/72, Fax: 263-242-883864
Website: www.delta.co.zw

10 March 2022

Simbarashe Mazani
3446 Tynwald North
HARARE

Dear Simbarashe

**REQUEST TO CONDUCT ACADEMIC RESEARCH STUDY IN DELTA**

Your request dated 10 March 2022, on the above subjects refers.

I am pleased to inform you that your request to conduct a Research Study within Delta has been granted. The permission is subject to the following conditions.

1. That Delta Corporation is given a copy of the final document.
2. That the information obtained from Delta is used for academic purposes only. The information (factual or implied) should never be divulged to the public or made public.
3. That Delta Corporation has the right to break the relationship as and when the above conditions had been violated.

Please revert should you require further clarification.

Yours Sincerely
**For and on behalf of Delta Corporation**

K Munda
**Human Resources Director**

Delta Beverages
HUMAN RESOURCES DEPARTMENT
10 MAR 2022
P.O. BOX BW 294
BORROWDALE, HARARE

Delta Beverages
HUMAN RESOURCES DEPARTMENT
01 MAR 2022
P.O. BOX BW 294
BORROWDALE, HARARE

Registration Number: 180/1946
Directors: S Moyo (Chairman), M M Valela (Chief Executive Officer), E Pundira, C C Jinya, J A Kirby, A Makamure
M A P Marufu, T Moyo, J Mushoshe, L E M Ngwerume, K T Rivett-Carnac, L A Swartz,
Company Secretary: A Makamure

**Appendix 5: Informed Consent Form**

Version 1.2 17/05/2022 MRCZ /A/2890

Page 1 of 4

**INFORMED CONSENT FORM**

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
30 MAY 2022
APPROVED
20 CAMBRIDGE ROAD, AVONDALE, HARARE

**Project Title: Performing well at work and enjoying a fulfilling private life: creating a practical workplace model for work-nonwork interface management**

Principal Investigator **Simbarashe Mazani,** [*Ph.D*]
Phone number(s) **0717534464 & 0773755857**

**What you should know about this research study:**

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- Routine care is based upon the best-known treatment and is provided with the main goal of helping the individual clients. The main goal of research studies is to gain knowledge that may help future clients.
- We cannot promise that this research will benefit you. Just like regular care, this research can have side effects that can be serious or minor.
- You have the right to refuse to take part or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care or employment in your organisation.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

**PURPOSE**

You are being asked to participate in a research study of Work-nonwork Interface Management. The purpose of the study is to investigate the relationships between work-nonwork interface management and emotional intelligence, tough-mindedness, self-efficacy and work resilience. You were selected as a possible participant in this study because you are a permanent employee in a publicly listed private company in Zimbabwe. The study will involve 300 participants.

Version 1.2 17/05/2022 MRCZ/A/2890

**PROCEDURES AND DURATION**

If you decide to participate, you will receive a link to an online portal with the research questionnaire. You will be expected to respond to closed-ended questions by choosing responses on options given. The questionnaire consists of a biographical form, a Work-nonwork Interface Management Scale, Emotional Intelligence Scale, Resilience at Work Scale, Self-Efficacy Scale and Tough-Mindedness Scale. You are expected to respond to all scales. The study will take an average of 25 minutes to complete. You will be expected to participate once.

**RISKS AND DISCOMFORTS**

Although, the researcher does not reasonably for see any risk or discomfort to the participants; it is expected that there will be inconveniences associated with connecting to the online platform and the data costs for the duration of the participation. The researcher has however made attempts to use the shorter but reliable versions of instruments.

**BENEFITS AND/OR COMPENSATION**

We cannot and do not guarantee or promise that you will receive any benefits from this study mainly because all participants will remain anonymous. However, the researcher has guaranteed two free presentations to participating organisations to help employees who choose to attend the presentations to manage their work and nonwork activities in a psychologically healthy way.

**CONFIDENTIALITY**

If you indicate your willingness to participate in this study by signing this document, we plan to disclose only the research findings of all participants or subgroups with numbers exceeding 30. Your responses cannot be reported separately neither can they be identified with you. The research supervisors an Medical Research Council of Zimbabwe will have access to research data.

**ADDITIONAL COSTS**

It is expected that there will be data costs associated with connecting to the research portal when responding to the study questionnaire.

**IN THE EVENT OF INJURY**

There is no risk of injury that is anticipated from participating in the study.

**VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with your organisation. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

**ADDITIONAL ELEMENTS**

You can withdraw at any stage of the research if you experience discomfort. There will be no negative consequences associated with withdrawing from the research.

# The Efficacy of the Allied Health Practitioners Council of Zimbabwe's First Aid in Mental Health Course: Insights from Trained First Aiders

***[1]Mpho Mukabeta, [2]Herbert Zirima & [2]Farirai Maziriri***

[1]Great Zimbabwe University, School of Social Sciences, Psychology Department
[2]Great Zimbabwe University, School of Medical & Health Sciences, Bhehavioural Sciences & Psychiatry Department
[2]Allied Health Practitioners Council of Zimbabwe

## Abstract

The Allied Health Practitioners Council of Zimbabwe introduced the first aid in mental health (FAiMH) course in November 2021. The goal was to assist lay people to be able to identify common mental disorders as well as give initial help to someone who maybe in a mental health crisis. This study sought to determine whether this course is useful in assisting its trainees to identify symptoms of common mental disorders such as depression and anxiety. The study also sought to solicit recommendations on ways to improve the course such that identification of the common mental disorders can be done effectively by trainees who are largely lay people. The study also sought to explore the views of trainees on the usefulness of the course in providing initial help to people in crisis situations. The study adopted a qualitative approach, specifically adopting an explorative case study to get the views of ten purposively selected trainees on the usefulness of the FAiMH course in helping lay people to identify selected common mental disorders (CMDs). In-depth interviews were used to collect data and thematic analysis was used to analyse the data. The study revealed that the course was easy to comprehend, and it helped to enlighten participants on the most common mental disorders. Several recommendations were proffered including strengthening the ethics and referral pathways area of the course, training as many people as possible, offering the course for a longer period and providing it in many geographical locations.

