

UNIVERSITY OF KWAZULU-NATAL

**IMPACT OF NEW MEDICINE PRICING REGULATIONS ON INDEPENDENT
COMMUNITY PHARMACIES: A KWAZULU-NATAL STUDY**

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of**

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DECLARATION

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ABSTRACT

Pharmaceuticals are a crucial component of delivering healthcare, hence regulating pharmaceutical markets is a complex issue involving dynamic interplay of multiple actors. The South African healthcare industry is plagued with past problems and new ones created by cumbersome legislation, changing economic conditions and rapid cost escalation. The core objectives of the 2004 medicines pricing legislation were; effective care and use of resources; high quality services and responsiveness; accessibility and affordability of medicines for consumers.

This study explores the impact of the new medicine pricing regulations on independent community pharmacies in KwaZulu-Natal, wherein 115 out of a total of 364 independent pharmacies participated. The main aim was to determine the number of pharmacies that closed and the emerging trends in this sector by qualitatively and quantitatively analyzing the legislation, policy implementation and its impact on various stakeholders. Data was collected via semi-structured interviews; a survey questionnaire and document analysis.

The study revealed that, more consultation was needed for a sustainable dispensing fee since between 72 and 83 pharmacies had closed in KZN from 2003 to 2009; due to them being uneconomical. Tools used to illustrate legislative impact were Porter's value chain, Force-Field analysis and the Fish-Bone diagram.

The emerging trends underscored government's need to provide a democratic environment conducive to small business growth, with the recommendation that policy makers strategically respond to the real world in which health sector reforms must be implemented.

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ACRONYMS AND DEFINITIONS

BGS	Business, Government & Society
BBEE	Broad-Based Black Economic Empowerment
CFM	Countervailing Forces Model
CMP	Code of Marketing Practice
CON	Certificate of Need
CPD	Continued Professional Development
CPS	Community Pharmacist Sector
DF	Dispensing Fee
DOH	Department of Health
DSP	Designated Service Provider
DTI	Department of Trade and Industry
EDA	Exclusive Distribution Agency
EDL	Essential Drug List

EIA	Economic Impact Assessment
EU	European Union
GPM	Generic Process Model
HR	Human Resource
HST	Health Systems Trust
IMSA	Innovative Medicines South Africa
KZN	KwaZulu-Natal
NAPW	National Association of Wholesalers
NCPA	National Community Pharmacist Association
NDP	National Drug Policy
NHI	National Health Insurance
NHRPL	National Health Reference Price List
NHS	National Health System
MHS	Managed Health System
MSR	Managing Stakeholder Relationships
OECD	Organization for Economic Co-operation and Development

OTC	Over-the-Counter Medicines
PAT	Patient-Advised-Therapy
PF	Professional Fee
PPP	Public-Private Partnership
PSF	Pharmacist Stakeholders Forum
PSSA	Pharmaceutical Society of South Africa
R & D	Research and Development
SA	South Africa
SAPC	South African Pharmacy Council
SCA	Supreme Court of Appeal
SME	Small Medium Enterprises
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
US	United States
USAP	United South African Pharmacists

VAT	Value Added Tax
WB	World Bank
WHO	World Health Organization
Generic medicine	Generic is defined as ‘denoting a drug protected by a trademark, usually descriptive of the drug’s chemical structure; sometimes called public name
Independent Community Pharmacy	Pharmacy that is owned by an individual and not a consortium such as Netcare, Pick & Pay, Dischem and Hyperpharm
SEP	Single Exit Price is the price set by the manufacturer or importer of scheduled substances in terms of these regulations combined with the logistics fee and VAT and is the price of the lowest unit of the medicines or Scheduled substance within a pack multiplied by the number of units in a pack.
Schedule	Denoted by the letter, ‘S’. In South Africa, medicines can take on one of the following Schedule, S0-S6. S0-S2 is over-the-counter medicines and can be purchased without a script whilst S3-S6 is prescription only medicines.

CHAPTER ONE: INTRODUCTION

1.1. INTRODUCTION

Pricing has become a big issue in the health care sector, from as far back as 1997. Traditionally price was not a very important aspect in the health care industry and was usually set by either the South African Medical Association (SAMA) or the Board of Healthcare Funders (BHF). With the introduction of the National Health Reference Price List (NHRPL), prescribed minimum benefits (PMBs) and government directed negotiating measures, all this changed.

According to Truter (1999), the level of service offers the retailer competitive advantage based on service differentiation. The notion then that, 'price is about the cost which customers are prepared to pay for the product' has become a myth because patients are prepared to pay for the product as long as there is adequate service.

Government intervention added to the pharmaceutical industry's problems; making 2004 a turbulent year with piecemeal implementation of amendments to the Medicines and Related Substances Control Amendment Act of 1997.

Independent community pharmacists had been resistant to the new pricing system, whilst the Department in Health (DOH) is trying to balance contrasting health objectives and reducing the cost of medicine. The DOH is adamant that there is no mass closure of pharmacies; instead there is an increase in the number of pharmacies (DOH, n.d.). Although the figures have not been confirmed, it is estimated that up to 700 pharmacies have closed since the introduction of regulations, while hundreds of pharmacists have left the country, unable to make a living in South Africa (Kotze, 2009: 6).

This study intends to quantify the number of closures in KwaZulu-Natal from 2003 to 2009 by way of an impact study.

1.2 MOTIVATION FOR THE STUDY

The medicine price regulations has left the pharmaceutical industry in a state of flux because these regulations were seen by government as working but not by community pharmacists; who had reached a fee truce with the DOH. Health Minister, Hogan was interested in the number of community pharmacies that had closed in Kwazulu-Natal since 2003 (Hogan, 2009). This prompted the researcher to determine the number of community pharmacy closures in KwaZulu-Natal (KZN).

The unique contribution would be to bring about a feasible dispensing pricing structure for pharmacists by highlighting the impact that regulatory pressures have put on community pharmacists, notwithstanding government's plans to make healthcare more affordable and accessible to consumers. It also outlines the roles of public functionaries and policy-makers and the skills and strategies required to improve medicine pricing policy processes.

This study is significant because the following stakeholders may benefit:

- the sustainability of independent community pharmacies would be ensured if they can practice in a regulated and stable environment;
- if the dispensing fee (DF) is viable, consumers would receive quality healthcare and service;
- wholesalers, as their viability depends on the sustainability of independent community pharmacies;
- bankers' who provide support to independent pharmacies.

1.3 FOCUS OF THE STUDY

The focus of this study is based on a 'conceptual framework' linking concepts from economics, business strategy and legislation to assist in making assumptions built into the research.

This study considered two of the ten key elements of economics as follows:

- economic progress comes primarily through trade, investment, better ways of doing things and sound economic institutions;

- too often long-term consequences, or the secondary effects, of an action are ignored.

The study considered one major source of economic progress as being:

- limits on government regulation: whereby, regulatory policies that reduced trade also retarded economic progress.

In terms of economic progress and the role of governments; three elements of clear thinking were:

- government is not a corrective device;
- governments' may slow economic progress when it becomes heavily involved in trying to help some people at the expense of others;
- constitutional rules that bring the political process and sound economics into harmony will promote economic progress.

Hence, it makes good sense to use quality research in the policy-making process.

Specific dimensions in the pharmaceutical field focused on:

- consultative health reform and service delivery;
- the pharmaceutical value chain;
- regulating pharmaceutical distribution and retail pharmacy;
- access to medicines and the changing agency relationship;
- pricing of medicines and reimbursement of pharmaceuticals;
- impact of medicine pricing legislation and its effect on the sustainability of independent community pharmacy; assessing of the financial risk profile and exploring emerging trends impacting on the future of independent community pharmacy;
- business strategies.

1.4 PROBLEM STATEMENT

Statistics from the Interim Pharmacy Council from 1996 to 1998 (Bolleurs,1998) shows a trend of community pharmacies closing down with pharmaceutical role-players fighting medical schemes and their administrators on exorbitant discounts

claimed, stirring the stormy seas with massive battles for control of the healthcare industry in the years ahead.

Medicines control and pricing legislation placed wide ranging and ambiguous requirements on both suppliers and pharmacies. For pharmacies the impact resulted in the need to maximize opportunity by becoming a smart retailer.

Watson (2004) stated that, the Single Exit Price (SEP) saw all parties supporting the noble ideal of access to healthcare for all, reduction of drug prices and ensuring transparency of pricing but disagreeing on the workability of the regulations. Other issues, directly and indirectly affecting the pharmaceutical sector, such as dispenser licensing, lay ownership of pharmacies and massive medical scheme changes also occurred.

The implementation process has been anything but smooth, with clarity still needed on a proper dispensing fee through a four year protracted court battle that resulted in a hostile community pharmacy trading environment. Negotiations for an appropriate dispensing fee have to be fast-tracked to ensure that the entire medicines distribution chains, including community pharmacies, remain viable. This study shows that a workable medicine pricing structure has to be born out of stakeholders' consultation to prevent further closure of pharmacies.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were:

- to determine the actual number of independent community pharmacies that have closed in KwaZulu-Natal since the promulgation of the new medicine pricing regulations for the period from 2003 to 2009;
- to explore the attitude of bankers with regards to SME funding with the view to assess the financial risk profile of independent community pharmacies;
- to critically explore whether the pricing objectives are being met as per the legislation and to make recommendations towards the pricing regulations based

on the principle of a transparent pricing system and an appropriate dispensing fee for the benefit of all stakeholders;

- to evaluate the future of independent community pharmacies.

1.6 RESEARCH QUESTIONS

The research questions focus on the research problem.

- How many independent community pharmacies closed in KZN between 2003 and 2009?
- Did the relationship between independent retailers and key stakeholders (bankers and wholesalers) deteriorate?
- What is the assessment of the future of independent community pharmacies?

1.7 LIMITATIONS OF STUDY

The geographic area of study is focused on KwaZulu-Natal, whilst this medicine pricing policy affects all Provinces.

The South African Pharmacy Council (SAPC) did not have updated published data on the number of pharmacies closed. The researcher had to use four medical directories to obtain this data. Hence, the actual population was difficult to establish accurately, thus the reason for conducting a census using all pharmacies in the independent retail sector.

There were practical constraints encountered regarding time and costs. It was time consuming to process the data from a large number of pharmacies as:

- telephone numbers changed due to new area coding by Telkom;
- street names changed;
- some pharmacies either had no fax or no e-mail and their questionnaires had to be personally administrated and collected.

The use of semi-structured interviews was a lengthy and demanding process because pilot testing was done which required revisits to verify notes taken during interviews.

1.8 STRUCTURE OF THE STUDY

Chapter Two outlines the theoretical framework used in this study. This chapter reviews previously published work and shows the relationship to this study. Chapter two provides a critical insight into the complexity of regulating the pharmaceutical sector.

Chapter Three discusses research methodology and provides the rationale for the mixed method of combining both a qualitative and quantitative approach.

Chapter Four provides an analysis of the collected data. The results are presented in tables, bar charts and triangulation techniques.

Chapter Five discusses the results and answers the objectives of this study and a number of other questions arising from the literature review.

Chapter Six provides recommendations for future research and practical suggestions for the practice of business and management as well as, for public policy making improvements. Most importantly a restructured dispensing fee is suggested which would alleviate the financial plight of an ailing retail sector.

1.9 SUMMARY

This chapter provides an outline of the study, detailing the research questions, objectives and motivation for the study; demonstrating how medicine pricing relates to the wider context of regulating the pharmaceutical sector in South Africa.

This sets the stage for the next chapter which is the literature review.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This study was born from a study done by Singh (2006); which recommended that the proposed tiered pricing, announced in 2006, be evaluated for impact on independent community based pharmacies.

This proposal, however, was never gazetted due to the ongoing court battle that ensued between retailers and the Department of Health (DOH). The original, 26%/R26 dispensing fee itself, according to Professor Di McIntyre (n.d.), chair of the government's Pricing Committee, was never fully implemented, due to the court case. Hence, chaos ensued with, some pharmacists implementing this rate, whilst others charged mark-ups of between 35% to 50%. This and other challenges led to a hostile trading environment according to media liaison officer of the Pharmaceutical Society of South Africa (PSSA) (Pringle, 2007).

The Single-Exit Pricing (SEP) was legislated in 2004, sparking debate in the healthcare industry and media about the possible impact of these regulations on the South African healthcare system (Modern Pharmacy, 2004).

The medicine pricing saga, according to Beaumont and Klinick (2006), continued into 2005 and 2006, with the court endorsing the bulk of the regulations but placed the onus on pharmacists and the DOH to resolve the dispensing fee (DF) issue.

2.2 REGULATION OF THE PHARMACEUTICAL SECTOR

Government regulation of the private sector according to Steiner and Steiner (2006: 288) is justified under two circumstances:

- “when flaws appear in the market place that produces undesirable consequences;
- where adequate social, political and other reasons exist”.

Steiner and Steiner (2006: 291), explain that where government prescribes the rules of the game the following are the scope of government's relations with business; i.e. government:

- “is a major purchaser of the output of business;
- uses its contracting power to get business to do things government wants;
- is an architect of economic growth;
- protects interests in society against business exploitation;
- directly manages large areas of private business;
- redistributes resources to meet social ends;
- is the arbiter of disputes”.

Steiner and Steiner (2006), reflect on the numerous regulations written which have had significant impact on everyone, especially business. However, the authors convey that comprehensive data is not available to measure this impact; hence a few indicators and anecdotes help to understand complaints about regulatory burdens and costs.

A study done by the World Bank (WB), concludes that there is a great diversity of government regulations among countries. The study reports the impacts differ widely with poorer countries having highly regulated environments. These regulations tend to be badly enforced and are subject to corruption, becoming burdensome in poor countries (Steiner and Steiner, 2006: 305).

Steiner and Steiner (2006: 306) recommend that for regulations to be considered, based on good principles countries should:

- “simplify property rights;
- expand the use of technology;
- reduce court involvement in business matters;
- ensure that reform is a continuous process”.

Steiner and Steiner (2006: 306) further state that, “costly regulations which may make businesses go out of business should be examined carefully”.

The Countervailing Forces Model (CFM) shown in Figure 2.1 depicts the business, government and society (BGS) relationship, suggesting the complex exchanges of influence amongst them.

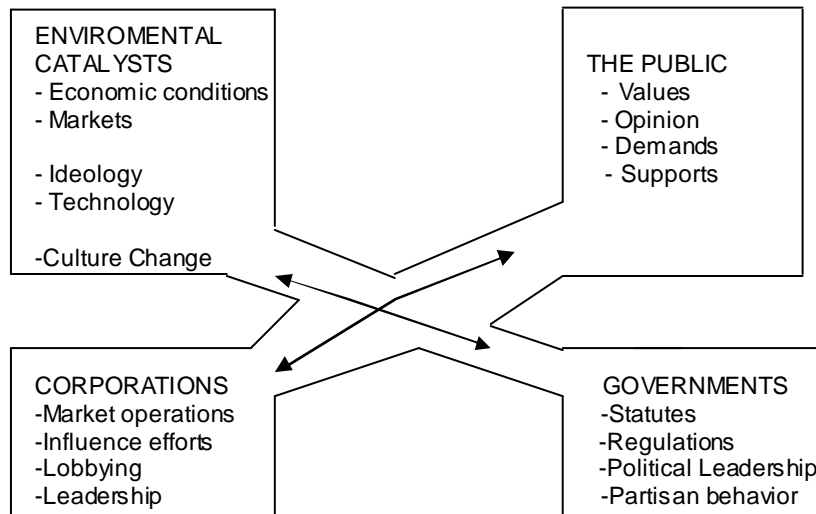


Figure 2.1 The Countervailing Forces Model (Adapted from: Steiner and Steiner, 2006: 15)

The CFM is reflective of democratic traditions with the over-arching conclusion that business is deeply integrated into an open society and must respond to many forces, both economic and non-economic. It is “not isolated from its social environment nor is it dominant” (Steiner and Steiner, 2006: 9).

Despite the lack of a single theory to unify the field, there are economic theories about the impact of government regulation as there are political theories. Hence, business is simultaneously encouraged and constrained by governments, as can be seen in Figure 2.2 (Steiner and Steiner, 2006: 37, 38).

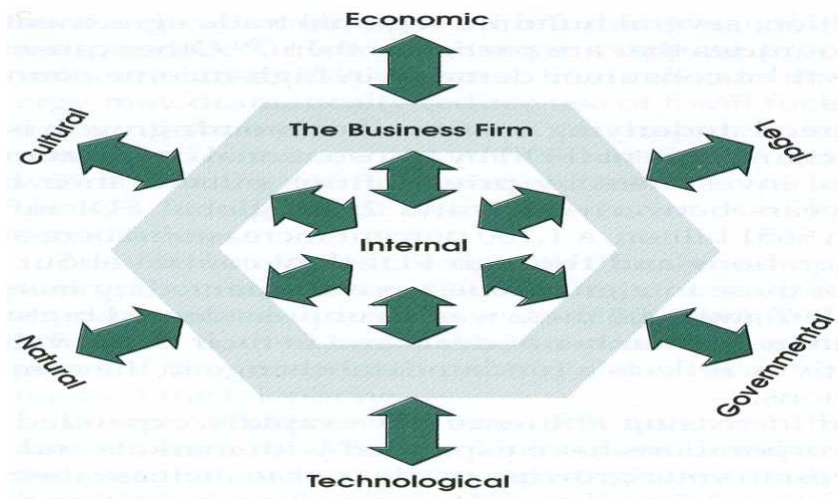


Figure 2.2 The Seven Key Environments of Business (Source: Steiner and Steiner, 2006: 35)

The economic environment Steiner and Steiner (2006) refer to, consists of various influencing forces, which in the South African context are: commodity prices, interest rates, currency fluctuation, wages, competitor's actions, technology change and government policies.

The task of economics is concisely explained by Gwartney, Stroup and Dwight (2005) concerning the forces that affect human decision-making whereby economics provides considerable insight on how the political process worked. Hence, for economic growth, countries must have sound institutions to guide behavior and sound government policies which are central elements.

2.3 POLICY-MAKING: THEORY TO PRACTICE

In any modern democratic state, the authors Cloete, Wissink and de Coning (2006: v) state that, "there is a policy framework (a written or unwritten constitution) that sets out broad principles and values enabling policy makers to design guidelines and procedures for public affairs management; the goodness of which is inextricably linked to good governance".

The advantage of the Generic Process Model (Cloete, *et al.* 2006) is that major stages are identified with various considerations through which a policy is developed but the disadvantages which are not provided for are:

- “detail on all activities that should be attended to during a particular phase eg: the usefulness of negotiating models during policy adoption;
- guidance on the use of institutional capacities during the policy phases and where analytical teams are used;
- leadership quality and managerial effectiveness should be important considerations” (Cloete, *et al.* 2006: 53).

Table 2.1 depicts policy analysis approaches as discussed by Cloete, *et al.* (2006: 77). The analytical approach of this study is on policy outcome and focuses on policy impact evaluation. Hence, the analytical instruments of a survey and semi-structured interviews are used to evaluate the value of the pricing policy.

Analytical Approaches	Analytical focus	Analytical instruments
Policy content Analysis	Interpretation of policy content	Judicial practice, Administrative law
	Comparative policy analysis	Correlation of policy content
	Policy dynamics	Indicators of policy change
	Policy pathology	Problems and ailments of the policy process
Policy systems analysis	Policy behavioral studies	Influence and decisions of shareholders and stakeholders
	Policy institutional studies	Role of institutions and related organizations
	Policy process studies	Agenda-setting procedures of policy-making bodies and committees
Policy issue analysis	Policy problem structuring	Structure of the nature of policy problems
	Policy recommendation (advocacy)	Determining and forecasting policy solutions
Policy outcome analysis	Policy monitoring	The outcome of policy actions
	Policy impact evaluation	The value of policy actions
Policy values analysis	Community values and general morality or moral guidelines	Values and ethical considerations supporting specific policy choices and/or actions

Table 2.1 Approaches to Policy Analysis (Source: Cloete, *et al.* 2006: 77)

Cloete, *et al.* (2006: 175) give emphasis to the importance of creativity in decision-making because “no administrator can assume that there is only one solution to a problem” and discuss various variables that should be examined. These variables are depicted in Table 2.2.

LEVELS	VARIABLES			
	Drivers	Characteristics	Constraints	Style/Approach
Individual personality(internal)	Rationality	Benefits	People	Consultation
	Emotions/Instincts	Power	Irrationality	Instinctive
	Ideology	State intervention	Dogmatism	Ideological determinism
Contextual Enviroment (external)	Organisational objectives	Crisis perception	Groupthink	Consensus seeking

Table 2.2 Levels and Variables of Decision Making (Adapted from: Cloete, *et al.* 2006: 176)

The “Public-policy impact chain” as depicted by Cloete, *et al.* (2006: 216) is considered important to understand the economic, political, cultural and demographic environments and how these shape a government’s strategy. These forces impact on other elements in the chain, during implementation through various policy instruments and institutions, which finally have an effect on society through a series of sequential feedback linkages.

The Public Policy Impact Chain developed by Cloete, *et al.* is shown in Figure 2.4.

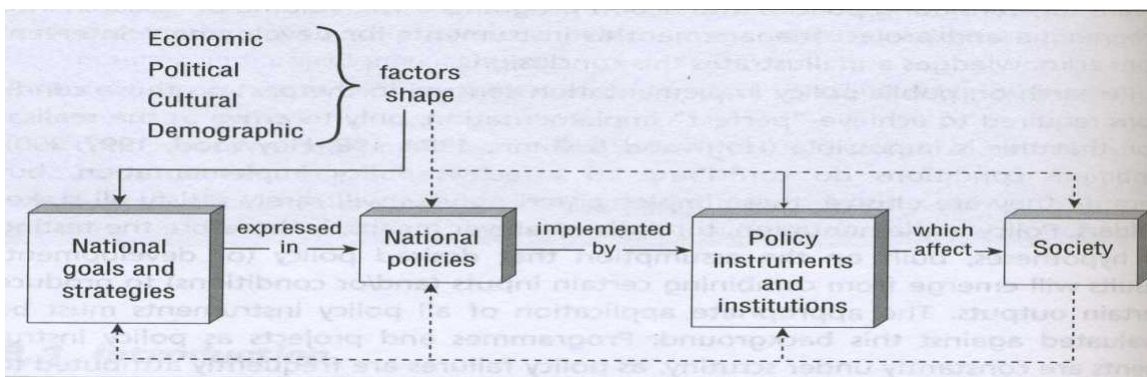


Figure 2.4 Public Policy Impact Chain (Source: Cloete, *et al.* 2006: 216)

Cloete, *et al.* (2006: 246) emphasize that policy evaluation is in essence “impact assessment” which simply put, is the consequences of public policy effects on real-world conditions. Conceptualized as such, impact assessment is a hybrid of applied social science research and practical policy planning, using normal available approaches, methodologies and procedures of social research to assess practical policy issues in society.

Shafritz (1998: 820) and Posavac and Care (1980: 8) as cited by Cloete, *et al.* give the following reasons for policy assessment amongst others:

- “to measure progress towards the achievement of policy objectives;
- to provide political or financial accountability;
- to better advocate a cause”.

In many cases these reasons are not clearly spelt out due to political sensitivities or hidden personal agendas, but if undertaken can produce the practical benefits of assessing factors contributing to policy impact, which would help planners improve policy design (Cloete, *et al.* 2006: 248).

An important proposal according to Cloete, *et al.* (2006: 267-270), on good policy practices is found in various measurement objectives, the most important being:

- “people-centered, participatory and responsive processes;
- process equity, fairness, representivity;
- process transparency;
- accountability;
- democratic nature of processes (tolerance, rights-based, legitimate);
- process flexibility;
- co-ordination, integration and holism of services;
- professionalism and ethical nature of processes;
- creativity, competitiveness and entrepreneurship processes”.

Cloete, *et al.* (2006: 339) note that no policy is ever complete but is rather a changing and continuous process, hence researchers can intervene in the process at any point for the purpose of analyzing the particular activity or stage of the policy process.

