The Impact of Non-tariff Barriers on Southern African Development Community: A firm base analysis of Botswana

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ABSTRACT

Mutual gains in international trade are based on the assumption of absence of trade restrictions among trading countries. As the World Trade Organization, regional integrations and trade agreements decrease tariffs throughout the world, other barriers to trade have tended to emerge to attain the same protectionist objectives previously achieved through tariffs. The main objective of this study was to investigate the impact of Non-Tariff Barriers (NTBs) on Botswana's trade within the Southern African Development Community region. In contrast with previous research, this study introduced infrastructure as a category of NTBs in the conceptualization of NTBs. In this study, 28 NTBs were categorised into four groups, namely, administrative, trade policy, technical and infrastructure. The findings made two major revelations: First, Administrative barriers were the most impactful, followed by Infrastructure, and then by Trade Policy; Technical NTBs were the least. Second, managers of smaller firms and less experienced firms perceived a higher level of NTBs. The findings suggest that studies in developing economies that omit infrastructure barriers may be misleading because of under-specification of an important trade barrier. Since NTBs are external to firms and macro in scope, overcoming them requires collective action by the business sector. It is recommended that export promotion programmes should concentrate on small and less experienced firms because their managers have a tendency to overestimate the impact of NTBs.

Keywords: Non-tariff, barriers, impact, trade, Botswana.

INTRODUCTION

This paper is the third in a series intended to provide a better understanding of Non-Tariff Barriers (NTBs) in Botswana's trade with member states of the Southern African Development Community (SADC). The first paper (Marandu, Phambuka-Nsimbi, & Thomas, 2012) assessed the prevalence of NTBs in the country. The second one (Thomas & Marandu,

2017) discussed about the rhetoric and realities of NTBs in Botswana. The current paper extends the previous studies by investigating the perceived impact of the NTBs.

Generally, trading across borders faces an overwhelming number of barriers globally. These barriers are mainly classified into Tariffs and Non-tariff barriers (NTBs). These barriers affect both imports and exports of nations, but mostly they are impositions on imports by countries that follow the mercantilist economic policy. Mercantilists argue that it is in a country's best interests to maintain a trade surplus, to export more than it imports. The weakness of mercantilism is that it views trade as a zero-sum game in which a gain by one country results in a loss by another. The implication of mercantilism for economic policy is that counties should maximize exports and minimize imports. It thus promotes tariffs, quotas and other barriers on imported goods in order to achieve that goal.

Mercantilism contrasts sharply with the theory of free trade which posits that trade is a win-win game whereby each country stands to gain from trading (Smith, 1776; Ricardo, 1817). This implies that a country's economic well-being can be best improved through the reduction of barriers to free trade. The source of the mutual gains is specialization which tends to allow resources to be allocated in their most efficient pattern among trading countries.

In global, regional and national terms, research on NTBs is timely. NTBs are measures, other than tariffs, that restrict trade flows (Gonzalez-Mellado, M'Barek, Nii-Naate, Gonçalves, & Spinoglio, 2011). The use of NTBs has escalated in relatively recent years due to the reduction of tariffs caused mainly by two sets of forces. The first force is the founding of a Free Trade Agreement Organizations known as the World Trade Organization (WTO) on 1 January 1995. The WTO replaced the then General Agreement on Tariffs and Trade (GATT), which had operated since 1948. The WTO deals with global regulation of trade among member nations. Its main function is to ensure the reduction of tariff barriers so that global trade would flow as freely as possible. With the pressure of the WTO to reduce tariffs globally, non-tariff barriers have assumed an unprecedented significance and application in neo-mercantilism.

The second force resulting in tariff reduction is liberalization due to regional integration agreements. The reduction of tariff barriers has two effects: intensifying foreign competition in domestic markets and loss of tariff revenues for governments. The result is that governments have turned to non-tariff barriers to attain the same protectionist objectives previously achieved through tariffs. In view of the reduced tariffs, the main barriers to trade now are non-tariff ones at both the border and behind the border (Ratna & Huang, 2016).

For developing countries, understanding of NTBs is of critical importance. UNCTAD (2013) noted that accessibility of markets for developing countries is largely dependent on compliance to trade regulations beyond tariff and preferential agreements. The rise in the service sector, specifically in developed countries, has been accompanied by trade impediments often hidden in domestic regulations that attempt to curtail foreign firm access (Ching, Stephen; Wong, Clement Yuk-Pang; Zhang, Anming, 2004). In general, the reduction of tariffs and the resulting restrictive measures consisting of non-tariff barriers have not favoured the developing countries (Fisher, 2006).

Specifically, in the African context, the reduction of tariff barriers on African exports is crucial and must be emphasised in multilateral negotiations (Portugal-Perez & Wilson, 2008). However, the reduction tariff barriers have led to the growth of NTBs. Gonzalez-Mellado, M'Barek, Nii-Naate, Gonçalves, & Spinoglio (2011) conducted a study in Ivory Coast, Kenya, Morocco, South Africa and Uganda on the impact of non-trade barriers in their exports to the European Union (EU). The impact was mostly negative and the authors concluded that there was a need to establish a database of NTBs to facilitate their reduction to allow entry of African products into the EU.