**Keywords:** Allied Health Practitioners Council of Zimbabwe, first aid in mental health, common mental disorders and mental health awareness

## Introduction

Over 450 million people in the world are affected by mental illness which is one of the causes of illness and disability (World Health Organization [WHO], 2020). Although there is a difference between the two, the terms mental health and mental illness are frequently used interchangeably. While mental illness is a diagnosable mental condition that affects a person's thoughts, moods or behaviour, mental health refers to a person's overall wellbeing and their capacity to manage life's stresses and achieve their goals (WHO, 2014). According to the American Psychiatric Association (2018), mental disorders are disturbances of the mind, whereas mental illnesses are diseases of the mind. The phrases mental disorder and mental illnesses are used interchangeably in this study due to the small differences.

While most people are knowledgeable about common physical health issues, there is universal ignorance about mental health. Regular first aid courses are recognised as improving the public's skills in providing immediate and appropriate assistance in medical emergencies; however, many of these courses do not address assisting with mental health problems (Chesney et al., 2014).

It is against this background that the Allied Health Practitioners Council of Zimbabwe (AHPCZ) deemed it necessary to offer a short course to address mental health issues. The AHPCZ is a statutory body established under the Health Professions Act Chapter 27:19. Its mandate is to protect the public and guide the professions through regulation (HPA, 2004). According to the Health professions Act Chapter 27:19, AHPCZ is charged with promoting the health of the Zimbabwean population by regulating, controlling, and supervising all aspects of training, registration, and practice, as well as enforcing ethics and discipline among allied health practitioners. The Council regulates twenty health professions in terms of registration, education and training, professional conduct, and ethical behaviour, ensuring continuing professional development, and fostering compliance with healthcare standards. The AHPCZ started offering the first aid in mental health course in 2022 with an initial programme to train at least 30 people every month. The course is delivered by state licensed psychologists and counsellors to enforce the importance of seeking health assistance from certified health practitioners.

The concept of training people in the basics of mental health is not exactly a new concept. Studies indicate that mental health courses started as way back as the year 2000 in Australia.

In Australia, the training is known as mental health first aid (MHFA). MHFA training began in 2000 as collaboration between a volunteer with lived experience of mental illness and a researcher (Chesney et al., 2014). It spread quickly in Australia and other countries after this modest beginning. Over 700,000 Australians had been trained by mid-2018 and the programme had spread to 25 other countries, with over 2.7 million people trained worldwide (Kohn, 2014). This successful dissemination was because MHFA training is based on the well-known first aid model (Chesney et al, 2014).

In 2017, investigators from China and Sri Lanka were awarded a Global Alliance for Chronic Diseases grant to develop and test MHFA training from low-and middle-income countries (Kitchener & Jorm, 2022). This was the first formal effort to adapt MHFA training to low-resource countries. They recently began a similar research programme in collaboration with researchers in Brazil, Chile, and Argentina (Kitchener & Jorm, 2022). These projects provide opportunities to identify and evaluate the best models for cultural adaptation and community-based education programmes aimed at improving population health (Chesney et al., 2014).

Whilst the first aid in mental health course first offered by the AHPCZ has currently trained a significant amount of people, the efficacy of this training to the ordinary person in terms of acquisition of knowledge about mental health issues, referral pathways and practicality in offering first line help, has not been scientifically assessed. This study therefore sought to fill in that gap and assess the usefulness of this training in people's everyday lives.

Specifically, the research sought to address the following objectives:

1) To establish the first aiders' perceptions regarding the ease of understanding the content of the first aid in mental health course offered by the AHPCZ
2) To understand the views of students regarding the practicality of the first aid in mental health course offered by the AHPCZ
3) To get recommendations on how the first aid in mental health course offered by the AHPCZ can be improved

## Materials and methods

The study's target population consisted of 80 students who had enrolled in the FAIMH from its inception in 2022 to 2023. Five male (50%) and five female (50%) participants were chosen to

participate in the study. The modal age ranges of the study were the age categories marked >20; 21-25 and <30. Each range had three (30%) participants. The age range with the least number of participants in the study was the 26-30 years category. The highest number of participants (60%) came from those who were sent by corporates to attend the course. Equal numbers of participants (20%) were individuals and students.

## Data collection method and tool

The people who took the FAIMH underwent extensive telephone interviews. According to Babbie and Mouton (2010), an interview is a technique for gathering data that entails a discussion between the researcher and the interviewee. The researcher held face-to-face interviews to collect in-depth information from the participants.

## Data analysis

Thematic analysis was used to analyse the data. Boyatzis (1998) describes thematic analysis as a method of identifying, analysing, as well as reporting patterns in the data. This method of data analysis was considered necessary owing to the exploratory nature of this study. When the participants were asked to narrate their perceptions on the efficacy of FAIMH on the first cohort of the first aiders, they are given enough time to reflect on the question, and themes then emerged from their narratives.

## Ethical considerations

Ethical standards are essential whenever human subjects are involved in a study (Creswell, 2003). The participants had to express interest in the study first before they could participate in the study. This method also assisted to maintain the privacy of prospective participants, while permitting the opportunity to participate. Apart from the above, to guarantee that there is informed consent, all participants were given information sheets that explained the full details of what would happen in the study.

## Results

### *Participants' perceptions of the content of the first aid in mental health (FAiMH) course*

Participants in the study reported that the first aid in mental health course offered by the AHPCZ was quite easy to understand since it was tailor made for Zimbabweans, in a language that the recipients could understand. Participant 1 stated that:

> It is very simple to follow and contextualised to a Zimbabwean context, which helps a lot. The flexibility in language usage also makes it user friendly.

Participants in the study also reported that it was simplified so much that people who were not in the medical fraternity could easily comprehend the content. In other words, the course could be understood even by lay persons. Participant 2 reported that:

> The course is very simplified for non-medical staff. It is very simple to comprehend, and I think that was a very good start.

