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Bancassurance on commercial banks and life insurance in the Southern African Development Community (SADC)

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Supervisor: Dr Mphekeleli Hoohlo (Ph. D)

A thesis presented in partial fulfilment of the degree of Master of Business Administration to the Faculty of Commerce, Law, and Management, University of Witwatersrand

Johannesburg, 2023

DECLARATION

I, Thabang Mapena, declare that this research article is my own work except as indicated in the references and acknowledgments. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.



Thabang Mapena

Signed at: Maseru, Lesotho

On the 29th day of April 2023

DEDICATION

The work is dedicated to my loving mother, ‘Matoka Mapena, thank you for paving the way, it is your footsteps I am walking in.

ACKNOWLEDGEMENTS

I would like to express my heartfelt gratitude to my family for their unwavering support and encouragement throughout my academic journey. I am indebted to my beloved wife for her constant love, patience, and understanding. She has been my source of inspiration, and without her, this accomplishment would not have been possible. I want to make a special thank you to my play pal and loving child Karabo thanks for agreeing to postpone our games for me to finish the project.

I would also like to extend my sincere appreciation to my mother for the prayers and to my twin brother, who has always been a pillar of strength and a source of motivation for me. His unrelenting support and encouragement have helped me to overcome many obstacles and reach this milestone.

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Lastly, I would like to acknowledge God, who has been my guiding light and source of strength throughout this journey. His blessings and grace have enabled me to achieve this accomplishment, and I am forever grateful for His unwavering love and support.

ABSTRACT

The increase in competition and the scramble for customers in the financial industry has led to the convergence of banking and insurance to form what is known as Bancassurance. Bancassurance, as the name suggests is the distribution of insurance products using bank platforms. Although two parties get into the bancassurance agreement in search of some mutual gains, it comes with unintended consequences which among other things affect the banking efficiency of banks. This study assesses the efficiency changes brought about by Bancassurance in the SADC commercial banks. Using Data Envelopment analysis with the return to scale, an analysis was done on 21 banks with active insurance income on a case and control methodology. The results showed insurance income having no impact on the regional banks' efficiencies. The income insurance however had an impact on some banks' returns to scale.

Keywords: *Bancassurance; Efficiency; DEA; Rational choice theory; Resource-based view*

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CHAPTER 1. Introduction

1.1 Purpose of the study

The purpose of this research is to determine the effects of bancassurance on commercial banks and life insurance in the Southern African Development Community (SADC) region.

1.2 Background of the study

An increase in competition and the scramble for customers has led to partnering of organisations in some industries as companies strive to be better placed to get more customers(Das & Teng, 2000; Grant & Baden-Fuller, 2004). Among the partnerships, banking and insurance were an interesting pair to consider as they are both looking for mutual benefits in a fiercely competitive financial industry (Agbo & Nwankwo, 2020).

The main reasons for bancassurance arrangements have been identified as cost and distribution advantages (Ghazaryan, 2020) and (Nasir, Nasir, Salleh, Nasir Borhanordin & Nasir, 2021). For banks, the partnerships ensure diversification of their earnings as it creates an additional revenue stream besides fee income and others. It is also a means for the requisite competitive edge in the industry as it positions banks as a one-stop shop for clients (Nasir et al., 2021). For insurance companies the arrangements opens them up to a wider customer reach as they award them access to the bank's captive market- a market they would not otherwise get access to with their in-house agents alone (Nasir et al., 2021)

SADC's banking sector is dominated by South Africa's big 4 banks, namely Standard Bank, Nedbank, Absa and First National Bank (Mowatt, 2001). The banks have made good strides in the bancassurance sector with key partnerships developed amongst insurers within their groups or those insurers owned by the banks (Ketley, Mela, Thomas, Nixon, & Van Rensburg, 2015). Using quantitative

research methods, the study focuses on determining the effects and uncovering the consequences of such partnership.

1.3 Problem statement

Bancassurance agreements are entered into by banks and life insurance companies to create value for financial institutions (Ghazaryan, 2020). Although the arrangement is set to benefit both institutions, the arrangements come with some disadvantages for both banks and insurance companies (Dicevska, Karadjova, & Jolevski, 2018). The disadvantages include the conflict of interest between banks and insurance partners in bancassurance agreements as well as falling into a dependency trap with a more powerful partner (Bazilinska & Panchenko, 2021; Dicevska et al., 2018). They also include increased work for employees, complicated pricing models as well as clashing approaches to doing business (Bazilinska & Panchenko, 2021).

With a noticeable growth in bancassurance partnerships and their contribution to the overall sales of life insurance in different parts of the world (Grover & Arora, 2015; Ketley et al., 2015; Rubio-Misas, 2022) several trends have been picked in both banking and insurance space. Banks have increased the customization of their products to easily integrate with insurance (L. R. Chen, Peng, & Wang, 2008; Jongeneel, 2011). Banks have also established comprehensive bancassurance departments within, who are regarded as complete revenue units(Ketley et al., 2015).

Multiple studies have been conducted around the effects of bancassurance on either insurance companies or banks in isolation with prominence on analysis of scale economies using efficiency models. Dreassi and Schneider (2015) investigated scale economies of insurance companies in Italy based on types of integration with banks. Grover & Arora (2015) on the other hand, analysed efficiency gains of bancassurance on Indian commercial banks. In Nepal, a similar exercise was performed (Shapkota, 2018). Studies were also done in the African context

with banks in Kenya, and they all asserted existence of some financial gains for banks in the bancassurance models (Bochaberi, 2018; Weweru, 2014).

1.3.1 *Main problem*

In the wake of the move to bancassurance i.e., from a purely banking and/or insurance imperative by banks and/or insurance companies a curious phenomenon arises, of a somewhat corroded culture in both bankers and insurers alike, wherein their primary concerns in the traditional sense may have been compromised. For example, in the banking scenario, one could conflate the allocation of client resources as a priority over the need for financial cover (as an insurance-based priority) by prioritising a banking specific financial imperative over an insurance-based one, and vice-versa.

For banks, the arrangement could reduce the attainment of desired revenue from banking products because of an extra requirement of employees to distribute insurance products. Pure bankers often express disillusionment as this phenomenon persists, as evidenced in one banker's dismay:

> "*This new requirement of selling insurance products reduces my focus on banking and insurance products confuse me*."

For insurers, on the other hand, using the bank as an additional channel, although extending the client reach, it also reduces the number of products distributed by its employees possibly impacting on employee welfare and satisfaction, as expressly observed by commission paid employees.

This brings about several concerns which form our basis for the problem at hand: One concern is that the misrepresentative distribution of the banking products over insurance reflect a false state of the market. This in turn brings about unintended consequences and highlights the research gap: As opposed to profit maximisation and sustainable competitive advantage, the skewed reflection of your business environment negatively impacts on profit and promotes disadvantages leaving the business behind its rivals in the external marketplace.

1.3.2 *Sub-problem 1*

Conflating the allocation of resources over the need for financial cover may lead to domination and contaminating banking versus insurance imperatives for employees and clients alike negatively impacting on the efficiency of the firm.

1.3.3 *Sub-problem 2*

Conflating the allocation of resources over the need for financial cover may lead to domination and contaminating finance versus insurance imperatives of employees and clients alike and bringing about adverse unintended consequences and negatively affecting the win-win memorandum of stakeholders.

1.4 Research objective

This study therefore aims to assess the effects brought about by bancassurance, whose unintended consequences may affect bancassurance partnerships alike, in the SADC region. For example, upon the discovery of outperformance, banks may take over life insurance.

1.5 Significance of the study

The study fills a gap in the analysis of the effects of bancassurance for commercial banks and life insurance companies in the SADC region.

The study adds value to strategic partnerships and their value on competitive advantages and financial results. It provides guidance to the regional regulatory bodies in improving operational governance of the bancassurance partnerships as they affect and impact both banking and insurance industries. Both commercial banks and life insurance companies in the SADC region can use the study as motivation to pursue bancassurance partnerships in the region. The leadership of current bancassurance partnerships will have additional insights which would help them solidify the benefits of the partnerships to involved partners.

1.6 Delimitations of the study

The study focuses on the efficiency analysis of Commercial Banks with bancassurance agreements only and excludes other banks as most bancassurance agreements are found in commercial banks (Bergendahl, 1995; Teunissen, 2008). The study does not make mention of other effects brought about by bancassurance agreements such as human resources satisfaction as well as customer gains.

1.7 Assumptions

It is assumed that SADC commercial bank financial statements are readily available on internet platforms and all SADC banks follow similar reporting format as guided by regional banking regulator. The SADC market is also assumed not to be perfectly competitive with the member states exhibiting similar market conditions. The banks are also assumed to share a similar range of resources.

CHAPTER 2. Literature review

2.1 Introduction

The purpose of the review is to give the background of the study based on earlier work and studies made about the topic and its elements. The review will start with literature on Bancassurance as a phenomenon with basic structures followed by theories underpinning it, accompanied by a schematic model and then impact on bank efficiencies. The chapter also gives and account of empirical literature on efficiency methodologies and application in the financial services industry.

2.2 Overview of the Bancassurance phenomenon

2.2.1 *Bancassurance*

Bancassurance, a word derived from a combination of bank and insurance (Grover & Bhalla, 2013) is defined as a partnership between banks and insurance companies whereby insurance products are distributed by bank channels to bank clientele (Leepsa & Singh, 2017). This partnership between banks and insurance companies started in the 19th century in Europe and made its way to the corners of the world through globalization (Pacholarz, 2021). The partnerships take different forms and models depending on jurisdiction (Moss, 2008).The models also depend on the regulatory, economical and general outlook as well as conditions in that country (Agbo & Nwankwo, 2020).They can partner via integrated models, which include joint venture, mergers, strategic alliances, and non-integrated models such as promotional contract distribution agreement and cross selling(Fields, 2007; Ghazaryan, 2020; Teunissen, 2008). In India for example, the regulator recognises the following three models(Sagaya Swetha N. Joseph, 2019):

- *Referral Model*, where the bank serves as a leads' platform for insurance companies. In the model the bank does not sell insurance products, but houses agents of the insurer who actively sell to the bank customers(Sagaya Swetha N. Joseph, 2019),

- *Corporate Agency model,* whereby a bank becomes an insurer's tied agent, exclusively distributing the sole insurer products to its customers(Sagaya Swetha N. Joseph, 2019),
- *Joint Venture,* whereby a bank and insurance join forces to form an entity, integrating systems and sharing economic benefits(Sagaya Swetha N. Joseph, 2019).

Since insurance has two forms, long-term and short term, banks, and insurance companies can join forces to distribute either short term insurance products or long-term insurance products or both(Pacholarz, 2021). Globally the life bancassurance products is the most popular due to the growth of insurance awareness (Pacholarz, 2021).

Although the term bancassurance originated in 1980 in France, the integration of banking and insurance firms was recorded in 1860 when a Belgian bank sold mortgage linked insurance products(Ghimire, 2013; Pacholarz, 2021).The offering of insurance by banks would then spread to the rest of Europe. The spreading continued well into the 1990's when banking would become a leading distributor of insurance in many insurance markets within Europe resulting in the term "The nucleus of bancassurance" (Pacholarz, 2021). In the Americas traces of insurance and banking partnerships go as far back as the 1920s while in Africa the bancassurance phenomenon is relatively new hence its effects only being felt in the 21st Century (Agbo & Nwankwo, 2020; Pacholarz, 2021).