Mapuva & Muyengwa-Mapuva (2014) noted that the Southern African region is good for economic integration because of the small economies in the area and hence can facilitate interstate trade and help boost the economies. Hence, for the SADC region, tariff reductions have been effected despite the reliance of many of these countries on tariff revenues due to the poor taxation systems in place (Marandu, Phambuka-Nsimbi, & Thomas, 2012). For these countries, the reduction of tariffs may tempt them to resort to non-tariff barriers to bridge their revenue deficits.

Objective of the Study

The main objective of the study is to investigate the impact of NTBs on Botswana's trade in the Southern African Development Community. In the light of this broad objective, the issues to be studied revolve around seeking answers to one primary and three secondary questions:-

Primary Question

What are the main NTBs that impact Botswana's trade in the SADC region?

Secondary Questions

1. Does the perceived impact vary with the size of the firm?
2. Does the perceived impact vary with the experience of the firm?

The objective of the secondary questions is to provide a better insight into answers to the primary question. The secondary questions translate into the following hypotheses:

- H1: Smaller firms perceive more impact of non-tariff barriers than larger firms.
- H2: Managers of less experienced firms perceive more impact of non-tariff barriers than managers of more experienced ones.

CONTEXT OF THE STUDY

SADC is an African regional integration that consists of 16 member states. These are Angola, Botswana, Comoro, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe. In 1996, SADC member states signed a Trade Protocol (Simwaka, 2011) which came into force in 2000. Originally, SADC milestones of transition to integration were agreed as follows: SADC to be Free Trade Area by 2008; Customs Union a by 2010; Common Market by 2015; Monetary Union by 2016 and an Economic Union by 2018 (UNCTAD, 2006; SADC, 2019). The ultimate aim was to create a larger market for member countries to ensure reduced cost of doing business associated with the economies of scale in production and marketing.

Although most SADC members met the minimum 85% tariff reduction by August 2008, reaching complete tariff removal by 2012 proved difficult and even so in 2021. Three explanations account for this difficulty. First, the tariff structure in some of the SADC countries is complex rendering total integration difficult to achieve (Behar & Edward, 2011). Second, some nations are open whereas others are restrictive, hence making it hard to harmonize

external tariff for trade with non-members (Khandelwal, 2004). Finally, some members lack commitment and the political will for total tariff reduction (Simwaka, 2011).

In consequence, the 85% reduction in tariffs has not produced significant improvements in trade among SADC member states. One plausible explanation is that, globally, any efforts to reduce tariffs on trade are being rapidly replaced by a corresponding growth in NTBs (Faehn, 2002; Nuhanovic & Nurikic, 2016). In our specific context, notwithstanding the formation of the SADC Committee of Ministers of 1999, responsible for removal of NTBs, some member countries continued to introduce new NTBs (Simwaka, 2011).

Thus, more work needs to be done at the regional level to reduce NTBs. One of the initiatives in this direction is the joint effort by three Regional Economic Communities - the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and SADC. These regional blocks converged to reach an inter-regional agreement. The main objective of this pact is to establish a single extended market through the Tripartite Free Trade Area (TFTA). One of the practical steps they took was to design an "On-line Complaint Reporting, Monitoring and Eliminating Mechanism" mainly to identify and correct NTBs from participating member states (Non-Tariff Barriers: Reporting .., 2019). However, despite the mechanism, NTBs that have supposedly been resolved continue reappearing. To buttress, Phambuka- Nsimbi (2018) attributed the recurrence of NTBs to the countries involved having different mind-sets, hence making it difficult to integrate as envisaged. Vanzetti, Peters, & Knebel (2016) acknowledge the existence of non-tariff barriers in SADC and that their reduction would significantly improve the region trade. Kalaba (2014) conducted a study on NTBs in agricultural trade sector in the SADC and concluded that NTBs were increasing as tariffs were decreasing.

SADC Intra-Regional Trade

Being part of SADC means that Botswana has preferential market access for its products in the region and, in turn, makes its market accessible to fellow members. The 2013 statistics estimated the SADC region to hold 26.5 percent of Africa's population, which is about 286.8 million people (UNCTAD, 2018). Detailed knowledge of Botswana's exports (Table 1) and imports (Table 2) within SADC is important to help in appreciating the significance of NTBs to businesses in the country.

Although, trade data for the regions are often unreliable and generally difficult to find (Sandrey, 2013), however, Table 1 shows Botswana's exports to other SADC countries from 2014 to 2018 and the world for 2016 to 2018. Two main observations are apparent from the data:

1. First, the figures for 2018 reveal that the bulk of Botswana's exports go to the rest of the world with only 13 per cent going to the SADC region. This implies that Botswana is relatively very much more dependent on the rest of the world.