Another factor which made the AHPCZ first aid in mental health course easy to understand was that it fulfilled a public need. Because the prevalence of mental disorders is so high in Zimbabwe, members of the public had frequent contact with such people. Many people lacked knowledge and confidence in how to help, which motivated people to seek training. This was confirmed by Participant 3 who reported that:

> So, many people are getting affected with mental illness, so we are more than ready to assist. The fact that the course is easy to understand coincides with our readiness to assist because of this course.

***Views of the students regarding practicality of the FAiMH course offered by the AHPCZ***

Participants reported that what made the FAiMH course more practical was its being tailored to meet the needs of different age categories. Charles had the following to say:

> In addition to the standard physical aid course for adults to assist other adults, the AHPCZ first aid course in mental health has been tailored for specific age groups ... like adults helping youth, adults helping older people, teenagers helping their peers, professional roles for instance, medical and nursing students, legal professionals and cultural groups, such as indigenous people, people who do not speak or understand English.

The study also found that the course was developed by professionals based on expert consensus guidelines. The professionals in these studies were mental health professionals and experts with lived experiences. The guidelines covered how to assist patients with a wide range of developing mental health problems and crises. Therefore, the course has been easy to understand. In an interview, Participant 4 reported that:

> Seemingly, the AHPCZ first aid course in mental health has been developed by a team of experts with lived experiences, covering a wide range of mental health problems and illnesses.

Participant 2 also reported that the course clearly draws the line between issues to do with spirituality and science by giving practical solutions on how, when and where one should seek health assistance.

Participant 7 highlighted that the FAiMH course was more practical since it helped to provide assistance to those with mental health challenges:

> The approach enhances helpful behaviours, decreases stigmatising attitudes, and improves awareness about mental health.

Participant 9 reported that the FAIMH course was practical in the sense that it taught first aiders to detect problems that were present in the lives of the people they interacted with, and this really addressed a need for assistance:

Generally, participants were of the view that the FAiMH course was more practical because it taught people how to recognise warning signs of mental ill health and help first aiders develop the skills and confidence to approach and support someone whilst keeping themselves safe. The course helped first aiders develop resilience, learn new ways to cope with stress, advise on sleeping better and equip them with a wealth of resources to be able to confidently help someone struggling with their mental health, hence it was a practical course.

Participant 5 weighed in and added that:

> The course provides first aiders with the knowledge to spot specific warning signs that an adult or child could be struggling with a mental health condition. It explains how to initiate a supportive conversation, explore healthier lifestyle choices and links to the wealth of additional support available if someone needs further help.

## Discussion

The study found that the course was easy to understand. This was confirmed by early Australian research which examined the ease of understanding a mental health first aid course. The research did so by assessing the efficacy of the course in raising mental health knowledge and confidence to interact with a person in need of aid. Following the session, participants were better equipped to identify warning signals that someone could be experiencing a mental health issue and provide them with the first aid they required, and according to an examination of these self-assessments.

The study also found that the FAiMH course explained the referral pathways found in health practice and the importance of regulation hence the demystification of several myths surrounding health assistance related to mental illness. The course, for example, emphasised that, *regulation is essential to define a clear framework within which health professionals acquire and maintain the competence needed to provide health services that are of high quality, that are safe, effective and patient-centred.*

The study revealed that the FAiMH course provided by the AHPCZ was useful in many ways, particularly in the sense that it tackled actual issues affecting people's mental health. The results are consistent with those of earlier investigations. Zilnyk (2010), for instance, discovered that the FAiMH taught participants how to use the right tools and resources to assist persons dealing with mental health concerns. To assist in providing first aid assistance to this particular population of people, the course directed participants toward the appropriate resources. Furthermore, the mental health first aid training programme equipped participants with the knowledge and abilities to recognise the early warning signs of mental illness (Kroll, 2015; Svensson & Hansson, 2014).

The mental health first aid training programme enhances participants' mental health literacy, per research by Kroll (2015). According to research by Morrissey et al. (2017), participants' knowledge and literacy of mental health considerably increased after completing the training programme. In a study by Svensson and Hansson (2014), 36 participants showed a significant improvement in understanding of mental health and helpful conduct. (Svensson & Hansson, 2014; Mina, Colucci, & Jorm, 2019). The participants asserted that they learned how to identify the warning signs and symptoms of mental illness as well as how to deal with such a population. Participants also reported feeling more confident about their ability to identify and help those suffering from mental illness (Svensson & Hansson, 2014).

Ploper et al. (2015) reported that, after completing a mental health first aid training course, participants had a better understanding of mental illness, felt less stigma associated with having a mental illness, and had more confidence in their ability to interact with people with mental illness.

## Implications of the study

The study revealed that there is still a need to continue promoting mental health awareness in Zimbabwe hence the duration of the course should be increased to equip the first aiders with more information to assist people with mental health emergencies. There is also a need to decentralise the programme to improve mental health literacy among the people of Zimbabwe. In future, a new research ought to be quantitative to make the findings more generalisable. The study further revealed that there is a need for this course to be tailor-made for younger ages in primary, secondary and tertiary levels so that first aider volunteers are equipped with requisite knowledge. There is also a need to look for partnerships so that the course can be offered for free nationwide and train as many people as possible.

## Study limitations

The study was conducted on a small sample of ten participants hence there is little scope for generalising the study findings. Most of the participants were domiciled in Harare, making it impossible to get other potential informational rich cases for more credible and useful data. Lastly, it was difficult to locate and collect data from the participants due to their mobility and work commitments. For example, some of the interviews had to be rushed because the participants had work commitments they wanted to attend.