The landscape in Southern Africa closely follows the African bancassurance story. South Africa, the biggest contributor to insurance numbers in the rest of Africa according to a Swiss Re Insurance Regulator Report of 2017 as cited in McKinsey and Company (2020) report, had its bancassurance experience in the 1990's with banks developing viable relationships with insurers (Ketley et al., 2015). South Africa's big four banks, Absa, Standard Bank, Nedbank, and First National bank all either had connections with some insurance companies via full ownership or as part of one group (van Niekerk, 2012). Since South Africa's big four banks also dominate most part of the SADC region (SADC, 2019), the subsequent event was the transfer

of the bancassurance relationships to countries such as Eswatini, Lesotho, Botswana, Namibia and Zimbabwe, Angola, to mention but a few.

2.2.2 *Life insurance companies in the SADC*

In its most basic definition life insurance refers to a contract between an insurer and life assured (Agbo & Nwankwo, 2020). The insurer makes a commitment to pay the life assured or people connected a certain amount in the occurrence of a covered life event in exchange for fee known as premium(Fields, 2007; Morgan, 1994; Teunissen, 2008). There are different forms of life insurance and include savings, pensions, and health insurance. According to SwissRe 2018 Report cited in the McKinsey and Company (2020) report, life insurance forms over 54% of the gross written premium of all insurance in Africa. South Africa, a member of the SADC community, accounts for 85% of the life insurance market (Umar, Francois Jurd de, & Ra'ees, 2020)

The size of South African insurance market was a result of foreign investors targeting it when investing in Africa because of its matured financial market and population (Umar et al., 2020). This has translated into South African Life Insurance Companies dominating the SADC space in one way or the other. In Lesotho for example, Metropolitan Lesotho, is a subsidiary of Momentum Metropolitan Holdings, a South African company. Momentum Metropolitan Holdings also owns the second biggest insurance company in Botswana, Metropolitan Botswana (Momentum Metropolitan, 2023). The Zambian Insurance market is also dominated by South African companies such as Absa Life Zambia, Hollard Life Zambia, Liberty Life Zambia, and Sanlam Life Zambia (Pensions and Insurance Authority, 2023). Namibia, a close neighbour of South Africa also has its market dominated by South Africa insurance giants like Momentum Metropolitan, Hollard, and Sanlam (Namibia Financial Institutions Supervisory Authority, 2023).

2.2.3 *Commercial banks in the SADC*

Banks are defined as financial intermediaries which collect, distribute and invest money on behalf of its diverse clientele (Agbo & Nwankwo, 2020).Most banks in the SADC region are commercial and offer services ranging from transactional and corporate and investment banking (Mowatt, 2001; SADC, 2019). The Banks supply financial services to a diverse population through branch networks, cell phone platforms as well as the internet. The industry in the SADC regional bloc, which host 16 countries, 16 Central banks and around 83 commercial banks is dominated by South Africa's big 4 banks (Mowatt, 2001; SADC, 2019) . Several banks in the area are part of the group of the four banks or their subsidiaries. The interconnectedness of the block has enabled formation of multiple agreements and integration initiatives to help ease transfers of funds across countries. This has ensured uniformity of services, operations as well as products (Mowatt, 2001; SADC, 2019).

Most of the banks in the area have bancassurance agreements which follow different models, some led by the bank themselves while others are led by the insurance firms (Ketley et al., 2015). Standard Bank group owns Liberty Life (Standard Bank Group, 2023) and they have forms of bancassurance agreements between them within the group. For example, in Lesotho the bank distributes funeral policies underwritten by Liberty Life. Other examples include First National Bank which has FNB Life (FNB, 2023) while Nedbank has Nedgroup Life (Nedbank, 2023). In Eswatini's Standard Bank there is a form of employee protection plan, which is an insurance offering for employers. Standard bank group also has bancassurance arrangements in Namibia and Botswana (Standard Bank Group, 2023).

2.3 Theoretical framework

2.3.1 *Rational choice (RTC) theory*

Bancassurance is always agreed to for mutual benefits for both banks and life insurance companies alike (Ghazaryan, 2020; Ibrahimov, 2021; Nasir et al., 2021). This phenomenon is likened to using the rational choice (RTC) theory as a theoretical framework since it is entered into for desired benefits. According to the theory, rational actors make investing decisions based on a direction best suited to maximise their benefits (Hudik, 2019; Weiske, Petzold, & Schad, 2015). These actors are not confined to human beings alone but can be purposeful actors such as groups and/or organisations (Lovett, 2006). The RTC theory is defined as a decision-making procedure aimed at perfecting gains given a set of different choices (Abell, 2000; Lovett, 2006; van den Berg, Coleman, & Fararo, 1994) and according to Weiske et al. (2015) is premised on three assumptions, namely, motivation, action constraints and maximization of utility. Ogu (2013) on the other hand, postulates some assumptions which were brought forward by Abell (2000) which include individualism, optimality, rationality, structures and self-regarding interest.

The theory has been used in sociology, politics, and economics and has helped explain some of the decision making processes in the forementioned fields (Green, 2002).Frisby and Westerman (2010) applied the theory in analysing channel selection in romantic relationships with respondents showing that a choice in media is based on perceived advantage of that particular media among other things. In economics the theory together with other consumer behaviour theories has been used to predict consumer behaviour and decision making as well as buying patterns as done in a study about antecedents of green computer purchase behaviour among Malaysian consumers (Yeow & Loo, 2022). Gilmour (2016) made references to the influence of the theory in criminology and argued that offenders use cost benefit analysis in deciding their next mission. RTC theory has also been used for organisational decision making for example, its use and contribution to organizational design (Weimer & Calvert, 1995). Ogu (2013) demonstrated the

versatility of the theory and its applicability to several areas which include party politics, gaming, legislation as well as public good. Furthermore, he postulates that the theory is also usable in coalitions and strategic partnerships where partners seek to find secure mutual benefits (Ogu, 2013).

Although the theory is widely used, its critics point out its ineffectiveness and inefficiencies when being applied to situations which do not have benefits and costs explicitly estimated(van den Berg et al., 1994) i.e. it works best on quantifiable benefits and costs. Some criticize the theory's generic and simplistic assumptions like the "*all actors act to maximise their benefits*" assumption as well as its impractical application in scientific research (Lovett, 2006).

Despite the critics, in this study, the author sees the rational choice theory's relevance as the theory has enjoyed great use in most fields and was therefore used in the analysis of the bancassurance phenomena. Additionally the assumption that banks and insurance companies are discreet purposeful actors (Lovett, 2006; van den Berg et al., 1994) and (Abell, 2000) who would have had several options at their disposal but instead selected a partnership which would yield positive outcomes congruent to rational actors.

2.3.2 *Resource based view (RBV) theory.*

The second theory that comes into play and underpins the study is the resource-based view (RBV) theory of the firm. The resource based view of a firm speaks to the notion that a firm's resources and capabilities play a pivotal role in creating a sustainable competitive advantage against its peers (Barney, 1991; Lockett, Thompson, & Morgenstern, 2009; Yarbrough & Powers, 2006). For resources to create the advantage, they have to be valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991). The resources can be anything from physical tangible resources to intangible resources e.g. knowledge (Das & Teng, 2000; Yarbrough & Powers, 2006).

Pursuant to creating this competitive advantage, firms may form partnerships and use them as a tool to gain resources owned by other organisation (Yarbrough &

Powers, 2006). Partnerships are formed to create better resource gathering combinations which would otherwise evade a single firm (Das & Teng, 2000). Businesses in search of competitive advantage work on maintaining and improving internal resources while searching for more resources externally (Yarbrough & Powers, 2006). "The resource-based approach argues that the motivation for alliances is the value creation potential of company resources that are pooled together," Das and Teng (2000) write in their research of resource-based theory of strategic alliances. The suggestion therefore renders resource-based view model an appropriate model for analysing strategic alliances as most are created to improve competitive advantages using other firms' heterogenous resources (Das & Teng, 2000).

In support of this statement, some studies have used the resource based view to analyse partnerships and strategic alliances, with particular interest either in resources themselves or the outcomes; Clarke and MacDonald (2019) based the analysis of the outcomes of partners in multi-stakeholder cross sector partnerships on the resource based theory. The outcomes were grouped based on the resources and positive gains across financial capital e.g., cost savings and/or improved efficiencies, organizational capital e.g., access to marketing and business opportunities and human capital i.e., knowledge(Clarke & MacDonald, 2019). Das and Teng (2000) also studied the strategic alliances using the resource-based view as opposed to transaction cost perspective and were able to determine resource profiles which had an influence on how the alliances are set up.

There are as many disadvantages as there are advantages of the resource-based view as showcased by its critics and promoters (Lockett et al., 2009; Truijens, 2003). A disadvantage according to some of its critics is its inability to address some critical areas such as complex and dynamic aspects of resource creation, the environmental influence of value as well as the absence of formal statements expressing relation between competitive advantage and superior performance (Truijens, 2003). It is also falls short in providing practical application for managers as brought forward through a test study for managerial application (Arend & Lévesque, 2010). The study was aimed at testing the ability of the theory to pinpoint

strategic assets from a large set of assets as well as how much the key characteristics of such assets relate to performance. RBV theory proved impractical as results of the study showed that managers were not able to identify critical resources with high accuracy as well as identify resource impact on performance of a firm (Arend & Lévesque, 2010).

The RBV theory has on the other side been lauded for providing the foundation for addressing key strategic issues in business (Barney, 1991; Wernerfelt, 1984). With the RBV theory, firms can target and pick resources with which they can implement certain strategies, can inform the firm's next acquisition or strategic alliances (Das & Teng, 2000) and create a sustainable competitive advantage (Wernerfelt, 1984). The RBV framework can also be used to analyse the potential of a wide range of resources that can be used to create sustainable advantage (Barney, 1991; Truijens, 2003).

As highlighted earlier, bancassurance agreements are entered into to generate advantages such as cost efficiencies through sharing of resources(Ghazaryan, 2020; Nasir et al., 2021). The resource-based view speaks to resources which help create competitive advantages (Barney, 1991; Wernerfelt, 1984) for firms. The study analyses the advantages gained from sharing of resources by two separate firms which follows a resource-based view of strategic alliances as brought forward by Das and Teng (2000), highlighting the relevance of the theory.

Synthesizing the theories

The two theories, RTC and RBV theory, were therefore used to deduce a framework which was used in the study as well as the foundation from which all hypotheses were tested. The banks and life insurance companies are assumed to be rational entities with resources which join forces for positive results which will later be tested using efficiency methodologies as depicted in Figure 2.1 below.