2. Second, the figures show that Botswana's intra SADC exports go mainly to the contiguous neighbours: South Africa (66% in 2018) followed by Namibia (21%) and Zimbabwe (5%); thus making exports to the rest of the SADC countries insignificant.

Table 2 shows Botswana's imports from other SADC members from 2014 to 2018. A prominent observation is again the vast reliance (about 86% in 2018) of Botswana on South

Africa, thus again rendering the other 14 member states insignificant. Namibia imports into Botswana come a distant second. The Comoros became the 16th member of SADC and was only admitted as a full member in August 2018, hence the nil figures.

The low intra-regional trade can be attributed to several factors. The first is a lack of a diversified export base, whereby minerals and agricultural products are dominant (IMF, 2018; SADC pushes..., SADC pushes for intra-regional trade, 2018). The second is different levels of economic development of the member countries, with the more developed economies in the bloc playing a domineering role in decision-making, hence stalling some policies that could otherwise lead to improved intra-regional trade (Mapuva & Muyengwa-Mapuva, 2014). The third factor has to do with political instabilities in Lesotho, the Democratic Republic of the Congo, the Comoros, Madagascar and Zimbabwe (Simwaka, 2011).

Table 1: Export by Botswana to other SADC Countries (Millions US $)

Year	2014	%	2015	%	2016	%	2017	%	2018	%
Angola	2.08	0%	2.49	0%	2.36	0%	1.17	0%	2.84	0%
Comoros	0	0%	0	0%	0	0%	0	0%	0	0%
DRC	3.76	0%	3.55	0%	1.93	0%	1.17	0%	7.41	1%
Eswatini	1.42	0%	1.03	0%	1.05	0%	0.36	0%	0.73	0%
Lesotho	3.66	0%	0.2	0%	0.27	0%	0.2	0%	0.4	0%
Madagascar	0.05	0%	0.01	0%	0	0%	0	0%	0	0%
Malawi	2.29	0%	1.61	0%	1.73	0%	3.77	0%	1.33	0%
Mauritius	0.07	0%	0.05	0%	0.18	0%	0	0%	0	0%
Mozambique	4.38	0%	2.79	0%	3.19	0%	0.39	0%	0.93093	0%
Namibia	583.85	35%	745.45	40%	847.72	44%	202.4	24%	186.56	21%
Seychelles	0.11	0%	0	0%	0.03	0%	2.12	0%	5.49	1%
South Africa	932.9	55%	987.54	53%	993.39	51%	576.77	68%	573.64	66%
Tanzania	2.84	0%	1.46	0%	2.86	0%	0.17	0%	12.35	1%
Zambia	46.34	3%	43.8	2%	31.04	2%	28.82	3%	37.78	4%
Zimbabwe	107.72	6%	56.69	3%	50.63	3%	30.62	4%	43.29	5%
Totals in SADC	1691.47	100%	1846.67	100%	1936.38	100%	847.96	100%	872.75	100%
Totals, World					7362.00		5899.00		6587.00	
%					**26%**		**14%**		**13%**	

Sources: IMF (2018) Direction of Trade Statistics & UNCTAD (2016, 2017, 2018). Handbook of Statistics.

Table 2: Botswana's imports from other SADC members from 2014 to 2018 (Millions US $)

Year	2014	%	2015	%	2016	%	2017	%	2018	%

Angola	0	0%	0.08	0%	0.11	0%	0.1	0%	0.18	0%
Comoros	0	0%	0	0%	0	0%	0	0%	0	0%
DRC	0.02	0%	0.01	0%	0.03	0%	0	0%	4.8	0%
Eswatini	1.02	0%	7.2	0%	10.4	0%	8.21	0%	11.9	0%
Lesotho	0.29	0%	0.16	0%	1.11	0%	1.35	0%	1.8	0%
Madagascar	0.09	0%	0.01	0%	0	0%	0	0%	0.16	0%
Malawi	2.73	0%	0.9	0%	3.78	0%	1.56	0%	1.15	0%
Mauritius	8.08	0%	3.47	0%	2.57	0%	0.81	0%	19.15	0%
Mozambique	12.78	0%	44.7	1%	117.91	2%	70.07	2%	41.15	1%
Namibia	944.33	16%	1,123.15	20%	641.45	13%	364.41	9%	520.03	11%
Seychelles	0	0%	0.05	0%	0.07	0%	0	0%	0	0%
South Africa	**4,952.70**	**83%**	**4,455.27**	**78%**	**3940.14**	**83%**	**3,425.58**	**88%**	**4038.83**	**86%**
Tanzania	4.36	0%	0.4	0%	0.18	0%	0	0%	0.57	0%
Zambia	32.03	1%	36.99	1%	26.09	1%	19.78	1%	21	0%
Zimbabwe	23.03	0%	31.05	1%	21.56	0%	20.85	1%	24.52	1%
Totals	5981.46	100%	5703.44	100%	4765.4	100%	3912.72	100%	4685.24	100%