Pillay in Terre Blanche and Durrheim (2004: 244) in Chapter 13: Researching public policy states that, "impact analysis falls under the monitoring of policy implementation stage, for which resources are required for sustainability".

Poete as cited in Cloete, *et al.* (2006), sees impacts as the long-term economic and social consequences of interventions. Original policy goals should be guided by measurement objectives linked to an indicator guide and developed into an impact assessment table, as discussed in chapter five.

2.4 Medicine Pricing Legislation

According to Rwigema and Venter (2006: 96), "Changes in government carry with them the prospect of changed laws and regulations, new policies and restrictions, and varied attitudes to business.

In keeping with this claim, the last five years has seen the introduction of a range of policy interventions in the South African healthcare environment.

According to Pillay (2006: 7) the pharmaceutical sector has seen the introduction of dispenser licensing, lay ownership of pharmacies and the regulations of medicine prices. Other interventions that have had an indirect effect include; low-income medical schemes, prescribed minimum benefits and a government employee medical scheme. Pillay (2006: 7) asserts, "it was fair to conclude that government policy was aimed to promote greater access and equity to healthcare and that these interventions and the growing generics industry would ensure that the private healthcare sector was sustainable over the long term".

2.4.1 Pricing Objectives

An overview document of medicine pricing in South Africa compiled by Makani-Mansomi (2008) of the National Parliament Research Unit, spoke to the aim of transforming inequity and fragmentation of the health sector with key amendments in 1997 to the Medicines and Substances Act (No. 90 of 1965), which included:

- parallel importation of medicine;
- establishment of a medicine pricing committee;
- dispensing licenses for medical practitioners;
- introduction of a transparent pricing system for medicines, resulting in the introduction of the SEP.

The objectives of the amendments were to:

- reduce medicine pricing and increase affordability to the user;
- increase accessibility of affordable medicines, especially to rural consumers (Makani-Mansomi, 2008).

The question arises, “Are the pricing objectives being met”?

The Pharmaceutical Society of South Africa (PSSA) Newsletter (2004: 13) states that; “by interfering, in a naïve and scientifically suspect manner government has created pricing distortions, the net effect being directly contrary to the initial intentions”. This is strengthened by the findings of a Treasury commissioned report which states that, “South Africa’s system of administered pricing is failing to deliver efficient, cost-reflective prices and is probably inflationary; and that price controls need extreme caution (PSSA Newsletter, 2004: 13). These, however came too late with the R26/26% script item fixed dispensing fee charged by pharmacists; provoking Deputy Judge President J Traverso to state in a dissenting judgment when pharmacists challenged the DOH that, this fee was “no more than a thumb suck based on a simplistic one-size-fits-all approach” (Osman, 2004).

Unhappy pharmacists are repeatedly calling for further negotiations because of the precarious position pharmacies are placed in due to other competing forces (Moodley, 2006).

An Eastern Cape Survey, reported in The Herald (2005) showed that there were huge disparities between prices of popular brands of medicines at different pharmacies. This confusion was over the Supreme Court of Appeal (SCA) ruling; whereby some pharmacies still charge the R26/26% fee and others reverted to pre-regulation pricing structures.

2.4.2 PRICING IN PHARMACY

This section encapsulates the differences in pricing strategies used to price general products compared to medicine pricing which utilizes specific methodologies.

Community pharmacies have two distinct areas where products are sold, namely the dispensary and the front shop. Dispensary items are price regulated unlike the front-shop, where goods are marked up according to the discretion of the owner. According to Terblanche' (1998: foreword), "retailing is probably one of the toughest and most competitive industries in South Africa; vibrant and demanding yet innovative whilst grappling with a complex legacy of social and structural problems". He states that, "pricing is a key element in the eventual success or failure of a retail business" (Terblanche', 1998: 313).

Medicines could be classified as price elastic. Terblanche' (1998: 332-333) explains that elastic demand means that consumers are relatively sensitive to a change in price but in practice, he states that, the concept elasticity is often difficult to apply in view of the volume sales of hyper-retailers. Terblanche' (1998: 348) states that price is a major factor in a consumer's perception of a specific retailer, making the dilemma for small independent community pharmacies even more pronounced.

Macleod and Terblanche' (2004: 66) explain the basics of pricing as:

- direct costs of acquiring or making it;
- indirect fixed costs e.g. rental, wages, accounting fees, loan repayments;
- profit;
- volume, i.e. the number of units sold.

“Governments try to”, as per, Mossialos, Mrazek and Walley (2004: 1) “regulate few markets as much as they do the pharmaceutical market. Cost containment has to be balanced between conflicting demands hence it is not a main health policy. Even if, solutions from the experience of other countries was sought, the different contexts in which they work would have to be born in mind”.

Mossialos, *et al.* (2004: 10-13) explain supply side cost containment measures in Europe as direct price control:

- fixed price controls e.g. negotiated prices, price-caps, cost plus; price comparisons;
- profit-controls;
- reference pricing e.g. setting a maximum reimbursement level.

Mossialos, *et al.* (2004) noted that perhaps the least transparent price negotiations were between manufacturers and government; the criteria being unclear, leaving decisions to the regulators discretion; which confounds a (2006) UKZN study done by Paruk, Ramdayal, Khoza, Rajkumar and Mantanga on the ‘SEP as it affects State Hospitals’. The researchers found that SEP only applies to the private sector, while the state continues to operate on the tender system, with the question being raised whether the private sector was subsidizing the state? Hence, the recommendation called for review of medicine pricing in the private sector to one that is uniform and applicable to both sectors.

Mossialos, *et al.* (2004) state that indirect price controls e.g. profit or rate-of-return regulation is unique to the UK (United Kingdom); the main objective being to ensure pharmaceutical firms are not making excessive profits, specifically on patent-protected-products whilst rewarding innovation, through a non-statutory profit control regulation called the Pharmaceutical Price Regulation Scheme (PPRS). This will be discussed further in chapter five.

Beaton (1997) cited legislation amongst other factors that contributes to the pricing decision, giving two options for price setting in retail pharmacy:

- a traditional cost-plus method;
- marketing-oriented approach.

Beaton (1997) states, that in practice, both methods should be used but the final arbiter must always be the market. He alludes to the fact that the price regulators must strive to ensure that the purpose of price is not simply to recover cost but to capture the value of the “product” in the mind of the consumer. The “product” in pharmacy consists of not only goods sold but service, quality assurance and professional endorsement.

Moodley (2006: 13) explained that, “before the new dispensing fee was published, when determining the cost of dispensing, there were departure points between the Pricing Committee and Pharmacists. These differences centered around directors’ emoluments, delivery costs, the number of items dispensed and a fair return on investment”.

In 1996, the Interim Pharmacy Council accepted that the professional fees (PF) of a pharmacist should be a procedure-based approach similar to other healthcare professionals (Putter, 1997). This remuneration of pharmacists was moved by the World Health Organization (WHO) stating that, remuneration systems for pharmacists should be attuned to the goal of rational drug usage and to the wider contribution that pharmacists can make to achieve this goal. Hence, this system offered flexibility because a fixed fee per item on a prescription was to be avoided at all costs, as this was not in the patient or pharmacist’s interest but the alternate would lead to cost savings and improve patient outcomes (Putter, 1997).

2.4.3. Regulating Pharmaceutical Distribution and Community Pharmacy

The Health Systems Trust (HST) (2008) statistics, reflect that in KZN, for 2008 there were 438 pharmacists in the public sector, while 1784 were registered with the South

African Pharmacy Council (SAPC) giving five pharmacists per 100 000 population for KZN.

The South African Institute of Race Relations (SAIRR) (2008: 5) shows medical aid coverage by race in 2007 is 66.1% for Whites; 31.2% for Indians; 18.9% for Coloured and 7.3% for Africans. This is viewed as worrying because Jeffery (2008: 1) explains that policy hinders growth in South Africa due to a lack of co-ordination, citing five leading South African economists.

The literature reviewed reinforces the notion by Mossialos, *et al.* (2004) that, regulating the pharmaceutical sector involves complex decision-making frameworks and policies; because current market interventions affect pharmaceutical expenditure by targeting price, volume or both.

For South Africa to meet its own objectives and needs, policy approaches must reflect the following general principles:

- policy objectives must be clear and consideration must be given to the impact on all evaluative dimensions of efficiency, equity, quality and cost;
- rigorous price control alone does not necessarily improve efficiency or control total expenditure;
- attention must be given to demand side and the promotion of rational drug use to improve efficiency, equity and quality;
- new drugs and product mix will drive drug expenditure in the future;
- future greater partnership requires stakeholder solidarity if socialized pharmaceutical care is to be maintained despite greater needs and constrained resources (Mossialos, *et al.* 2004).

Policy-makers have to rank policy goals and recognize the trade-offs involved and the importance of context in translating evidence to practice (Mossialos, *et al.* 2004). Sidley (1997) asserts that government efforts to reduce the price of drugs has been hindered by vested interests which resist medicine reforms. Sidley (1997) argues that

South African consumers need to show support for the DOH in its efforts to bring down medicine costs.

Pillay (2004), refers to the challenges of regulating the South African healthcare industry, such as shaking industry operations which were largely perverse. On the future of pharmacy, Pillay (2004) states that the corporate pharmacy model will be driven by price and community pharmacies should focus on service. Minister Tshabalala-Msimang (DOH, 2007) announced that, 162 new pharmacies had opened between February 2006 and January 2007. However, the reality is that “many of these licenses were granted indiscriminately to new players such as the corporates, leaving independent community pharmacies economically unsustainable in some regions” (Moodley, 2006: 12).

A study of the statistics of a list of pharmacies opened SAPC (n.d.) shows that, four opened in KZN in 2004, mainly being public institutions with eight pharmacies having closed SAPC (n.d.) during the same period, 2004.

2.4.4 Medicine Cost Reimbursement

According to Mossialos, *et al.* (2004: 13), a reimbursement level is reflective of negotiations between pharmaceutical companies with new product (monopoly) and the payer, which is normally government or medical aid schemes (monopsony).

This involves political and economic power, together with the bargaining skills of all stakeholders. Economic evaluation seen as ‘value for money’ has influenced policy makers (Mossialos, *et al.* 2004: 13).

McMillan (1994), highlighted the plight of retail pharmacists stating that it was pharmacists’ and wholesalers who demanded a “one-exit price” in 1993, to level the playing fields with state hospitals to whom manufactures offered substantial discounts on tenders. Hence, the argument that pharmacists are only interested in profits is weak (Pillay, 2006).

Presently, most medical aids are still reimbursing retailers on the R26/26% fee structure hence, co-payments have put the medical aid consumers out of pocket. Medical aids are directing scheme members to designated service providers (DSP) with whom, a specific fee structure has been negotiated (UKZN, n.d.).

The Constitutional Court, heard evidence in 2005, of a study done between 1990 and 2003, showing that 24% of community pharmacies were running at a loss which led to the Supreme Court of Appeal (SCA) ruling that the newly introduced pricing regulations were invalid and pharmacists pointed out that the manufacturer and medical schemes were weak spots in the value chain impacting negatively on the viability of retailers (IOL, 2005).

2.5 The Tale of Two Fees

According to McMillan (1994), the detailed ‘tariff war’ history is of academic interest and practical interest.

McMillan (1994: 33, 34) states the following perversities which effectively reduced pharmacists’ tariffs or income whilst medical aid schemes benefited from these tariffs because of huge discounts squeezed out of retailers:

- manufacturer bonuses;
- wholesaler bonuses;
- price cutting;
- medical scheme discounts up to 30% in some cases for managed care;
- hyper-pharmacies bonuses on volume purchases.

2.5.1 Dispensing Fee (DF)

Table 2.3 details the chronological order of changes to the DF and shows the following:

- the time delays in revising the DF;
- the variety of DF structures.

Dispensing Fee Dates	Dispensing Fee Description
Dispensing Fee (DF) Prior to 2004(McMillan:1994)	Cost Price (Vat included) + mark-up (50%) = Selling Price
27 August 2004: R26/26% DF (Vat excl)(Osman,2004:6)	SEP < R100 then DF \neq 26% SEP \geq R100 then DF = R26 SEP < R100 then DF \neq 16% SEP > R100 then DF = R16
31 / 10/ 2006: New Tiered – Dispensing Fee(Osman,2006:6)	SEP < R70 then DF = R4 + 33% of SEP SEP \geq R70 but < R250 then DF = R25 + 6% of SEP SEP \geq R250 but < R1000 then DF = R 30+ 3% of SEP SEP \geq R1000 then DF = R50 + 1% of SEP
2007-2009 : Current DF Options(software vendor:2009)	There are 4 basic pricing codes. N = standard 50% mark-up Y = mark-up set per schedule S = single exit price T = tier pricing module
19 June 2009 : Draft DF for comment (PSSA Newsletter June 2009)	SEP < R100 then DF \leq R6 + 36% of SEP SEP \geq R100< R250 then DF \leq R32 +10% of SEP SEP \geq R250 < R1000 then DF \leq R45 + 5% of SEP SEP \geq R1000 then DF \leq R65 + 3% of SEP

Table 2.3 Dispensing Fee Structure in Chronological Order

The validity of this pricing regulation has been challenged in the Supreme Court of Appeal, as shown in Figure 2.5.



Figure 2.5 Court Process to Date (Adapted from : Pharmaciae, Dec/2005, 13(4): 7)

On 30 September 2005, the Constitutional Court of SA ruled that, minor defects needed to be corrected in the Medicines Control Act of 1965. However, with regards to regulations 10 and 11, the DF arrived at is not appropriate, hence invalid but pharmacists being ethical should not exploit the situation by charging excessive fees in lieu of contravening Schedule 42 of the Pharmacy Act, 53 of 1974 (Pharmaciae, 2005).

Kohn (2004) states that the Australian model bears no resemblance to the 26/26 and 16/16 model. It uses tiered-pricing and provides for other charges. Kohn noted that, by imposing price control and over-regulating the dispensing fee in South Africa before expansion of the marketplace and greater access to state patients, could result in destroying the pharmaceutical service infrastructure of community pharmacy which would be difficult to repair.

According to the PharmAssist® pharmacy software program (supplied by ComputAssist) and used by many pharmacies there are four pricing mark-up structures available to retailers. Most pharmacists use the tiered pricing system linked to the SEP tables used by individual Medical Aids (ComputAssist, 2009).

The proposed DF, as contemplated in section 22G (2) (b) of the Act, shown in Table 2.3, is to be charged by pharmacists, seems to be an improvement on the 2006 tiered model, however any medicine pricing proposal should be:

- simple and flexible;
- respond to external pressures.

This proposal is the result of the current government fee truce reached with pharmaceutical stakeholders (SAPJ, 05/ 2008).

2.5.2 Professional Fee (PF)

The study by Butler (2006) on quantifying dispensing service in South Africa using a pilot project concluded that the time taken to dispense by the pharmacist is independent of the cost of the medicine, but dependent on the nature of the

prescription, which should be reflected in the proposed professional fee (PF) structure for pharmacists.

Abedian, Strachan and Ajam (2001), illustrate the context for a caring service in the public sector, mimicking the private sector as shown in Figure 2.6.

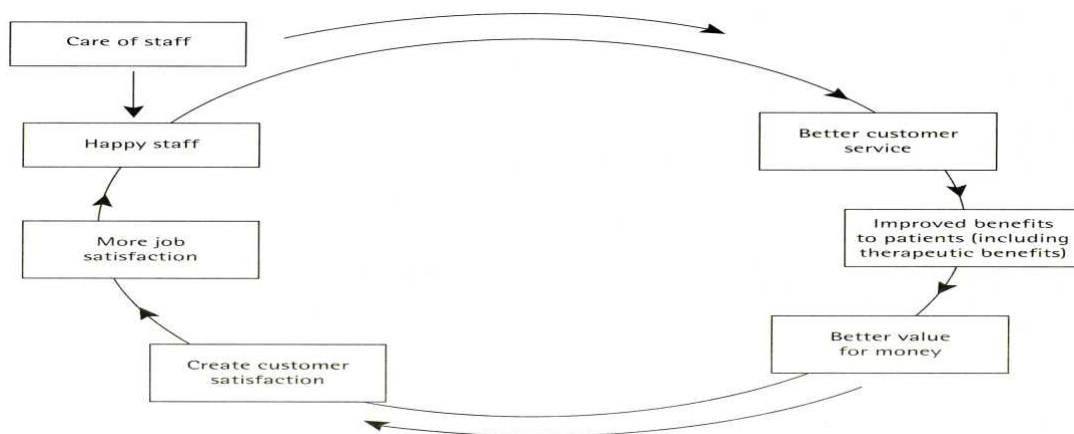


Figure 2.6 Context for a Caring Service (Source: Abedian, *et al.* 2001: 98)

The paradigm shift from selling products at a profit is changing, to rendering expected professional services (Pharmaciae Dec/ 2004).

Futter (2001) explained the social and political status and how these were impacted on by the tariff. Figure 2.7 attempts to provide an argument for patients and society giving pharmacists the authority to earn a living. The new PF and services associated with it will then be affected by the level of authority.



Figure 2.7 Patient Authority Level (Source: SAPJ, Sept/2001, 68(8): 30)

The fact that the new DF and PF are out for comment currently (June 2009), heavily exposes a huge gap during the planning stage of the medicines pricing legislation ten years ago. If both proposed fees were intensely studied to finalize baseline fees prior to implementation from 2003 onwards then the negative impact of piece-meal legislation on retail pharmacy may not have occurred.

2.6 The Pharmaceutical Value Chain and Community Pharmacy

According to Mossialos, *et al.* (2004), pharmaceuticals pass from manufacturer to the patient via a distribution chain of wholesalers and pharmacists. Medicine distribution, as per Taylor, Mrazek and Mossialos (2004), as cited in Mossialos, *et al.* (2004), spans the links in the pharmaceutical 'value chain' between manufacturers and the patients; the primary actors being wholesalers and pharmacists in community and hospital settings, on whom focus is drawn. The pharmaceutical value chain is depicted by the following Figure 2.8.

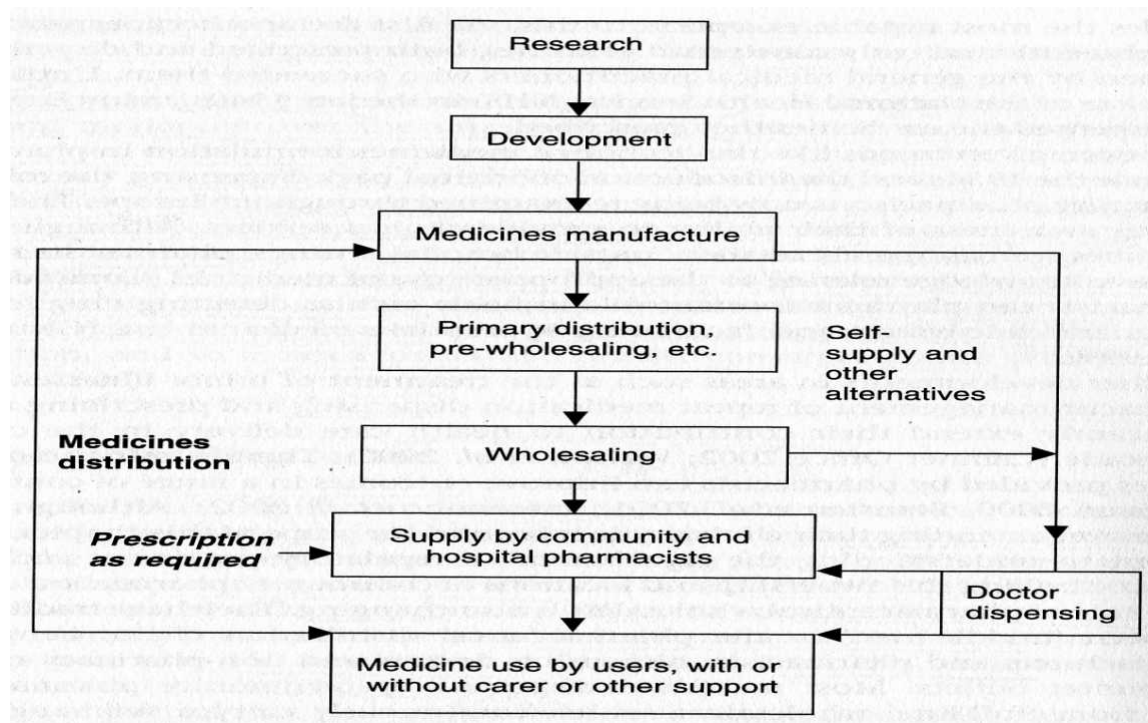


Figure 2.8 The Pharmaceutical Value Chain (Source: Mossialos, *et al.* 2004: 197)

Insight into the tensions inherent in the role of community pharmacists as both private retailers and health professionals expected to work closely with other clinicians in the delivery of well integrated healthcare gives rise to the following challenges:

- best use of healthcare technologies and patient education on drug utilization;
- nature of economic incentives anywhere in the regulated medicines supply chain in terms of pharmacy ownership, medicine prices and dispensing fees;
- informed patient choices so as to drive service improvement through competition as apposed to regulation;
- political, social and financial forces that contribute to regulatory innovation or stasis.

2.6.1 Community Pharmacists

There are about 461 community pharmacies across KZN (SAPC, n.d.) supplying medicines. The average population according to Mossiolos, *et al.* (2004), are served by community pharmacists.

In European Union (EU) countries, community pharmacists work with greater autonomy allowing delegation of dispensing. There are direct regulations on pharmacists to population ratios in EU countries.

Pharmaciae (Sept/2005) discussed the attributes of a pharmacist as outlined in Table 2.4. In the face of change, the Pharmacy Council expressed concern that, community pharmacy cannot be business as usual and pharmacists would have to embrace change and become service oriented.

1. Patient focused
2. Advise patient on non-pharmacological treatment
3. Provide his/her services in a semi-private or consultation area
4. Provide a full range of comprehensive services
5. Advise patient of cheaper generic products
6. Provides information to ensure the safe and effective use of medicine
7. Keeps patient profile and records of sale of medicines
8. Assess the outcome of the therapy with the patient's co-operation

Table 2.4 Attributes of a Pharmacist (Adapted from: Futter, 2006)

Futter (2006) succinctly explains how community pharmacists need a common framework to sustain their social relevance. This means moving from ‘trading professionally to becoming a professional trader’ as depicted in Table 2.5.

CRITERIA	OLD ROLE-DISPENSING PRODUCTS	NEW ROLE-PROVIDING PHARMACEUTICAL CARE
1.Orientation 2.Objective: 3.Decisions focus on: 4.Revenue comes from: 5.Services support: 6.Success measure: 7.Space organized : 8.Records kept to:	Product Product to Customer Business Inventory; Mark-up; Number of Prescriptions Display and Sell Products Meet Legal Requirements about Medicine Products	Service Pharmacist to Client The Client Professional Fee The Client Client Outcomes Meet Clients' Needs Support Client Care

Table 2.5 Contrasting Old and New Roles (Adapted from: Futter, 2006)

KL1 (2009), refers to the concept of General Practice and Community Pharmacy (GP/CP), states that health promotion must add value to professional action and must be considered as a separate product or service to be delivered, either as “added value” in a competitive situation that goes with a product or as services to be reimbursed by consumers or alternate healthcare system payment mechanism. KL1 (2009), citing Rifkins (2000), explains this approach as “gain sharing”, implying that by moving from selling drugs to providing services, businesses “move up the value chain”.

Osman (2004) states that, if the proposed regulations cause manufacturers and distributors to close, then pharmacies close and medicines are inaccessible to consumers which was definitely unintended by legislation.

However, Mossalios, *et al.* (2004), state that regulatory strategy for EU pharmaceutical supply aims to combine the advantages of scale in pharmaceutical wholesaling and competitive consumer retailing with the benefits of professionally delivered personal care may be able to offer medicine users further value. To achieve these requires deregulation in terms of ownership and community pharmacy

operations, so South Africa may be on track in this respect, especially once the draft Code of Practice for the Marketing of Medicines becomes regulated, meeting the requirements of section 18C of the Medicines Act which will enable the formation of a Marketing Code Authority (MCA), leading to ethical marketing of health products in South Africa, right across and down the supply chain (Beaumont, 2008).