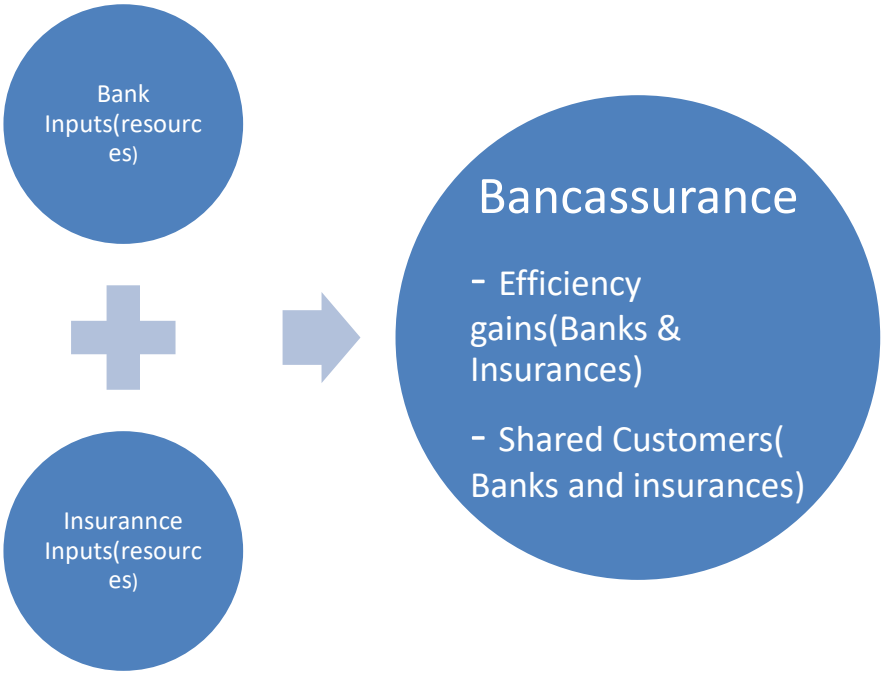


Figure 2.1:The Bancassurance Model (Using resource-based view and Rational choice theory developed by author)

2.4 Formulation of Hypotheses

Das and Teng (2000) and Yarbrough and Powers (2006) assert that strategic alliances are entered into to generate competitive advantage and that firms' alliances are usually in the form of resource sharing. For banks and insurers competitive advantage can take several forms which may include profitability and cost efficiencies, summarised as cost and distribution advantages (Ghazaryan, 2020). The advantages can be seen in several ways; for example, there was a positive effect of bancassurance to banks in a study measuring financial performance of banks in a bancassurance arrangements (Bochaberi, 2018; Weweru, 2014). Another study done in Nepal also highlighted positive effects of the arrangements to life insurance companies (Shapkota, 2018) finding a reduction in the marketing costs for insurance companies and further reductions of operating cost such as rent, printing and stationery.

Although bancassurance agreements are entered into with all rationality with some advantages expected, they come with some unforeseen problems which may impact both commercial banks and insurance companies (Bazilinska & Panchenko, 2021). The arrangement may lead to inefficiencies to both parties due to reduced attention to main activities, increased workload for employees as well possibility for conflict of interest (Bazilinska & Panchenko, 2021; Dicevska et al., 2018). According to Dicevska et al. (2018) the arrangement may also confuse the consumers with regard to what product they need to take up and where. Over and above this, since insurance products are sold by banks and not the other way round, the partnership may position the bank as a direct competition for insurance companies, setting them well for domination over the corresponding partners (Carow, 2001).

The first hypothesis seeks to answer the question; Do banks in a bancassurance partnership have a more dominant performance than their life insurance partner? Based on these studies a hypothesis is set below:

> *H_1: Allocating branch networks over traditional house to house insurance distribution through salespeople leads to banking efficiency performance dominance in bancassurance agreements.*

In strategic alliances, partners voluntarily join forces and enter into inter-firm agreements aimed at achieving benefits for the partners (Das & Teng, 2000). Several models of these partnerships with differing degrees of integration have been explored in the bancassurance space (Fields, 2007; Ghazaryan, 2020; Teunissen, 2008) all having success and challenges for both partners.

According to Bazilinska and Panchenko (2021) the partnerships may lead to performance inefficiencies' because of possible contradictions in philosophies and strategic directions of two partnering entities. For example, banks are generally very passive in how they conduct their sales while insurances are commonly very aggressive, the differences may lead to functionality challenges for the union (Dicevska et al., 2018) which may affect the win-win relationship. Depending on the form, banks may bear bigger costs which may include staff training costs, system integration costs as well as set up costs as they ready themselves to distribute insurance products (Gonulal, Goulder, & Lester, 2012). To insurance companies, the partnerships, as banks push for higher volumes, create competition between its bancassurance and its traditional distribution channels i.e., brokers and tied agents which may affect the channels' contribution to sales impacting the insurers' performance (Carow, 2001).

Although the partnerships would be entered into, with reference to rational choice theory and resource based view theory, to create value for both partners (Das & Teng, 2000; Weimer & Calvert, 1995), the studies show that it sometimes becomes burdensome for some partners.

The second hypothesis therefore seeks to address the question: Do all partners win in the bancassurance agreement?

> *H2: Allocating bank resources to distribution of both insurance and bank products leads to reduced uptake of some bank and insurance products and affects the efficiency gains in bancassurance agreements.*

2.5 Framework for Bancassurance Efficiency Analysis

2.5.1 *Efficiency methodologies*

To better understand the effects of bancassurance and test the two hypotheses, the performance of the banks in bancassurance agreements with life insurance companies is measured and analysed. Studies have shown that performance in the financial industry can be measured using efficiency models (Arefjevs, 2017; Allen N Berger & Humphrey, 1997; Klumpes, Banker, & Cummins, 2010) and several studies have been done around banks and insurance companies using different efficiency measures (Alber, Elmofty, Kishk, & Sami, 2019; Arefjevs, 2017; Chang, Peng, & Fan, 2011; Klumpes et al., 2010; J.-L. Peng, Jeng, Wang, & Chen, 2017).

Efficiency measures a firm's ability to maximise production with its useful inputs (Tim J Coelli, 1995; Timothy J Coelli, Rao, O'Donnell, & Battese, 2005). Efficiency in business measures its ability to generate output from its inputs (Eling & Luhnen, 2010a; Grover & Arora, 2015). The concept has been used in several studies since inception, with use ranging from health sector, manufacturing, communication, technology, supply chain as well as the financial industry to mention but a few (Arefjevs, 2017; Allen N. Berger & Mester, 1997; Chirikos & Sear, 2000; Fenn, Vencappa, Diacon, Klumpes, & O'Brien, 2008; Grover & Arora, 2015; Liang, Yang, Cook, & Zhu, 2006; Ngom, 2007). The prominent structure of efficiency is a sub-division of two components, technical efficiencies and allocative efficiency which were brought about by Michael Farrell in 1957 and termed "*the Farrell Approach*" by Kopp 1981 and covered by several authors(Timothy J Coelli et al., 2005; Klumpes et al., 2010; Kopp, 1981). Technical efficiency speaks to the ability of a firm to get the optimal output from employed inputs whereas allocative efficiency refers to the ability to use resources optimally (Timothy J Coelli et al., 2005).

Vincova (2005) suggests that efficiency can be measured using either ratio indicators or parametric and non-parametric frontier methodologies, the former being the simplest. The simpler methods like ratio analysis usually use single inputs and assess a few indicators, limiting their usefulness in measuring corporate

efficiency (Tim J Coelli, 1995; Vincova, 2005). Parametric and non-parametric methodologies are widely used because of their precision to efficiency measurement in comparison to the more simpler ratio indicators (Allen N Berger & Humphrey, 1997; Tim J Coelli, 1995; Murillo-Zamorano, 2004; Vincova, 2005). They are also preferred because of their ability to cover efficiencies in multiple inputs and outputs firms (Eling & Luhnen, 2010a). Both the methodologies fall under frontier models which use other industries or organisation's efficient performance standards or best practices, known as frontiers- against which a firm's efficiencies are compared (Eling & Luhnen, 2010a; Klumpes et al., 2010; Leal Paço & Cepeda Pérez, 2013). Firms that operate on the frontier are said to be efficient while firms operating off it are said to be inefficient (Charnes, Cooper, & Rhodes, 1978; Cook & Seiford, 2009; Leal Paço & Cepeda Pérez, 2013).

Parametric measures, which are mostly used to measure economic efficiency (Murillo-Zamorano, 2004; Vincova, 2005), make assumptions about the parameters used while non-parametric measures, which are used for technical efficiencies, do not involve any assumptions of parameters (Granderson & Linvill, 1998; Leal Paço & Cepeda Pérez, 2013; Vincova, 2005). The advantages of the approaches include the ability to identify units contributing to inefficacies as well as pin pointing the size of the inefficiencies (Leal Paço & Cepeda Pérez, 2013). Data Employment Analysis and Stochastic frontier analysis are examples of non-parametric and parametric techniques respectively(Hlali, 2018; Vincova, 2005).

Frontier methodologies have gained popularity in recent years being used in different industries (Huguenin, 2012). In manufacturing, as an example, Ngom (2007) used data envelopment analysis to find the value of the technical efficiency and the determinants of efficiency in the Senegalese Industrial firms with results giving out the size of firms, sector of activity, and production by qualified workers as contributors to the firm's efficiency. The models were also used in supply chain's efficiency study by Liang et al. (2006) who developed and used another data envelopment analysis model to evaluate efficiencies in the supply chain. In the financial services industry, particularly in banking and insurance, the methodologies have been used a great deal. Eling and Luhnen (2010a) showed over 90 papers

which have used both parametric and non-parametric efficiencies methodologies across wide areas in the insurance industry ranging from comparison of distribution systems' efficiency, intercountry comparisons, mergers and scale and scope economies as examples. Allen N Berger and Humphrey (1997) surveyed and made mention of around 130 studies in the financial industry using all frontier methodologies and comparing frontiers of over 21 countries. About 132 papers which were published from 1993-2018 which used data envelopment analysis to measure efficiencies in the insurance industry were also surveyed and analysed (Kaffash, Azizi, Huang, & Zhu, 2020). The stochastic frontier analysis model was also used by Fenn et al. (2008) to assess whether market structure affected the efficiencies of some banks in Europe. Efficiency of the banks was also evaluated by Titko, Stankevičienė, and Lāce (2014), and Othman, Mohd-Zamil, Rasid, Vakilbashi, and Mokhber (2016). The bancassurance phenomenon has also been studied using the methodologies like in a study done by J.-L. Peng et al. (2017) who measured the effects of the non-integrated model of bancassurance; finding that the more involved the bank is in the bancassurance set up the more efficiencies and benefits it will achieve. Their study done on the commercial banks in Taiwan measured the banks performance which included both efficiency and profit and the extend of bancassurance involvement using commission earned as well as interest income. Franco and Ornella (2011) computed the efficiency gains of bancassurance in insurances and banks using a parametric measure, stochastic frontier analysis which compared effects of bancassurance in life insurance and banks.

The reviewed literature gives confidence in the use of both the parametric and non-parametric efficiency methodologies highlighting their effectiveness and efficacies in estimating efficiencies across multiple industries. However ,according to Allen N Berger and Humphrey (1997) and Murillo-Zamorano (2004) literature does not show consensus with regard to which efficiency method to use, but point out that the choice of method rests purely on user's appetite to accept their drawbacks. Both methods come with some advantages and shortfalls (Murillo-Zamorano, 2004). As an example, parametric methods are known to impose functional forms and behavioural patterns which may give out specification and estimation problems

(Allen N Berger & Humphrey, 1997; Murillo-Zamorano, 2004) while non-parametric methods are on the other hand known for their undesired deterministic nature, with some being unable to separate technical inefficiencies and statistical noise effects (Murillo-Zamorano, 2004).

Although the reviewed studies are not prescriptive regarding the choice of model to use, the number of studies done in the financial industry, both banking and insurance and the positive results given from the use of the Data Envelopment Analysis (DEA) methodology compels the use of non-parametric approach in this study. The decision is justified because of the capability of the method to be used in analysis of multiple inputs and outputs data without necessity to make arbitrary assumptions (Granderson & Linvill, 1998; Leal Paço & Cepeda Pérez, 2013) which would be difficult in a multi-cultural environment like the SADC.