Source: IMF (2018) Direction of Trade Statistics

THEORETICAL FRAMEWORK

Understanding Non-Tariff Barriers

Whereas it is generally vital to appreciate the nature of a concept before trying to measure its impact, many studies on NTBs experience this weakness: Lack of construct definition. Measures must entail a conceptual and operational definition (Tull & Hawkins, 1987). The conceptual definition attempts to define the NTBs construct. The operational definition defines how to gauge the impact of the NTB. In many cases, only a few researchers develop a conceptual definition of the NTB they are purporting to measure (Gertner, 2010). Overcoming this weakness requires studies on non-tariff barriers to be anchored on theoretical frameworks that clarify the non-tariff construct. The following theories can be helpful in the construction of a theory of NTBs and influenced this study.

The first is the theory of perception which constitutes the process of giving meaning to stimuli that comes through our senses (Cherry, 2019). It is about how we see or interpret the world around us. Though perception may not coincide with reality, people usually act on the basis of their perceptions (Schiffman & Wisenblit, 2015). This study, therefore, assumes that exporters reach decisions based on their perceived barriers and not necessarily based on actual barriers.

A closely related theory is the concept of self-efficacy (Bandura, 1994; Bandura, 2000), which refers to the extent of one's belief in one's ability to accomplish a task and reach set goals. One's sense of *self-efficacy* is important in influencing how one approaches goals amidst obstacles. In fact, the fewer the obstacles that an individual foresees, the better will be one's perceived control over a behaviour. Self-efficacy also determines whether an individual will display coping behaviour and for how long such efforts will be sustained in the face of obstacles.

The third theory that informed this study is the theory of absolute advantage (Smith, 1776) as improved upon by Ricardo (1817) to become the theory of comparative advantage. The main contribution of the economic advantage theory is its explanation that trade is a win-

win game in which all participating countries realize economic gains. This theory provides a strong rationale for encouraging free trade. Indeed, so powerful is economic advantage theory that it remains a major intellectual weapon for those who argue for free trade. Based on this theory, this study assumes that gains in international trade are largely based on the absence of trade barriers among trading countries (Jordaan, 2017).

On the whole, it seems that a lot remains to be done to advance knowledge on NTBs from a theoretical perspective. After all, there is an overall scarcity of literature on this subject, hence warranting more studies in the area.

Classification of Non-Tariff Barriers

The study of NTBs causes problems because they are defined by what they are not. Literature defines NTBs as virtually every trade-distorting action, apart from tariffs. This open-ended definition implies that NTBs may embrace a myriad of activities that affect trade. Such a definition means that no classification of NTBs can meaningfully be complete.

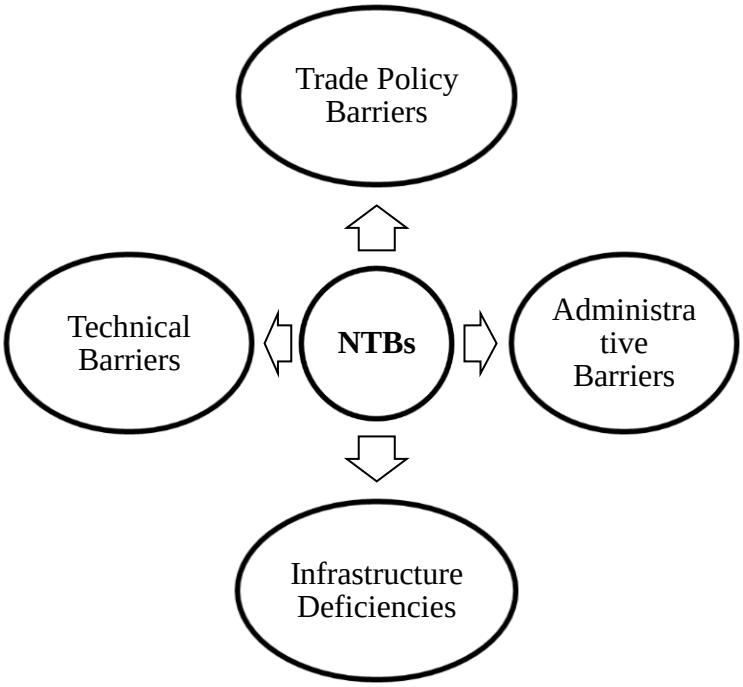
Vakulchuk & Knobel (2018) classified NTBs into unwieldy categories that included differences in sanitary and phyto-sanitary (SPS) requirements on food and agricultural products, non-recognition of documents authorising business activities, countervailing and anti-dumping duties, differences in national regulation and municipal procurement, subsidies, technical obstacles, and rules of origin.