Burns, *et al.* (n.d.) use Porters' popular value chain, to explain the value created within a given business helps it to contribute value along the inter- business supply chain.

Burns, *et al.* (n.d.), undertook 'The Wharton School Study of the Health Value Chain' to show that in the healthcare industry value chain represents more aspiration than reality. Co-ordination, widespread strategic alliance formation, knowledge sharing, inter-firm trust and competing value chains oriented to delivering the greatest customer value at lowest total cost, is lacking among stakeholders.

This study drew consensus that the supply chain acts more to push products down the chain rather than pull them from the customer due to a lack of information at provider level at the point of consumption. Consequently providers order products based on just-in-case inventory planning. This makes for a case for, just-in-time ordering, in view of the regulations before South African pharmacists but demands operational changes all along the supply chain.

Barringer and Ireland (2008), reiterate that Porters' value chain concept has been a widely adapted tool for developing business strategy and analyzing competitiveness; which gives rise to identifying opportunities and the crafting of business models. The value chain of both selling products and service in a pharmacy can be studied to spot where additional "value" can be added in some meaningful way.

The 58th PSSA Conference (2003) noted that pharmacy was the essential link in the healthcare chain. Zimmerman cited in HMR Africa (2005) states in the Council for Medical Schemes Annual Report 2003-2004, that in terms of choices for the future of private healthcare, the South African scenario may seem unique but the underlying problems have a universal tone. Zimmerman (2005), quoting Porters' view on

healthcare reform based on his Harvard Business Review (2004) paper, on “Redefining Competition in Healthcare“, explains that these are pertinent to South Africa, based on the evolution of reform models.

Past – objective: reduce costs, avoid costs

Present – objective: enable choice, reduce errors

Future – objective: increase value

Zimmerman (2005) further explains Porter’s recommendation that information must be provided on providers’ experiences, outcomes, prices to facilitate consumer choice and incentives should be designed to increase value rather than shift costs. These principles apply to community pharmacy as a service provider equally because adding value to various segments of the value chain must be with the effort to satisfy the consumer. This would increase margins and give a positive value chain.

Burns, *et al.* (n.d.) strategically analysed that partnerships improved efficiencies between value chain players as shown in Figure 2.9.

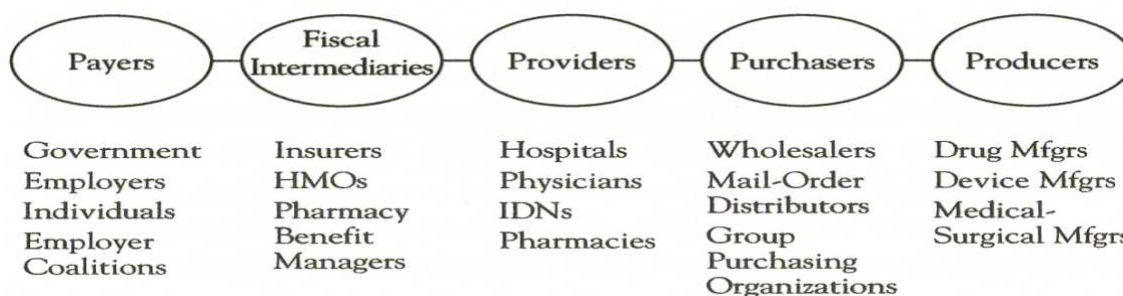


Figure 2.9 Pharmaceutical Value Chain (Source: Burns, *et al.* n.d.)

Figure 2.9 would impel policy-makers to:

- be responsible to consumers for safe, good quality and efficacious medicines;
- control health expenditure and drug costs;
- promote business conducive regulations (Burns, *et al.* n.d.).

Managed Health System (MHS) appointed by PSSA, surveyed the impact of the draft pricing regulations on community pharmacy according to Osman (2004).

It was pointed out that whilst South African medicines were highly priced, the dispensing fee of R1,30 (excluding VAT) had remained static for the past 25 years, making pharmacists dependent on profit margins for income. MHS notes the following impact of the pricing legislation:

- "one-size- fits-all" at all levels of distribution channel would be harmful;
- affordability will be enforced at the cost of access and availability;
- the average pharmacy was operating at a loss, at that time; hence the proposed changes could result in closure of two out of three pharmacies.

MHS, suggests the following:

- price should be used as a market rationing mechanism;
- any system should be simple, flexible and efficient as possible.

The DOH (2005) states that it had received 260 license applications for retail pharmacies in 2004, of which 120 were new pharmacies, 87 for ownership of existing pharmacies and 57 were relocations. Van Tonder (2006), reported the collapse of a Johannesburg based pharmacy chain group, citing the low dispensing fee the government enforced on pharmacies as contributing to the liquidation.

Moodley (2007), outlines the following impacts of the pricing regulations:

- lack of transparency created new perversities contrary to the initial intention;
- the reduction of students entering the profession would add to the HR crises;
- designated service providers (DSPs) are eroding community pharmacies ability to provide comprehensive patient care because penalties are levied to patients who choose not to use DSPs;
- private-public partnership agreements have been delayed, prolonging mutual benefits.

Carruthers (2004), states the following business impacts of the pricing legislation:

- bank overdrafts are put at risk;
- staff retrenchment becomes a reality;
- domino effect, supplier relationships e.g. with wholesalers strained.

Tayob (2005), states that a positive impact is the paradigm shift from shopkeeper to professional service provider, recommending the need for business models to standardize practice in the pharmacy profession. Given such realities, the future for pharmacy service regulation is one of piece-meal evolution; it seems, rather than dramatic revolution.

2.6.2 Wholesalers

The Mercury (2006), states the following impacts of the medicines pricing regulations on wholesalers:

- contracts had to be re-negotiated between wholesalers and manufacturers with respect to the logistics fee, averaging 9%;
- the difference between wholesalers and distributors needs to be clarified;
- buying groups resulted; causing claw-backs;
- delay in defining logistics service and fee causes upstream and downstream pressure, leading to “gaming” in the absence of a fixed fee.

The NAPW (2009) conference highlights various challenges, impacts and opportunities as shown in Table 2.6.

ISSUE	DESCRIPTION	REGULATION IMPACT
IMPACTS	-logistics fee	Negative(N)
	-“claw back” discounts increased “pseudo- wholesalers”.	N
CHALLENGES	-more complex supply chain	N
	-margin pressures	N
OPPORTUNITIES	-regulation needs honest dialogue; direct participation and mutual understanding of parameters; negotiation, compromise, partnership; hence equitable regulation of an economic activity is required	Positive(P)
	-accessibility and affordability; hence price controls	N
CHALLENGES	-limited healthcare resources	N
	-high disease burden in S.A.	N
OPPORTUNITIES	-price of pharmaceuticals had increased over the past 20 years	N
	-need for government to protect vital wholesaler link in distribution chain	P
OPPORTUNITIES	-Broad-Based Black Economic Empowerment (BBBEE) needs the right BEE partner but embracing this change can increase government business	P

Table 2.6 Wholesaler Issues (Watson, 2007)

Wholesalers expressed unhappiness at National Association of Wholesalers (NAPW), 2008 conference, with the capping of logistics fees preferring a fixed fee while Beaumont of (IMSA) Innovative Medicines South Africa, stated that the multinationals had supported the capping of logistics fees as this would provide for competition on service delivery impacting on all stakeholders. The benchmarking of medicines, logistics fees regulation and the Code of Marketing Practice are for the medium to long term which would be regulated once the (NHI) National Health Insurance is implemented.

2.6.3 Consumers

Thom (2001) states that, consumers are likely to gain as the pharmacy industry faced overhaul; because chronic medication would now be 20% less.

The DOH (2007), stated that the transparent pricing system focused greatly on price; which was disseminated to consumers on website and on the medicine packs, which meant affordability and access for the consumer.

According to Futter (2005), consumers have great expectations based on their symptoms, health priorities, concerns, illness experience and experience with healthcare systems. Patients are expected to wait at a doctor's room, not a pharmacy. Consumers' expectations are important because it effects how they evaluate pharmacists' services. Futter (2005) recommends Batho Pele as a starting point.

Sidley (1998) states that, consumers perceived medicine prices being very expensive in the private sector, even on medical schemes because of escalating premiums, hence the legislation brought relief to consumers.

2.6.4 Role of Bankers in the pharmaceutical chain

According to Macleod and Terblanche (2004), South African financiers tend to be suspicious of any applications from a small business; working on a fair assumption that eight out of ten small businesses fail. A mentor makes bankers feel secure in giving a loan. Macleod and Terblanche (2004), acknowledge the following impacts:

- positive: Department of Trade and Industry's (DTI) recent amendment to the Small Business Act enabling the establishment of an advisory council for the minister, strengthened small business lobby;
- negative: other players such as labour and finance, are much stronger than DTI in pushing through laws and programs, however well intentioned, have negative consequences for small businesses.

Macleod and Terblanche (2004: 227) define financial risk as the volatility of net income accruing to the owner of the business. The higher the level of fixed charges (interest on loans) that needs to be met by the operating income of the business, the smaller the safety margin that remains for the owner. Bankers are interested in the above because, the debt to equity ratio is the ratio of the total funds provided by creditors to owners equity, consequently the amount of financial risk attached to the owners equity. Osman (2006: 6) states that pharmacists want a "dispensing fee which gives a fair return on investment", (ROI) which is a measure of the efficient use of capital and the efficiency of management.

$$\text{e.g. } \frac{\text{Net income after tax}}{\text{Total assets}} = ? \% \text{ (to assess compare industry average)}$$

Pharmacy industry averages are available from various sources, e.g. bankers.

According to Barrow (2001), bankers are not risk-takers therefore the five Cs of credit analysis applies:

- character: honesty of borrower;
- capacity: borrower's ability to repay the loan;
- collateral: borrower must pledge an asset that can be sold;
- capital: borrowers net worth is scrutinized;
- conditions: loan granting can be influenced by the current economic climate and amount of money required (Barrow, 2001).

Bankers hope that a business will succeed in order to be able to provide banking services to a loyal customer therefore bankers are more interested in being assured of a steady stream of earnings from the start of trading (Barrow, 2001).

According to Marino (2005), banks do have limitations. In South Africa, banks cannot involve themselves in the management or interfere in the daily affairs of a troubled business, since the rights of the other creditors may be prejudiced but banks have significant influence on how a troubled business can address its problems as follows:

- give continued and or further support conditional to an independent review of the business affairs;
- assist on a credible turnaround plan;
- insist on more regular, transparent and in-depth reporting and communication.

2.7 Competing Forces

The medicines pricing regulation promised to ensure fair and transparent pricing of pharmaceutical products, Osman (2004) states; however it had become absolutely clear that these regulations, if not amended, would be to the detriment of the supply of products in all sectors of the pharmaceutical industry. These regulations had been well intended but well planned implementation is needed to cushion impact on market operations to prevent irreversible damage and allow for correction to bottlenecks (Osman, 2004).

2.7.1 Force Field Analysis of Community Pharmacies

Competing forces in respect of community pharmacies can best be explained by the use of Kurt Lewin's Force-Field Analysis. Misselhorn (2005), explains that the use of Force Field Analysis gives greater objectivity in a holistic problem solving process, whereby the whole field or environment in which the organization is operating, is looked at. According to Rwigema and Venter (2006: 112) this valuable analysis tool, demonstrates where change is needed, after determining the forces driving or restraining change.

Table 2.7 illustrates the main forces.

Forces for Change	Forces Against Change
1. Opportunity recognition	1. Uncertainty
2. New leadership	2. Fear

Table 2.7 Example of Force Field Analysis (Adapted from: Rwigema and Venter, 2006)

2.8 Recent Legislative Issues

According to Reekie (1995), the thwarting of the Pharmacy Act Amendment Bill in late 1993, by pharmacists retarded the development of managed care in South Africa.

2.8.1 Lay Ownership

PSSA (2000), states that lay ownership of community pharmacies is against PSSA policy. "It is in the public's best health interest that community pharmacies in S.A. be owned by pharmacists registered with the SAPC; contrary to the motivation given in the (NDP) National Drug Policy for South Africa that lay ownership of pharmacies is to ensure the availability and accessibility of essential drugs to all citizens" (PSSA, 2000:1).

Kohn (2003), states that pending legislation has rung major changes for community pharmacy, which could be marginalized in the DOH's big business plan for pharmacy ownership, yet independent retail pharmacy invests a vast amount in the economy and towards taxes. Pharmaciae (2003) reports that, lay ownership was legislated in 2003 and pharmacists have been up in arms to date because the Certificate of Need is not being enforced. Pharmacists just cannot compete with the present dispensing fee structure to match volume sales of the corporate DSPs and mail order or courier pharmacies.

2.8.2 Pharmacists Assistant

Initially, the pharmacists assistants programme was looked at suspiciously by pharmacists but the Technical Report to Chapter 10 of the 1998 South African Health Review (Health Systems Trust, 1998) shows gross mal-distribution of pharmacists in the public sector which serves 80% of the population; hence the Pharmacists Assistant Programme was intensified to meet the impending shortage envisaged in the public sector (Pharmaciae, 2008).

The Pharmacy Council approved the new scope of practice for pharmacy support personnel falling into two categories:

- entry level-pharmacist's assistant;
- midlevel-pharmacy technician.

In the face of brain drain, this effort will have a positive impact on the availability of skilled pharmacy support personnel; who will be bound by the 'ethical rules', the code of conduct, the marketing code and all other relevant legislation (Pharmaciae, 2008).

2.8.3 Certificate of Need (CON)

According to The National Health Act (2003) the objective of the certificate of need is to ensure that health establishments are equally distributed throughout the country to enable equitable access to health services for everyone. Therefore, CON is more descriptive than the term license for these reasons.

Osman (2008) states that, one of pharmacies 2008 challenges was licensing issues where pharmacy and dispensing doctor licensing were still a problem area because CON had not come into operation and if it does come into existence then the impact must be studied on independent community pharmacies.

2.8.4 National Health Insurance

van den Heever (2009), a health economist, re-iterated the need for fundamental strategic health reform but warned that in countries with low levels of formal employment and high inequality a combination of supply-driven public services and

demand-driven private services is inevitable. van den Heever (2009), cites Prof. Mills (1994) who advised the DOH that the National Health Insurance would give rise to expectations about access to care. Further, Prof. Mills notes this involves a financing mechanism that if put in place before an efficient health service infrastructure, would cause justifiable grievance.

The mixed messages on National Health Insurance (NHI) was evident on the television debate, reported in HMR Africa (2009), with panelists agreeing that the two tier system might still have to prevail but in a diluted form because as Hassim (2009) states that the private/public sector divide would have to be taken out of the equation completely when planning resources to accommodate NHI, with all stakeholders clear on their role and potential contribution to the system.

However, pharmacists may have to start engaging in NHI deliberations with the DOH, as former Minister Hogan (2009), stated that, NHI was not going to simply be imposed but the DOH would engage with the private sector.

The picture painted of pharmaceutical sector statistics in 1994 Pillay (n.d.), entitled 'The SA Experience: Access, price regulation towards NHI', whereby comparison of the public vs the private sector, showed the discrepancies as in Table 2.8.

<u>PUBLIC SECTOR</u>	<u>PRIVATE SECTOR</u>
- serves 38 million people	- serves insured population of 7 million
- EDL supplied	- all registered drugs available
- <50% of pharmacists work in the public sector serving 80% of the population	- most pharmacists work in the private sector serving 20% of the population

Table 2.8 Public vs Private Sector

Pillay (2007), states that there was a lack of transparency across the healthcare sector, which concerned the DOH and impacted on the implementation of medicines pricing legislation but Kotze (1997), expresses concern that the Medicine and Related Substances Amendments Bill and the Pharmacy Amendment Bill were never discussed with key stakeholders by the DOH, showing lack of transparency, consultation and communication.

The appointment of a Facilitator for Health Pricing included in the National Health Act Amendment 2008, still being gazetted, would ensure improved transparency in negotiations on costs that forms the basis for prices. There is also a proposal for a Health Pricing Tribunal and health pricing inspector (HMR, 05 /2008).

Cloete, *et al.* (2006), advise that policy evaluation should be done either by internal implementation staff; specialized internal units; independent evaluators or special multidisciplinary evaluation teams because the key to this specialized activity is expertise, capacity, funding, time, and information which will determine the equity of evaluation.

2.9 Business Strategies

Change management business models are key to the survival of independent community pharmacies.

2.9.1 Innovation in Community Pharmacy

According to Tann and Blenkinsopp (2003), innovation is both an outcome (eg. service or product) and the process of innovating.

Figure 2.10 shows the differing perspectives on innovation.

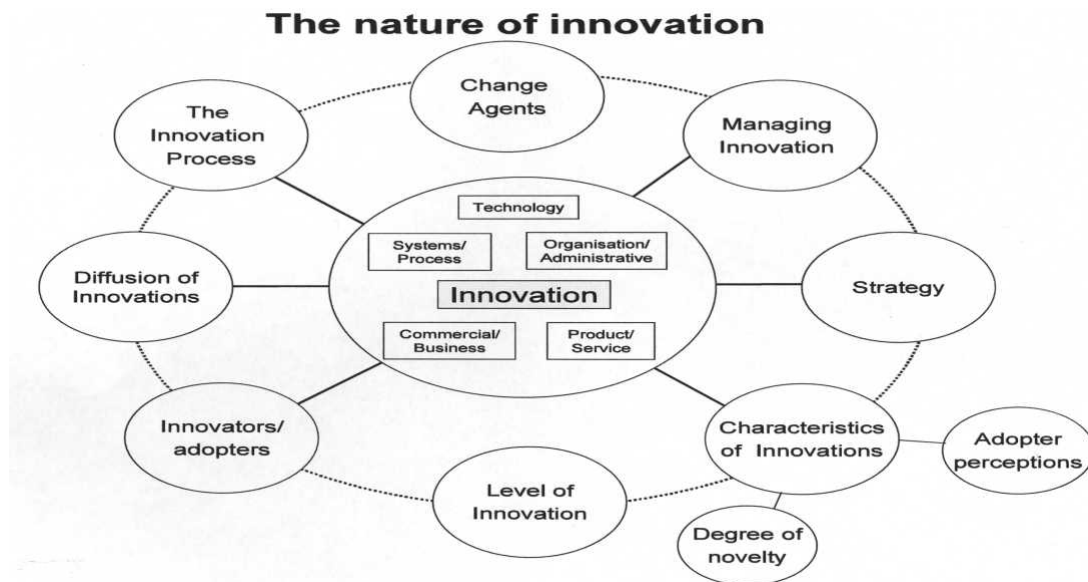


Figure 2.10 Perspectives on Innovation (Source: Tann and Blenkinsopp, 2003: 3)

Tann and Blenkinsopp (2003), undertook four case studies to explore innovation in community pharmacy in the United Kingdom's, National Health System (NHS). This resulted in formulating contextual factors in strategic innovation as shown in Figure 2.11

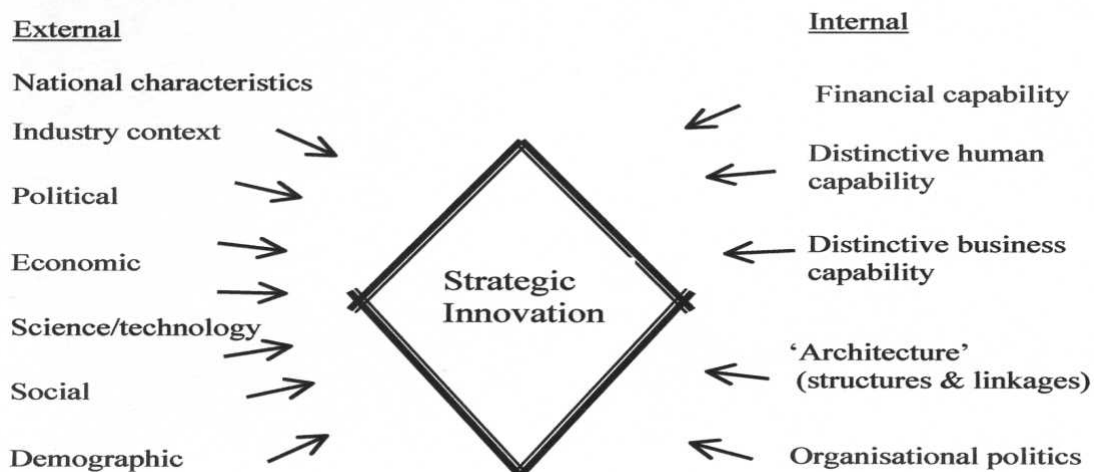


Figure 2.11 Contextual Factors in Strategic Innovation (Source: Tann and Blenkinsopp, 2003: 38)

This study clearly showed that innovation required additional resources; hence the debate on sustainability of NHI, even if phased in over five years because cash strapped independent retailers cannot become innovative (Tann and Blenkinsopp, 2003).

It can be concluded that the small independent community pharmacist does require advanced entrepreneurship strategies to survive the current economic recession and the impact of massive government regulations, both conditions being external and beyond the control of the ordinary retailer.

2.9.2 Location or Market Area

Truter (1999) states that retail pharmacy location is one of the important steps in a retail location strategy. The statistics of pharmacy license applications for relocation has a direct impact of the medicines pricing regulation; but Truter (1995) warns that relocating is costly and cannot be easily adjusted because of its long-term nature thus, the CON must be implemented.

Reilly's "Law of Retail Gravitation" (Truter, 1999) states that two cities draw trade from a smaller intermediate city or town in a more or less direct proportion to the first power of the population of these two larger cities, and in an inverse proportion to the distance to the square of each of the larger cities from the smaller intermediate city. This can be seen in Figure 2.12.

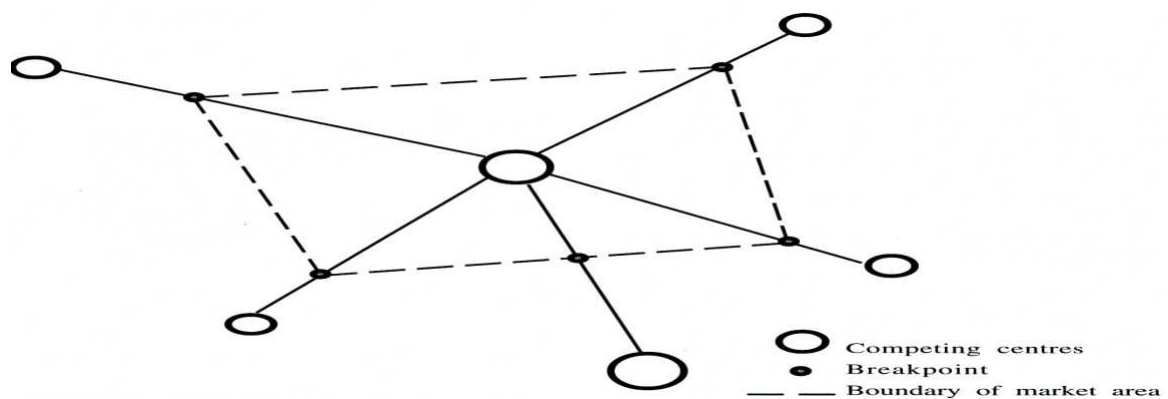


Figure 2.12 Market Area Demarcated with Breakpoints (Source: Truter, 1999: 26)

The major factors to consider for location are population characteristics; labor availability; closeness of supply sources; promotion; economic base; premises availability; competition and regulations. Location requires investment and must be continually re-evaluated to detect any changes in the market area (Truter,1999: 26). Incentives should be given to sustain rural pharmacies as is the practice with the NHS, community pharmacy model schemes (Pryce, 2009).

2.9.3 Service Differentiation

Truter (1999) recommends the need for pharmacists to use a service portfolio as a marketing tool i.e. a written description of services offered. The level of service offers the retailer competitive advantage based on service differentiation. Medical aids do pay for most extra services e.g. screening services.