2.5.2 *Data Envelopment Analysis*

The data envelopment analysis technique was first formulated and used in the operations space for comparing efficiencies of decision making units but has grown in leaps and a bounds with additions and d000evelopments (Murillo-Zamorano, 2004). It falls under non-parametric or mathematical approaches to efficiencies evaluation (Allen N Berger & Humphrey, 1997; Charnes et al., 1978; Tim J Coelli, 1995; Granderson & Linvill, 1998) and is defined as a relative efficiency measurement form which measures efficiency of firms in comparison to the best in a given industry (Tim J Coelli, 1995; Timothy J Coelli et al., 2005). Allen N Berger and Humphrey (1997) define it as a linear programming technique that uses a frontier to estimate efficiencies. It is known to estimate frontiers based on the input and output data of decision-making units (DMUs) which can either be below or equal to the best practice efficiencies rendering them efficient or inefficient depending on where they lie (Hlali, 2018). Efficiency calculations are made relative to an efficiency frontier, with best practice firms located on the efficiency frontier given an efficiency score of 1 (Huguenin, 2012; Jayamaha & Mula, 2011). Since the efficiency scale is from 0 to 1, firms which operate below 1 are known to be inefficient (Huguenin, 2012). For multiple firms and/or decision-making units, the scores are compared to determine a better performing unit (Titko et al., 2014).

There are several models of the DEA, and selection and choice of a model to use is determined by the desired optimization area as well as the return to scale assumptions (Huguenin, 2012; Titko et al., 2014) and will be discussed below:

1. *DEA based on desired optimization.*

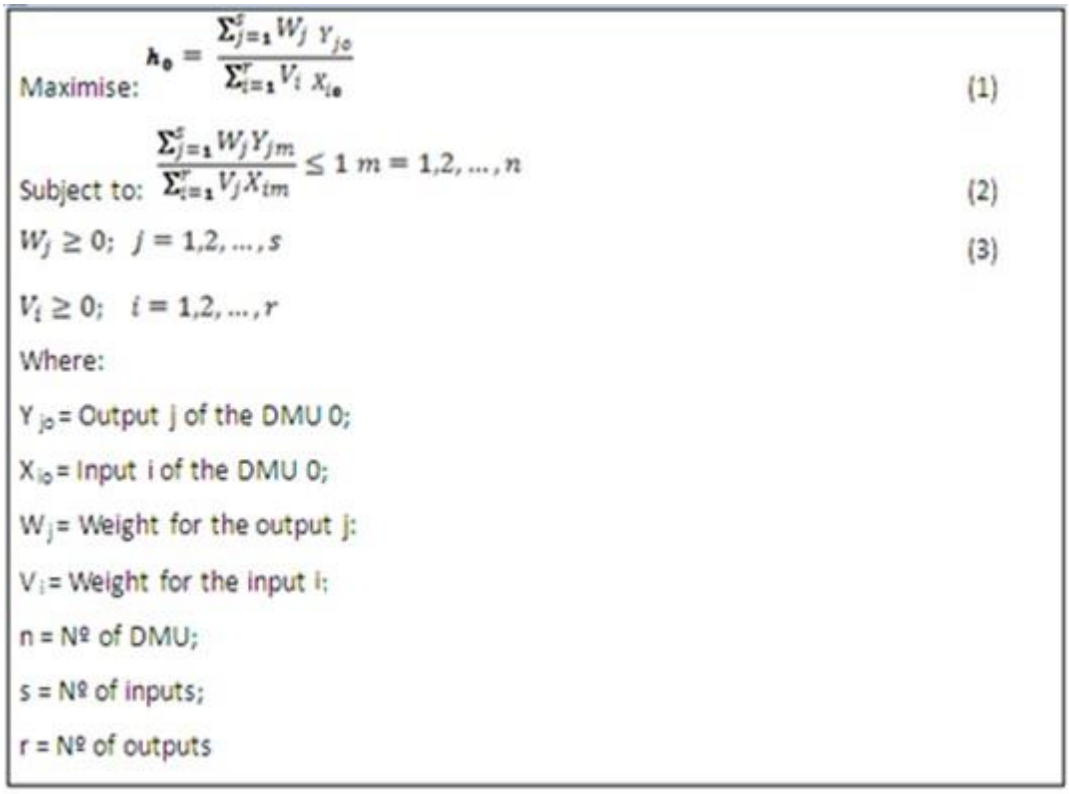
Also known as input and output orientation, DEA can be modelled to either of two orientations: i.e. , How much inputs can be decreased for a set level of output, or how much output can be increased for fixed set of inputs (Timothy J Coelli et al., 2005; Huguenin, 2012). Although the efficiencies derived for both orientations are relatively the same, selection of the orientation needs to be made and according to Huguenin (2012) should be based on the variables which the DMUs have much control on. In the banking and insurance space, most studies made were on the

input-oriented DEA because the industry does not have much control on the output due to regulation and other similar industry issues (Alber et al., 2019; Eling & Luhnen, 2010b; Jayamaha & Mula, 2011; Kaffash et al., 2020).

2. *The Return to scale assumptions*

There are two returns to scale models: A constant return to scale model and variable return to scale model. The constant return to scale model follows work done by Farrell in 1957 (Tim J Coelli, 1995) and was developed by Charnes, Cooper, and Rhodes and termed CCR model (Charnes et al., 1978). The model assumes that firms experience constant return to scale (Charnes et al., 1978; Tim J Coelli, 1995). It assumes that an increase in output is always caused by a corresponding increase in inputs (Jayamaha & Mula, 2011). According to Huguenin (2012) the model is appropriate for firms operating in a perfectly competitive environment and are able to optimise scale. The variable return to scale model was developed as an extension to DEA CCR model upon realisation that most industries were not in perfect competition and firms were not operating at an optimal scale which would have an impact on the return to scale of in such environments (Tim J Coelli, 1995). This means that, unlike in the constant return to scale, changes in inputs may not lead to corresponding changes in output because of other factors existing in the operating environment. The linear programming on the CRS model is modified by incorporating a convexity constraint to help account for variable returns situations (Tim J Coelli, 1995).

The basic DEA model which was first brought forward by (Banker, 1984) and (Charnes et al., 1978) is shown below:



Maximise: $h_0 = \frac{\sum_{j=1}^{s} W_j Y_{jo}}{\sum_{i=1}^{r} V_i X_{io}}$ (1)

Subject to: $\frac{\sum_{j=1}^{s} W_j Y_{jm}}{\sum_{i=1}^{r} V_j X_{im}} \leq 1 \; m = 1,2,\dots,n$ (2)

$W_j \geq 0; \; j = 1,2,\dots,s$ (3)

$V_i \geq 0; \; i = 1,2,\dots,r$

Where:

Y_{jo} = Output j of the DMU 0;

X_{io} = Input i of the DMU 0;

W_j = Weight for the output j:

V_i = Weight for the input i:

n = Nº of DMU;

s = Nº of inputs;

r = Nº of outputs

Figure 2.2: DEA CCR Model source (Leal Paço & Cepeda Pérez, 2013)

In the equation, according to Leal Paço and Cepeda Pérez (2013), the objective is to find a set of values which maximise h0. There is efficiency where h0=1 and inefficiency where h0< 1. All calculated efficiencies as per the equation should give a value which lies at 0 < h0 < 1 (Leal Paço & Cepeda Pérez, 2013).

DEA is applauded for removing the necessity to make arbitrary assumptions regarding functional form of a frontier (Granderson & Linvill, 1998), in the same breath critiqued for its failure to take into consideration the influence of measurement error and other data noises (Tim J Coelli, 1995; Granderson & Linvill, 1998; Leal Paço & Cepeda Pérez, 2013). It has also received criticism for its inability to be used outside of the data employed thereby limiting its use, for example ,as a prediction model for organizational performance (Leal Paço & Cepeda Pérez, 2013).

It must be noted that the method can be modified to give good insights like in comparison study by Chang et al. (2011). In the study, the researchers used a two stage DEA model where they considered the relationships of two sub-processes

within the main process. This enabled the model to also pick inefficiencies and added to the reliability of the model. The model was used together with other methods to compare the analysis of port efficiencies where the container ports served as DMUs (Hlali, 2018) with results showing constant return to scale efficiencies lower than the variable return to scale efficiencies. DEA was also used in several insurance studies including assessing efficiencies of distribution systems, financial and risk management, intercompany comparisons, mergers as well as in scales and scope economies (Eling & Luhnen, 2010b).

Arefjevs (2017) ran a study on bancassurance effects in the pension fund management of the Baltic countries using DEA model and stochastic frontier analysis model and found that bancassurance contributed to the efficiencies of the funds. Another study evaluating the impact of bancassurance on technical efficiency performance in Indian commercial banks confirmed that bancassurance does increase technical efficiency (Grover & Arora, 2015). Rani and Sharma (2019) also tested whether bancassurance helps improve the efficiency of Indian banks as well as the impact of diversification on the performance using DEA on all private and public banks in India. The study was performed by testing efficiency on banks inclusive of bancassurance income and then without the bancassurance income to determine the changes in efficiency scores caused by bancassurance income. The results outcome show that there were additional efficiency gains brought about by bancassurance (Rani & Sharma, 2019).

2.6 Conclusion of Literature Review

Literature covered the background of the bancassurance phenomenon and profiles the state of bancassurance on the SADC where the study is targeted. Theories underpinning the study, rational choice theory as well as the resource-based view theory aided in setting the scene of the generation and testing of the hypotheses which speak to efficiency changes that come about as a result strategic alliances by firms. The two hypotheses which emanated from the situation on the ground in Lesotho, a SADC member state, where as an example, bank employees expressed their dismay in having to distribute insurance products, were thoroughly discussed.

The review also looked into forms of efficiency measurements as a framework for measurement of performance in the financial industry. A discussion of advantages and shortfalls served to guide the author in the selection of a suitable model to apply in this study demonstrate DEA as the most appropriate tool to adopt toward the evaluation of technical efficiencies determined to be gained from bancassurance was also done. DEA's prowess in analysing a handful of indicators simultaneously, which is key in technical efficiency analysis in the financial services industry was highlighted as one of the reasons it was preferred by the author in the study.

CHAPTER 3. Research methodology

The section of the report covers the research strategy and methodology which encompasses analysis model, data definitions and collections methods.

3.1 Research strategy

According to Vincova (2005) in the literature the evaluation of the bancassurance phenomenon can be carried out by varying methods such as financial ratio analysis or the use of efficiencies through frontier analysis methods. As highlighted, the advantages of frontier analysis over traditional methods such as financial ratios include ability to be used for analysis of multiple indicators as well as pinpointing elements contributing to efficiency (Vincova, 2005). In the study the interaction of various inputs and outputs in the bancassurance arrangements including insurance income was analysed to determine efficiency changes brought about by bancassurance. Efficiencies are a result of a relationship between inputs and output variables which are tested using numerical values (Eling & Luhnen, 2010a; Klumpes et al., 2010).

A positivist research paradigm which assumes availability of a reality that can be observed and measured (Leavy, 2022) is adopted in this study, as the study pursues to measure the impact of strategic alliance of banks and insurance companies. The study seeks to measure efficiency in bancassurance which rests upon evaluating numerical variables and their relationships to answer the research questions, therefore quantitative research was deemed appropriate in testing the efficiency gains from the partnerships. A quantitative research method seeks to measure and test for the presence and/or non-presence of relationships between an or amongst variables, be it causal, correlational and/or availability of patterns etc., between dependent and independent variables (Leavy, 2022), premised on deductive reasoning (Williams, 2007). According to several authors (Leavy, 2022; Lowhorn, 2007; Williams, 2007), quantitative methods provide an objective measure of realities and enable comparison of numerical variables to draw conclusions.