This study classifies NTBs into four categories (Figure 1). First, as policy (for example, value-added tax), second, as technical (e.g. product quality, product safety, authenticity, etc.), third, as administrative (e.g. lack of clarity on cross-border policies, non-transparency, cross border delays, etc.) and, finally, as infrastructure (e.g. access to trade finance, transportation problems). The authors contend that administrative NTBs are not an independent set of barriers as they originate from the first two groups. In fact, they consist of methods put in place to carry out the Trade Policy and Technical regulations. The administrative NTBs therefore, become an impediment to trade because of flaws inherent in the implementation methods. Administrative deficiencies include; the lack of clarity, transparency, efficiency and consistency of cross-border procedures (Sandrey, 2013). Administrative NTBs are difficult to identify because many of them are informal as they arise from unpublished procedures and practices.

The infrastructure NTB category is not normally found in the conventional literature but consistently appears in research relating to developing countries such as those in Eastern Europe (Pjerotić, 2008) and Africa (Imani Development Austral, 2004). Infrastructural inadequacies consistently emerged throughout the pre-testing of the questionnaire used in this survey. These include: inadequacies in border posts, roads, airports, high transportation charges, problems in accessing trade finance, just to mention a few.

Infrastructure relates to the level of economic advancement of a country. It enhances or impedes the application of the technical, trade policy and administrative regulations. For instance, a good information technology system may reduce delays arising from undue customs work. This obstacle is less important in a developed country than it is for a developing country, as infrastructure in the former is already well-developed and can be taken for granted.

Figure 1: Constituents of Non-Tariff Barriers



Source: Marandu, Phambuka-Nsimbi, & Thomas (2012)

Impact of Non-Tariff Barriers on Trade

With regard to the impact of non-tariff barriers on trade, there is no single method capable of analysing the entire spectrum of NTBs (Deardorff & Stern, 1997). This limitation notwithstanding, two broad methods have emerged in the trade literature for quantifying the effect of non-tariff barriers on trade (World Trade Organization, 2012). The first is a group of techniques called "Price Gap Methods" that work on the assumption that consumers bear price increases from NTBs. They compare prices before and after NTBs, and convert the differences into a tariff equivalent (Ferrantino, 2006). The second is a group of techniques called the "Gravity Equation Methods" named after Isaac Newton's law of gravity. These equations predict how the magnitude of trade between any two countries is positively associated with the size of their economies and negatively associated with the distance between them (World Trade Organization, 2012).

Collectively, impact studies have made one important conceptual contribution. Theoretically, NTBs are more destructive to trade efforts and inflict much greater welfare harm than tariffs (Faehn, 2002; Nuhanovic & Nurikic, 2016). There are several good reasons behind tariffs being considered better policy solutions than NTBs (Hartigan, 1995; Winkelmann & Winkelmann, 1998):

- Unlike NTBs when tariffs are used, the level of the barrier is apparent to all stakeholders because they can easily evaluate impact of the tariff.

- Whilst revenue from tariffs accrues to the government, the costs of NTBs are absorbed by a business which then passes them on to the consumers or simply creates conditions favourable for corruption.

METHODOLOGY

Development of Questionnaire

It is essential for a good survey that researchers begin with determining the prominent issues in a specific context. It was, thus, imperative to pre-test the questionnaire to ensure that it elicits barriers relevant to international trading firms in Botswana. The pre-test helped to determine the salient items for inclusion in the instrument. The pre-test also helped to uncover editorial, readability and content mistakes.

The questionnaire used was divided into two sections. Section one sought data on demographic features of the respondents. Section two sought responses aimed at the research issues on perceived impact of NTBs on trade. The questions were structured, Likert-type, incorporating fill-ins, thus offered comparable responses, which aided coding and analysis.

Sampling

Data were collected by surveying participants attending the Botswana Exporters' and Manufactures' Association (BEMA) workshops held in Gaborone. This type of purposive or judgmental sampling was used because the workshop attendees were the executives most responsible for or most knowledgeable on their firm's export activities. The respondents can therefore be logically assumed to be able to elucidate the issues of the study as well as being representative of the population. In addition, on-site visits were made to three border posts (Ramatlabama, Kazungula Ferry, and Ramokgwebana) in order to experience first-hand border issues.

Data Analysis

Data analysis involved individual and grouped item average scores that provided a measure of the impact of NTBs. To test for differences, if any, among groups, the t-test for two independent samples was employed with significance established at the conventional level of 5 percent. The associations among the NTB groups were analyzed using correlation matrix.

Characteristics of the Sample

This section presents an analysis of the main characteristics of the sample of 84 firms used in the study. It should be beneficial to the reader to reflect on the overall features of the respondents who provided the data used to derive the findings, conclusions and recommendations. **Error! Reference source not found.** shows a summary of the key features of the sample. Emerging from the data are the following major points:

a) The majority of the respondents were from Gaborone where most firms are located and these companies accounted for 67 percent of the firms surveyed.

b) The respondents in the sample came from several sectors, with manufacturing consisting of the largest group accounting for 46 percent of the participants.

c) The vast majority (95%) of the respondents were citizens of Botswana.

d) Overall a good number of the respondents appreciated most of the issues raised in the questionnaire because they had an average of 8 years work experience and 41 percent of them were top management.

e) A good majority (83%) of the respondents ordinarily used the border posts between South Africa and Botswana for trade, hence corroborating the truism of high dependence of Botswana on its southern neighbor."