Kruger (2008), elaborates on other pharmaceutical services in keeping with good pharmacy practice to negate the negative impacts of pricing regulations; shrinking profits; emergence of corporate pharmacy and customer demand. These services are:

- New Service Models: non-pharmaceutical: e.g. nail Salons;
- Product based Models: pharmacist advised therapy or PAT market;
- New Information based Models: e.g. disease management.

“Ex nihili nihil fit”, meaning ‘Out of nothing comes nothing’, sums up the opportunities available for success.

Futter (2009), states that managing stakeholder relationships (MSR) is based on the principle of good working relationships for sustainable success. MSR improves trust, provided a win-win outcome and secures the long term future of the pharmacy.

2.9.4 Medical Practice Business Plan

Adaptation and change management are vital to the retail pharmacist today as expressed in HMR (09/10: 2007). Medical business plans should be based on understanding the “cause and effect” principle in terms of the future of retail

pharmacy; that is, the ability to predict the future and plan how the practice will deal with this. The cause and effect diagram; also known as, Ishikawa or Fish-Bone chart; is illustrated in Chapter Five, in relation to the data analysis.

2.9.5 The Future of Community Pharmacy

Marino (2005) acknowledges that small medium enterprises play an important role in creating new jobs, promoting innovation and spurring the economy; therefore, good business management is equally important and a sound turn-around strategy will help to prepare for the long-term goals of the practice.

Watson (2003), stresses that new legislation has changed the game for both suppliers and pharmacies but the differing responses of a smart retailer can maximize opportunities; the legislation restricts pricing not retailing strategy.

Botha (2006), questions whether the health ladder had been placed along the wrong wall arguing that South African economic and socio-economic development should be the priority, noting that hardly any progress has been made, with respect to, the new Medical Schemes Act because medicine scheme product design is standardized and service delivery is tightly controlled, impacting negatively on community pharmacy, which primarily services the insured population.

Horner (2009), reports that the sick economy put patients health in danger because of the expected 16% medicine price increase due to rising input costs and the DOH's delay in increasing the SEP of medicines. United South African Pharmacists (USAP) confirms that fewer people are buying drugs, reflected in the declining profitability of community pharmacies, since turnover has remained static despite inflation.

The future means adapting to change where retail pharmacy evolves to avoid erosion by the changing healthcare landscape to meet the healthcare needs of all South Africans (Watson, 2009).

2.10 Summary

The introduction of the medicine pricing regulations and SEP has ushered in a new era, where the pharmacist, is not merely a distributor of medicines but a healthcare consultant providing professional advice and expertise.

The implementation process has been problematic with legal confrontation leading to dialogue and a fee truce by government. A viable dispensing fee together with a fair professional fee for services rendered has become imperative. Pharmacists will remain the first point of contact, hence their pivotal role in transformation of the healthcare delivery system in which affordability, access and quality needs to be maintained.

The next chapter evaluates research methodology and shows how this research was designed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The extensive literature review of chapter two, illustrates the complexity of the research topic. In order to produce high quality research based on logical rationale but tied to theory that could be either replicated or generalized, the technique of triangulation was used by Denzin (1978) as cited in Mouton (2001). This refers to the use of multiple methods of data collection; a similar strategy to Compbell and Friske (1959) which they termed multiple operationism. The underlying assumption is that, because various methods complement each other, their respective shortcomings can be balanced out.

3.2 Aim and Objectives of the Study

The aim of this study is to evaluate various impacts over the last few years on community pharmacies.

The four objectives have been specifically linked to the problem statements outlined in chapter one.

The objectives of the study are:

- to determine the actual number of independent community pharmacies that have closed in KwaZulu-Natal since the promulgation of the new medicine pricing regulations for the period from 2003 to 2009;
- to explore the attitude of bankers with regards to SME funding with the view to assess the financial risk profile of independent community pharmacies;
- to critically explore whether the pricing objectives are being met as per the legislation and to make recommendations towards the pricing regulations based on the principle of a transparent pricing system and an appropriate dispensing fee for the benefit of all stakeholders;
- to evaluate the future of independent community pharmacy.

3.3 Research Design and Methods

This research design was tailored to address the different questions in the semi-structured interviews and in the survey questionnaire with the aim to meet the objectives of this study.

3.3.1 Description and Purpose:

Mouton (2001: 55) states that, "a research design is a blueprint of how you intend conducting the research". Figure 3.1 describes this study:

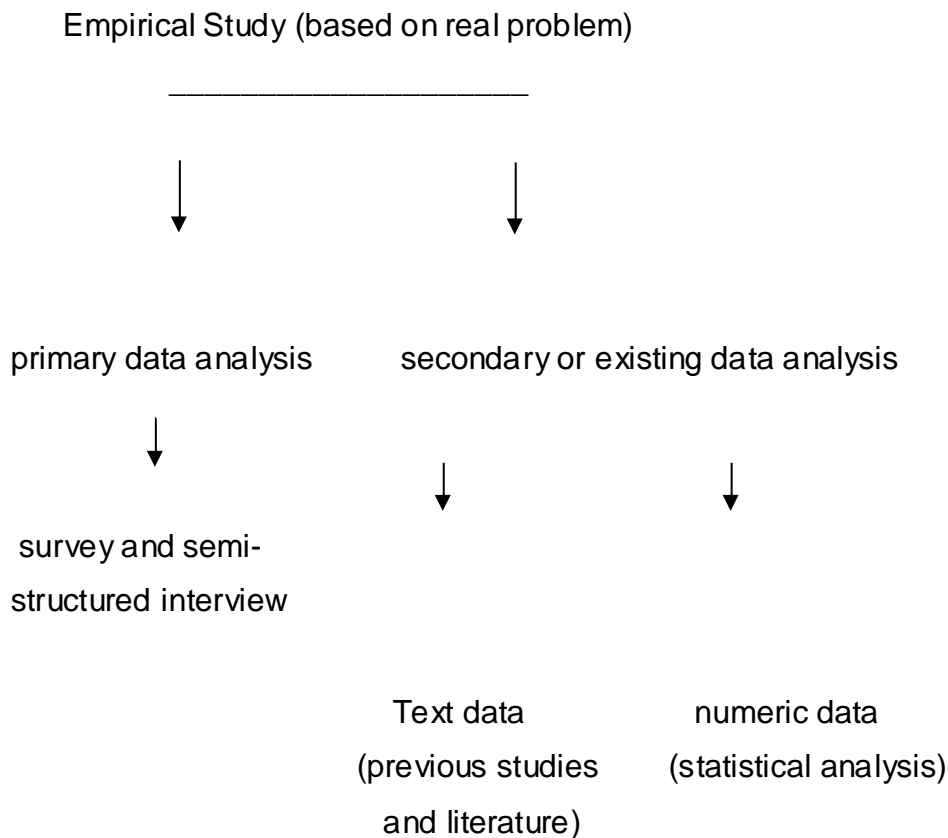


Figure 3.1 Research Design Steps (Adapted from: Mouton, 2001: 57)

According to Cooper and Schindler (2008: 70) a model in business research "is used to represent phenomena"; so it can be easily argued that the proposed tiered pricing

model is part of the medicine pricing model system that can be studied with the view of restructuring it based on economic theories which were cited in chapter one to explain the impact of the current medicine pricing model, on the private sector.

Hence, models should be developed through inductive and deductive reasoning. These are important to advance theories and help decision-makers because imprecise input can be problematic. Decision makers would have to review complex variables in order to derive a viable dispensing fee structure (Cooper and Schindler, 2008).

As the problems that would be encountered were unclear at the outset due to the public and private sector divides, the researcher chose exploration as per Cooper and Schindler (2008) in order to develop clear concepts on issues, establish priorities and improve the final design.

Cooper and Schindler (2008: 90), state that “taking a census requires that the researcher examine or count all elements in the target population”. Data collection strategies via e-mail, telephone, internet, personal interviews, computer and mail were considered. Questionnaires were participant friendly and pilot tested. All these factors were combined to produce a study that was multi- method for effectiveness.

According to Cloete, *et al.* (2006) policy analysis can utilise a descriptive approach ie. the interviews done but more importantly this impact study, with the use of triangulation, shows the consequences of public policy effects on real world conditions.

Pillay (2004: 239), in Terre Blanche and Durrheim (2004), states that “policy making is a political process influenced by a variety of factors besides research and empirical evidence; arguing that there are two defining features of a policy:

- a policy is developed to influence or shape behavior;
- policies are the result or outcome of some need”.

Pillay (2004: 239) states that government increasingly relies on research when framing new policies; emphasizing that in the policy process steps, pilot studies should be undertaken.

The findings of research on the National Health Insurance in the UK was a good example, Pillay (2004) asserts because it is driven ideologically and not by sound research. There was also lack of interest in taking research seriously by policy-makers. Hence, the International Health Policy Program (1996) has provided guidelines to ensure the increased role for research in policy-making (Pillay, 2004).

3.3.2 Construction of the Instrument

The creation of a survey question according to Cooper and Schindler (2008) is exacting and attention to detail is required to address many issues.

In mapping out questions for both the questionnaire and semi-structured interview, the researcher continuously changed order, type, wording and measurement options until the researcher pilot tested the questionnaires with the help of five retail pharmacists and both bankers and wholesalers which guided the researcher as to what needed to be refined in the respective questionnaires.

Question Categories and Structure

- administrative e.g. location
- classification e.g. sociological and demographic
- target questions (structured and unstructured to address objectives)

Question Content

This being an impact study, Cloete, *et al.* (2006: 183) state that impact studies typically ask “what happened” hence, the type of questions levied.

Question Wording:

These were simple, clear and non-taxing on memory. The Likert scale, with the traditional five levels of agreement was used. This was used to provide more

reliability and greater volume of data compared to any other scale (Cooper and Schindler, 2008: 310).

Ranking Scale

Ranking scales were used for some questions to assist the participant to directly compare 2 or more choices.

Question Quality:

According to Cooper and Schindler (2008: 362-366), the following constitute purposeful questioning:

- scope and coverage;
- participation;
- time.

3.3.3 Recruitment of study participants

For the semi-structured interview participants were known to the researcher. The survey questionnaire was administered to all 364 independent community pharmacies by way of a covering letter, wherein there was a full disclosure about the research; its aim and anticipated contribution.

3.3.4 Pre-testing and Validation:

Data was ethically accessed by obtaining gatekeepers letters from key persons; participating in semi-structured interviews. Consent forms were signed. Questionnaires were administered on voluntary participation.

3.3.4.1 Pre-testing or Piloting

According to Blaxter, Hughes and Tight (2006), informal piloting is advised to initially try out the questionnaire to view response and modify if necessary as explained in 3.3.2. The independent pharmacy questionnaire was sent to five retail pharmacists who made minor changes such as simplifying a word or correcting spelling which improved the questionnaire but did not alter the original content. This was also done

with both the bankers and wholesalers. Cooper and Schindler (2008: 358), promote the value of pre-testing as “the final step towards improving survey results”. There were no queries when the final questionnaires were administered.

According to Cooper and Schindler (2008: 358) pre-testing can lead to the following discoveries:

- “discovering ways to increase participant interest;
- question content, wording, sequence;
- exploring ways to improve overall quality of survey data”.

Participant pre-testing led to revising the questionnaire a few times. The researcher pre-tested the questionnaire with a few independent community pharmacists. The semi-structured interviews were administered only after finally seeking advice and discussing issues with key stakeholders and gatekeepers.

3.3.4.2 Validation

Sample Validity

According to Cooper and Schindler (2008) sample design is tested by its population representivity and its validity is measured by:

- accuracy: depending on the degree of bias;
- precision: ie. how closely the sample represents the population.

According to Mouton (2001) in human science research, which is applicable to this business research, “measuring instrument” refers to questionnaires or interviews.

Internal Validity

The Likert and ranking scales are widely used. This is confirmed by Neuman (2000: 192) who states that, reliability refers to the dependability or consistency of a measure and validity refers to its truthfulness or how well a construct and data fit together. The Likert scale was chosen so that index scores could be easily assigned to give a more precise quantitative measure of a participant’s opinion improving construct validity. Strategically, open ended questions were added at the end to test whether there was consistency in the answers given in the Likert scale choices, making the questionnaire an extremely relevant instrument for this study (Mouton,

2001). The main aim for the selection of data collection strategies was to reduce error during each stage of the research process in order to increase validity of the finding (Mouton, 2001).

3.3.5 Administration of the Questionnaire

The survey to independent community pharmacies was self- administered and sent via fax, e-mail or delivered. Semi-structured interviews were conducted with wholesalers and bankers.

Questionnaire	Self Administered	Interview
Survey	- Faxed	
	- e-mail	
	- Posted	
	- delivered	
Semi – Structured Questionnaire		selected gatekeepers were interviewed in person
Advantages	- reached inaccessible participants in KZN	good cooperation received from participants
	- expanded geographic coverage	
	- minimal staff requirement	- could probe,
	- participants free to think and answer	use follow up questions
	- rapid data collection	greater input
	- cost effective	
Disadvantages	- length prevented some response	- high cost incurred
	- own environment	- labour intensive
	distractive	and time consuming

Table 3.1 Questionnaire Administration (Adapted from: Cooper & Schindler, 2008: 223)

3.4 Data Collection Strategies

Cooper and Schindler (2008: 185,186) define triangulation as the combination of several qualitative methods or combining qualitative with quantitative methods. This study utilized one of the four methods of combining namely, conducting qualitative and quantitative studies simultaneously. According to Mouton (2001), the sample

design, techniques employed and criteria for choice of a sample size are important features.

Significant data sources were used for various aspects of the study. Responses included 115 completed questionnaires by independent retail pharmacists and the small sample of gate-keepers for semi-structured interviews. Secondary data via the internet, pharmaceutical institutions and impact studies done by other researchers were also collated.

Data collection strategies, firstly involved meticulously recording the process of data collection as outlined by Blaxter, *et al.* (2006); keeping notes by way of a research diary; box files, sticky notes, computer and card indexes. Secondly, by chasing up the scheduling of interviews with gate-keepers and keeping tabs on respondents for questionnaires by giving reminders. Data collection strategies ranged widely from reading, interviewing, questioning, informally chatting to pharmacists and pilot testing the research instruments before final administration.

The data collected characteristically varied from; numerical, words, primary, secondary, originating from both the qualitative and quantitative techniques used.

3.4.1 Defining the Population

There were three questionnaires utilized in this study:

- The big four South African banks constituted the population to which purposive sampling was applied. Two bankers were chosen and interviewed.
- There are five full line wholesalers in KZN, two of which were chosen and interviewed.
- Community pharmacists - Cooper and Schindler (2008: 383) state that the sampling frame is closely related to the population, in this case pharmacists in community practice.

For the community pharmacy group Medical directories were chosen covering the years, 1998/99 Medpages; 2003 Pharmacy Info Guide; 2007/2008 Medpages; 2008 The Pharmacists Information Guide, 2008/2009 Telkom Yellow Pages and 2009 Braby's online directory (15/06/09).

The total number of independent pharmacies identified from these sources were:

998/99 = 384 (independents)

2003 = 383 (many independents closed/ many chain groups opened)

2007/08 = 338 (many independents closed/chains excluded)

Pharmacies were divided into Central, West, North and South of KZN on the spreadsheet to ensure that a fair number of responses were obtained from the length and breadth of KZN, making the findings as representative as possible.

3.4.2 Sample Design for this Study

The sample design for this study was selected according to Cooper and Schindler (2008: 378) and shown in Figure 3.2.

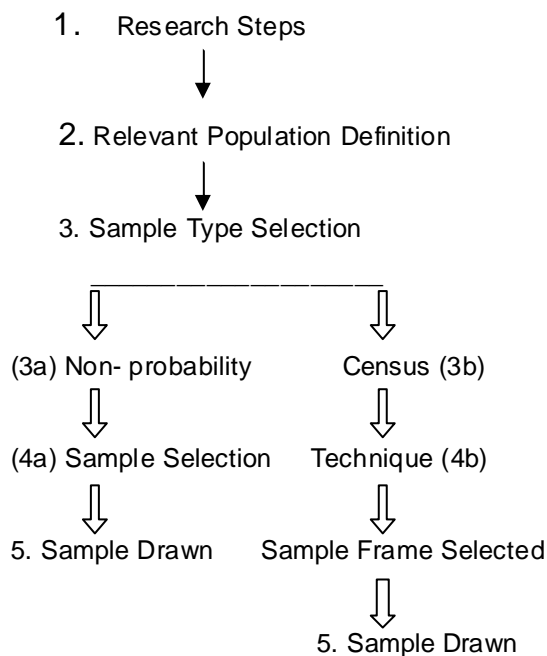


Figure 3.2 Sampling Design Steps (Adapted from: Cooper & Schindler, 2008: 378)

Explanation of Steps

1. the research steps targeted relevant stakeholders.
2. targeted population: bankers, wholesalers and independent community pharmacists.
3. non-probability: used for wholesalers and bankers (smaller number of participants)
census: used was for community pharmacists (larger number).
4. the relevant samples were drawn in step five using various data collection strategies or methods, discussed.

Step (4a) non-probability testing: qualitative sampling:

Cooper and Schindler (2008: 169) states that non-probability testing involves where little attempt is made to generate a representative sample, hence purposive sampling was chosen for this study because the researcher chose participants arbitrarily for their unique experience and for the conceptual or theoretical categories being economic (bankers) and supply side (wholesalers) which during the semi-structured interview gave valuable insight and contribution to this impact study.

The primary data gathered via the semi-structured interview was meaningful because of the use of creativity and skill to extract a greater variety of data and to achieve greater clarity and elaboration of answers due to sending interviews back for further amendments and comments.

Step 4 (b) census: population sampling:

Census sampling method was used to target all community pharmacists.

3.4.3 Defining the Sample

Census type sampling design was chosen for the independent pharmacy group. Questionnaires were administered to all independent community pharmacists upon division of KZN into four regions, Central, West, North and South. All community pharmacies were invited to participate in the survey.

Sample Size

Sample size is the number of cases selected from the population to use as the sample (Bhattacharyya, 2006: 392). However, for this study a census sampling was done on independent community pharmacists and purposive sampling was done on

the banking and wholesaler sectors. The researcher was aware that the chosen banks always financed retail pharmacies. The wholesalers chosen were two of the oldest and largest in KZN. The response rate results are discussed in Chapter Four.

3.5 Data sources

- Primary data was obtained from the semi-structured interviews and survey questionnaires.
- Secondary data was obtained from journals; newspapers; internet; government legislative and policy documents and text books.

3.5.1 Fieldwork Control

The data collected was documented in detail so that that data serves as follows.

- A historical record for the researcher and other possible researchers, to be used later in secondary data analysis.
- Secondary data collected from surveys, ie; sample design, fieldwork procedures coding protocols were recorded in a separate code book.
- A form of quality assurance involving dates for interviews; changing factors and tracking refusal rate, response rate and reasons for these were recorded (Mouton, 2001).

3.6 Data Coding

Coding errors were only relevant to the open-ended questions in the questionnaires to retailers and in the semi- structured interview. Five themes were identified which narrowed the focus of the topic. Very few questionnaires to retailers were incomplete; only with regards to the open ended questions; due to lack of time for one or two participants who felt that this section was repetitive.

3.7 Data Analysis

Mouton (2001), states that effective fieldwork during data collection, requires cooperation from the major role players, as well as, the availability of administrative

resources. SPSS or (Statistical Package for the Social Sciences Version 15) was used to quantify data obtained from the 115 completed questionnaires.

3.7.1 Statistical Analysis

The data analysis is presented as follows:

- graphs: descriptive percent statistics and comparison dispersion statistics were applied to relevant variables from the questionnaire and the results are presented graphically as bar charts;
- tables: inferential statistics were applied to certain groups of variables and presented as tables for ease of interpretation eg. Cronbach Alpha test; T-test; ANOVA test and Chi-Square test;
- special tables were designed for illustrating themes from the semi-structured interviews and the open-ended questions from the questionnaires;
- an overall impact analysis on affected stakeholders using qualitative data analysis.

3.7.2 Central Tendency Stats:

According to Smailes and McGrane (2000: 55), measures of central tendency refer to values of a variable that are typical or representative of a data set.

- Central tendency statistics reported in this study are, mean, median, mode, standard deviation, variance and range.
- “Variance is a technical term for statistical estimates of the variability observed in the sample measurements” (Bhattacharyya, 2006: 396).

“The range is a measure of variability that is the difference between the largest and the smallest value in a set of values” (Bhattacharyya, 2006: 391).

3.7.3 Significance Testing

The T-test is designed for comparing the differences between two means (Bhattacharyya, 2006: 394). According to Cooper and Schindler (2008: 503), a T-test is chosen when “the sample size is small and is generally applied to gender dispersions in research studies”.

3.7.4 ANOVA Test

The analysis of variance (ANOVA) test is used to examine the differences among means for two or more populations (Bhattacharyya, 2006: 379). In this study it is used to test between age groups and years of work experience and perceptions towards selected variables.

3.7.5 Chi-Square Test

This is a common method of analysis in survey research, used to compare frequencies. It is a skewed distribution whose shape depends on the number of degrees of freedom (df). As the number of degrees of freedom increases, the distribution becomes more symmetrical (Bhattacharyya, 2006: 382). According to Cooper and Schindler (2008: 503), Chi-Square is applied to test differences between proportions in populations and testing for independence.

3.7.6 Correlations

This is the existence of a relationship between two variables (which may or not be a causal relationship, i.e. correlation on its own does not infer causality (Bhattacharyya, 2006: 383).

3.7.7 Cronbach Alpha

According to Cooper and Schindler (2008: 293) Cronbach's Alpha uses specialized correlational formulas to measure the degree to which instrument items e.g. questionnaires are homogeneous and reflect the same underlying construct(s) so as to give a reliability estimate of internal consistency. This would show whether the questionnaire was robust.

3.8 Summary

Data analysis prepares the study to transmit the findings, implications; recommendations and conclusion. This chapter details the various research methodologies and provides support for the selected design and method. The next chapter provides a presentation of the results.

CHAPTER FOUR: RESULTS

4.1 Introduction

The research design adopted for this exploratory study was important for clarification of secondary data with respect to the medicines pricing regulation. This chapter summarizes the empirical findings based on data collected from completed questionnaires and semi-structured interviews. The data collected has been tabulated; expressed graphically and statistically analyzed in this chapter. The findings are discussed in Chapter Five.

The purpose of the data analysis is to ascertain the overall impact of the medicines pricing regulations based on the perceptions of various respondents.

The types of statistics used were descriptive, inferential and comparison statistics due to the research instruments gathering both qualitative and quantitative data. Furthermore, the nature of the topic required to illicit information about past and current experience, as well as, predictive trends because policy making is a continuous impacting process.

Descriptive statistics are used mainly to explore various issues related to the new medicine pricing and its impact on respondents.

Cronbach's Alpha test is used to measure the internal consistency and reliability of the research instruments. Correlations are done to test the strength of relationship between variables. T-test was performed in order to determine gender based responses with respect to specific impact variables as a result of the new medicine pricing legislation. ANOVA test was utilized and through probability measures, shows that if there are statistically significant differences or not, amongst the diversity of the population studied. Chi-square test is used to determine if there are statistically significant relationships between variables in terms of association or dependence. Comparison dispersion statistics between the respondent's perceptions and demographic factors such as area and age were also carried out.

4.2 Pharmacies

This section is the analysis of the responses to the survey of independent community pharmacies.

Response Rate

The response rate for the survey is calculated as follows:

- 20% refused to participate as per telephonic conversation with the pharmacist;
- 15% wanted to but had time constraints citing various reasons;
- 5% claimed to have filled in the questionnaire but failed to send it back, upon telephonic verification;
- 10% actually constituted pharmacies that did not exist or had one owner for two or three pharmacies or had locums who were restricted from participating, hence 50% of pharmacies, did not participate.

Actual Participation: = 50% of 364 = 182 pharmacies

Actual Response: = 115 completed questionnaires.

Hence, Response Rate = $\frac{115}{364} = 31, 59\%$ response rate

NB. s = Statement Q = Question

4.2.1 Position in the pharmacy - Q1

It was necessary to be aware of the role of the respondent. Figure 4.1 reflects the distribution of the respondents. The majority of the respondents 76.5% were the owner of the business and also the pharmacist.