According to Lowhorn (2007) quantitative studies may either be descriptive or experimental. The latter tests the accuracy of a theory checking whether the independent variable has any effect on the dependent variable while the former is premised on identification of behaviour of certain occurrence using observation and relationship between phenomena (Lowhorn, 2007). This study has followed the latter experimental approach to ascertain the theories as well as the two hypotheses H1 and H2 that conflating resources by banks and insurance company affects efficiencies.

3.2 Research design

In the research, a quantitative and experimental research design with secondary data were used. The hypotheses as well as both rational choice theory and resource based were tested using DEA variable returns to scale approach used by Banker (1984). Input and output data was obtained from secondary sources of data, being financial statements of the banks with bancassurance agreements in the SADC region. According to Johnston (2014), the advantages of the sources include the breadth of data that can be used as well as time and cost effectiveness. The countries that make up the SADC regional are Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe (Bara, Mugano, & Le Roux, 2017; Mowatt, 2001).

Since the bancassurance phenomenon was studied in 16 SADC countries, a region with a little over 83 commercial banks and using financial information, secondary data was preferred to cover the vast data. Usage of secondary data in the form of financial statements in the studies of bancassurance is common in literature. In India, the contribution of bancassurance to financial performance of banks was analysed using financial statements- secondary data (Pattanaik & Patjoshi, 2020). In Italy in a study done by Franco and Ornella (2011) where bancassurance efficiency gains were analysed from banks and insurance perspectives also used annual financial statements which is classified as secondary data as the main source for their exercise.

In the annual financial statements, a particular focus was on the income statements and statements of financial position of banks with bancassurance income with interest on income generated, both interest and non-interest income and expenses alike as well as assets similar to the approach used by Grover and Arora (2015). An intermediation approach which regards banks as intermediaries was used in the determination of inputs and outputs for the efficiency analysis as done by most efficiency studies analysed by Allen N Berger and Humphrey (1997) in their survey of efficiencies in the financial industry. In the simplest terms, the intermediation approach assumes banks as financial intermediaries whose work is to facilitate exchange of resources between savers and investors (Othman et al., 2016).The data from income statements then used as inputs and outputs to the DEA model to generate required efficiencies which are then used for assessment of efficiency changes brought about by bancassurance partnership.

Banks in the SADC entered into bancassurance agreements at different times (Agbo & Nwankwo, 2020) making it a challenge to apply intertemporal comparison, a case and control model similar to the one used by Grover and Arora (2015) and Rani and Sharma (2019) was adopted in this study on cross sectional data of the 2021 financial year. In the first instance, data used was exclusive of bancassurance revenue and expenditure to determine efficiency scores in what is known as the restricted model, then followed by the same analysis, this time with all bancassurance variables- income and expenditure in an unrestricted model (Grover & Arora, 2015; Rani & Sharma, 2019).

By its nature the research design controls for the extraneous/independent variables, so they have minimum opportunity to operate. The reader will see in the design of the non-randomizable selection of participants, it does not control the extraneous variables, hence why the former trait will.

3.3 Population and sample

3.3.1 *Population*

The population refers to the target of interest from which the sample of the study is going to be sourced (Taherdoost, 2016). The study is targeted at commercial banks that are part of integrated payment system in the SADC region. The population of the study is 83 commercial banks in 16 SADC countries. The banks are part of regional cross border real time payment system which is part of the SADC's regional economic integration initiative. The initiative seeks to, among other things, harmonise the regulatory and economic environment in the region thereby creating an integrated economy (SADC, 2019). The population is representative of all countries with commercial banks as per table below.

Table 3.1: SADC Banks compiled by researcher (Bara et al., 2017; Mowatt, 2001).

Countries	Number of banks
Angola	2
Botswana	4
Comoros	0
DR Congo	1
Eswatini	5
Lesotho	4
Madagascar	0
Malawi	12
Mauritius	4
Mozambique	6
Namibia	4
Seychelles	0
South Africa	12
Tanzania	5
Zambia	10
Zimbabwe	14
	83

3.3.2 *Sample and sampling method*

A non-probability convenience sampling was used to get the sample for the study. The method refers to use of readily available sample items without use of any

specific subject selection process (Ehiedu, 2014; Taherdoost, 2016). Although the method is often criticised by many scholars, for its susceptibility to biasness (Taherdoost, 2016; Williams, 2007), it is useful in instances where subjects meet a certain practical condition such as geographical location or proximity to each other or to the researcher (Farrokhi & Mahmoudi-Hamidabad, 2012). This criterion was considered for sampling as the case in this study into bancassurance phenomenon in SADC region. The researcher's target was to source all subjects pertinent to the population but was inhibited by availability of required data on some secondary sources.

The data used represented 10 countries out of the 16 that make up SADC region. 21 Banks have been analysed out of the possible 24, with about 2 banks falling off because of gaps on their financial reports- which renders the variable not usable as discouraged by Sarkis (2007). The banks themselves are considered as DMUs as was done in several efficiency studies (Alber et al., 2019; J.-L. Peng et al., 2017; Rani & Sharma, 2019). According to Alirezaee, Howland, and Van de Panne (1998) for more accurate measure of efficiency the number of DMUs have to be large. Golany and Roll (1989) suggests that they DMUs should be at least twice the sum of inputs and outputs to accurately estimate efficiencies. In our case, the sum of inputs and outputs is 8 and the recommended DMUs according to Golany and Roll (1989) rule of thumb would be 16,and our data is well above the desired 16 sitting at 21 DMUs.

3.4 The research instruments.

Secondary data sources were used for the research and were assessed for consistency, appropriateness, and satisfaction before being used as laid out by Hox and Boeije (2005), and Leavy (2022). The data sources which included websites of the financial institutions involved and regulatory websites provided all the data that was used in the form of either financial statements or integrated reports found in similar studies for banks and insurances firms around the world (Chang et al., 2011; Dreassi & Schneider, 2015; Granderson & Linvill, 1998; Grover & Arora,

2015). Most of the financial data used was quantifiable and verifiable in nature which gave the researcher confidence in the use of secondary data.

The efficiency scores were generated using a MaxDea Lite 12.0 software as well as Excel DEA Solver Pro 5.0.

3.5 Data and Variables

3.5.1 *Data*

The data set is comprised of secondary data from financial reports which covers annual financial statements of banks in the SADC region with bancassurance income in each of the members states of the SADC regional block. In total 24 subjects were assessed based on the availability of full set of financial statements from the companies' websites. About three (3) banks' financial statements did not have all variables available and were dropped from the sample. Selection of the data and variables was based on some assumptions and guided by the DEA model used as was done in several studies measuring financial institutions efficiencies(Banker, 1984; Cook & Seiford, 2009; Granderson & Linvill, 1998; Grover & Arora, 2015; Huguenin, 2012; Vincova, 2005). Since the study is primarily focused on bancassurance primarily from a banking centred perspective, in selecting our variables we explored the three banking approaches; intermediation approach, production approach and profitability approach with intermediation approach used in most efficiencies studies according to Titko et al. (2014) informing the approach to the study. The orientation of the DEA model applied was the input orientated model with variable returns to scale method.

3.5.2 *Variables*

Several variables have been used for analysis of bancassurance efficiencies in the literature, input variables ranging from number of salespeople, marketing proportion expenditure, technology, and infrastructural expenditure, branches while output variables ranged from net interest income, non- interest income, bancassurance

income to mention but a few (Chang et al., 2011; Grover & Arora, 2015; Rani & Sharma, 2019). Based on the case and control method done by both Rani and Sharma (2019) and Grover and Arora (2015) the research used the following variables;

Input Variables

- Physical Capital (Fixed Assets) (Allen N. Berger & Mester, 1997)
- Number of Branches (Grover & Arora, 2015)
- Interest expense(Titko et al., 2014)
- Non-Interest Expense(Rani & Sharma, 2019)
- Total employee cost (Alirezaee et al., 1998)

Output Variables

- Insurance Income(Rani & Sharma, 2019)
- Interest income(Titko et al., 2014)
- Net profit after tax(Anouze & Bou-Hamad, 2019)

3.6 Data Envelopment Analysis (DEA)

The Data Envelopment analysis model developed with variable return to scale was used in the study as used by L. Peng (2020) and Rani and Sharma (2019). Input and output variables selection based on previous research on bank efficiencies as shown earlier in this paper (Allen N Berger & Humphrey, 1997; Rani & Sharma, 2019; Titko et al., 2014). All variables were extracted from annual financial statements of banks in selected SADC countries. Since the variables were extracted from accounting information of multiple countries with different currencies, they were standardised by using South African Rand (ZAR) as the base currency as it is the currency used in the SADC-RTGS pact (SADC, 2019). The exchange rate and the value of the (ZAR) used was as at 27th February 2023. The variables were then uploaded onto MaxDea Lite 12.00 software as well as DEA Excel Solver Pro 5.0

3.7 Validity and reliability

The extent to which a measure sufficiently represents a variable it is intended to measure is known as validity while reliability is the degree to which a measure is dependable (Fink & Litwin, 1995; Patino & Ferreira, 2018). The absence of the two degrees makes the findings questionable. In our case, the variables are from financial statements which are prepared using common reporting standards and guided by regional regulators bodies and this renders them dependable in measuring financial performance of the banks studied. The different input and output variables obtained from the annual financial statements communicate the financial activities of the banks in the study which literature has affirmed their sufficiency in representing components of efficiency in the financial industry.

3.7.1 *External validity*

The research meets external validity criteria because all variables used in the banking and insurance industry are standard therefore gives a general representation of the conditions in the industry (Patino & Ferreira, 2018) i.e. the research findings can be generalised since the data is representative of the population.

3.7.2 *Internal validity*

According to Blumberg, Cooper, and Schindler (2014) the internal validity refers to its ability of an instrument to test and measure what it supposed to test. In this case, the DEA method used is suitable for the measurement of technical efficiencies given the right input and output variables and in the right number relative to the DMUs as recommended by Banker (1984) and Golany and Roll (1989).

CHAPTER 4. Data Analysis and Presentation of Research Results

4.1 Introduction

In this chapter the researcher presents the findings, analysis and discussion on data analysis and research results. It will commence with the descriptive statistics on the collected data and data cleaning, conductive to recognise and obtain meaningful patterns to be used to draw conclusions from. According to Leavy (2022) data analysis is important because it forms the foundation for determination of research findings. The techniques used to collect the used data will be discussed followed by the description of the data, the sample as well as the variables used.

4.2 Descriptive statistics

4.2.1 *Data sample and respondents*

The data set comprises of variables obtained from 21 commercial banks which had active bancassurance business in the SADC region in 2021.The year chosen is 2021. This was deduced from a total population of 83 commercial banks from all 16 SADC countries as outlined in the SADC (2019) report. Out of a possible 16 countries, only 10 countries, namely Angola, Botswana, South Africa, Lesotho, Namibia, Mozambique, Malawi, Tanzania, Eswatini and Mauritius were studied. The other countries either had missing financial statements from the commercial banks' websites or huge chunk of missing variables in the commercial banks' annual financial statements. For example, three other countries making up the SADC zone, Democratic Republic of Congo, Comoros, and Seychelles' banking data did not have readily available commercial banks' annual financial results on the companies' websites. Madagascar on the other hand had missing variables in most financial statements of its banks and according to Sarkis (2007) estimating the missing data is subjective and the usual alternative is to drop it. The deletion is

also supported by Blumberg et al. (2014) who asserts the removal of participants when data is missing from variables in question.