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# The Quality of Secondary School-based Counselling Services in Contemporary Digitalised Learning Environment in Zimbabwe

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## Abstract

*School-based counselling is a noble practical guide that shapes and corrects the behaviour of learners. Counselling in schools is one of the most important services provided by facilitators in public schools. Children in schools are helped to adjust meaningfully and to develop the ability to set realistic learning goals. In Zimbabwe, teachers have the responsibility of providing counselling services in schools. The Zimbabwe education system has adopted the use of information and communications technology (ICT) devices popularly known as digitalised learning. With the integration of technology in classrooms and in every aspect of modern life, it is impossible to ignore the risks for learners. As students learn today, they are exposed to social media influence and this determines their behaviour. Social media syndrome is a technological fashion that has defeated the expected ubuntu behaviour amongst learners. Learners are influenced and motivated to exhibit complex behaviours that warrant complex counselling skills. Educational facilitators and pupils are aware of guidance and counselling services although much is needed to serve the intended purpose. The objective of this article is to establish the efficacy of para-professional counselling services provided by teachers and to gauge the credence of services in the peak of digitalised learning environment. The study used the transformative paradigm (TP) and critical emancipatory research (CER) as the research method and design, respectively. Such research method and design enabled the researcher and the researched to jointly get into the problem and collaboratively find solutions by interrogating the existing social media addiction. The purposive and convenience sampling was used in the study. The study found that the use of technological devices such as phones and computers have caused complex deviant behaviours in schools. The results reveal that teachers are compelled to provide counselling services without the necessary counselling skills. The research recommends that there ought to be professional counsellors at each school. There is a need to devise a deliberate training programme that has its bedrock on Afrocentric culture and to ensure that all school counsellors receive adequate contemporary skills.*

**Keywords**: Secondary school, school counselling, digitalised, learning, teachers, *ubuntu*, behaviour

## Introduction

Globally, the introduction of information and communications technology (ICT) in schools has caused complex developmental harm than good among the learners. ICT has been taken as a compulsory learning area in Zimbabwe (Isaacs, 2007). Social media has triggered learners to learn and experience, unwarranted behaviours such as sexual acts, criminal tendencies, drug and substance abuse. These weird behaviours have shown the importance of guidance and counselling services in schools. Counselling is a universal behavioural remedial strategy

(Shimbili, 2019). The educational counselling has been used as a cross-cutting theme with no independent timetable and was a reactive special learning area established to solve study-related and non-related problems of students. Secondary school-based counselling helps students' to harmonise their abilities, interests and to reduce some illicit behavioural activities. The study found a gap in counselling skills of educational facilitators.

## Background of the study

Education in Zimbabwe is rated as one of the best in Africa. According to Dzingirayi and Musemburi (2021), the education system in Zimbabwe is divided into primary education spanning nine years, as well as four years secondary education and another two high education. The education in Zimbabwe is guided by the education blueprint called the national curriculum. The curriculum is a national policy with all guidelines, which ensures quality education. This equips learners with necessary skills for a changing world today and tomorrow. ICT is now the bedrock of the updated curriculum in which learners use technology devices such as computers and mobile phones. These devices are now being abused by most secondary learners who mostly adolescents. In schools, peer pressure is the leading behavioural influence among adolescents as they try to understand themselves.

The behaviour of learners is now influenced by social media in which they are subjected to anti-social behaviour, which is against the learning ethos. Instead of using the technology devices for e-learning, they rather spend their time on social media platforms such as YouTube, Facebook, WhatsApp, Instagram, Pinterest, ShareChat, Twitter and many more. Educational facilitators have resorted to guidance and counselling as a behavioural correctional approach to learners. Secondary school facilitators have para-professional counselling skills that they acquire from in-service workshops. It is arguable that these para-professional counsellors have effective skills for rehabilitating the complex behaviours learnt from the social media. The most common social evils in schools are drug abuse and delinquency which trigger indiscipline in schools.

Counselling is an effective method of dealing with indiscipline because it addresses the problem and its root cause. It has also been observed that counselling has become a remedial strategy for disruptive behaviour in British schools (Nyaegah, 2011). Studies conducted in Zambia by Shimbili (2019) recognised the importance of using guidance and counselling in schools to change the unwanted behaviours. Counselling is, therefore, a process of helping an individual to deal with difficulties experienced in life, using his/her strength to settle the

weaknesses so as to make informed decisions that would lead to a more satisfying life (Mbabazi & Bagaya, 2013). In the same vein, Makumba (2013) asserts that counselling is a psychological process by which a professional counsellor helps the client to explore, understand and accept the current state of life. According to Dryden (2010), the counselling process has regional, professional and cultural variations. This reflects that counselling skills and processes are a complex aspect.

## Counselling in Africa

Counselling has been a tradition African societies since time immemorial. Traditional African societies used the wisdom of uncles, aunties, grandparents and other influential people such as counsellors. Therefore, the practice of counselling is not a new phenomenon to the African community. Mkhize (2016) argues that the African way of counselling is based on the collective principle of humanity which is coiled around *ubuntu* philosophy's basic tenet that "I am, and therefore we are." Counselling in Africa was rooted in the indigenous knowledge systems (IKS) and sociocultural values, customs and practices (Chiboola, 2019). Traditional elders, being custodians and administrators of culture, offer counselling in the form of storytelling and role-modelling. Dzingirayi and Musemburi (2022) indicated that counselling in the traditional indigenous system were applied through various traditional, initiation, ritual, marriage, social, and religious ceremonies. These avenues of counselling were for sustainable social integration and perpetuation of cultural identity for the common good of society and individual wellbeing. These forms of counselling were passed on orally to the next generation. This gradually led to their extinction during the colonial and post-colonial eras. The collective wisdom of Africans generally is that elderly people are regarded as a valuable resource in the community. They are the repositories of traditional knowledge, the embodiment of cultural competences, the experts in social skills and the cherished models for emulation at the family and community levels (Josephine, 2017) This view is supported by Ampim (2003) who states that an elder is given the highest status in African culture because he/she has a lived experience and is a model to emulate in society.

The African form of counselling applies indigenous ways of helping people experiencing various difficult situations such as initiation at puberty, death, illness and marriage. These forms of African counselling refer to the various methods or approaches used by traditional counsellors as remedies to life challenges. This indicates that counselling process is an art as well as a science. This is supported by Kabir (2017) who describes counselling as an interpersonal relationship, helping developmental process, in which a counsellor offers

guidance to the client. However, the term "counselling" is used to describe a variety of activities; and different people have different views on what counselling is and its context of application. Some people believe that it is a means of giving good advice, teaching morality, guidance on marriage and social issues. All these views are uncontested. Taking from a conventional perspective, counselling is a process that involves a special type of helping relationship between a counsellor and client that is purposively interactive and ameliorative (Mugumbate et al., 2022).

## Counselling in Zimbabwe secondary schools

Counselling in Zimbabwean secondary schools falls under the institutionalised curricular known as 'guidance and counselling'. The Ministry of Education, Sport and Culture in Zimbabwe, through the Department of Schools Psychological Services and Special Needs Education (SPS & SNE), introduced policy circular number 23 of 2005 with the intention of meeting the educational needs of students who face various problems that interfere with their learning (Mawire, 2011). This circular was a follow up of the Secretary's policy circular number 14 of 2004. Both circulars are based on the recommendations of the 1999 Presidential Commission of Inquiry into Education and Training (Nziramasanga Commission, 1999). School-based guidance and counselling programmes have been introduced to assist students overcome challenges they experience at home and at school. The guidance and counselling document intends to play an important role in promoting educational success among the learners. Today, the Zimbabwean school syllabus encompasses the following broad areas: personal and social guidance, educational guidance, career/vocational guidance, HIV/AIDS education and individual counselling (Murwira, 1998; Ngara, 1999). With the introduction of Education 5.0, known as the New Curriculum/Competence Based Curriculum in 2016, guidance and counselling became a mandatory subject (Ministry of Higher and Tertiary Education, Innovation, Science and Technology, 2016). That means guidance and counselling is now an examinable learning area just like other subjects such as mathematics and science.

## Quality of secondary school-based counselling services in Zimbabwe

Adolescence is a transitional period when pupils try to sort out all the conflicting demands and expectations of the family, community, friends and school. Most learners in secondary education are adolescents. At this stage, an individual begins to search for identity. According to Davidoff (1987), one wants to answer such identity questions as: Who am I? What do I believe in? Where do I belong? What sort of occupation will I pursue? The overall objectives

of guidance and counselling in Zimbabwean secondary schools, according to Mawire (2011) are: preparing learners to live in a changing environment; developing positive decision-making skills; facilitating the development of multiple intelligences, essential life skills, self-esteem and confidence; promoting healthy life skills; providing opportunities for psychosocial counselling for learners in times of need; laying a foundation for informed career choices; enhancing positive learning outcomes for all; and developing conflict transformation skills among learners. According to Pecku (1991), the guidance and counselling approach is not only limited to formal subjects offered in secondary school, but also included in and out of school activities, work, vocation experiences, and part-time work programmes. The responsibility of the teacher counsellors is to unlock opportunities for students to help nurture their character and behaviour to adjust to society norms and to be mentally and physically healthy. The teacher-counsellor prepares learners' to face the current situations and make developmental adjustments in society.

Teacher-counsellors in secondary schools need to understand the practice of counselling in schools to offer effective counselling services to learners. Counselling is a scientific discipline that provides guidance to learners on various issues such as social, emotional, academic, drug education, vocational and personal development. Counselling in schools has restricted time.

Counselling in schools is not just a process but also part of a 'continuum of helping strategies' (Hornby, 2003). However, most of the teachers conducting counselling in schools are not competent counsellors. Some have little or no training in counselling. These range from information giving, advising, directing, consultation and supporting. In addition, the priorities in schools override the themes of guidance and counselling.

## Digitisation of Zimbabwean education

The provision of ICT resources to the education sector in Zimbabwe has been growing in leaps and bounds since 2002. The Zimbabwean government developed a national ICT policy in 2005. According to Isaacs (2007), the policy was informed by the Harvard University-guided e-readiness survey, the Nziramasanga Education Commission Report of 1999, the National Science and Technology Policy of 2002 and Vision 2020. In particular, the Nziramasanga Commission recommended the use of computers for teaching and learning in educational institutions. The National ICT policy that was adopted in 2005 makes significant references to the promotion of ICTs in education, including their pedagogical use in educational institutions (Isaacs, 2007).

The introduction of ICT in school allowed learners access to smartphones, tablets, Wi-Fi, 5G technologies, social media websites such as Facebook, Instagram, TikTok, Snapchat and many more. However, the potential risks associated with being a digitalised individual need counsellors to advise leaners accordingly. Learners have increased their presence on social media which triggers experimentation, curiosity and impulsive behaviour. It is therefore important for teacher-counsellors who interact with the learners to make them understand the potential benefits or risks of consuming social media.

Children and young people can be susceptible to consuming pernicious social media behaviours such as internet-initiated grooming for purposes of on and offline sexual abuse; the possession, production and distribution of sexual content; and the use of internet-based content to bully (and sometimes blackmail) a person. These internet-related activities can directly or indirectly result in offline abuse directed towards children or to other children by their peers (Ospina et al., 2010). Children and young people have also been found to be perpetrators of online grooming and online sexual offences (Choo, 2009). These include sex-texting and catfishing. Sexting can result in adverse outcomes such as "embarrassment, mental health problems, public dissemination of sexual photos and legal consequences" (Benotsch et al., 2013). It has been estimated that 12% of young people aged 11-16 in the UK, have seen or received sexual messages online, with 2% reporting that they have seen them more than once a week. Mkhize et al., (2017) insist that children at school are exposed to indecent images before they reach 18 years. This is against the teachings of *ubuntu/hunhu* according to the African culture.

The use of ICTs also exposes children to publication and presentation of highly explicit imagery such as cyberporn. The challenge that cyberporn or online pornography brings is that it is freely accessible to anyone with access to an internet connection without the appropriate filters such as a parental block. This is being incorporated into mainstream education unintentionally and some argue that it has altered social values and behaviour of children by sexualising them prematurely; hence, placing them at risk of a variety of harms (Gill, 2009). Cyberbullying, as a conduct risk associated with young people, has been linked to school mates whereby those affected by cyberbullying end up in depression, isolation, self-harm and, in severe cases, suicide (Parris et al., 2012).

## Methodology and setting

### Research design and paradigm

The transformative paradigm (TP) was used as the methodological plan of this research article. This paradigm raises the issue of transformative social network through engagement and changing the existing situation for better (Mertens, 2007). Omodan (2020a) argues that TP tends to change the existing status of the participants for better. The study also adopted the critical emancipatory research (CER) as a research design. The CER enabled the researcher and the researched to jointly get into the problem and address the challenges through interrogating the existing deviant behavioural development. This design was relevant to guide the study because it aims at reforming, transforming and emancipating people from conspiracy, scientific and ideological enslavement (Dube & Hlalele, 2018; Omodan & Dube, 2020). The design also enabled the researcher to engage in a transformative and participatory process of inquiry on the quality of secondary school-based counselling services.

## Participants and selection of participants

The educational facilitators and secondary school learners were selected as research participants. The research selected secondary learners in public secondary schools in Mbare and Dzivarasekwa high-density suburbs of Harare. The participants were active in the WhatsApp groups of the selected schools. A convenient and purposive sampling technique was used in the study. These techniques are relevant to identify counselling skills and the complex behaviour precipitated by technology which warrants counselling. The purposive selection method is used when dealing with social issues, where the expected participants' deviant behaviours are not recognisable (Brady, 2019). This means that the groups are either regimented, vulnerable; possess hidden characteristics, among others (Mason, 2001). Semi-structured interviews were used to gather data from the participants using social media platforms such as WhatsApp, e-mails, Facebook and phone calls. This was due to COVID-19 restrictive measures that limited movements of people to contain the pandemic. Age and sex of the participants was not captured in this study since it was time of Covid-19 restrictive lockdowns. The researcher personally posted the interview questions in the school learners' social media groups.

## Data analysis and ethical considerations

The study used socio-thematic analysis to interpret the data collected through interviews. The socio-thematic analysis is a way of generating data by integrating the social environment of the

participants in themes (Omodan, 2019). The data was coded into themes and each theme was subjected to conversational interpretation in a way to understand the sociality of the participants since the problem under study was centred on *ubuntu* kind of social space. Ethical issues of protection from harm, confidentiality, and request for permission from the gatekeepers were honoured during the study. The researcher followed all protocols of seeking permission.

## Results and discussion

From the responses of the participants, the following themes emerged:

*i) Complex behaviours exhibited by secondary school learners*

*ii) Para-professional counselling skills*

***Complex behaviours exhibited by secondary school learners***

The findings established some of the contemporary behaviours that disrupt the teaching and learning environment in the selected secondary schools. Some participants indicated that they were stressed by the general behaviours common in their learning environment. These findings are illustrated in the following excerpts:

> **Participate 1:** "Am stressed by the behaviours of my colleagues, some of us are no longer respecting teachers"
>
> **Participate 2:** "I can't be sanctioned at school for misbehaving, anyone who intend to sanction by behaviour will be abusing my rights. I had the right to take drugs at any given time."
>
> **Participate 3:** "Due to the current economic situation faced by the teachers, we are the one who support their day to day living. Myself I used to brought grocery for my teachers and the teachers harass us will not come for extra lessons"

The education facilitators were asked if they had adequate skills to counsel learners who showed some deviant behaviours. The following extracts show some of the responses from the teachers:

> **Participant 4:** "I don't have the skills of counselling a child who proposed love to me… their behaviours is precipitated by drugs and substance abuse. I have noted that the professional counsellors do the opposite of what we do as teachers and will worsen the learners to misbehave. After the learner engaged with professional counsellors, they start to label teachers as useless hence discouraging our para-professional skills".
>
> **Participant 7:** "As teachers we are being forced to teaching guidance and counselling, yet I know nothing about it. There are certain behaviours which require professional counsellors to offer assistance.

> **Participant 8:** "The complex behaviours exhibited by learners … are from the social media. Some of the notable behaviours include bullying, sexual abuse, attempted suicides, complex planned crimes, drug abuse, vending and many more. The list is endless.

The study noted that there were many unexpected behaviours being exhibited by the current crop of learners in the selected secondary schools. These behaviours could precipitated by the influence of social media. The most notable behaviours were suicidal cases, drug substance abuse, bullying and planned criminal cases such as rape, theft, among others. The study established that, as the common age group found in secondary schools, adolescents exhibited behaviours informed by peer pressure and experimentation. Adolescence is a transitional stage in which an individual needs to fully understand oneself. A drive for invention and discovery is a common character of this age group. For instance, the research found that learners used their learning gadgets to find chemical reactions of mosquito repellents and then turn them to use as drugs. Apparently, teachers and school authorities could not find easy answers to such complex tensions. This solution could be professional counselling approaches. Teachers in the selected schools were para-professional counsellors who tried to offer help but could not cope due to lack of sufficient skills. This sometimes worsened the behaviour of the learners. The research also revealed that teachers who offered counselling had scanty knowledge of professional counselling. The most notable challenge found was of ethical considerations which resulted in ethical dilemma. Professional ethical issues were found to discourage learners to seek counselling services from their counselling teachers hence worsening the deviant behavioural activities.

***Para-professional counselling skills***

The teachers in the selected secondary schools offered para-professional counselling skills which were not adequate and suitable to address complex behaviours influenced by technological advancement.

The study noted that the gaps of teacher-counselling skills were centred on lack of ethical principles and referral skills. This is against the Afrocentric philosophy which insists that the African way of counselling is based on the collective principle of humanity which is coiled around the basic tenet of *ubuntu* philosophy, "I am, and therefore we are" (Mkhize, 2016). The complex behaviours exhibited by learners had not been noticed because of cultural issues, meaning that the African culture has been seriously eroded. The study found out that most

behaviours were copy-cats of foreign cultures, especially the imitation of Western culture mimicked from social media and then infused into the African culture.

***Some of the complex behaviours***

The study identified the following as some of the complex behaviours exhibited by learners in schools:

- Bullying
- Drug and substance abuse
- Suicidal experimentation
- Complex planned criminal activities
- Robbery
- Murdering parents
- Sexual acts motivated by social media

The above complex behaviours can best be addressed by professional counsellors with adequate counselling skills and guided by professional ethics. Some of the learners need constant monitoring from their guardians because of the complexity of their behaviours. However, teacher-counsellors seemed to be unaware of such ethical guideline. Participants indicated the displeasure of addressing the complex behaviours from learners under the harsh economic environment.

## Recommendations

The study recommends the following to be included in the education system to help remedy the behaviours of adolescents in secondary schools in Zimbabwe:

i) There is a need to hire professional counsellors at every secondary school in Zimbabwe.
ii) There is a need to have a collaborative approach to advise adolescents.
iii) The basic tenets of African culture should be used as a pillar when offering counselling services to learners. This would ensure that learners know their identity.
iv) The counselling body should prohibit the use of para-professional counselling in schools and empower education facilitators with professional counselling skills.

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# Book Review: A Psychosocial Review of L. Mushita's *Chinongwa*

***Reviewer: Clara M. Makosa***
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## Book information

| | |
|---|---|
| Title: | *Chinongwa* |
| Author: | L. Mushita |
| Publisher: | Weaver Press: Harare. |
| Pages: | 234pp. |
| Binding: | Paperback |
| Price: | $15 |
| Year: | 2022 |

## A psychosocial review of L. Mushita's book: *Chinongwa*

## Background and setting

Set in Zimbabwe, the book *Chinongwa* is pedagogical thereby calling upon its readers to reflect, learn, and be taught about the female gender. Showcasing women in their multiple roles, it is also about identity formation and identity maintenance. The author, L. Mushita, makes plain the aspect of togetherness and community, yet still managing to safeguard individuation. *Chinongwa* is about finding one's voice, expressing it, as well as combining that voice with others, in order to make a symphonic sound of the female gender. The book speaks to the psychosocial issue of child marriages that present day Zimbabwe is grappling with. It is a compelling narrative about this hard topic. Additional themes depicted in this book include counselling and therapy spaces, ethnic misunderstanding, spirituality and family dynamics.

The plot begins in 1910, concentrates in the 1920s, spans a good 30 years before concluding in 1940. In *Chinongwa,* Mushita systematically describes the phenomenon of child wives, and the situation of the female gender. If it were a research study, it would fall under the umbrella of a descriptive research design. Typical of a descriptive research design, the book does not dwell on the *why*. Rather, it helps answer the *what, when, where,* and *how* questions regarding the research problem, that is, child marriages.

**Keywords:** Child marriages, orphan, vulnerable, gender, roles of women, family dysfunction, conflict management, conflict resolution, polygamy, blended family

## Characterisation: Different strokes of women

The book has two main characters, namely Chinongwa and Amaiguru.

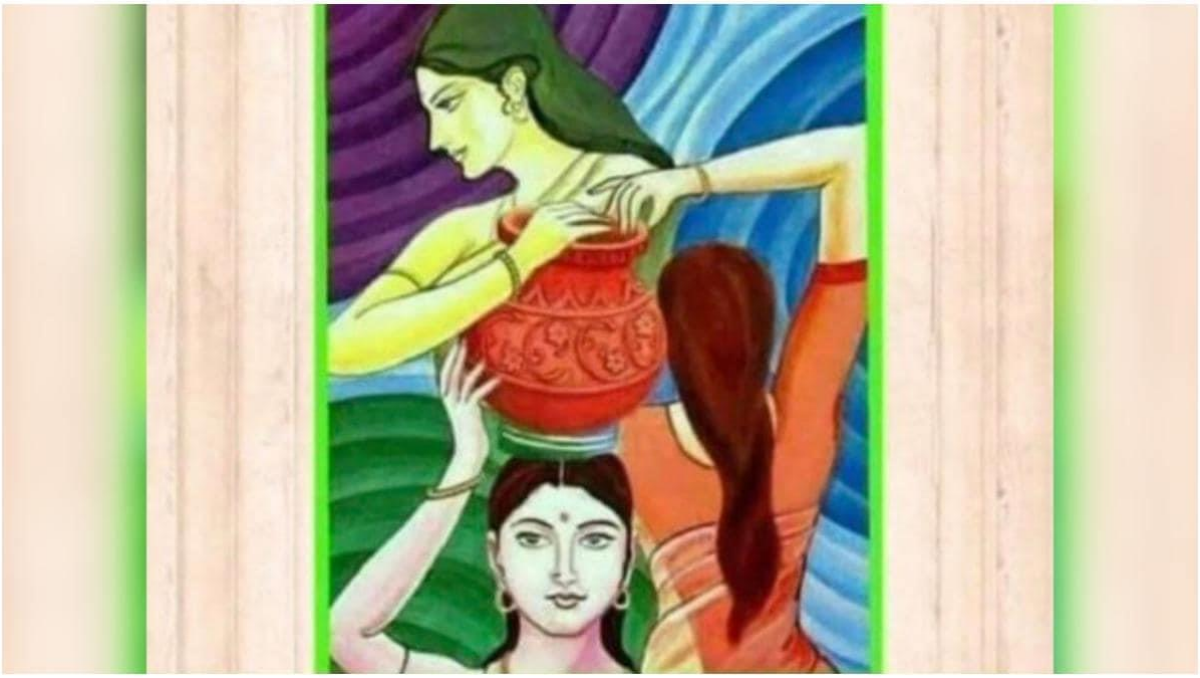
As a child, Chinongwa relates to things in her environment (nature) to language her mind, soul, spirit, essence, being, and inner self. By the age twenty year, Chinongwa has experienced stillbirth, neonatal death, and buried a toddler. She, herself a child, bears and raises children under hostile conditions imposed by her *Vahosi* (her husband's senior wife) and other community players.

In her twenties, Chinongwa is therefore an adult, and a widow back in her village of origin, with a controversial past. Slowly, but steadily she feels liberated in such a way that by age 30, Chinongwa has found her voice and is telling it all! Thus, the book *Chinongwa* helps us to understand and explore the effects of marriage on young girls.

The other major character is Amaiguru (also known as Vahosi, Maidei, or Mai Chitsva). Voices of shame and guilt from events in the past colour and shape her present. She is an adult survivor of childhood trauma. She is haunted by fear, which she carefully and artfully manages. After all, she is the Medicine Man's Wife. She fights for significance, recognition and acknowledgement that befits this position of honour and respect in the community. Nevertheless, as she remains childless, Amaiguru cannot hide the labelling diagnosis of barrenness. So, in a typical biblical *Sarah-helping-God style*, Mai Chitsva acquires Chinongwa to be her husband's co-wife.

Mushita (2022) is artful in her portrayal of the conflict between the two main characters, i.e., Chinongwa and Amaiguru. The author writes in such a way that, if it were about taking sides, the reader would vouch for Chinongwa as she narrates her story. However, as soon as Amaiguru recounts the story from her perspective, the reader cannot help but side with her. Covey (2020) has summarised this tendency as follows: *"We judge ourselves by our intentions, and others by their behaviour".* Commenting about this book, Ndoro (2022)**,** posits that, *"Both characters are achingly human … where each character has been dealt difficult cards, no one wins."* In the book, the author therefore advocates the importance of understanding people within their context; how they make sense of their world as they engage with family (of origin, and of choice), engage with community, build friendship, and navigate the manifold aspects of polygamy. Ranging from a whisper to a loud mob, the voice of the community comes through in *Chinongwa*. The results include group think, the community as the commentator, and the community as the instigator.

In the words of the author, "*A woman is the central pole of the world, and that means carrying one's load with pride, at least for the sake of your children"* (Mushita, 2022, p.2). The following image succinctly captures the book's characterisation of women and its thematic concerns.



Source: Nanda S. (2020). Painting. *India Today*, 27 September.

The painting depicts three women carrying the same pot in their own different way. The message is: *"Each woman carries her responsibility differently; don't compare!"*

## Themes: Psychosocial and mental health issues

The book, *Chinongwa* is an emotional and intellectual rollercoaster, as one would find after reading and navigating matters that have implications on psychosocial and mental health. Themes of the multiple roles of women, the manifold aspects of polygamy, the thin and fragile line between comradery and hostility, gender based violence, conflict management and resolution are part of this work of art. In addition, loss and bereavement, group think, effects of words on emotional trauma, sexual abuse and rape. Furthermore, there are themes of identify crisis, children (orphaned, vulnerable, in difficult places and difficult spaces), and adults who live their lives through their children. Given the foregoing, It is no surprise that clinical themes of anxiety, depression and psychosis also feature in the book.

On the surface, the main conflict of this book is the power struggle between characters as they navigate marriage in its various forms, including one-man-one wife unions, polygamous

unions, and blended family unions. Looking deeper, and going past this conundrum, the main conflict in this book is the personhood of the female gender in Zimbabwe.

The book therefore begs the reader to answer a myriad of questions such as:

- What distinguishes family functionality from family dysfunction?
- What does couple therapy in a multiple union look like?
- What boundaries delineate sex education from sex initiation?

Psychosocial and mental health practitioners in Zimbabwe are often hindered by lack of individual and community buy-in for some well-structured interventions. In a research based in Chiredzi, Gambir and Matsika (2022) pointed out that girls may not take part in programs designed to curb child marriages as they perceived such a move as a direct challenge to their belief system, and/ or disrespect to their elders. These views are in line with Banda and Mutepfa (2019) who argue that the practice of child marriages is deeply entrenched in cultural norms and practices. Hence, in some cases, survivors of child marriages appear to be thwarting efforts towards rehabilitation and community reengagement. Granted culture evolves, yet in some parts of Zimbabwe families have turned a blind eye, as it were, towards the practice of child-brides, child-marriages, and child-wives. Reading *Chinongwa* has the potential to shift perception from *an outsider looking in* to that of *an insider looking around*. These are the sort of stories that existed or exist in one's genogram.

## A shift in the narrative perspective

What makes *Chinongwa* attention-grabbing is that the theme of child marriages is explored from the perspective of those involved in child marriages, not the perspective of policy makers. In addition, the psyche of the perpetrator(s), the inner-self of the victim(s), and the soul of adult survivor of having been a child-wife are all reconnoitred and scrutinised. Written in powerful prose *Chinongwa* achieves a descriptive language of the mind, the will, and the emotions. Psychological practitioners such as Flores (2016) and Wilson and Evans (2017) suggest that the positive use of literature, storytelling and role plays teach social justice and advocacy skills to counselling students. *Chinongwa* proffers many options to educate and inform and thus enabling a therapeutic dialog.

The book, *Chinongwa,* can be useful particularly to those not privy to some Shona traditional and cultural practices, or oral traditions and folklore that passed down such knowledge.

## Recommendations and conclusion

This book is a useful resource for mental health practitioners, i.e., mental health first aiders, health education promotion officers, counsellors, clinical social workers, pastoral counsellors, psychologists, psychiatrists and practitioners offering counselling to pre- and post-natal clients. In addition, this book can be considered as part of essential text in training programmes such as gender, child marriages, and other marital unions. In a nutshell, *read the book*!

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## Guide for authors

The *Zimbabwe Journal of Health Sciences* (*ZJHS*) will consider for publication articles relating to all forms of human psychological services as well as human health and social services issues.

### Format

- All submissions should be written in English.
- Submissions *must not have been previously published*, *nor be under review by another journal*.
- Articles should be between 5000 - 6000 words, including an abstract of not more than 300 words and not more than 5 key words.
- All submissions should be 1.5 line spaced and in Times New Roman font 12.
- Authors should submit an article in MS Word as an e-mail attachment or upload as advised on our website.
- A separate cover page with name/s of authors, current address, phone number, e-mail address, current occupation, department and institution should accompany all submissions.
- Contributors should ensure that their papers are comprehensively edited and proofread before submission. A separate *confirmation letter from the editor* should accompany all submissions.
- *ZJHS* recommends the use of the latest edition of the American Psychological Association (APA) for all citations and references.
- In-text citations should always include page numbers where appropriate.
- All articles involving human research *must have proof of ethical clearance* from responsible authorities.
- Please include a non-refundable processing fee for each submitted article: USS$20.00 (if you are within Zimbabwe) or US$120.00 (if you are outside Zimbabwe) cash or bank draft addressed to Allied Health Practitioners Council of Zimbabwe.
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