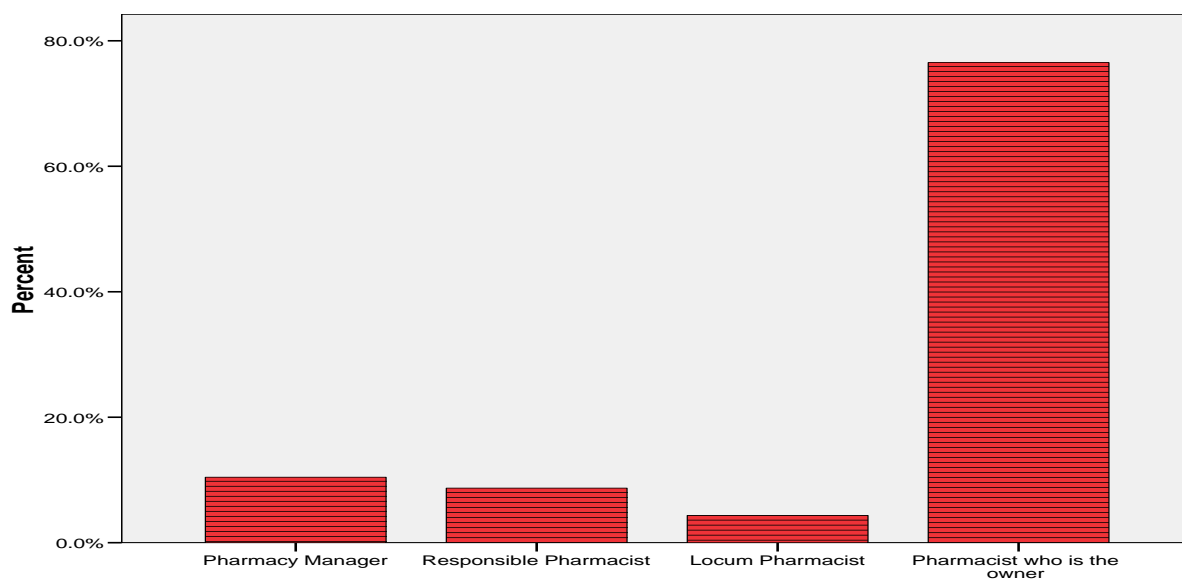


Figure 4.1 Position in the Pharmacy

4.2.2 Gender - Q2

		Frequency	Percent
Valid	Male	79	68.7
	Female	36	31.3
	Total	115	100.0

Table 4.1 Respondents Gender

Table 4.1 reflects the gender distribution of the respondents who participated in the study. Of the respondents 68.7% are male and 31.3% are female.

4.2.3 Age – Q3

Figure 4.2 depicts the age-group dispersion of respondents. The highest number of respondents, 38.3% is in the age group 41-50. The next highest being 26.1% in age group 31-40. The lowest was the age group of 26-30, where there were 7.8% of respondents.

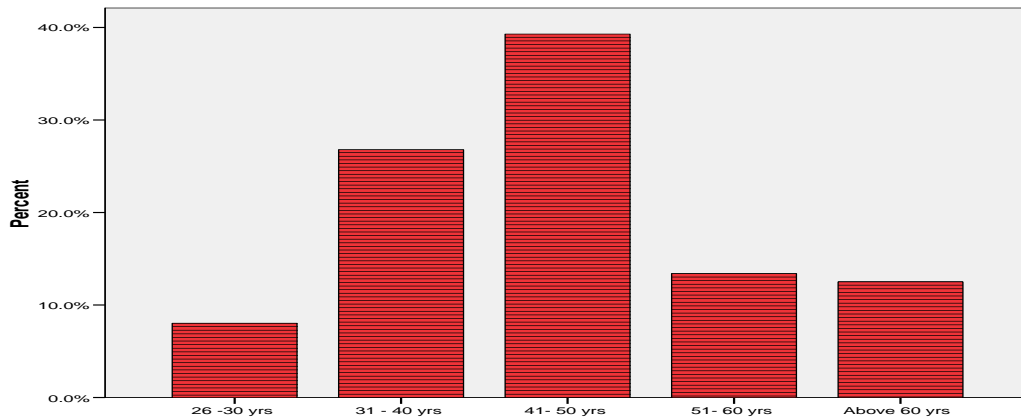


Figure 4.2 Respondents age profiles

4.2.4 Race – Q4

		Frequency	Percent
Valid	African	22	19.1
	White	27	23.5
	Indian	61	53.0
	Coloured	1	.9
	Total	111	96.5
Missing	System	4	3.5
Total		115	100.0

Table 4.2 Respondents Race Group

According to Table 4.2, African respondents comprised 19.1%, Whites 23.5%, Indians 53% and Coloureds were 0.9%.

4.2.5 Area of Respondents - Q5

Figure 4.3 shows the geographical dispersion of respondents where 44.3% respondents were from central Durban and surrounding areas, 20.9% from West-Midlands; 16.5% from North Coast and Rural North and 14.8% from South Coast and Rural South. 3.5% did not answer this question.

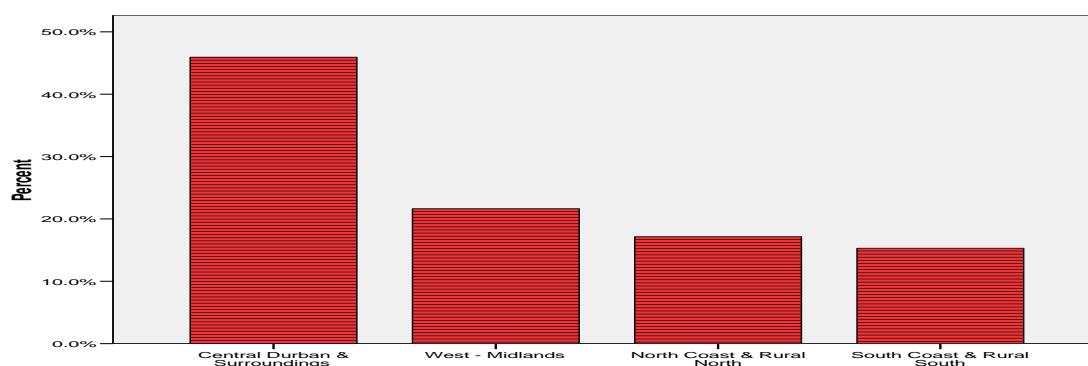


Figure 4.3 Area of Respondents

4.2.6 Ownership Pattern - Q6

Respondents were required to indicate the type of legal entity of the business in order to determine changing patterns of ownership. Figure 4.4 indicates that most (47%) are sole ownership; (46.1%) are in a close-corporation; (2.6%) are in a partnership agreements; (1.7%) fall within other legal entities and 2.6% of respondents did not disclose their ownership status. Whilst sole ownership and closed corporations remain popular, the effect of lay ownership could see change in ownership patterns of independent retailers.

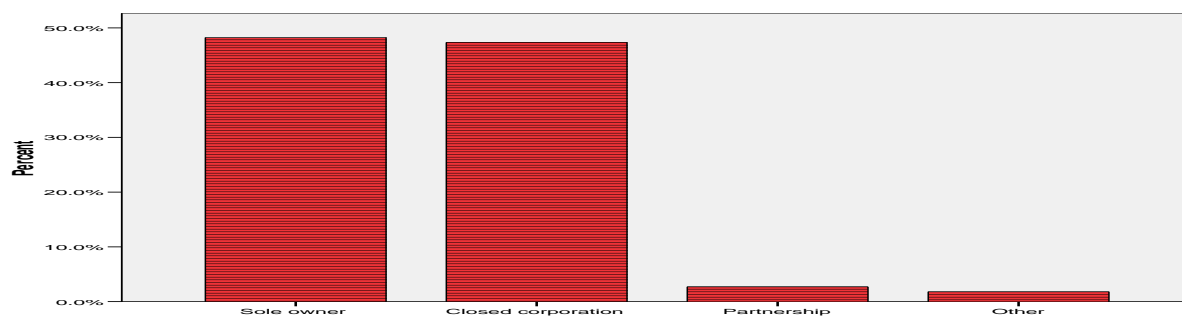


Figure 4.4 Pharmacy Ownership Type

4.2.7 Pharmacy Size – Q7

Table 4.3 shows the cross-tabulation of size of pharmacy with increased profitability of the new pricing. The majority of respondents strongly disagreed, 39.1% respondents with a pharmacy size above 100 square meters, 24.5% around 100 square meters and 7.3% around 50 square meters.

	S18: Has the new medicine pricing system increased profitability of the pharmacy?					Total
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
B7: Size of the pharmacy						
Around 50 m ²	7.3%	1.8%	.9%	.9%		10.9%
Around 100 m ²	24.5%	8.2%	1.8%		1.8%	36.4%
Above 100 m ²	39.1%	8.2%	3.6%	.9%	.9%	52.7%
Total	70.9%	18.2%	6.4%	1.8%	2.7%	100.0%

Table 4.3 Pharmacy Size and Profitability

4.2.8 Number of years in practice – Q8

It is considered important to establish a life-cycle of pharmacies. The results revealed that 38.3% of respondents fall mainly in the 11-20 years practicing category; 6.5% in the above 30 years; 5.7% in both the 21-30 year and 6-10 year categories and only 10.4% in the 0-5 years group.

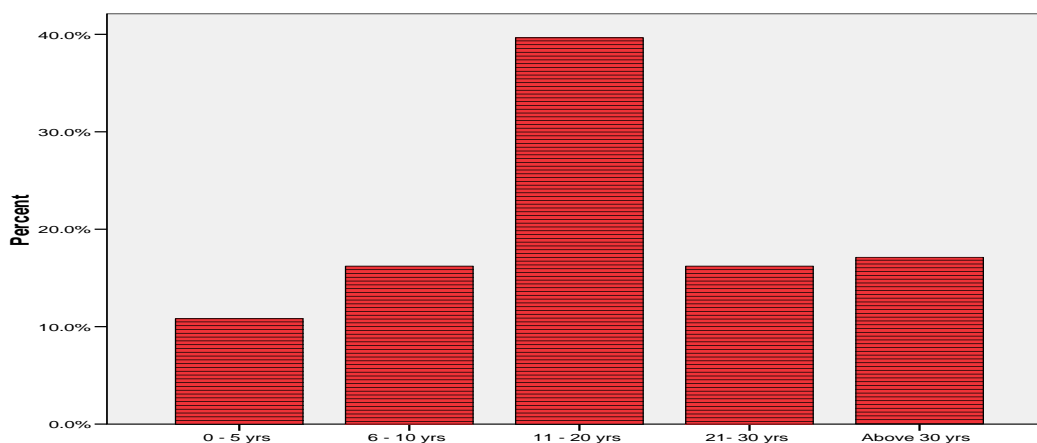


Figure 4.5 Number of Years in Practice

4.2.9 Number of employees in the pharmacy – Q9

Figure 4.6 illustrates that 35.7% of pharmacies employ between 3-5 staff; 26.1% employ between 6-10 staff; 23.5% employ above 10 staff and only 12.2% employ between 1-2 staff. Of the respondents 2.6% did not disclose the number of staff employed.

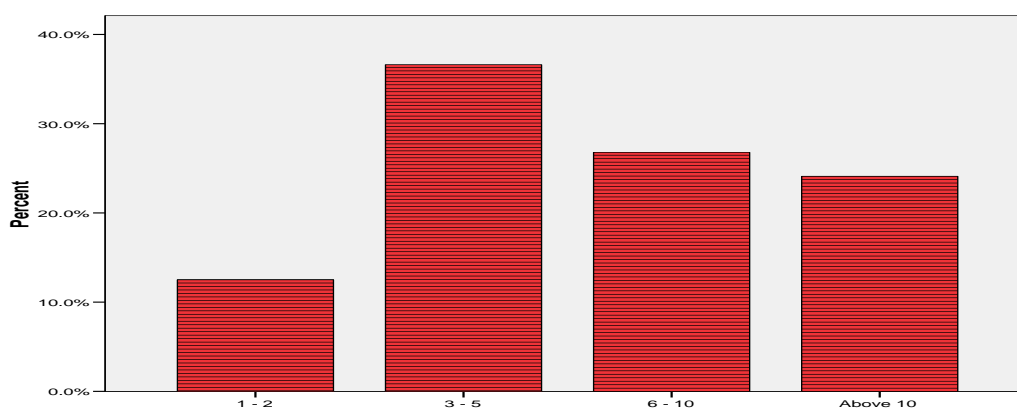


Figure 4.6 Number of Staff Employed

4.2.10 Awareness of New Medicine Pricing – Q10

The majority of respondents 98.3% were aware of the new medicine pricing legislation, whilst 1.7% of respondents did not answer this question.

		Frequency	Percent
Valid	Yes	113	98.3
Missing	System	2	1.7
Total		115	100.0

Table 4.4 New Medicine Pricing Awareness

4.2.11 Awareness of Pharmacy Closures

Table 4.5 shows that 32.2% of respondents did not know of any pharmacy closure within a 10 km radius of their business but 26.1% of respondents knew of 1 closure, 23.5% knew of 2 closures, 8.7% knew of 3 closures and 7.8% knew of 4 pharmacy closures.

	Frequency	Percent
Valid		
number		
of		
closures		
1	30	26.1
2	27	23.5
3	10	8.7
4	9	7.8
No	37	32.2
Total	115	100.0

Table 4.5 Pharmacy Closures Awareness

4.2.12 Reasons for Closures – Q12

The information from the collected data is summarized and described in terms of typical values, by defining variables and applying descriptive percentage statistics as identified below. Question 12 has 5 statements which respondents had to rank from 1 to 5 being the major to least reason for closures. Only the highest percentage responses are noted in Table 4.6 and Figure 4.7

Question	Statements	Description	Highest % only
12	s12.1	Uneconomical	53.9
12	s12.2	Emigration	13.9
12	s12.3	Career Change	12.2
12	s12.4	Retirement/Death	16.5
12	s12.5	Other	6.1

Table 4.6 Description of Explanatory Impact Variables

Figure 4.7 illustrates that most of the respondents ranked the major reasons for closure of pharmacies within a 10km radius in the order of, uneconomical (53.9%), retirement or death (16.5%), emigration (13.9%), career change (12.2%) and other e.g. liquidation (6.1%).

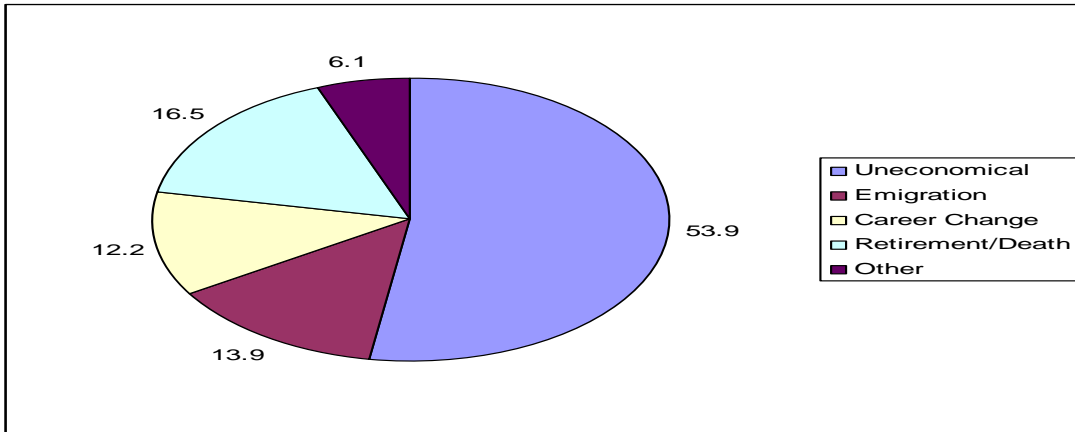


Figure 4.7 Ranked Reasons for Pharmacy Closures

4.2.13 Awareness of Opening of New Pharmacies - Q13

Figure 4.8 reflects that 40% of the respondents were not aware of any new pharmacy opening within a 10Km radius of their business since 2003. However, 27.8% knew of one, 20% knew of two, 4.3% knew of three, 5.2% knew of five and 2.6% knew of six. This question did not differentiate between independents or chain store pharmacies.

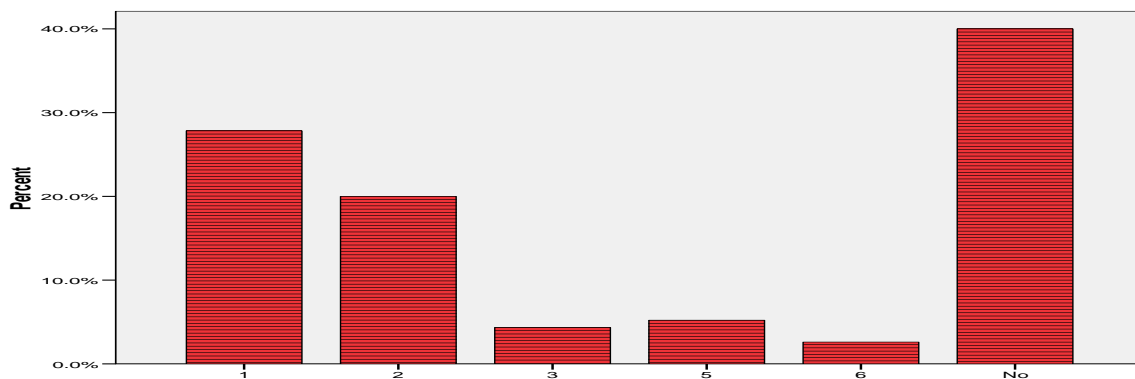


Figure 4.8 Number of New Pharmacies Opened

4.2.14 Promotion of Pharmacy as a Career Choice - Q14

The response indicates respondents despondency regarding the future of retail pharmacy whereby 79.1% said 'no' to the promotion of pharmacy as a career choice to school leavers and only 20.9% stated 'yes'. The response rate to this question was 100%. The high negative response of retailers not to promote pharmacy to young people suggests despondency.

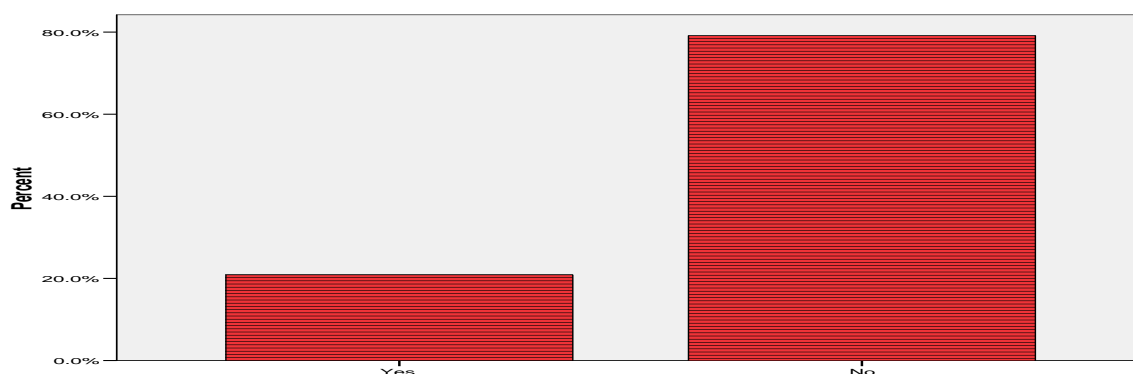


Figure 4.9 Promotion of Pharmacy as a Career Choice

4.2.15 Is Legislation based on Socialist Ideology - Q15

Table 4.7 illustrates that the majority of respondents 96.5% state that the medicine pricing legislation is based on ideology contrary to business economics, while 3.5% respondents said "no".

		Frequency	Percent
Valid	Yes	111	96.5
	No	4	3.5
	Total	115	100.0

Table 4.7 Belief that Legislation is Based on Socialist Ideology

4.2.16 DOH's Attitude - Q16

The response to the question on the DOH's attitude to independent pharmacies suggests pharmacists do not believe government understands their perspective to the current pricing dilemma, as 87.8% respondents stated that the DOH's attitude to independent retail pharmacies current pricing dilemma was negative with only 0.9 % stating positive and 10.4% were unsure.

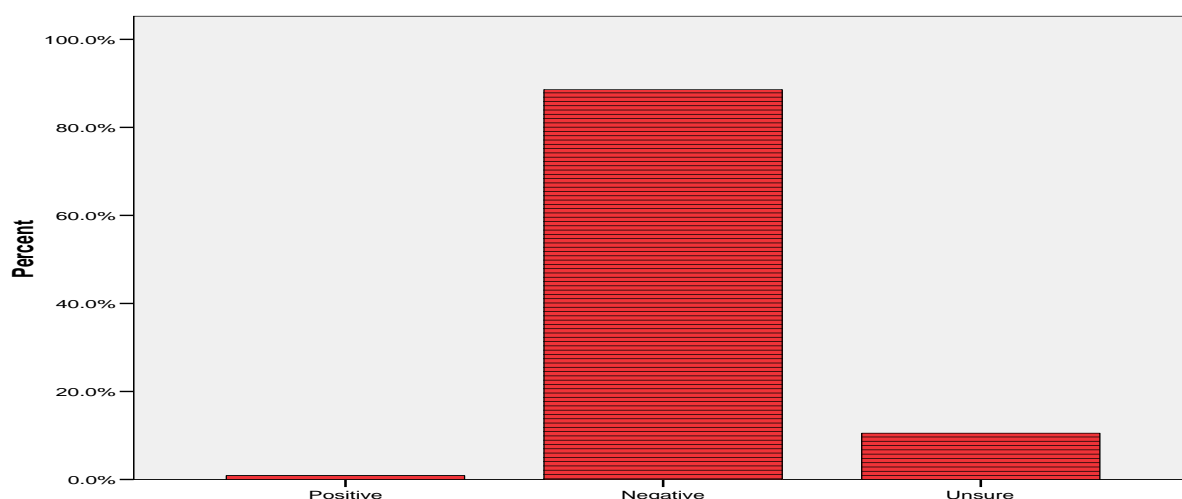


Figure 4.10 DOH's attitude to pharmacies

4.2.17 Specific Impact on Independent Retailers – Q17

As shown in Table 4.8 the statements are specific to the respondents as the medicines pricing impacts on each one, as they were coded in SPSS, using a Likert Scale. Table 4.8 shows the results for responses to Q17 to Q24. These are numbered as statements and reflected in Figure 4.11 as futuristic statements 1-6 for Q17.1 - Q17.6 and in Figure 4.12 shown as retailer impact statements 1-7 for Q18-Q24, respectively.