4.2.2 *Description of the sampled respondents*

The sampled population is composed of banks with the highest physical assets investment and have insurance as another source of non-interest income. From the banks, financial statements were acquired, and appropriate variables obtained. Since identified banks are affiliated to the SADC regional regulatory body which requires certain financial reporting standards, the data is from trusted sources. The intention was to at least have two banks with the largest asset bases representing a country but because of the availability of data some countries had a representation of over two banks while others had only one. See table 4.1 below.

Table 4.1: Observation of SADC banks by country

Country	Observed DMUs	Percentage DMUs Observation
Angola	2	10%
Botswana	4	19%
Eswatini	1	5%
Lesotho	2	10%
Malawi	1	5%
Mauritius	1	5%
Mozambique	3	14%
Namibia	3	14%
South Africa	3	14%
Tanzania	1	5%
Total	**21**	**100%**

Table 4.1 depicts representation of the SADC countries in the data set. A total of 10 countries which represents 63% of the SADC region countries formed the data sample. The common monetary area (CMA) countries, a subset of SADC countries

with common currency and an interconnected commerce and economy, had the largest representation of banks at 43% because of the collective superior economy in the region. The countries in the zone are Lesotho, Eswatini, South Africa and Namibia. Botswana and Angola closely followed the pact with the number of banks in the DMUs making up 19% and 10% of the data respectively. The rest of the countries each had a 5% representation in the data which translated to an average a bank per country. On average there are about 2 banks per country, a feat that depicts a noticeable balance in the data. Although the data represents most of the countries in the SADC region, the results and findings are analysed at country level followed by the SADC level analysis.

4.2.3 *Descriptive statistics of the variables*

The selected variables are based on literature on bancassurance as well as banking efficiencies as shown earlier in this paper. Arranged in terms of input and output the variables were physical assets, number of branches, interest expenses, non-interest expenses, total employee costs, insurance income, interest income and net profit after tax (Alirezaee et al., 1998; Allen N. Berger & Mester, 1997; Grover & Arora, 2015; Rani & Sharma, 2019; Titko et al., 2014). A descriptive statistic which is used to show the centrality, spread and distribution of the selected variables will be run as to have a full view of the input and output data for better analysis(Blumberg et al., 2014).

Table 4.2: Descriptive statistics of input and output variables

2021	Mean	Median	Std. Dev	Min	Max	Count
X1(Physical Assets)	1,804,397	385,826	4,017,071	1,256	15,970,000	21
X2(Number of Branches)	118	32	256	7	1,007	21
X3(Interest Expense)	6,201,125	441,643	20,375,458	1,058	89,495,000	21
X4(Non-interest expense	545,233	68,896	1,384,052	584	5,629,000	21
X5(Total Employee Cost)	2,917,617	402,485	7,486,906	1,901	26,133,000	21
Y1(Insurance Income)	523,890	39,000	1,910,431	33	8,778,000	21
Y2(Interest Income)	9,111,919	1,408,411	24,082,406	6,361	89,495,000	21
Y3(Net profit after tax)	1,878,508	282,739	4,387,757	2,279	16,373,000	21

In table 4.2, all figures are in South African Rand (ZAR) and in thousands, apart from the number of branches which are in real terms. The table shows interest income and interest expenses showing the highest standard deviation compared to the rest of the monetary variables. The means and medians display dissimilarities which showcases a good breadth of skewness in the data. Although the minimum number of branches of the studied banks stands at seven (7) branches the mean and median show that the data covers a wide range of the number of branches. The maximum number of branches was 1007 which was found in one of the South African Banks which is congruent to the size of the South African market.

4.3 DEA model measurements

The model is centred around input and output variables, the combination of which when computed give efficiency readings for all DMUs. All variables have some degree of connection, inputs to inputs as well as inputs/outputs to outputs. A statistical measure known as correlation is usually used to determine and explain the strength of the relationship between two or more variables(Leavy, 2022). The table below outlines the correlation of all inputs and outputs.

Table 4.3: Pearson correlation scores

	X1(Physical Assets)	X2(Number of Branches)	X3(Interest Expense)	X4(Non-interest expense	X5(Total Employee Cost)	Y1(Insurance Income)	Y2(Interest Income)	Y3(Net profit after tax)
X1(Physical Assets)	1.0000							
X2(Number of Branches)	0.9748	1.0000						
X3(Interest Expense)	0.9591	0.9478	1.0000					
X4(Non-interest expense	0.8975	0.8875	0.7590	1.0000				
X5(Total Employee Cost)	0.9826	0.9706	0.9116	0.9571	1.0000			
Y1(Insurance Income)	0.8801	0.8670	0.9757	0.6007	0.8006	1.0000		
Y2(Interest Income)	0.9924	0.9797	0.9417	0.9320	0.9965	0.8462	1.0000	
Y3(Net profit after tax)	0.9939	0.9684	0.9323	0.9274	0.9890	0.8383	0.9925	**1.0000**

One of the properties required for the DEA function is existence of isotonicity between inputs and output variables i.e., a positive movement in one input should lead to a positive movement in an output (Bowlin, 1998; Wang, Lin, Hsu, Le, & Lin, 2016). If the property is violated, the DEA scores are compromised. According to Bowlin (1998) most analysts use correlation analysis to assess the existence of the property. A positive and significant correlation coefficient is proof that isotonicity is not violated (Wang et al., 2016).

The table thus shows the correlation coefficients between the input and output variables of the selected data set. The correlation coefficient ranges from -1 to 1, with 1 indicating a strong positive correlation, 0 indicating no correlation, and -1 indicating a strong negative correlation.

Overall, the results suggest that there are strong positive correlations between most variables which mark the variables as isotonic. It must be noted though that highly correlated input and output variables are known to distort the DEA efficiency scores (Bastani, Ketabi, Maddahi, & Ahari, 2021) the impact is mostly felt when correlation exists between inputs and outputs not amongst inputs and or outputs (Bastani et al., 2021) and in our case correlation is stronger between inputs than it is between inputs and outputs.

4.4 Results

4.4.1 *DEA efficiency Scores (All Variables)*

Table 4.4: DEA Scores with all variables

DMU Name	Input-Oriented	Optimal Lambdas									
DMU 1	1.00000	1.000	DMU 1								
DMU 2	1.00000	1.000	DMU 2								
DMU 3	1.00000	1.000	DMU 3								
DMU 4	1.00000	1.000	DMU 4								
DMU 5	0.64334	0.199	DMU 3	0.059	DMU 4	0.037	DMU 6	0.052	DMU 15	0.653	DMU 18
DMU 6	1.00000	1.000	DMU 6								
DMU 7	1.00000	1.000	DMU 7								
DMU 8	0.87687	0.329	DMU 3	0.012	DMU 4	0.659	DMU 23				
DMU 9	1.00000	1.000	DMU 9								
DMU 11	1.00000	1.000	DMU11								
DMU 13	0.73698	0.029	DMU 4	0.148	DMU 17	0.191	DMU 22	0.574	DMU 23	0.058	DMU 24
DMU 14	1.00000	1.000	DMU 14								
DMU 15	1.00000	1.000	DMU 15								
DMU 16	1.00000	1.000	DMU 16								
DMU 17	1.00000	1.000	DMU 17								
DMU 18	1.00000	1.000	DMU 18								
DMU 19	1.00000	1.000	DMU 19								
DMU 20	1.00000	1.000	DMU 20								
DMU 22	1.00000	1.000	DMU 22								
DMU 23	1.00000	1.000	DMU 23								
DMU 24	1.00000	1.000	DMU 24								

A DEA model was run using the MaxDEA Lite as well as the DEA Excel Solver. The efficiency scores and benchmarks are provided in Table 4. 4 from DEA run. The DEA window analysis estimate efficiency under the assumptions of variable returns to scale was used. Bancassurance efficiency was estimated using the DEA input-output oriented model with variable returns to scale. The reason for using this technique is that with constant returns to scale the assumption is acceptable if all production units are operating at optimum size. This assumption is improbable in practice therefore, so to avoid this problem the variable constant return to scale is a natural choice (Repková, 2014). Twenty-one banks from the SADC region (See Appendix C) are used.

The DEA results are reported with efficiency scores, and for inefficient units there are benchmark units. For example, DMU5 (0.643) is not the best practise. Its benchmark is DMU3 (0.019), DMU4 (0.059), DMU 6 (0.037), DMU15 (0.052). Meanwhile, DMU8 (0.876) is not the best practise, and its benchmarks are DMU3 (0.329), DMU4 (0.012), DMU23 (0.0659). These benchmarks are all good practises with efficiency of 1. On the other hand, DMU13 (0.736) is not the best practise. Its benchmarks are DMU4 (0.029), DMU17 (0.148), DMU22 (0.574), DMU23 (0.058) and DMU24 (0.058). All the DMU shows efficiency at 1 except for DMU 13, DMU 8 and DMU5.

The average efficiency ranged from 64% to 100%. The scores show that SADC commercial banks are on average considered to be efficient. Thus, the average inefficiency of the SADC banking sector in the VRS model was in a range of 20-25 per cent.

DMU 5 was the least efficient and among other reasons was the size of physical assets relative to the number of branches, which could have increased the expense base and affected efficiencies. This is further confirmed by Table 4.5 which shows that DMU 5 has a declining variable of -0.03417 output increased by less than proportional change in inputs, therefore they are decreasing returns to scale.

Therefore, it can be interpreted that the Total Profits and Loans of the bank has increased by a larger proportion of the given number of Total Capitals and Deposits

and thus they need to increase or decrease its Total Capitals and Deposits to become efficient (Benicio & De Mello, 2015). DMU5 obtains an efficient score of 0.64 or 64 per cent (see Table 4.4). It appears that it could be able to reduce expenses and insurance by 34 per cent and still produce at 64 per cent of its branches with the same number of physical assets (1.027million).

4.4.2 *Unrestricted scenario (Including Insurance Income)*

Table 4.5 covers the same efficiency scores as table 4.5 but includes free variable as well as return to scale analysis which provides more detail on the efficiency scores calculated by providing direction in the returns to scale.

Table 4.5: DEA Scores with variables and return to scale.

	Input-Oriented		
	VRS		
DMU Name	**Efficiency**	**Free Variable**	**Returns to Scale**
DMU 1	1.00000	0.00100	Increasing
DMU 2	1.00000	-0.00213	Decreasing
DMU 3	1.00000	0.00000	Constant
DMU 4	1.00000	-0.03995	Decreasing
DMU 5	0.64334	-0.03417	Decreasing
DMU 6	1.00000	0.00000	Constant
DMU 7	1.00000	-0.05910	Decreasing
DMU 8	0.87687	0.23952	Increasing
DMU 9	1.00000	0.00000	Constant
DMU 11	1.00000	0.00000	Constant
DMU 13	0.73698	0.38174	Increasing
DMU 14	1.00000	0.12453	Increasing
DMU 15	1.00000	0.00000	Constant
DMU 16	1.00000	-0.06115	Decreasing

DMU 17	1.00000	0.33744	Increasing
DMU 18	1.00000	0.00000	Constant
DMU 19	1.00000	0.10322	Increasing
DMU 20	1.00000	0.09846	Increasing
DMU 22	1.00000	0.51697	Increasing
DMU 23	1.00000	0.93508	Increasing
DMU 24	1.00000	0.99265	Increasing

4.4.1 *Restricted scenario (excluding insurance income)*

The DEA function was also run exclusive of the insurance income variable to determine the banks efficiencies without bancassurance income. The aim was to form a base to test whether addition of bancassurance or insurance income has an impact in the banks' efficiencies. This part of the analysis served as a control in the testing of the bancassurance phenomenon as done by Grover and Arora (2015). The results in Table 4.6 therefore gives an overview of the banks (DMU's) efficiency scores.