Table 3: Characteristics of Respondents

Location of Company:			**Border Frequently Used:**	**No.**	**%**
Gaborone	56	67%	South Africa	58	83%
Francistown	5	6%	Namibia	5	7%
Selibe Phikwe	1	1%	Zimbabwe	4	6%
Kasane	2	2%	Zambia	3	4%
Lobatse	8	10%	**Total**	**70**	**100%**
Gantsi	3	4%	**Position of Respondent:**		
Maun	4	5%	Top Management	32	41%
Other	5	6%	Middle Management	23	29%
Total	**84**	**100%**	First line Executive	24	30%
Type of Business:	**No.**	**%**	**Total**	**79**	**100%**
Manufacturing	39	46%	**Citizenship:**		
Wholesale or Retail	6	7%	Citizen	52	95%
Clearing and Forwarding	7	8%	Non-Citizen	3	5%
Government	10	12%	**Total**	**55**	**100%**
Parastatal	15	18%		**No.**	**Average**
Other	7	8%	Average Number of Employees	63	187
Total	**84**	**100%**	Average Company Experience	72	15 Yrs.
			Respondent Experience	53	8 Yrs.

Note: Totals may be less than 84, as some respondents did not complete all questions.

STUDY FINDINGS

The findings are organized in accordance with the results from the primary and secondary lines of analysis.

Primary Analysis

The impact of an NTB was measured by requesting respondents to express their views on the impact of a specific NTB on business performance on a 3-point scale: Minor (1), Moderate (2), Major (3). Data analysis was conducted at two levels: At disaggregate and at aggregate levels of the 28 NTBs used in the study.

Disaggregated analysis

The disaggregated analysis focused on the impact of the top 15 NTBs. Table 4 presents the entire 28 NTBs perceived to impact Botswana's external trade in SADC, arrayed in descending order of their mean ranking. The rankings produced several interesting revelations:

Table 4: Top 15 Impactful Non-Tariff Barriers

	N	**Mean**	**Rank**	**Type of NTB**
1. Delays at Border	90	2.61	1	Administrative

2.	Excessive documentation	89	2.45	2	Administrative
3.	Cumbersome transit procedures	60	2.43	3	Administrative
4.	Varying trade Regulations in SADC	62	2.40	4	Administrative
5.	Difficulties in accessing trade finance	86	2.40	5	Infrastructure
6.	Value Added Tax	87	2.32	6	Trade Policy
7.	Visa, Res work permits	83	2.31	7	Trade Policy
8.	Unfair Trade Practices	62	2.31	8	Trade Policy
9.	Import Fees	63	2.30	9	Trade Policy
10.	Transport Problems	87	2.29	10	Trade Policy
11.	Restricted border working hours	63	2.27	11	Administrative
12.	Inconsistent customs implementation	62	2.26	12	Administrative
13.	Export Fees	61	2.15	13	Trade Policy
14.	Non-notification of new customs regulations	85	2.14	14	Administrative
15.	Corruption	86	2.09	15	Administrative
16.	Unclear what to do at border/customs process	47	2.06	16	Administrative
17.	Unclear Customs Documents	43	2.02	17	Administrative
18.	Unreasonable Quality Standards	85	2.00	18	Technical
19.	Rules of Origin	83	1.99	19	Trade Policy
20.	Inadequate banking facilities	84	1.98	20	Infrastructure
21.	Inadequate insurance facilities	85	1.96	21	Infrastructure
22.	Export License	88	1.92	22	Trade Policy
23.	Import License	84	1.92	23	Trade Policy
24.	Unjustified Pack and Labelling Regulations	82	1.87	24	Technical
25.	Government requirement to buy local	83	1.86	25	Trade Policy
26.	Subsidies	55	1.85	26	Trade Policy
27.	Pilferage	83	1.84	27	Administrative
28.	Police roadblocks	63	1.78	28	Administrative

a) First, the findings show that the most impactful NTB on Botswana's external trade is "Delays at the Border", a problem which is "Administrative" in nature.
b) Second, the findings show that, the first four NTBs are "Administrative" in nature. This corroborates the above finding and further suggests that, perhaps, in general, the most impactful NTBs are "Administrative" issues.
c) Third, for the 15 most impactful NTBs, eight, six, and one are from the "administrative", "trade policy" and "infrastructure" categories, respectively. None is from the "technical" category. It appears that Technical NTBs are the least impactful on Botswana's intra-SADC trade.
d) Fourth, another noticeable feature is that most of the 15 NTBs are implicit or covert in nature. These include "delays at the border", "unclear on what to do at the border", and "excessive documentation". These NTBs are normally not stated in regulations, but originate from practice. They arise from the discretion of officials when applying "trade policy" regulations. We can, thus, cautiously assume that the most impactful NTBs that affect traders may, indeed, be implicit in nature. As implicit NTBs are of a covert nature, they are hard to ascertain, assess the impact, and hard to eliminate (Ching, Stephen ; Wong, Clement Yuk-Pang; Zhang, Anming, 2004).
e) Finally, the results suggest that NTBs are found not only in the goods sector, but also in the service sector, which depends more on the mobility of people as a mode of import. For example, the seventh ranked NTB (immigration difficulties) is related to controls on the movement of persons. This may negatively impact on foreign direct investment (FDI).