Questions	Statement number	Response Statement	Figure
17		<i>where do you see yourself in the next 5 years</i>	
	1	still in retail practice	The responses are shown in Figure 4.11 as Futuristic statements
	2	emigrating	
	3	changing career	
	4	closing down	
	5	selling practice	
	6	changing ownership	
18	1	increased pharmacy profitability	The responses are shown in graphical form in Figure 4.12 as retailer impact statements
19	2	negatively affected bank relationship	
20	3	improved patient service provision	
21	4	medicines cheaper to consumer	
22	5	you feel like a shop-keeper	
23	6	wholesaler relationship improved	
24	7	tiered pricing an improvement on older 16%/26% dispensing fee	

Table 4.8 Description of Study Variables for Specific Impact

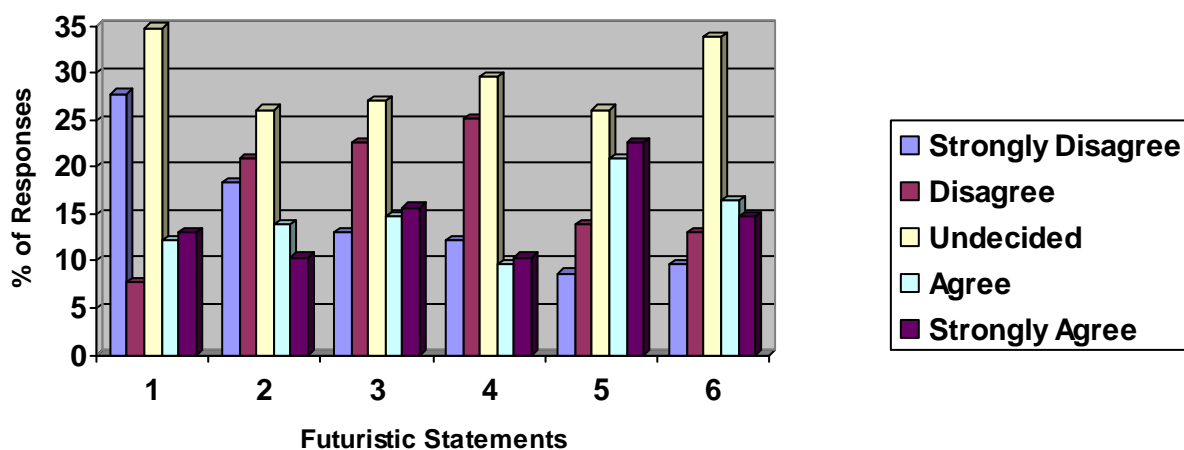


Figure 4.11 Specific Impact on Independent Retail Pharmacists

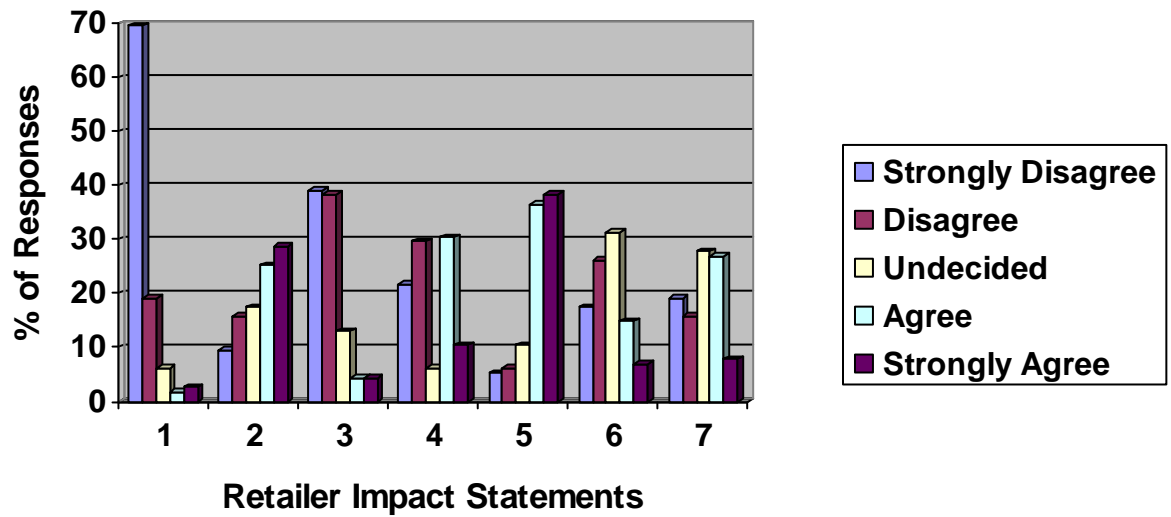


Figure 4.12 Specific Impact Variables

4.3 Central Tendency Statistics: Pharmacies

The researcher used central tendency statistics to demonstrate the respondent's perceptions to Q17 to Q24. Table 4.9 shows questions as statements eg.Q18 is s18. The results are discussed in section 4.3.1.

Question	Statements	Description
17	s17.1	still in practice
	s17.2	emigrating
	s17.3	changing career
	s17.4	closing down
	s17.5	selling practice
	s17.6	changing ownership
18	s18	increase pharmacy profitability
19	s19	negative banker relationship
20	s20	improved patient service
21	s 21	cheaper medicines to consumer
22	s22	makes you feel like a shop keeper
23	s23	improved wholesaler relationship
24	s24	proposed tiered pricing better than 16%/26% model

Table 4.9 Description of Study Variables (combined)

4.3.1 Central tendency statistics for variables s17 to s24

The statements s17 to s24, described in Table 4.9 relate to perceived impact of the medicines pricing legislation on retail pharmacists'. The results are shown in Table 4.10 where values for Mean to Range is given for each question shown as a statement. Table 4.10 is a discussion of of these results.

Central Tendency Statistics

	s17.1	s17.2	s17.3	s17.4	s17.5	s17.6	s18	s19	s20	s21	s22	s23	s24
Valid	110	103	107	100	106	101	114	111	114	113	111	111	112
Missing	5	12	8	15	9	14	1	4	1	2	4	4	3
Mean	3.00	3.00	3.00	3.00	3.00	3.00	1.00	4.00	2.00	3.00	4.00	3.00	3.00
Median	3.00	3.00	3.00	3.00	3.00	3.00	1.00	4.00	2.00	2.00	4.00	3.00	3.00
Mode	3	3	3	3	3	3	1	5	1	4	5	3	3
Std. Deviation	1.366	1.274	1.285	1.186	1.268	1.198	.895	1.334	1.051	1.374	1.120	1.155	1.243
Variance	1.866	1.622	1.650	1.406	1.609	1.435	.800	1.780	1.104	1.888	1.255	1.333	1.545
Range	5	5	5	5	5	5	5	5	5	5	5	5	5

Table 4.10 Central tendencies for variables related to the perceived impact of the pricing legislation

Mean

The mean is calculated as the arithmetic average of the responses.

Table 4.10 reveals central tendency statistics results for research statements s17.1 to s17.6 and s18 to s24, listed in Table 4.9.

The measurement scale code interpreted as:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

The Mean results for s17 to s24 as listed in Table 4.9 are depicted in Figure 4.13.

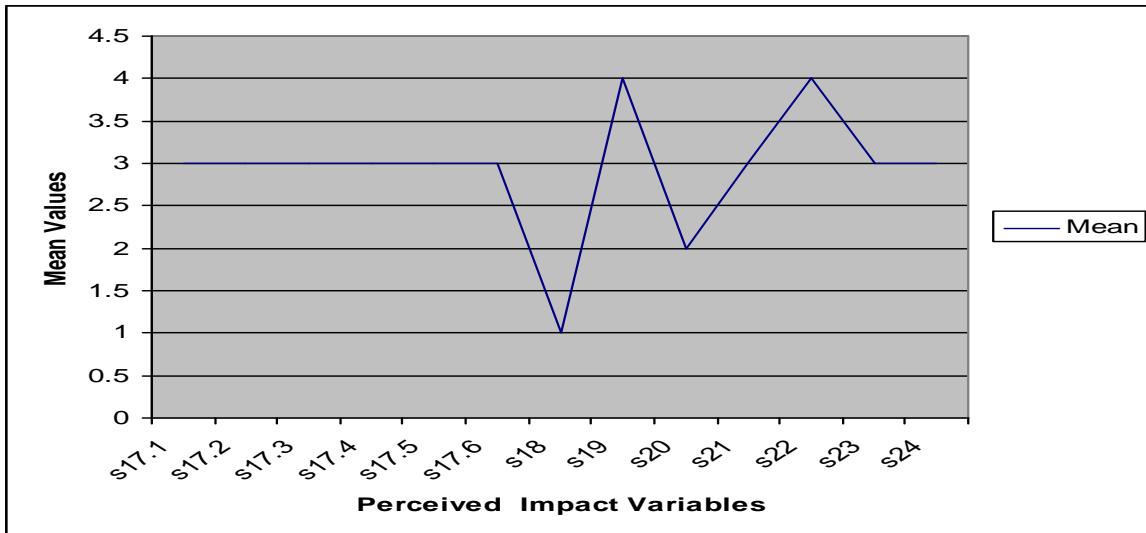


Figure 4.13 Mean Values for Perceived Impact Variables

The Mean results shows:

- Research statements s17.1 to s17.6 (still in practice, emigrating, changing career, closing down, selling practice and changing ownership, respectively) have a mean value of 3. This reveals that pharmacists' are undecided about their future due to the pricing regulation introduction;
- The s18 and s20 variables with mean values of 1 and 2 respectively revealing that pharmacists' disagreed with profitability increase and service provision improvement respectively but agreed with s19 having a mean of 4, that their relationship with their banker was negatively affected by the pricing regulations, as per Figure 4.13;
- With respect to s21 medicines being cheaper to the consumer, s23 improved wholesaler relationship and s24 proposed tiered pricing an improvement over 16%/26% dispensing fee, respondents were neutral to these study variables (mean 3) but agreed with s22 that retailers feel like shop-keepers (mean 4).

These mean results do have a bearing on the overall impact analysis on various stakeholders as discussed in chapter 5.

Median

- The median is the midpoint of the responses and the results on the skeptical future of retail pharmacists' are in keeping with a median value 3.
- The research statements s18 and s20 have a median of 1 and 2 respectively denoting disagreement whilst S19 has a median of 4, showing agreement.
- s21 = 2, s22 = 4, s23 = 3 and s 24 = 3, hence 23 and 24 are neutral, s21 shows disagreement and s22 shows agreement.

Mode

- The mode is the most frequently occurring number, and the results are in keeping with the respondents' perception of an uncertain future where research statements s17.1 to s17.6 have a mode value 3.
- Mode for s18 and s20 are 1 showing strong disagreement but for s19 the mode is 5 showing strong agreement.
- Mode for s21 and s22 are 4 and 5 respectively denoting agreement and for s23 and s24, mode = 3 indicating neutral is mode perception of respondents.

The Standard Deviation

The standard deviation summarizes how far away from the average the data values typically are:

- The research statements s17.1 to s17.6 about where pharmacists see themselves in five years time, have standard deviation from 1.186 to 1.366, revealing that variables show little difference in respondent's perception;
- Research statements s18 to s20 about increased profitability, negative banker relationship and improved service provision, respectively have standard deviation from 0,895 to 1,334, revealing that these variables show strong differences in respondents' perception;
- Statements s21 to s24, about cheaper medicines, shop-keeper status, improved wholesaler relationship and improved tiered pricing structure over older pricing

structure, respectively have standard deviation from 1,120 to 1,374; hence respondents' perceptions of these variables differ.

4.4 Inferential Statistics

4.4.1 T – Test

Statements s17 to s24 were compared; assuming equal variances, to the respondents' gender profile and the results are shown as per Table 4.11.

Statement variances	Equal	t	d f	Sig. (2 tailed)
S17.1	Equal variances Assumed	-.073	108	.942
S17.1	Equal variances Assumed	1.902	101	.060
S17.3	Equal variances Assumed	.965	105	.337
S17.4	Equal variances Assumed	-.123	98	.902
S17.5	Equal variances Assumed	1.508	104	.134
S17.6	Equal variances Assumed	.593	99	.554
S18	Equal variances Assumed	1.369	112	.174
S19	Equal variances Assumed	.438	109	.662
S20	Equal variances Assumed	1.825	112	.071
S21	Equal variances Assumed	.298	111	.766
S22	Equal variances Assumed	-.911	109	.364
S23	Equal variances Assumed	.765	109	.446
S24	Equal variances Assumed	.644	110	.521

Table 4.11 Relationships between study variables and gender using a T-test

Interpretation Rules:

1. If **p** value is less than or equal **$p \leq 0.05$** , statistically there is significant difference between groups opinions.
2. If **p** value is greater than **$p > 0.05$** , statistically there is **NO** significant difference between groups opinions.

- The **p** significant values are 0.174, 0.662, 0.071, 0.766 for research statements s18, s19, s20 and s21 and all are above 0.05. Hence, there is **NO** significant difference between different gender groups (male and female) perceptions for these study variables.
- Similarly, the results for s22, s23 and s24 are also above 0.05, thus, male and female respondents have almost similar type of perceptions towards these statements and no huge difference in the opinions of respondents.

4.4.2 ANOVA TEST

Not all the study variables were significantly related to the demographic factors, hence only the statistically significant variables have been tabulated in Table 4.12.

Interpretation Rules:

1. If **p** value is less than or equal **$p \leq 0.05$** , statistically there is a significant difference between groups' opinions;
2. If **p** value is greater than **$p > 0.05$** , statistically there is **NO** significant difference between groups' opinions.

Note: p indicates probability

Demographic factor	Significant study variables	Sum of Squares	Mean square	Sig.
Age Group	S 17.1 Between Groups Within groups Total	20.389 181.200 201.589	5.097 1.776	.027
	S 17.5 Between Groups Within groups Total	20.736 145.497 166.233	5.184 1.485	.010
	S 17.6 Between Groups Within groups Total	16.751 121.300 138.051	4.188 1.304	.016
	S 19 Between Groups Within groups Total	22712 168.204 190.917	5.678 1.633	.0
	S 20 Between Groups Within groups Total	112.888 110.968 123.856	3.222 1.047	.0
Race	S 17.1 Between Groups Within groups Total	13.849 184.208 198.057	6.925 1.806	.025
Number of years Experience	S 17.4 Between Groups Within groups Total	25.222 113.232 138.454	6.305 1.231	.001
	S 17.5 Between Groups Within groups Total	21.304 144.929 166.233	5.326 1.479	.009
	S 17.6 Between Groups Within groups Total	16.944 122.107 138.051	3.986 1.313	.021
	S 19 Between Groups Within groups Total	27.366 161.195 188.561	6.841 1.580	.003

Table 4.12 Significant Relationships between Study Variables and Demographic Factors using ANOVA Test

The ANOVA test results shows:

- there is **no statistically significant difference** in perceptions of different age groups of respondents towards the research statements s17.2, s17.3, s17.4 because these variables **p** significance values are 0.542, 0.125, 0.084 being above **0.05**;
- there is a **statistically significant difference** in perceptions of different age group respondents towards the research statements s17.1, s17.5, s17.6 regarding the future because these statements **p** significance values are 0.027, 0.010, 0.016 and all being below **0.05**;
- the response of various race groups to Q17 (being in retail practice in five years time) having significant differences in perceptions amongst different race groups,

- probably because whites being longer in practice can leave more easily, whilst blacks are currently entering retail practice and prefer to stay;
- a significant difference in the perceptions of respondents' regarding number of years of work experience and their likelihood to close down; sell practice or change ownership and their relationship with the banker.

4.4.3 Chi-Square

Interpretation Rules:

1. If **p** value is less than or equal **p ≤ 0.05**, there is a statistically significant relationship;
2. If **p** value is greater than **p > 0.05**, there is **NO** statistically significant relationship.

Independent Variables: Race vs Area

Chi-Square Tests

	Value	df	Asymp. (2-sided)
Pearson Chi-Square	7.1	6	.256
N of Valid Cases	10		

Table 4.13 Chi- Square Test for Race vs Area

Interpretation:

The above Chi-square () test result indicates **p** value is **0.256**, which is above 0.05. This result reveals there is **no statistically significant relationship** between race and area where independent pharmacies are located. These two variables are not associated and are independent each other.

Dependent Variables: Table 4.14 shows Chi-Square test for other relevant, statistically associated demographic factors

Demographic factor	Pearson Chi-Square Value	df	Asymp. Sig (2 sided)
Area vs ownership	24.494 111	9	.004
race group vs ownership type	14.342 110	6	.026
years of experience vs number of employees	42.948 109	12	.000
promoting pharmacy career vs social ideology opinion	7.353 115	1	.007
promoting pharmacy career vs DOH's attitude	8.099 114	2	.017

Table 4.14 Statistically Associated Variables

Interpretation:

The above Chi-square () test result indicates **p** value is **0.004**, which is below 0.05, revealing there is statistically significance relationship between variables area and ownership. These two variables are associated and dependent on each other. Similarly, for the above reasons variables race vs ownership, years of experience vs number of employees, promoting pharmacy as a career vs socialist ideology, promoting pharmacy as a career vs the DOH's attitude, as per Table 4.14, are associated and dependent on each other.

4.4.4 Correlations

In Table 4.15 the statements (s) correspond to the respective questions in the pharmacy questionnaire or see Table 4.9.

Statement	correlation	S17.1	S17.2	S17.3	S17.4	S17.5	S17.6	S18	S19	S20	S21
S17.1	pearson Correlation Sig. (2-tailed) N	1 110	-.428** .000 103	-.544** .000 105	-.577** .000 100	-.527** .000 105	-.630** .00 101				
S17.2	pearson Correlation Sig. (2-tailed) N	-.428** .000 103	1 103	.277** .005 102	.358** .000 98	.297*** .003 101	.343** .001 98				
S17.3	pearson Correlation Sig. (2-tailed) N	-.544** .000 105	.277*** .005 102	1 107	.459** .000 99	.551** .000 102	.513** .000 99				
S17.4	pearson Correlation Sig. (2-tailed) N	-.571*** .000 100	.358*** .000 98	.459** .000 99	1 100	.528** .000 100	.519** .000 98				
S17.5	pearson Correlation Sig. (2-tailed) N	-.572** .000 105	.297*** .003 101	.551** .000 102	.528** .000 100	1 106	.813** .000				
S17.6	pearson Correlation Sig. (2-tailed) N	-.630*** .000 101	.343** .001 98	.513** .000 99	.579** .000 98	.813** .000 101	1 101				
S18	pearson Correlation Sig. (2-tailed) N							1 114	-.304** .001 111	.465** .000 114	.058 .542 112
S19	pearson Correlation Sig. (2-tailed) N							-.304*** .001 111	1 111	-.373** .000 111	-.159 .098 109
S20	pearson Correlation Sig. (2-tailed) N							.465*** .000 114	-.373** .000 111	1 114	.254** .007 112
S21	pearson Correlation Sig. (2-tailed) N							.058 .542 112	-.159 .098 109	.254** .007 112	1 113

	S22	S23	S24
s22 pearson Correlation Sig. (2-tailed) N	1 111	-.117 .224 110	-.230** .016 .110
S23 pearson Correlation Sig. (2-tailed) N	-.117 .224 110	1 111	.091 .342 110
S24 pearson Correlation Sig. (2-tailed) N	-.230** .016 110	.091 .342 110	1 112

** Correlation is significant at the 0.01 level 2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 4.15 Strength of Relationship between Variables

Interpretation Rules:

- the Significant value (probability value) $p \leq 0.05$, then there is a statistically significant correlation;
- Pearson correlation coefficient (r) values starts from -1 to +1;
- if - means negative correlation (If one variable increases, other variable will decrease);
- if + means positive relationship (If one variable increases, other variable will also increase);
- - or + indicates direction of relationship between two variables.

Strength relationship:

$r = .10$ to $.29$ or $-.10$ to $-.29$ small (moderate) correlation

$r = .30$ to $.49$ or $-.30$ to $-.49$ medium correlation

$r = .50$ to 1.0 or $-.50$ to -1.0 large (strong) correlation

Interpretation:

- The research statement s17.1 with other statements s17.2, s17.3, s17.4, s17.5, s17.6, s19 and s20 (see Table 4.9 for description) has **p** values 0.00, 0.00, 0.00, 0.00, 0.00. These **p** values are less than **0.05** and it indicates the statement s17.1 (still in practice) with other statements s17.2, s17.3, s17.4, s17.5, s17.6, s19 and s20 (improved patient service) have statistically significant correlation. The **-ve** sign in front of s17.2 (emigrating), s17.3 (changing career), s17.4 (closing down), s17.5 (selling practice), s17.6 (changing ownership) indicates negative correlation, meaning that that if pharmacists' remained in practice then pharmacists' would not eg. emigrate but the **+ve** sign in front of s20 means that if pharmacists' remained in practice, patient service would improve. Pearson product correlation coefficient **r** value 0.428 indicates medium correlation and 0.544, 0.571, 0.572, 0.630 indicates strong correlation between them. This study considered one major source of economic progress as being 'limits on government regulation' whereby regulatory policies that retard trade, retards economic progress. This strengthens the argument that, one of the roles of government for economic progress is not to

become heavily involved in trying to help some people at the expense of others. These results concur with Poete, as cited in Cloete, *et al.* (2006), seeing impacts as long term economic and social consequences of interventions. Hence, the **–ve** and **+ve** correlations measured depict the economic theory in reality;

- Similarly research statement s18 with other statement s19, s20, shows negative correlation between s18 and s19 which means that if one variable increases then the other will decrease eg. s18 if pharmacy profitability increases then s19 ie. the negative relationship with the banker will decrease;
- If r (coefficient of correlation) is positive, this means that if one variable increases, the other variable will also increase, hence if s18 increases then s20 (0.465) will also increase because there is positive correlation ie, if pharmacy profitability increases then patient service provision will improve, eg. in terms of accessibility of medicines.

4.4.5 Cronbach Alpha Test

The Cronbach Alpha test or Reliability test for variables s17, s18 and s20 (same as, Q17, 18, 20) is tabulated in Table 4.16.

Questions	Reliability Analysis-Scale (Alpha)	
Q17	Reliability Coefficients	
	N of cases = 95	N of items = 6
	Alpha = 0.414	
Q18 to	N of cases = 111	N of items = 3
Q22	Alpha = 0.537	

Table 4.16 Cronbach Alpha Test for Consistency and Reliability of Questionnaire

Interpretation Rules:

- If Cronbach Alpha value is between 0.4 to 0.7, indicates medium internal consistency and reliability;

- If Cronbach Alpha value is between 0.7 to 1.0, indicates high or good internal consistency and reliability.

Interpretation:

- Reliability analysis of the questionnaire's continuous study variables ie. Q17 and Q18 to Q22 reveals Cronbach's Alpha value of 0.414 and 0.537, respectively. This indicates that this research instrument has medium internal consistency and reliability.

4.5 Comparison Dispersion Statistics

The researcher undertook to investigate the study variables (s17 to s24) as a function of the demographic factors: area and age - group.

Due to the complexity of cross-tabulation the researcher has only highlighted the statistically significant results and these are illustrated in the Table 4.17.

Demographic factors				Statement with Strongly Agree Results									
Demographic Factors	s17.1 %	s17.2 %	s17.3 %	s17.4 %	s17.5 %	s17.6 %	s18 %	s19 %	s20 %	s21 %	s22 %	s23 %	s24 %
B5:Area of Respondent Central	6.6	9.1	8.7	8.3	11.8	7.2	2.7	16.8	3.6	4.6	15.0	2.8	1.9
West	3.8	2.0	3.9	2.1	4.9	4.1		3.7		.9	12.1	.9	2.8
North	1.9	1.0	3.9	1.0	4.9	3.1		5.6	.9	.9	5.6	.9	1.9
South	1.9		1.0	1.0	3.9	3.1		2.8		4.6	6.5	1.9	
B3:Age group 26-30 years	2.8	1.0	1.0							1.8			
31-40	6.5	4.0	4.8	3.1	3.9	2.0	.9	7.4	.9	1.8	10.2	2.8	2.8
41-50	2.8	5.0	5.8	4.1	10.7	8.2		12.0		2.7	17.6	1.9	2.8
51-60	1.9	1.0	5.8	3.1	5.8	5.1	.9	4.6	1.8	1.8	3.7	.9	.9
Above 60		1.0		2.1	4.9	2.0	.9	4.6	1.8	2.7	7.4	.9	

Table 4.17 Cross-Tabulation of Study Variables with Respondents Area and Age Groups

Interpretation:

- Table 4.17 results reveal comparison dispersion results of area cross-tabulation with s17 to s24 or Q17 to Q24. Only the 'strongly agree' percentages of respondents' perceptions as per geographic area are shown in Table 4.17. The results clearly exhibit dispersion of different group's respondents' e.g. for s18 the west, north and south did not agree at all that pharmacy profitability had increased, clearly denoting the peri-urban and rural bias and the increased negative impact of the pricing legislation on these pharmacies compared to centrally located pharmacies;
- similarly, the results of the 'strongly agree' percentages reveal comparison dispersion results of respondents' perceptions as per age group, clearly exhibiting dispersion of different group's respondents. Younger pharmacists in the age group 26 to 30 did not strongly agree with most of the statements, possibly due to not experiencing the change of the old pricing system to the new, that older pharmacists have had to adapt to.

4.6 Open-ended questions: Pharmacies

The researcher used open-ended questions requiring further comments to extract new data or build on existing data so that the objectives of this study could be adequately met.