Table 4.6*: DEA Score with variables and return to scale.*

	Input-Oriented		
	VRS		
DMU Name	**Efficiency**	**Free Variable**	**Returns to Scale**
DMU 1	1.00000	0.00080	Increasing
DMU 2	1.00000	-0.00213	Decreasing
DMU 3	1.00000	0.00000	Constant
DMU 4	1.00000	0.01081	Increasing
DMU 5	0.64334	-0.03417	Decreasing
DMU 6	1.00000	0.00000	Constant
DMU 7	1.00000	-0.05910	Decreasing
DMU 8	0.87687	0.23952	Increasing

DMU 9	1.00000	0.00000	Constant
DMU 11	1.00000	0.00000	Constant
DMU 13	0.73698	0.38174	Increasing
DMU 14	1.00000	0.12453	Increasing
DMU 15	1.00000	0.00000	Constant
DMU 16	1.00000	-0.03976	Decreasing
DMU 17	1.00000	0.64559	Increasing
DMU 18	1.00000	0.00000	Constant
DMU 19	1.00000	0.10322	Increasing
DMU 20	1.00000	0.09846	Increasing
DMU 22	1.00000	0.55587	Increasing
DMU 23	1.00000	0.95481	Increasing
DMU 24	1.00000	0.99265	Increasing

The same DMUs which were inefficient when the model was run with all variables, are still inefficient even when insurance income is removed. Suggesting that DMU 5 inefficiencies were not caused by addition of insurance income. It should be noted that the unit is still facing decreasing returns to scale.

However, its quite a thing to note that DMU4 initial decreasing returns to scale changes to increasing returns to scale when insurance is removed. This suggests that that the bank insurance unit maybe affecting its return to scale and overall functioning of the bank but not enough to have a considerable impact on the efficiency. While the majority of DMUs did not change, DMU4 is the only one whose returns to scale changed. This means that bancassurance seem to not have influence on efficiency in many banks in the SADC region. Insurance is not the major product offered by those banks, but only form part of products offered.

4.5 Conclusion

In summary, the chapter presented the quantitative results and analysis of the variables from the collected data. The overall results of the DEA analysis showed that all DMUs under the study were highly efficient apart from 3 banks which had efficiency scores lesser than 1. About five input variables and three output variables from 21 banks representing SADC formed part of the DEA computation. The model was run in two separate scenarios, in a case control methodology. The efficiencies were calculated using all 8 variables in the first instance followed by calculation that excludes insurance income as an output variable. The results in both approaches give the same efficiency scores with some DMUs exhibiting different returns to scale in the tested cases. The overall results show that that insurance income has no bearing on bank efficiencies in the analysed sample.

CHAPTER 5. Discussion of results and findings

5.1 Introduction

The chapter discusses the results and evaluates the implications of the findings of DEA analysis on the 21 banks representing the SADC region. The chapter seeks to discusses these findings and inferences within the context of the current literature and to link and resolve the research problems with the aim of later drawing conclusions and addressing relevant business and management issues due to the bancassurance phenomenon in the SADC region.

5.2 Discussion of research problem, literature, and results

The study emanated from perceived challenges caused by bancassurance in the banking and insurance space and was conducted to assess the presence of the of mutual benefits in the bancassurance model. It centred on finding the impact of the bancassurance agreements on the performance of stakeholder banks involved in bancassurance, i.e., banks who have partnered with insurance companies and not the other way round. According to literature both banks and insurance companies enter into bancassurance agreements and combine resources pursuant of mutual gains (Ghazaryan, 2020; Nasir et al., 2021) supported by rational choice theory and resource-based view theory as showcased in this study. The study was therefore assessing the efficiency gains of 21 banks representing the SADC community from bancassurance agreements in 2021.

According to the initial analysis of the results in chapter 4 bancassurance does not bring about any change in technical efficiencies in the operations of the 21 banks, with the banks maintaining the same levels of efficiencies with or without insurance income.

To complete the assessment the study used DEA efficiency analysis input oriented model with variable returns to scale similar to the one by Grover and Arora (2015). About 21 banks with bancassurance, representing 63% of SADC countries, had

their annual financial statements analysed with particular interest on eight (8) variables: Five (5) input variables i.e., physical assets, number of branches, interest expenses, non-interest expenses, total staff costs and three (3) output variables viz., interest income, insurance income and net profit after tax. The variables were used as input and output variables from which technical efficiency scores were generated.

A case and control methodology whereby DEA analysis was performed on data Inclusive of insurance income and then exclusive of was used. In the first instance, 18 out of 21 banks were found to be efficient with all efficiency scores of 1. The other 3 banks had efficiency scores well below 1, Bank (DMU5) being the least efficient bank with an efficiency score of 0.6334 and exhibiting a decreasing return to scale. DMU13 and DMU8 followed with efficiency scores of 0.7370 and 0.8769 respectively. The second instance where the DEA analysis was run, with the exclusion of insurance income as one of the output variables, gave the same efficiency scores but with different returns to scale on some banks, particularly DMU4 where the return to scale was now increasing.

The results clearly exhibit that insurance income has no bearing on the efficiencies of the banks in the SADC region. The phenomenon can be explained by among other things the size of the insurance income in comparison with the main source of income for banks, interest income. Most banks in the SADC region had the interest income dwarf insurance income. For example, in the case of the bank (DMU1) with the biggest physical assets and the largest number of branches, as well as the biggest labour spend, the insurance income was just around 10% of the interest income. The percentage was sitting at 2% for the second largest bank as measured by the size of their investments viz., physical assets and spend on labour. In fact, the average percentage of insurance income to interest income was 5% across all 21 banks studied. This signifies the small size of insurance versus banking products in the SADC region scale wise. The scale and size of the input or output variable in comparison to corresponding variables have implications on the impact a variable has on the efficiency scores (Y. Chen & Iqbal Ali, 2002; Podinovski et al., 2001).

The low insurance income can be explained by low insurance penetration in the sub-Saharan African region, more especially the Southern African Region which, excluding South Africa accounts for 3.8% of the Africa's Gross Written Premium (Umar Bagus, 2020). The type of insurance which is popular in the region also affects the scale. The region predominantly has a relatively cheaper life insurance dominating over short term insurance sales (Umar Bagus, 2020). The economic conditions have also reduced uptake of other forms of insurance such as mortgage covers, credit life insurance as well typical short term insurance covers (Umar Bagus, 2020) The insurance income scale can also be explained by general financial literacy levels in the region as captured by SADC (2019) report on financial inclusion.

The efficiencies scores of the 21 banks and the results which show bancassurance income having no impact on the banks are consistent with results from a study done in Italy, where there was no evidence of bancassurance providing any efficiencies gains to banks (Franco & Ornella, 2011). The only difference was that the Italian study was done using a parametric stochastic frontier methodology as opposed to the DEA used in this study. Compared to another study, when DEA was used to analyse Indian banks bancassurance efficiencies brought about by the sharing of resources by banks and insurers particularly to distribute insurance products, different results were found; Bancassurance was found to have had an impact on banks efficiencies with an average deviation of 7.28% between efficiency scores calculated without insurance income and with insurance income.

5.3 Discussion of Hypotheses

5.3.1 *Hypothesis 1*

H1: Allocating branch networks over traditional house to house insurance distribution through salespeople leads to banking efficiency performance dominance in bancassurance agreements.

Hypothesis 1(H1) states that allocating banking branches who have a banking orientation in the traditional sense, to take up the distribution of insurance products leads to banking efficiency performance. The hypothesis was rejected as the phenomena was found wanting in the SADC region as shown by the efficiency scores of the 21 banks. The findings show that bancassurance does not have a notable impact on bank efficiencies as all DMUs experienced no efficiency changes when insurance income was added thereby refuting the hypothesis. It must be noted that the addition of insurance however affected the return to scale of one DMU, DMU4, implying a negative effect on the returns to scale in the business. This means that for each one-unit input e.g., hiring an inhouse broker, the utility depreciate over time as more units are added.

5.3.2 *Hypothesis 2*

H2: Allocating bank resources to distribution of both insurance and bank products leads to reduced uptake of some bank and insurance products and affects the efficiency gains in bancassurance agreements.

Hypothesis 2(H1) states that allocating bank resources in the distribution of insurance products in the banks reduces take up of insurance products and affect efficiency performance of the banks. The results of the study which depicts zero efficiency changes as a result of bancassurance agreement in the SADC refute the hypothesis. The zero movement of the efficiency scores when insurance income is introduced shows that in general terms, the current level of bancassurance in the region has no bearing on the bank's efficiencies be it negative or positive. Although a claim by certain bankers that juggling both bank and insurance may affect the sales of either product holds, the results show that bancassurance arrangements have no effects on the efficiencies of banks.

5.4 Conclusion

In conclusion, the analysis of the DEA scores indicates that bancassurance does not have a significant efficiency impact on banks in the SADC region. Despite the

widespread belief that bancassurance could enhance the performance of banks including efficiencies as depicted by literature, this research findings suggests otherwise. The DEA scores suggest that the adoption of bancassurance does not result in any changes in the technical efficiencies of banks in the SADC region.

Although a problem may exist in mixing banking and insurance imperatives by bank clients and employees as highlighted in the sub-problem one, the study assets that the sales of both has no bearing on the efficiencies of the commercial banks. The absence of positive changes in efficiencies score also removes notation of adverse performance changes and win-win situation with respect to efficiency gains for the two entities in the bancassurance partnerships.

This research finding provides valuable insights for banks and policymakers to make informed decisions about the adoption of bancassurance as a strategy to improve the performance of banks.

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CHAPTER 6. Conclusions and recommendations

6.1 Introduction

The study on the impact of bancassurance on 21 financial institutions in the SADC region carried out to test and determine whether the model of mutual benefits amongst stakeholder partners in bancassurance agreements underpinned by rational choice theory and resource-based view theory hold. Chapter 6 provides a summary of the results of the study, their interpretation, conclusions, and implications on relevant business and management within the operating environment. The chapter also formulates and justifies action plans in addition to recommendations and suggestions for future research.

6.2 Synopsis of the study

Insurance income, which was an output variable in the DEA analysis of the 21 SADC commercial banks was central in the study. The study assessed the technical efficiency due to insurance income included in banking by comparing a series of input and output variables obtained from annual financial statements of the commercial banks. From the assessment, insurance income was found to not have any impact on the efficiency scores on all the 21 DMUs studied. A case control method was used- efficiency analysis was run on data with all variables including insurance income and run again with insurance income excluded. The same results were obtained for both cases with all DMUs having identical efficiency scores.

Based on the findings gotten from the data of SADC commercial banks the two hypotheses forming the bases of the study cannot be accepted as there was no changes in efficiencies brought about by bancassurance.

6.3 Implications of the study

The research was conducted within a community of countries linked physically as well as by a desire to carry out a development agenda and trade, and the findings

have ramifications to the community as a whole and the 16 individual member states. The consequences affect a wide range of stakeholders, including legislators, regulators, commercial banks, insurance executives, and customers.