Aggregated Analysis

In the aggregate analysis, the 28 NTBs were categorized according to the four-group taxonomy. The 10 NTBs used to measure Trade Policy were consolidated into a single NTB by determining the mean of the items within that scale (Table 5). The same procedure was used for the other NTB groups.

Table 5: Grouping of NTBs by Type

New variable	Number of Items	Grouping Statistic
1. Policy NTBs	10	Mean
2. Technical NTBs	2	Mean
3. Administrative NTBs	12	Mean
4. Infrastructure NTBs	4	Mean
Total NTBs	**28**	

The aggregate analysis involved two types of analyses. The first type analyzed the mean and showed that Administrative NTBs (mean = 2.2) were the most impactful whereas Technical NTBs (mean = 1.9) were the least (Table 6). The second type analyzed the correlations among the four NTB groups. The Spearman's rank correlation coefficients among the four aggregate NTB constructs (Table 7) indicate a positive relationship among any of them. This implies that a respondent who perceives a rise in the impact of any one NTB group is also likely to perceive a similar rise in effect for all the other three remaining NTB groups.

Table 6: Mean Impact of NTBs by Type

	N	Mean	Std. Deviation	Rank
1. Administrative NTBs	94	2.2239	0.52964	1
2. Infrastructure NTBs	92	2.1413	0.62113	2
3. Policy NTBs	93	2.0702	0.47921	3
4. Technical NTBs	87	1.9138	0.71205	4

Table 7: Spearman's Rank Correlation Coefficient

	Technical	Policy	Administrative	Infrastructure
1. Technical	1.000			
2. Policy	0.516**	1.000		
3. Administrative	0.494**	0.381**	1.000	
4. Infrastructure	0.435**	0.438**	0.473**	1.000

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

Secondary Line of Analysis

The aim of the secondary line of analysis was to re-analyse the data to determine whether there are any differences arising amongst the sub-groups of the respondent managers. This analysis aimed at investigating whether interventions or solutions may need to vary with firm size or company experience.

Impact of NTBs by Firm Size

The impact by size of firm analysis was conducted by ordering all firms in descending order, based on the number of full-time employees. The number of employees is the most commonly used measure to gauge size because it is less sensitive to the type of activity than other measures like market value, assets, sales and equity. The number of employees in the sample firms varied significantly, ranging from 2 to 1,500. Twenty-one firms that did not provide employment data were excluded from this analysis. The firms were categorized into small and large ones relative to the median value in the sample. Thus, those having 32 (median value) or less employees were classified as *small*, and those with more than 32 employees were treated as *large*. This procedure produced 32 small firms and 31 large firms.

Hypothesis testing involved investigation to find out whether small firms perceived a higher level of NTB impact than larger firms. The results (Table 8) made two revelations. The

trend was that respondents from smaller firms perceived a higher level of mean impact, with regard to all the four NTB groups than the bigger ones. However, only the differences for Policy and Infrastructure NTBs were statistically significant.

Table 8: Size of Firm and Perceived Impact

		Size of Firms				
		Small n=31	**Large n = 32**			
		Mean	***Mean***	***Difference***	***Sig. Level***	***Interpretation***
1.	Policy	2.1168	1.8708	0.2460	0.036	Sig.
2.	Technical	1.9828	1.6667	0.3161	0.083	Not Sig.
3.	Administrative	2.2115	2.1992	0.0123	0.929	Not Sig.
4.	Infrastructure	2.2581	1.9250	0.3331	0.039	Sig.

1.1 Impact of NTBs by Company Experience

A similar test to the one that was applied for firm size was also undertaken for determining the association between company experience and perceived impact of NTBs. The categorization of firms was gauged by the company's number of years in business. The firms in the sample had significantly varying experiences that ranged from 0.5 to 50 years. Accordingly, they were categorized into firms with Low Experience and those with High Experience relative to the median value (15 years) in the sample. This procedure produced *35 Low Experience* firms and *37 High Experience* firms.

Hypothesis testing focused on finding out whether managers of Low experience firms perceived a higher level of impact than those of High experience firms. The results (Table 9) were, to some extent, similar and different from those of the analysis of size**.** First, there was an inclination for the Low experience firms to perceive a higher level of mean impact, when considering each of the four groups of NTBs than those with High experience. Second, contrarily to the findings relating to size, none of the differences achieved statistical significance at the conventional 5% level of probability.

Table 9: Company Experience and Perceived Impact

		Experience of Firms				
		Low n= 35	**High n = 37**			
		Mean	***Mean***	***Difference***	***Sig. Level***	***Interpretation***
1.	Policy	2.0244	1.9676	0.0568	0.620	Not Sig.
2.	Technical	1.9091	1.6912	0.2179	0.206	Not Sig.
3.	Administrative	2.1888	2.1780	0.0108	0.934	Not Sig.
4.	Infrastructure	2.1471	1.9838	0.1633	0.281	Not Sig.

CONCLUSIONS, IMPLICATIONS, FUTURE RESEARCH

This study investigated the perceived impact of NTBs on trade between Botswana and its SADC counterparts. This section translates the findings into a meaningful set of conclusions and implications as well as suggesting directions for future research.

Conclusions and Implications for Public Policy

a) There is evidence to the effect that "Administrative" barriers constitute the most impactful NTBs on Botswana's trade with other SADC countries. "Technical" NTBs (health, safety and environmental) barriers, on the other hand, have the lowest impact. This may be explained by the existence of similar standards between Botswana and its main trading partner, South Africa. Botswana mainly adopts South African standards to facilitate access to the latter's much larger market. Thus, although policy-makers should fight every NTB, concerted efforts should focus on "Administrative" NTBs.

b) A quick inspection of the most impactful NTBs suggests that in addition to being "administrative" they are also "implicit" in nature in the sense that they arise when officials apply their preference when implementing the "trade policy" or "technical" regulations. To curb this inclination it is vital to have transparent procedures that diminish official discretion as much as possible. In fact, SADC nations would be better-off standardizing their regulations to reduce any "implicit" or unintentional trade-restrictive corollaries.

c) There was moderate evidence (significant in the case of Policy and Infrastructure NTBs) to show that smaller firms perceive a higher level of impact than their larger counterparts. Thus, international trade promotion agencies should focus their efforts on smaller firms. One way of overcoming this psychological barrier is for export promotion organizations to arrange seminars, radio or television programmes in which small international traders share their success stories and testimonies.

d) There were two pieces of evidence, though weak, on the link between experience and perception of the impact of NTBs. Managers of firms with Low experience perceived a higher level of impact with regard to all the four categories of NTBs than those with High experience. However, the differences were not statistically significant. Overall, the indication is that the perceived impact of a barrier on a firm's trade somewhat varies inversely with experience. This suggests that trade promotion agencies need to provide differentiated support services to firms depending on experience. For example, non-exporters could be accorded opportunities to attend seminars while encouraging new exporters to attend trade missions and experienced exporters could be assisted to attend trade shows or in the identification of trading partners.

Conclusions and Implications for Theory

a) The four-group NTB taxonomy comprising Technical, Trade Policy, Infrastructure and Administrative, provided a useful framework for investigating NTBs.
b) NTBs are external factors to a firm and macro in scope. Thus, they are not easily controllable by any single company. Although collective efforts by firms can pressure government to reduce NTBs, on the overall more efforts are needed in terms of time and resources to reduce them.
c) The positive correlation amongst each of the four NTB groups suggests that whenever a respondent perceives an increase in the level of impact of any particular NTB group then he or she will similarly perceive an increase in the other groups as well. Thus, any impact of NTB originating from one group is prone to cause similar perceptions in the other

groups. In other words, the initiation of a specific NTB may cause a multiplier effect that is over and above the original NTB. Conversely, a decrease of a specific NTB in one area could cause a general perception of multiple decreases in other NTBs, hence gradually creating a more positive environment for trade.

d) The traditional three-group taxonomy of NTBs is based on developed country contexts where infrastructure is well-developed and can be taken for granted. This study shows that infrastructure has a critical role to play in the success of firms in Botswana. Implicitly, studies in developing country contexts that omit infrastructure may be misleading because of under-specification of an important trade barrier.

Suggestions for Future Research

This study is inclusive in many ways. First, it covers both exports and imports; however, nations are more inclined to set barriers against imports relative to exports. Therefore, future studies should examine exports and imports independently. Second, the study included several products. However, different industries have unique sets of NTBs afflicting them. This introduces problems associated with sample heterogeneity, which could undermine the reliability of the results. As such, future researchers may consider studying NTBs for a specific industry. Third, this study was on trade between Botswana and all other SADC countries. As differences between Botswana and individual SADC countries could be concealed in the overall averages, future studies can look at NTBs between Botswana and key individual SADC trade partners on a bilateral basis.

Concluding Remarks

It is believed that Botswana's economic development is going to be trade-led at least in the foreseeable future. Thus, this study aimed at improving our understanding of the impact that NTBs have on trade between Botswana and its SADC counterparts. The ultimate aim was to recommend ways for increasing trade. It is believed that the study has contributed towards a better comprehension of NTBs. However, some fresh questions have been raised and remain unanswered; these call for further empirical studies. This study, therefore, has the potential of motivating other researchers to build on what this study has established.

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