4.6.1 Situational Impact of Medicines Pricing – Q25 TO Q30

Table 4.20 highlights the situational impact variables elicited from the respondents.

These form the most common themes arising from the open-ended questions, Q25 to Q30 to retailers and are shown in Table 4.20 in percentage results for themes described as statements, denoted (s).

A graphical representation of these themes are shown in Figure 4.14.

Question	Statement Number	Theme Description	Percentage Response
25	1	value adding role of pharmacist	54,8%
26	2	service oriented profession	27,83%
27	3	<i>factors limiting scope to be profitable</i>	25.74%
	4	designated service provider (DSP)	12.87%
	5	overheads (O/H) lay ownership	61.39%
28	6	<i>growth strategies adopted</i>	81.13%
	7	front shop and OTC focus staff reduction	18,87%
29	8	stakeholder relationships prior to legislation	54,8%
30	9	<i>pricing structure recommendation</i>	44.79%
	10	percentage with or without capping tiered pricing (fixed and flexible portion)	26.04%
	11	review for alternate, profitable structure	29.17%

Table 4.18 Description of Study Variables for Situational Impact

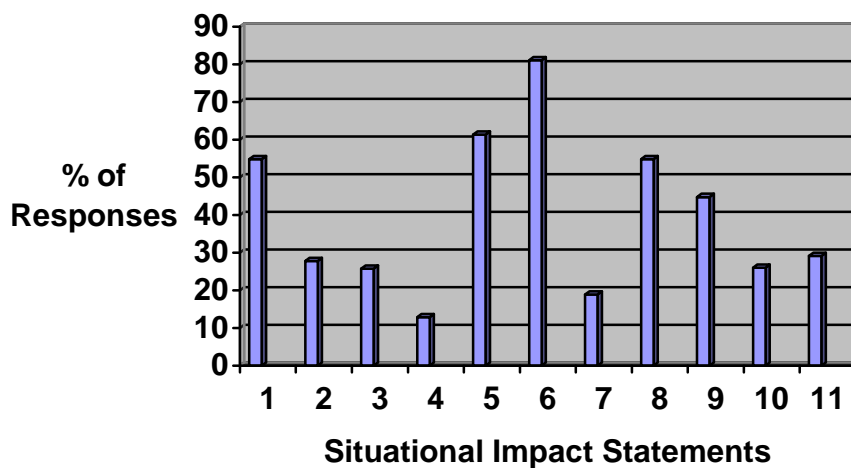


Figure 4.14 Situational Impact Statements

4.7 Semi-structured interview themes

Semi-structured interviews were conducted with selected bankers and wholesalers using separate questionnaires to elicit information that could improve the requirements to meet the objectives of this study. The following themes were common in both categories:

4.7.1 Wholesaler themes

The eleven questions posed to wholesalers extracted valuable data as follows:

Question one: The number of pharmacies supplied from 2003 to 2009 that have closed are between 70 to 80.

Question two: The major reason for pharmacy closures was that pharmacies were uneconomical.

Question three: The future of existing and new pharmacies is bleak if the DF is not revised.

Question four: New pharmacies would decrease due to this legislation.

Question five: The wholesalers had dealt with a few new pharmacies in the rural areas but could not give a number for start-ups.

Question six: Operational adaptation had led to reduced number of deliveries to pharmacies, which impacts finally on the consumer with the respect to the delays in getting their medicines.

Question seven: relationship with pharmacies has been reviewed, and wholesalers have become stricter in terms of account facilities.

Question eight: Relationship with pharmacies is positive because the common enemy is the pricing legislation.

Question nine: A major concern is the negative upstream impact on the distribution channel if retail practice is unsustainable because of supply chain inter-dependence.

Question ten: Wholesalers, themselves have been negatively impacted on by concurrent legislation. The SEP legislation gave rise to the emergence of 'pseudo-wholesalers'. Wholesalers are unhappy with the capping of the logistics fee, preferring fixed fees. The 'claw-back' phenomena affects retail pharmacies negatively because of unfair extra profit margins for pharmacies turned pseudo-wholesalers.

Question eleven: Wholesalers wanted the DF quantum reviewed in terms of a reasonable ROI.

4.7.2 Banker themes

The following are the responses to the eight questions posed to bankers.

Question one: Bankers are aware of the pricing legislation affecting pharmacies.

Question two: The legislation has not changed the banks lending policies to pharmacies because retail pharmacy like any other small business is a risk factor.

Question three: There is no change in how the banks deal with pharmacies because pharmacies like other clients are individually evaluated.

Question four: A few start ups have been finance in the last six years mainly in the rural areas.

Question five: In the past six years start-ups and closures have been few but resale's are more.

Question six: Major reasons for closure or change in ownership is relocation, then retirement or death but liquidation is rare.

Question seven: Bankers were in agreement that pharmacists have to manage change and adapt because bankers look for management skills.

Question eight: In terms of the legislation, views varied from:

- laws are frequently changing, hence change management is vital;
- the opinion that the legislation should be reviewed because of the skewed nature of tiered pricing especially on the first tier level.

4.8 Summary

This chapter presented the survey results of the data collected from independent community pharmacists and bankers and wholesalers considered as key stakeholders. Descriptive frequency statistics reflected respondents' answers to specific questions. The researcher defined various study variables and central tendency statistics were applied to determine average perceptions to these variables.

Correlation statistics was undertaken and applied to ascertain whether there were relationships between the study variables. The results showed significant relationships between some variables, as discussed.

The Cronbach Alpha test was applied to determine internal consistency and reliability of the research instrument. Medium internal consistency denotes acceptable reliability of the continuous study variables applied. Comparison dispersion statistics or cross-tabulation was used to examine relationships involving categorical variables but only significant dispersions were highlighted.

The research results of the qualitative semi-structured interviews are thematically presented. The logic of using triangulation whereby qualitative research facilitated quantitative research worked effectively in resolving objectives, one to four, of this study. A full discussion of the findings follows in the next chapter.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

The logic of validating the research problem, led to the use of a mixed method or triangulation approach of both quantitative (statistical) and qualitative (descriptive) data gathering techniques.

The analysis of responses is grouped as follows:

- The number of independent community pharmacies that have closed in KZN since 2003 to 2009;
- Interesting but significant trend data has surfaced from existing and new data, as well as, new trends from the survey data and correlation studies.

5.2 Tools for Strategic Analysis

Using Force-Field Analysis as presented in chapter two provides evidence to support various forces and actors at play in regulating the pharmaceutical sector, with the focus of this study being independent community pharmacy. Figure 5.1 depicts the environment in which independent retail pharmacy currently operates.

5.2.1 Force – Field Analysis

Force - Field theory as explained by Kurt Lewin (1951) and illustrated in Misselhorn (2005: 52) is used to depict the environment for community pharmacies as shown in Figure 5.1.

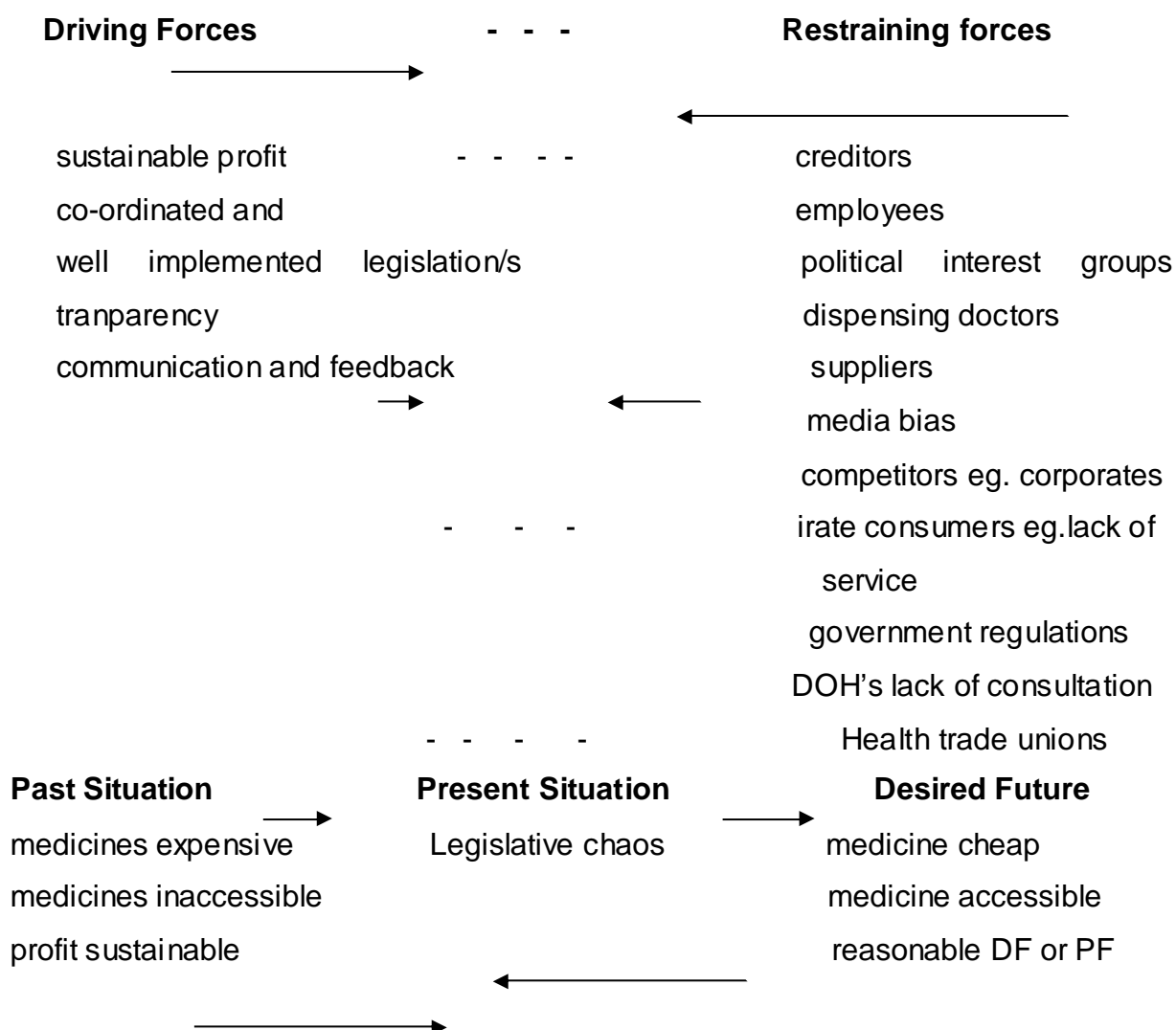


Figure 5.1 Force-Field Analysis for Independent Community Pharmacy
(Adapted from: Misselhorn, 2005)

The goal of independent retail pharmacy is to provide medicines that are affordable and accessible, whilst at a fair profit as discussed by Misselhorn (2005) which can sustain the practice, if not let it grow.

It can be concluded with the ideas adapted from Misselhorn (2005: 52) that for reasonable profitability (individually determined), population growth, good media publicity (to improve professional image of the pharmacist), technology advancement, continuous research and development (R&D) to improve existing medicines or develop new drugs; sound medicine pricing regulations; extensive consultation on concurrent legislation; coordinated implementation and a transparent DF and PF methodology, with as precise as possible input is required. These are the driving forces.

However, on the other hand restraining forces such as bad media publicity, escalating wage demands by trade unions, increase in the cost of living and haphazard regulation and policy implementation are detrimental to the survival of independent community pharmacy.

The secondary data in the literature review and primary data gathered in this study examines all these forces in detail and has illustrated the change in the pharmacists' professional outlook as the retail pharmaceutical sector evolves from being product driven to one of service orientation.

5.2.2 Fish-Bone Chart

The use of this simple tool, discussed in chapter two as the cause and effect diagram can assist the retailer in strategic, tactical and operational planning for different scenarios, as they arise in the day to day business environment due to the myriad of challenges the community pharmacist faces due to the medicines pricing legislation. The diagram reflects a common problem elicited from the data gathered, that is,

consumer satisfaction. The Fish-Bone chart illustrates the plight of the retailer in Figure 5.2.

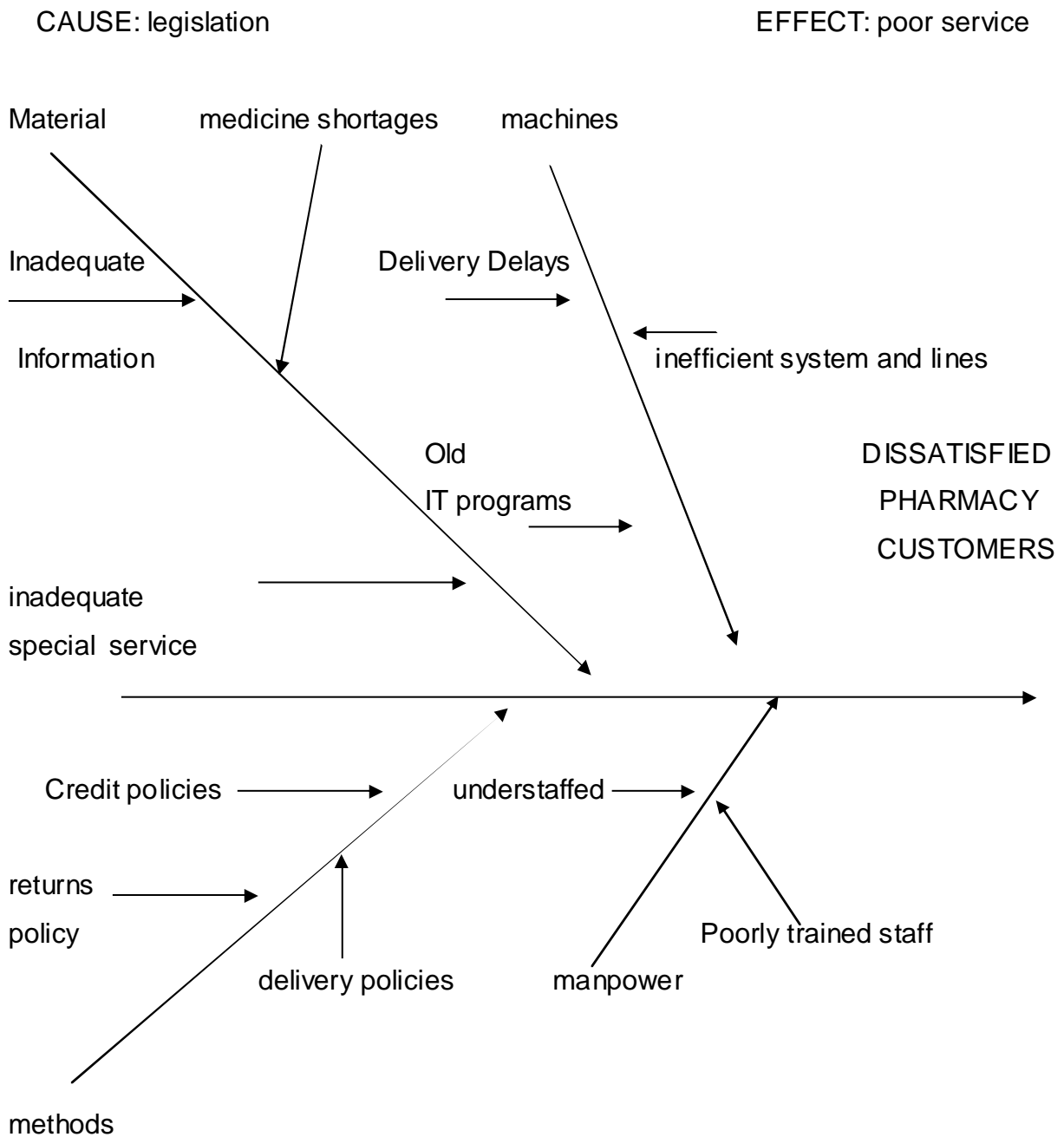


Figure 5.2 Fish-Bone Chart for Problems with Pharmacy Customer Service (Adapted from: Render and Heizer, 2006: 204)

5.3 Discussion of Findings in terms of objectives

The discussion of the findings from secondary data in Chapter Two and the primary data analyzed in Chapter Four is now looked at closely in the form of themes linked to the objectives of this study.

5.3.1 Objective (1) --- *to determine the actual number of independent community pharmacies that have closed in KwaZulu-Natal since the promulgation of the new medicine pricing regulations for the period from 2003 to 2009*

From the data evaluated the total number of closures from 2003 to 2009 is 72, as per the wholesaler records. Data on closures from bankers was privileged information. The banks interviewed cited relocation, retirement or death as being the major reasons for closure with liquidation being extremely rare.

Wholesalers cited the major reason for closure of pharmacies as being 'uneconomical'.

The respondents to the questionnaire administered to independent pharmacies indicated that 7.8% of respondents knew of the closure of 4 pharmacies within a 10km radius; 8.7% stated 3; 23.5% stated 2 and 26.1% confirmed 1 closure. Hence closures are occurring.

The statement by the DOH (n.d.) that no closures have occurred is refuted and the statement by Kotze (2009: 6) that close to 700 pharmacies across South Africa have closed is concurred with. In KZN alone, between 72 to 83 closures can be confirmed between 2003 and 2009.

5.3.2 Objective (2) --- *to explore the attitude of bankers with regards to SME funding with the view to assess the financial risk profile of independent community pharmacies*

The semi-structured interviews with leading SME bankers revealed that bankers are aware of the pricing legislation of pharmaceuticals. These bankers recognized this as a risk factor, however the bank's credit policies are based on risk profiling; hence each business is treated on its own merit.

Bankers did acknowledge that certain categories of clients especially start-ups, who meet the lending criteria but lack security, are assisted through risk mitigating tools like the risk sharing agreement schemes with the KZN Provincial Government. This would apply to pharmacies if they meet the criteria.

The exploration of the attitude of bankers with regards to the medicine pricing legislation and the assessment of SME funding and their perceptions of the financial risk profile of independent community pharmacies shows that, being risk averse, the banks criteria is a single lending policy for each individual on his or her own merit.

5.3.3 Objective (3) --- *to critically explore whether the pricing objectives are being met as per the legislation and to make recommendations towards the pricing regulations based on the principle of a transparent pricing system and an appropriate dispensing fee for the benefit of all stakeholders*

The pricing objectives are best explored via the wholesaler perspective because of supply chain interdependence. Wholesalers urgently want the DF quantum reviewed in terms of a reasonable ROI indirectly benefiting wholesalers as part of the value and distribution chain. Equally important was the finalization of the wholesaler logistic fee in order to provide a better service to pharmacies.

Pharmacies have reduced stock levels and line items in order to reduce input costs but the out of stock scenario is increasing, lowering service provision to consumers.

MHS study (SAPJ, June 2004: 10) commissioned by PSSA showed that, the current margins are market-efficient but sub-economic resulting in the number of pharmacies declining and this is expected to continue due to this sub-economic status. This impact study concurs with the findings of the MHS study.

Various journal articles (Jeffery, 2008) and (Urbach, 2006), spoke of the harm government policies have had by reducing access to medicines. The dispensing fee table in Chapter Two tells a tale of changing DF structures and the ensuing chaotic pricing environment clearly indicates that the pricing committee is grappling to come up with a reasonable DF which so far has been a “thumb-suck fee” as described by Judge Traverso, in her 2005 court judgment.

On the other hand, respondents’ perception, 96.5% said that the pricing legislation was based on socialist ideology to the detriment of business economics, points to the need for extensive stakeholder consultation to manage change and reduce resistance by respondents.

Clearly, transparency is of paramount importance in legislation making and policy development, if all stakeholders have to benefit. The cross tabulation results of the 41-50 year age group revealed strong opinions on the question of profitability and pricing structure because of their experience of the old to new pricing changes, hence the resistance to regulations that decrease profitability.

Through the use of correlation tests and cross-tabulations, amongst other statistical analysis, retailers were unanimous in their response to questions of pharmacy profitability not improving; banker relationship being negative and patient service provision not improving is indicative that the intentions of the medicine pricing legislation is not being met.

A worrisome finding was that pharmacists were demotivated to promote pharmacy as a career to school leavers, thus the pharmacy sector can experience an HR crisis

in future years. South Africa cannot afford this because the WHO has mandated countries in transition economies to come up with an HR plan for healthcare worker attractions, retention and training in lieu of the burden of diseases (Pharmaciae, 2006).

Three themes emerged from the open ended question to pharmacists about a viable DF structure. These were either:

- tiered pricing with improved percentages to the current structure;
- review of the current pricing in keeping with the best ROI criteria;
- the most suitable being a pure percentage mark-up (ranging from 36% to 50%) by 44.79% of the respondents.

This objective has been critically explored with a variety of opinions and perceptions expressed, thus meeting the study objective. Results indicated that the pricing objectives are not being met as per the legislation. This indicates a need to restructure an appropriate and transparent DF for the benefit of all stakeholders.

5.3.4 Objective (4) --- *to evaluate the future of independent community pharmacy*

The study undertaken by Singh (2006), entitled 'Are the current government regulations crippling the pharmaceutical industry?', concluded that if the medicine pricing legislation remained as it was R26/26% and profit margins did not improve then the future of independent community pharmacy will be bleak. A suggested area for future research from the above study was that the proposed 2006 tiered pricing should be monitored for its impact on independent retail pharmacies, hence the focus of this study. The impact has been more negative than positive, shown by both qualitative and quantitative emerging trends in pharmacy practice.

The pharmacists role has evolved from that of 'trading professionally' to that of 'professional trader'. Retail practice has been impacted on by various stakeholder expectations, such as consumers, government and other health care professionals.

Pharmacy is moving from the traditional product to service orientation, hence the professional fee being mooted for 2010.

Literature review empowers retailers on how to handle these changes but until the DOH, seriously looks at the financial plight of retailers and, as long as, CON is not enforced and the DF is not sustainably remodeled, the future of independent community pharmacy is inevitably dismal.

This is reinforced by the data gathered from the wholesaler interviews indicating that the future of independent retailer pharmacy appears bleak if the DF is not improved. Banker interviews varied from the need for a review of the skewed pricing structure to the suggestion that an immediate impact was not problematic because this depended on how pharmacists operated within the pricing constraints. Descriptive frequency statistics applied to the question on reasons for pharmacy closure showed that (53.9%) of respondents stated that the major reason was 'uneconomical' and the least reason was 'liquidation'.

Pharmacists (79.1%) would not recommend pharmacy as a career choice to students, depicting great despondency in most respondents. 38.4 percent of pharmacists viewed their five year plan as undecided about whether to remain in practice, 26.1% undecided whether to emigrate, 27% undecided to change career, 29.6% undecided whether to close down, 26,1% undecided to sell practice and 33.9% undecided to change ownership. The indecision is a contributory factor to the state of flux the medicine pricing regulation has put retail practice in.

Most respondents acknowledged that the current pricing legislation makes them feel like a shopkeeper with 38,8% strongly agreeing. The evolution to service oriented professionals may not materialize under present conditions but the PF would be an incentive because 54.8% of pharmacists agreed on the professional value adding role change in recent years on answering the open-ended question.

T-test revealed that both genders perceptions to their five year plan showed no significant difference, hence males and females felt the same way towards these variables.

ANOVA test revealed that younger respondents were more confident in terms of the their future plans compared to older pharmacists. This may be due to the lack of knowing past pricing and being able to compare current pricing. This was clearly seen in the number of years experience ANOVA tests especial with respect to s17.4 to s17.6, being the various options in five years time.

Chi-square test showed a statistically significant relationship of area vs ownership type, with these 2 variables being associated hence in the future if the certificate of need (CON) is implemented such a pattern would be strengthened. Race and ownership type showed association with more black sole traders now, accounting for the start ups, especially in rural areas.

Cronbach Alpha Test for Q17 showed an Alpha of 0.414, indicating medium internal consistency and reliability hence, clearly indicating how uncertain retail practitioners feel about their future.

Cross-tabulation of the 41-50 year age group showed the highest 'strongly agree' to selling practice (10.7%) and to changing ownership (8.2%). This age-group also agreed (11.9%) that the tiered-pricing is an improvement on the older R26/26% model. The results indicate that the age group (41-50 years) feels the impact most; probably because of where in the business life-cycle they find themselves. After the maturity phase, decline commences for various reasons. The strong responses on the pricing legislation impact expresses the urgent need for the DF to improve so that decline of retail pharmacy can be halted and growth can resume.

Open-ended Q27 and Q28, revealed that the new trends of DSPs and lay ownership, as well as, the strategy to sell more OTC and reduce staff, seemed to be upper most in the minds of most pharmacists as shown in Table 4.20.

The impact of cost containment policies on efficiency and quality of care and prescribing is often unclear. There is a need for government to balance health policy objectives against the needs of the private sector if a sustainable solution is to be achieved. This impact study uses evidence based research to show that a balance can only be achieved by extensive consultation, monitoring, evaluation and further improving pricing regulations to sustain independent retail pharmacy.

5.4 Other Key Findings of this study

5.4.1 Staffing in Pharmacy

Both the Health System Trust (1998) health review and Moodley (2007) express concern for the declining number of university pharmacy students and the human resource (HR) crisis in healthcare and state that pharmacy human resources will have to be attended to.

There are 1784 SAPC registered pharmacists according to the Health System Trust (2008). If 80% of pharmacists serve the private sector and only 438 are in the public sector according to HST (2008) then pharmacists should be monitored for brain drain, in particular. Furthermore, HST (1998) reported that the WHO suggested an average of 1 pharmacist per 2.300 people. In KZN the population is estimated to be 10.158.820 (DOH, KZN, 2009: 28). Hence in KZN there is 1 pharmacist for every 5694 persons, so it can be safely said that 1 pharmacist is doing the job of 3 pharmacists, hence our future needs should be to treble the number of pharmacists for KZN.

5.4.2 Certificate of Need (CON)

The CON has not been proclaimed hence there is no current requirement for persons to obtain this in order to establish a medical practice. As the name suggests, CON is basically a license with a broader meaning in term of restricted movement to where healthcare is needed. CON should be implemented because there needs to be a fair distribution of retail outlets if medicines are supposed to reach every citizen and this would ensure the viability of community pharmacy especially in rural areas if it was applied to dispensing doctors.

5.4.3 Ownership Patterns

Sole traders prevail slightly above close corporations. The rise in close corporations may be due to perceived protection for the trader if the business is so structured. A minimal number of respondents were in partnership but other forms of legal entities such as franchises, joint ventures and wholesaling companies are slowly growing which provide capital and skills needs.

5.4.4 Resulting Unemployment

The data collected is important to determine the impact of pharmacy closure on rising unemployment. Hence, the impact of policies should be to create jobs but if 100 pharmacies close then on an average 500 jobs can be considered lost based on the data that the majority of respondents 35.7% employed between three to five staff and 26.1% of the respondents employed between six to ten staff as per Figure 4.6. Hence if a typical pharmacy closes, then about five persons would become unemployed.

5.5 Medicine Pricing Impact Table

The following Table 5.1 identifies and lists the medicines pricing policy impacts on different sectors for assessment proposes. Table 5.1 is the culmination of overall impacts outcomes from both primary and secondary data collection. This impact table is based on the theory from Chapter Two and the tables on approaches to policy analysis and levels and variables of decision making (Cloete, *et al.* 2006).

Measurement objective	Indicator guide	Impact sector	Impact
1.Number of independent pharmacies closed in KZN since 2003 -result achieved	Quantity of results	Independent retail pharmacy (72 closures)	Negative
2. Financial risk profile of retail pharmacy	Risk factor	Independent retail pharmacy	Negative
3. Achievement of medicine pricing objectives	Affordability Accessibility Retail pharmacy sustainability	Consumer Consumer Retail pharmacy	Positive Negative Negative
4.Future-trends policy sustainability	Policy evaluation	-Independent pharmacy -Wholesalers -Bankers -Consumers	Negative Negative Negative Positive/Negative

Table 5.1 Specific Medicine Pricing Policy Outcome Indicator Guide

(Adapted from : Cloete, Wissink and de Coning, 2006: 270-273)

It is explicit from Table 5.1 that the overall impact on various measurement objectives has been negative, hence the need for improvement of the dispensing fee for community pharmacists.

The following weaknesses appear in the medicines pricing policy which needs focus:

- the need for the DOH to evaluate the pricing policy, using a policy resource conversion indicator guide with public sector measurement objectives and indicator guides, to evaluate these policy outcomes;
- It is clear that the National DOH's vision has not been realized and improving policy design continuously is imperative.

5.6 A Viable DF: Current Position

It is important to document the situation currently for future studies. The proposed DF, out for comment, as discussed in chapter two is as follows:

SEP < R100	then DF ≤ R6 + 36 % of SEP
SEP ≥ R100 < R250	then DF ≤ R32 + 10% of SEP
SEP ≥ R250 < R1000	then DF ≤ R45 + 5% of SEP
SEP ≥ R1000	then DF ≤ R65 + 3% of SEP

The proposed DF may succeed if the PF is implemented by 2010. The DF must be annually reviewed with appeal mechanism in place to adjust the flexible portion in the event of unforeseen factors which impact negatively on retail practice. Furthermore, an operational relationship must be maintained between the Department of Health and the private sector, allowing flexibility in negotiating business-specific profit margins, ensuring no sudden policy changes, thus facilitating a favorable and stable business environment. These will assist as a potential solution in the future, once an acceptable pricing structure is negotiated.

5.7 Summary

Within the limits imposed by the study, medium internal consistency of continuous variables was achieved and Mean scores using the Likert scale strongly indicated that, respondents were unhappy with the medicines pricing legislation and wanted a new pricing structure that would ensure the sustainability and growth of independent community pharmacy. A number of future recommendations arise from this discussion which will be looked at in the concluding chapter.

CHAPTER SIX: RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

This KZN exploratory study of the impact of the medicine pricing legislation deals with the dynamics of regulating the pharmaceutical sector as a whole in South Africa, encompassing a broader vision to 'bridge the gap', between the public and private sector divide, illustrating ways through the medicines pricing regulations the need for sound public policy making, so that theory can be easily put into practice with minimal disturbance to business operation.

6.2 Answers to Research Problem

This study has explored and evaluated the impact on independent community pharmacies, from recent regulatory changes to pricing. The discussion in Chapter Five shows how the objectives of this study have been met and how the problem identified for this study has been examined.

6.3 Implications of this research

This study confirms the dilemma faced by independent retail pharmacists and illustrates how research can play a critical role in understanding problems. The statistical analysis suggests that the results from this study carried out in KZN can be useful and contribute to a better understanding of the plight of independent retail pharmacists' throughout South Africa because all pharmacies are subjected to the same medicines pricing legislation and the same prevailing economic climate.

6.3.1 Stakeholder implications

Various stakeholders are identified and the implication in relation to these are as follows.

Bankers

- Bankers are suspicious by the nature of their job to small and medium businesses, like independent retail pharmacy.

- This study can assist to alert bankers to the need for mentorship programs especially for professional.

Wholesalers

- If the DF of retailers is improved, this will have a positive upstream effect on wholesalers who can improve their logistics services and increase their product lines.

Policy-Makers

- Although policy-makers were not interviewed; the research findings have implications for policy design. This study succinctly highlights the weak links as inconsistent policy monitoring, assessment, impact and review.

Independent Community Pharmacists

- This study comes at an important time when the revised DF and PF are out for comment, simultaneously. The gazetting and promulgation of these fees with recommendations for an annual review would boost the confidence of independent retailers in the participatory public policy-making process. Improved DF and PF would improve retention of pharmacists.

6.4 Recommendations for future studies:

- On the 19th June 2009, a proposed amendment to regulation 10 relating to a transparent pricing system for medicines and schedule substances was published in the government Gazette 9106 and pharmacists were requested to submit comments by 10th July 2003 to PSSA. The proposed tiered pricing, if implemented, will have further impacts on independent community pharmacies. A new study will have to be undertaken to ascertain the impact from this tiered dispensing fee together with the new professional fee;
- The feasibility of a six tiered-pricing pharmacy plan should be studied, post benchmarking, whereby preferred brands and generics are tiered into particular

price bands making it easier for patients to chose the most effective medication at the lowest cost (New Benefits, n.d.);

The researcher proposes the following pricing structure, adapted for the South African scenario as per Table 6.1.

Tier	Classification	SEP Band	DF
Tier i	Preferred brand and generic drugs for schedule quantity and dose	R100 or less	R5 + 40% of SEP
Tier ii	Preferred brand and generic drugs for schedule quantity and dose	R300 or less	R20 + 30% of SEP
Tier iii	Preferred brand and generic drugs for schedule quantity and dose	R600 or less	R30 + 20% of SEP
Tier iv	Preferred brand and generic drugs for schedule quantity and dose	R800 or less	R40 + 15% of SEP
Tier v	Preferred brand and generic drugs for schedule quantity and dose	R1000 or less	R50 + 10% of SEP
Tier vi	Preferred brand and generic drugs for schedule quantity and dose	R1000 or more	R65 + 5% of SEP

Table 6.1 Six Tiered Pharmacy Pricing Structure (Adapted from: New Benefits, n.d.)

Note: It is advisable to implement this pricing plan after the benchmarking process is complete because the current medicine prices would most likely come down.

This six-tiered pharmacy pricing plan proposed will increase profits for the retailer, sustaining independent pharmacies, embracing both brands and generics across six narrower SEP bands. The DF has a realistic baseline Rand value shift for both the fixed and flexible portions, in keeping with dollar based pricing as per adaptation from the New Benefit's table.

- A study should be embarked on to examine the regulating of pharmaceuticals in South Africa, with the focus on affordability, accessibility, quality and the development of a South African pharmaceutical policy framework;

- A case study, to investigate the prevalence and institutionalization of policy analysis in the National DOH, would be valuable;
- There is a need to study business models to standardize pharmacy practice in view of the paradigm shift to professional service provision;
- A new impact study should be undertaken after the certificate of need is proclaimed to ascertain whether its objectives are realized and this impact on independent community pharmacies;
- It is essential that bankers take heed of the gap identified to also provide established pharmacy retailers in these turbulent times with mentoring;
- It is deemed necessary for incentives to be given by government to sustain rural pharmacies as is the practice with the NHS in the UK example and community pharmacy model schemes (Pryce, 2009).

6.5 Summary

This study has explored and evaluated a complex industry, that of independent community pharmacy. It shows that real policy impact assessment is an important objective of evaluations, to determine and measure significant changes in policy target areas, groups or sectors over time as a result of policy implementation.

The recent changes to pricing of pharmaceuticals and changes in medical practice have been profound. The whole picture is one in which almost all stakeholders can safely say is turbulent at present. However, markets, vested interests, legal challenges and the role of policy-makers to tilt fine balances judiciously, could prove that, flexibility and creativity with government regulations can, in fact, increase trade and improve economic progress. A flexible operational relationship must be created and maintained between the DOH and the private sector once an acceptable DF is negotiated in order to provide a stable business environment for independent retail pharmacies.

The results show that the research questions of this study have been addressed. However, the fluidity of this sector indicates that further studies would be valuable.

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LIST OF APPENDICES

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UNIVERSITY OF KWAZULU-NATAL

QUESTIONNAIRE - INDIVIDUAL PHARMACIES

Greetings, my name is Shameen Thakur - Rajbansi and I am currently completing a dissertation for an MBA at the Graduate School of Business, UKZN. I am conducting a survey to assess the impact of the medicine pricing regulations on independent community pharmacies in KZN and to ascertain if the pricing objectives are being met.

This is an attempt to objectively obtain meaningful contributions from individual participants in the independent community pharmacy sector that can shape the new medicine pricing structure such that all stakeholders benefit.

I would be grateful if you can assist me to complete the questionnaire. Your opinion is extremely important in assessing the sustainability of independent community pharmacies for the future. Your confidentiality will be maintained at all time and will not be disclosed. Thank you for taking a short time to answer the following questions:

Please mark the appropriate box with an 'X'.

1. Which one of the following represents your position in the pharmacy?

1.1	Pharmacy Manager	
1.2	Responsible Pharmacist	
1.3	Locum Pharmacist	
1.4	Pharmacist who is the owner	

2. GENDER:

M		F	
----------	--	----------	--

3. AGE:

21 - 25	
26 - 30	
31 - 40	
41 – 50	
51 – 60	
61 and above	

4. RACE:

A		W		I		C	
----------	--	----------	--	----------	--	----------	--

5. AREA

KZN – Central Durban & Surroundings	
KZN – West - Midlands	
KZN – North Coast and Rural North	
KZN – South Coast and Rural South	

6. Pharmacy ownership type

Sole Owner	
Closed corporation	
Partnership	
Other	

7. Pharmacy size

+/- 50m²	
+/- 100m²	
> 100m²	

8. Number of years in practice

0 – 5 years	
6 – 10 years	
11 – 20 years	
21 – 30 years	
> 30 years	

9. How many staff are employed by the pharmacy?

< 3	
3 – 5	
6 – 10	
> 10	

10. Are you aware of the new medicine pricing fee introduced by the government from 2004?

Yes	
No	

11. Are you aware of the number of pharmacies that have closed down within a 10km radius of your area of business, from 2003 to date?

Yes (state number)		
No		

12. If yes to 11 above, rank the main reason/s below using 1 to 5 in each block as follows:

1 - as the major reason

5 - as the least reason

Uneconomical

Emigration

Career Change

Retirement /

Death

Other (Specify: Please write below eg. Liquidation)

.....

13. Are you aware of the number of new pharmacies that have opened up within a 10km radius of your area of business since 2003?

Yes (state number)		
No		

14. Would you promote pharmacy as a career choice to school -leavers in view of the current pricing legislation?

Yes	
No	

15. Do you believe that the medicine pricing legislation is based on social ideology to the detriment of business economics?

Yes	
No	

16. How would you describe the Department of Health's attitude to independent retail pharmacies current pricing dilemma?

Positive	
Negative	
Unsure	

For the following questions, mark with an 'X' one box which most reflects your opinion.

QUESTIONS	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
17. Based on the new medicine pricing system, where do you see yourself in the next 5 years?					
17.1 Still in retail practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.2 Emigrating to practice elsewhere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.3. Changing career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.4. Closing down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.5. Selling practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.6. Changing ownership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Has the new medicine pricing system increased profitability of the pharmacy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Has the new medicine pricing legislation negatively affected your relationship with your bank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Has the new medicine pricing legislation improved patient service provision?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

QUESTIONS**Strongly
Agree****Agree****Undecided****Disagree****Strongly
Disagree**

**21. Medicines are cheaper
to the consumer following
the introduction of the
medicine pricing regulation?**

☐☐☐☐☐

**22. Does the current pricing
legislation, make you
feel like a shop-keeper?**

☐☐☐☐☐

**23. Has the new medicine
pricing legislation improved
your relationship
with your wholesaler?**

☐☐☐☐☐

**24. Is the proposed tiered
pricing system an
improvement on the older
16% / 26% dispensing fee?**

☐☐☐☐☐

The following are open-ended questions requiring further comments:

**25. Has your view of the pharmacist's professional value adding role changed
over the recent years?**

Yes	
No	

26. If yes, why?

27. Apart from the pricing legislation what factors limit your scope to be profitable, keeping in mind ownership patterns?

28. What are some of the opportunities or different strategies that you have adopted to survive, keeping in mind, limitation of pharmacy space, tenancy agreements, changing from a sole trader to another form of business agreement and other legislation?

29. Was your relationship with various stakeholders (banker, wholesaler, consumer) better before the new pricing legislation of 2004?

30. If you had to make recommendations to change the current pricing structure, what would they be?

UNIVERSITY OF KWAZULU-NATAL
QUESTIONNAIRE – WHOLESALERS

Greetings. My name is Shameen Thakur-Rajbansi and I am currently completing a dissertation for an MBA at the Graduate School of Business, UKZN. I am conducting a survey to assess the impact of the medicine pricing regulations on independent community pharmacies in KZN and to ascertain if the pricing objectives are being met.

This is an attempt to objectively get meaningful contribution from stakeholders in the independent community pharmacy sector that can shape the new medicine pricing structure such that all stakeholders benefit.

I would be grateful if you can assist me to complete the questionnaire. Your opinion is extremely important in assessing the sustainability of independent community pharmacy for the future. Your confidentiality will be maintained at all times and will not be disclosed. Thank you for taking the time to answer the following questions:

Please mark the appropriate box with an 'X:'

1. How many pharmacies you supplied closed yearly from 2003 – 2009?

YEAR	No. of Pharmacies
2003	
2004	
2005	
2006	
2007	
2008	
2009	

2. In your view rank the following as the reasons for closure / change of ownership with:

1 - as the major reason

6 - as the least reason

Uneconomical

Emigration

Career Change

Retirement/Death

Resale

Other **(Specify: please write below e.g. Liquidation)**

.....

3. What is your view of the future of independent retail pharmacy, will these:
(Mark with an 'X')

Increase

Remain Stable

Decrease

4. What is your view of the impact of this legislation with respect to new pharmacies, will these:

Increase

Unchanged

Decrease

5. How many new pharmacies have opened up since 2003 to 2009 on a yearly basis?

YEAR	No. of Pharmacies
2003	
2004	
2005	
2006	
2007	
2008	
2009	

6. What adjustments if any, did the wholesaler make with respect to its operational strategy in view of the new pricing legislation?

7. Have wholesaler / independent retail pharmacy relationships been impacted due to medicine pricing legislation?

Yes		No	
-----	--	----	--

8. If so, is it negatively or positively? Give an example?

9. What are the concerns from your view in relation to legislation on retail pharmacy?

10. What impact do you feel the above concerns will have on your business?

11. What suggestions can you make that will lead to a more transparent and sustainable medicine pricing structure?

UNIVERSITY OF KWAZULU-NATAL

QUESTIONNAIRE - BANKERS

Greetings. My name is Shameen Thakur-Rajbansi and I am currently completing a dissertation for an MBA at the Graduate School of Business, UKZN. I am conducting a survey to assess the impact of the medicine pricing regulations on independent community pharmacies in KZN and to ascertain if the pricing objectives are being met.

This is an attempt to objectively obtain meaningful contributions from stakeholders in the independent community pharmacy sector that can shape the new medicine pricing structure such that all stakeholders benefit.

I would be grateful if you can assist me to complete the questionnaire. Your opinion is extremely important in assessing the sustainability of independent community pharmacy for the future. Your confidentiality will be maintained at all time and will not be disclosed. Thank you for taking the time to answer the following questions:

Please mark the appropriate box with an 'X'.

1. Are you aware there is medicine pricing legislation the pharmacy retail sector must comply with?

Yes

No

2. If you are aware, pharmacies are bound to pricing legislation, has this impacted the banks view on lending policies?

3. If this has affected the banks policies, in what way?

4. How many independent pharmacy start-ups have been financed by the bank in the last 6 years?

YEAR	No. of Pharmacies
2003	
2004	
2005	
2006	
2007	
2008	
2009	

5. How many established independent pharmacies which banked with your institution have closed down in the past 6 years?

YEAR	No. of Pharmacies
2003	
2004	
2005	
2006	
2007	
2008	
2009	

6. How would you rank the reasons for closure/change of independent retail pharmacies in order of priority: e.g. liquidation, emigration, career change or retirement/ death, re-sales or other.

1 - as the major reason

6 - as the least reason

Uneconomical

Emigration

Career Change

Retirement/Death

Re-sales

Other **(Specify: please write below e.g. Liquidation)**

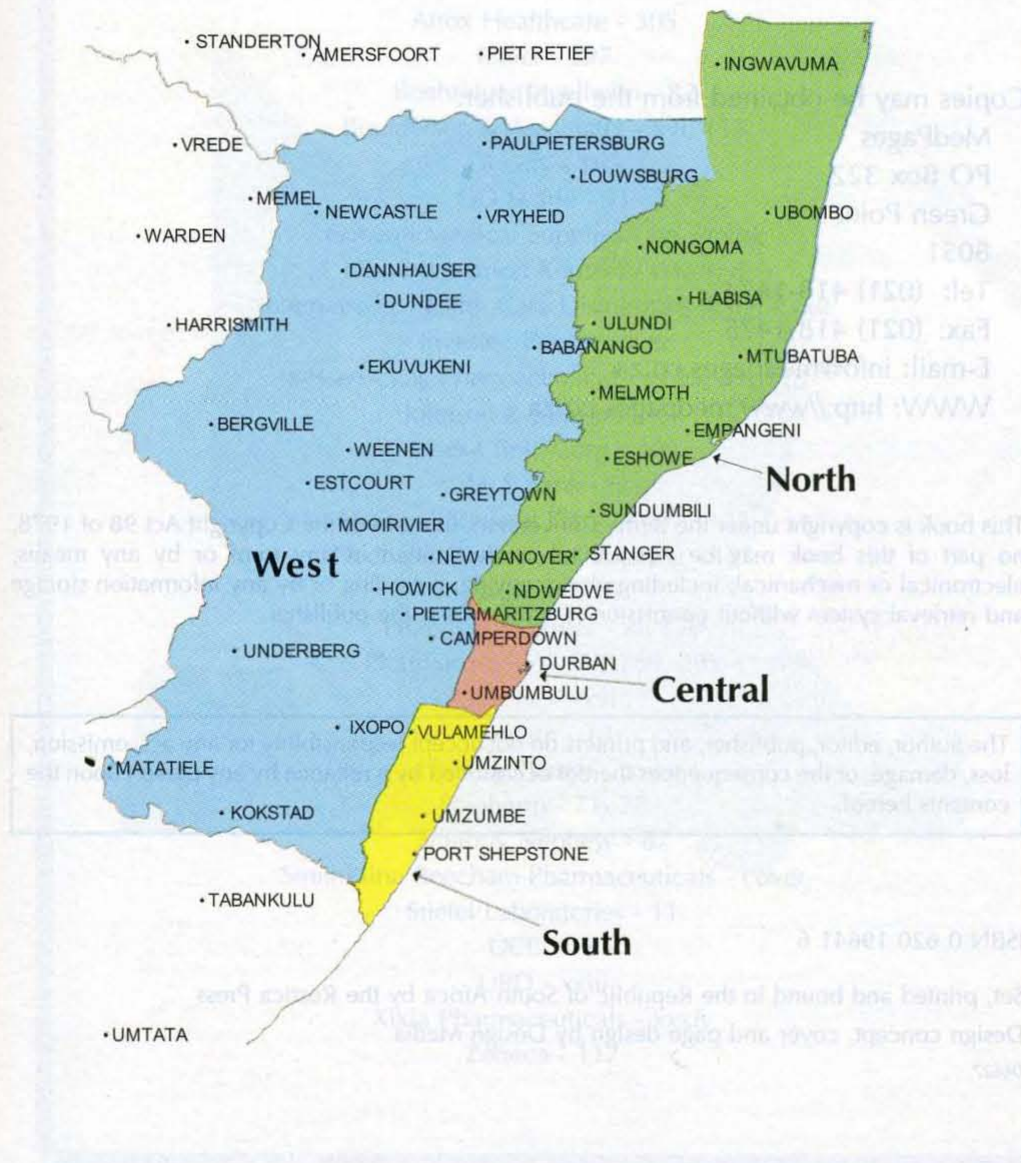
.....

7. What impact has new medicine pricing legislation had on independent retail pharmacy? Explain?

8. What further comments do you have as an SMME banker on the new medicine pricing structure?

KwaZulu-Natal Boundaries

KwaZulu-Natal has been divided regionally as follows:



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22 JUNE 2009

MRS. ST RAJBANSI (8318895)
GRADUATE SCHOOL OF BUSINESS

Dear Mrs. Rajbansi

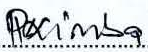
ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0273/09M

I wish to confirm that ethical clearance has been granted for the following project:

“Impact of New Medicine Pricing regulations on Independent Community Pharmacies- A KwaZulu-Natal study”

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

Yours faithfully


.....
MS. PHUMELELE XIMBA
ADMINISTRATOR
HUMANITIES & SOCIAL SCIENCES ETHICS COMMITTEE

cc. Supervisor (Mrs. G Manion)
cc. Mrs. C Haddon