6.3.1 *Business Implications*

The final verdict of the study showcased insurance income bringing no efficiency gains to the commercial banks in the SADC region. It has been established that the cause of non-movement in efficiency could be the scale and size of the insurance income compared to the rest of the output variables. The implication to business communicates, especially the banking side is to increase the scale of bancassurance by investing more into it. As an example, the banks can introduce a fully fleshed insurance divisions which can use the bank's existing clientele to push more insurance business pursuant to efficiency gains as well as other partnership benefits such as profitability. More bancassurance partnerships and collaboration should be negotiated to increase reach since the partnerships have no negative impact on the efficiencies of the banks. The current study has removed proposition that bancassurance may reduce up take of other banking products thus affecting efficiencies of the banks with all studied banks showing no efficiency losses from bancassurance partnerships.

6.3.2 *Regulators Implications*

Since the study has shown no negative impact of bancassurance on banking efficiencies, the regulators can be open to the partnerships and create an enabling environment for formulation of more well-structured bancassurance agreements in the region. The region's regulatory bodies should work on standardising the bancassurance partnerships by providing operational guidelines as well as minimum acceptable size of insurance which banks may sell. The regulators should also create reporting standards that make it compulsory for disclosure of bancassurance income as well as bancassurance expenses in the financial statements of commercial banks involved in bancassurance partnerships. This would help ensure ease of monitoring of performance so that that banks and

insurance companies are not compromised in the bancassurance partnerships, and both maximise gains from the partnerships.

6.4 Conclusions

The study was conducted to have a view of bancassurance in commercial banks and life insurance in the SADC region, with particular interest in the efficiency impact of insurance income on commercial banks. According to literature both financial institutions enter the partnership to pursue mutual benefits, be it financial, efficiencies or otherwise. Pursuant to the mutually beneficial gains sometimes unforeseen incidents take place which go against the desired benefits. Based on experience on the ground and some of the incidents in some local banks two hypotheses were proposed and tested using data from 21 banks representing 10 countries of the SADC region. The experimental study did not support both hypotheses in the SADC region as bancassurance was found not to have any impact on commercial banks efficiencies with case and control methodology yielding the same efficiency scores.

The lack of movement in DEA variable returns to scale efficiency scores was attributed to among other things the size of insurance income relative to the banks' interest income and other outputs. The exception, DMU4, whose return to scale shows a decreasing trend on the up take of insurance products by banks requires careful consideration. It is noted that in the DMU the addition of insurance income on the outputs reduces returns to scales. A deeper dive into the specifics implicates a spatial origin for this phenomenon, as DMU4 is unique in that it bears no other footprint outside the one location it resides in within the entire SADC region.

Insurance as well as bancassurance is on the ascendancy in SADC region and recommendations which included having fully integrated bancassurance products as well as dedicated bancassurance employees in the banks were made in the study. For regulators, the growing partnerships call for standardization of the bancassurance offering to ensure that the two parties in the partnerships get mutual benefits and are not compromised

6.5 Recommendations

Several benefits of bancassurance agreements have been highlighted in the literature in chapter 2, with benefits ranging from scale economies, diversification of income, access to wider market reach as well as profitability and efficiency gains. The learning from the study have prompted the following recommendations for the bancassurance partners.

Integrate insurance products with bank products.

For ease of take up and increase in the insurance income, which is necessary for efficiency improvements, banks in bancassurance agreements should consider integrating more insurance products into their normal banking product suite. The prominent integration is that of credit life insurance cover which is built into banks credit facilities. The recommendation is for banks to bundle up other insurance offerings like funeral covers and have them jointly marketed to influence better consumption by existing banks clientele. As already established in the literature, the more integrated bancassurance is, the better the performance. Seamless and hassle-free onboarding of insurance customers in banks will go a long way into increasing the size of the insurance income.

Have dedicated insurance team.

Having a dedicated well-trained insurance team can go a long way in ensuring that insurance sales is maximised in banks. Literature has established that one of the challenges in the bancassurance agreements is clashes in cultures- insurance have more aggressive sales culture while banks have a more passive culture. The culture differences sometimes lead to underperformance by bank trained insurance agents, the impact being low insurance income in the banking space.

6.6 Limitations

The study included fewer banks than expected due to a lack of data for most commercial banks in the region. In place of the planned 83 institutions, a total of 21 banks were investigated. All the data was gathered from the corporate websites under investor relations section, although some firms' websites did not include the data. The unavailability and breadth of the data, along with the difficulty to extract data covering more years, hampered the breadth of the study and caused the research to be cross sectional rather than longitudinal, which might have provided a more in-depth examination.

The study also used the DEA analysis variable returns to scale only which could not remove noises and thus ignoring other salient factors which may significantly affect technical efficiencies such as the macro-environmental economic factor.

The study was only limited to the banks because of unavailability of insurance data and lack of uniformity in the insurance reporting space in the SADC region.

6.7 Suggestions for future research

The study focused on the efficiencies of bancassurance on the banking side only and using cross sectional data which limited the depth of the analysis of the bancassurance phenomena. To get more understanding and view of the mutual benefits of bancassurance partners in the bancassurance institute should be studied with efficiencies analysed over a couple of years. Both non-parametric and parametric frontier methodology should be used and compared for full appreciation of the impact.

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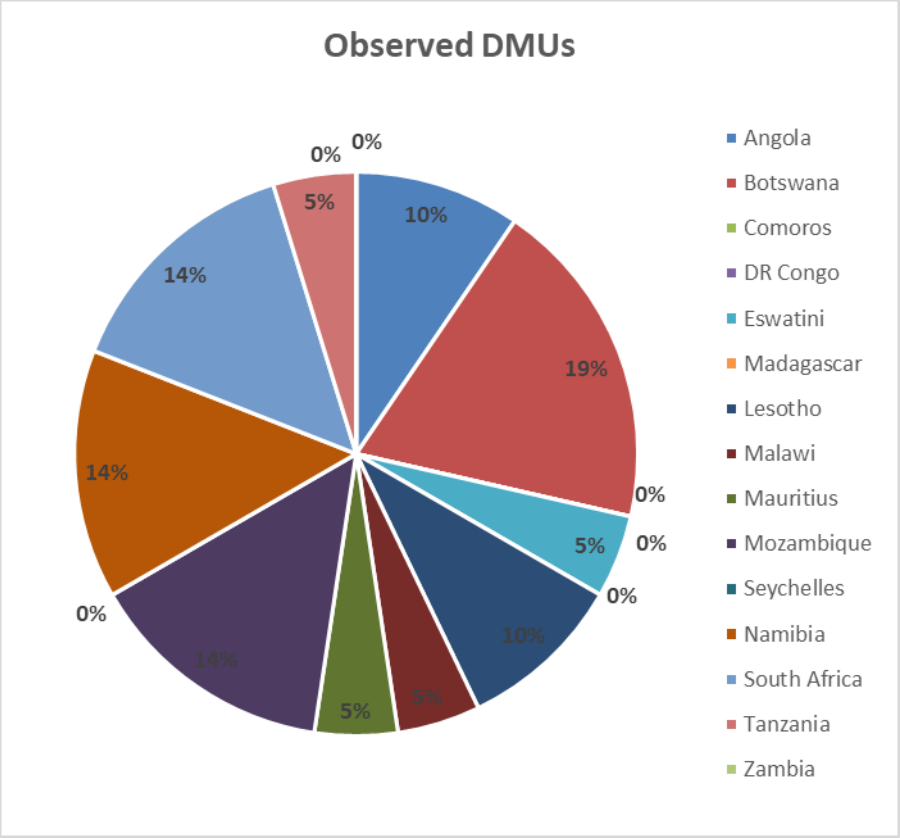
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APPENDICES

Appendix A: List of SADC Countries

	Country
1	Angola
2	Botswana
3	Comoros
4	DR Congo
5	Eswatini
6	Madagascar
7	Lesotho
8	Malawi
9	Mauritius
10	Mozambique
11	Seychelles
12	Namibia
13	South Africa
14	Tanzania
15	Zambia
16	Zimbabwe

Appendix B: Percentage of bank observed in 16 SADC countries.



Appendix C: List of Banks and input and output variables

	Physical Assets	Number of Branches	Interest Expense	Non interest Expenses	Total Employee Cost	Insurance Income	Interest Income	Net profit after tax
Dmu 1	15,970,000.00	1,007.00	89,495,000.00	3,475,000.00	26,133,000.00	8,778,000.00	89,495,000.00	16,373,000.00
Dmu 2	11,173,000.00	720.00	33,102,000.00	5,629,000.00	24,648,000.00	1,263,000.00	72,480,000.00	13,320,000.00
Dmu 3	1,867,482.04	35.00	477,097.49	469,495.48	781,226.78	107,018.75	3,227,116.50	2,726,507.23
Dmu 4	1,716,198.80	44.00	456,857.20	6,159.88	1,436,862.43	65,869.32	4,194,248.25	1,738,096.72
Dmu 5	1,027,366.00	62.00	736,165.00	261,361.00	838,915.00	88,695.00	1,972,847.00	371,222.00
Dmu 6	924,071.75	46.00	546,246.75	68,895.75	531,809.95	11,908.05	1,959,079.85	221,842.25
Dmu 7	865,476.00	27.00	1,152,689.00	189,765.00	1,103,406.00	21,402.00	3,012,043.00	980,183.00
Dmu 8	782,146.70	19.00	330,863.22	189,642.25	887,591.49	23,073.54	953,644.67	938,689.75
Dmu 9	749,722.00	26.00	673,131.00	68,547.00	353,698.00	41,845.00	1,408,411.00	204,526.00
Dmu 10	606,729.55	64.00	630,822.85	51,665.25	620,729.55	12,059.60	1,857,453.50	- 483,357.35
Dmu 11	601,000.00	49.00	1,332,000.00	618,000.00	1,578,000.00	39,000.00	4,958,000.00	534,000.00
Dmu 12	427,587.00	51.00	1,412,793.00	138,754.00	799,343.00	37,511.00	3,139,597.00	646,377.00
Dmu 13	385,825.61	36.00	80,617.06	18,766.98	200,421.22	6,631.59	363,156.62	44,876.90
Dmu 14	337,213.17	32.00	441,642.79	145,488.52	610,973.42	76,332.29	1,436,313.48	688,551.04
Dmu 15	331,992.00	27.00	140,526.00	31,950.00	327,528.00	22,410.00	1,066,752.00	445,842.00
Dmu 16	264,215.35	28.00	13,390.65	23,388.05	380,456.30	24,946.60	644,456.40	8,479.80
Dmu 17	256,029.19	40.00	20,600.86	16,354.33	136,404.65	95,000.76	309,503.30	89,827.24
Dmu 18	209,225.03	12.00	496,409.91	107,186.06	402,485.45	252,196.45	1,462,802.43	282,739.23
Dmu 19	165,183.00	17.00	173,947.00	69,792.00	287,743.00	26,297.00	773,545.00	243,005.00
Dmu 20	132,188.56	11.00	409,647.81	37,158.51	355,280.73	39,535.46	1,019,038.88	82,626.07
Dmu 21	117,595.80	19.00	63,115.24	31,384.51	110,162.57	4,741.62	198,326.92	- 42,739.83
Dmu 22	92,291.00	12.00	103,353.00	5,771.00	188,303.00	4,160.00	404,546.00	121,923.00
Dmu 23	40,464.00	7.00	40,377.00	17,577.00	85,947.00	14,344.00	203,433.00	30,460.00
Dmu 24	1,256.10	226.00	1,057.73	584.15	1,900.70	32.65	6,360.63	2,278.76

Appendix D: Ethics Clearance

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/BA2529165/794
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below)

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Bancassurance on commercial banks and life insurance in Southern African Development Community (SADC)
Investigator / Researcher	Mr Thabang Mapena
Nature of Project	MBA (Research Article)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	16 09 2022
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

19/09/2022
Date: