

## The impact of the logistics skills gap on customer service in Southern Africa: Evidence from Namibia and the Republic of South Africa.

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### Abstract

Logistics is essential for the development of trade (& therefore potential wealth) in southern Africa. To enable this to succeed it is crucial that the industry provides good (international) standards of customer service. Therefore, it is important to understand the current level of service provision as well as: what influences it, which skills are required and thus the impact of any skills gap. Within this context, this paper addresses the question: *“What is the impact of the logistics skills gap on customer service in southern Africa” drawing its evidence from Namibia and the Republic of South Africa.*

Previous research strands investigated skills requirements and shortages in the logistics industry of South African, determined stakeholder views on barriers to logistics development in Namibia as well as understanding of the service levels that are offered. This study uses the findings of these research strands, supported by additional data from literature as well as by stakeholder and academic feedback from conferences, workshops and publications. It gave a nuanced view of the probable extent and magnitude of the skills gap in the southern African logistics industry and evaluated the impact that this may have on the future service provision in the two countries and, in outline terms, the region as a whole. It identified differences and similarities between the two countries' industries and established a base-line for future research in the SADC / SACU area.

The work provides an independent view on logistics skills capability and the progress in capacity development, which is vital for the future development and welfare of the region. It emphasises the need to cultivate people related skills in parallel with infrastructure development to ensure that the serviceability offered is adequate to ensure that any predicted benefits are achieved.

**Keywords:** *Logistics skills, customer service, human capacity building, developing countries, logistics skills shortages*

### INTRODUCTION

Southern Africa relies on trade to generate wealth to fund its economic and social development. Successful trade is dependent upon efficient and effective logistics that must provide high standards of customer service. It is therefore important to understand the current levels of logistics service provision as well as the factors that influence them, the skills required and the impact of logistics

skills shortages in the region. This paper focuses on the research question: “What is the impact of the logistics skills gap on customer service in southern Africa” drawing its evidence from Namibia and the Republic of South Africa. Previous research by Heyns and Luke (2013) investigated skills requirements and shortages in the South African logistics industry. During the same period, work by Savage et al. (2014) identified stakeholder views on barriers to the development of the Namibian logistics industry, whilst Fransman et al. (2014) provided a better understanding of the current service levels in the Namibian logistics industry.

Southern Africa needs a clear view of the skills gap and its association with the barriers currently restricting development. The current emphases by the region in general are on driving growth and development; however there are challenges that hinder the prospects for success. This paper, using South African and Namibian data, combines the findings of the research strands from different datasets, supported by additional literature analysis as well as stakeholder and academic feedback from conferences, workshops and publications. It attempts to evaluate the impact of the skills shortage on future customer service provision in the two countries and, where possible, to extrapolate this to the region as a whole.

South Africa and Namibia’s developmental plans show that trade facilitation is a key attribute to promoting national growth. Both are working towards establishing or strengthening supply chain routes to service the region. This bodes well with international trading trends moving towards incorporating emerging markets into global supply chains. The two countries, which are inextricably linked through economic and currency dynamics, provide the basis for understanding how service levels for trade facilitation are affected by barriers and skills shortages in the region. The combination of the barriers and skills data sets, gives a wide spectrum of views that, in turn, offers the opportunity to detect differences and similarities in the businesses of the two countries and consider whether they are driven by the relative state of development of the two economies or other factors.

The paper further tries to provide an independent view on skills capability and the progress in capacity development in a discipline that is acknowledged as being vital for the future development of the region and welfare of the population. It emphasises the need to cultivate logistics and related skills in parallel with developing more concrete investments such as infrastructure to ensure that the service levels offered are adequate to enable any predicted benefits to be achieved.

## LITERATURE REVIEW

In today’s globalized world, most people agree that it is supply chains that compete rather than individual companies or products (Christopher and Towill, 2001). Hence supply chain management (SCM) is a key strategic factor for increasing profitability and gaining competitive advantage. As southern Africa is made up of developing countries, the majority of them do not have a significant manufacturing base, and so must acquire income through trade (Lambourdiere et al., 2012). Even South Africa which does have manufacturing capabilities, still relies on trade to distribute product and generate wealth. Trade and logistics have been inextricably linked for as long as man has had to move goods to or from a market. This was recognised by Converse (1954) who stated that logistics was “the other half of marketing”, see figure 1. Converse understood that, whilst marketing activities such as advertising and promotion can stimulate trade through sales, this is pointless

unless that demand can be satisfied. Supply chain and logistics functions such as warehousing, logistics information systems and transport that are responsible for satisfying that requirement.

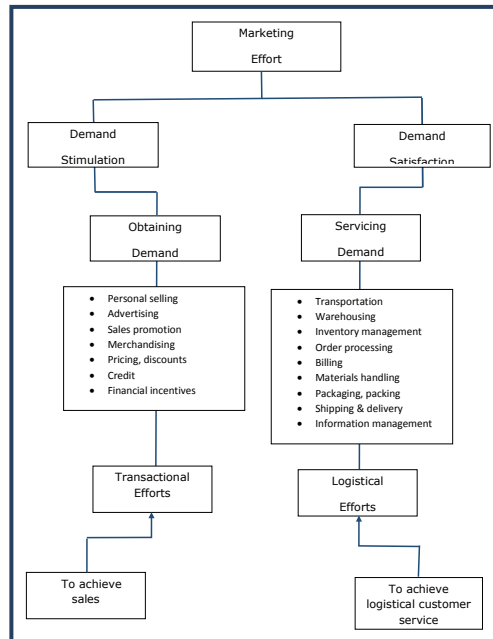


Figure 1: The two halves of the marketing process

Source: Converse, P., "The Other Half of Marketing", 1954, 26th Conference on Distribution, Boston, M.A.

To understand the significance of customer service and its impact on logistics, it is helpful to look at the level of individual businesses. According to Drucker (1989) "There is only one valid definition of business purpose: to create a customer. It is the customer who determines what a business is. What it [the company] thinks it produces is not of first importance, especially not to the future of the business and to its success. What the customer thinks he is buying and considers 'value' is decisive; it determines what a business is, what it produces and whether it will prosper." Therefore, it is vital to determine what the customer wants to 'buy' and, having done so, to provide it. Provision alone however, is not enough; rather it is essential to identify and provide the "correct level" of customer service that will generate competitive advantage, without endangering the sustainability, or future profitability, of the company. This has long been recognised by logisticians; for example, Christopher (1998) points out that "Logistics is ultimately concerned with customer service and specifically with making the product available in the market place within defined cost and service parameters". Savage and Bamford (1998) underline this link by demonstrating that measuring customer service factors is a quintessential part of benchmarking logistics performance. More recently, Christopher (2011) maintains that "Ultimately the success or failure of a business will be determined by the level of customer value that it delivers in its chosen markets". Customer value can be understood as:

$$\text{Customer value} = \frac{\text{Quality x Service}}{\text{Cost x Time}}$$

This equation (Johansson, 1993) is another illustration of the link between logistics and customer value as the former can affect both the “top” and the “bottom” half of the calculation. Once the importance of customer service is understood and accepted, it becomes imperative to define and understand the concept. This would appear to be straight forward, but there are many definitions of customer service, which can be confusing. Globalization, arguably one of the most influential trends in supply chains and their management, brings benefits to customers by increasing the range of goods available and should achieve cost reductions as suppliers source from low-cost countries. Bygballe et al. (2012) dispute this however, claiming that there is a lack of evidence that sourcing internationally actually leads to improved economic performance because of the difficulty in achieving a trade-off balance between purchasing and logistics costs (the total cost of ownership (Savage and Griffiths, 2007)) and customer service. It cannot be disputed that globalization implies ever increasing supply chain length, usually with a greater number of nodes. As supply chains increase in length, there are more opportunities for disruption and the risks increase as the probability multiplier effect comes into play because of the number of nodes. In some cases this can lead to manifestations of the “bull-whip” or “Houlihan” effect (Potter and Disney, 2006) where demand amplification can cause chaos in stock levels and manufacturing runs. The immediate impact of this is on the producer, but as soon as there is a risk of stock out or rationing, customer service will also suffer. This means that for supply chains to compete effectively by delivering good serviceability, there must be an high degree of integration supported by sophisticated IT systems. According to Zhao et al. (2008), effective integration also requires relationship and commitment between organizations, e.g. through partnerships, which may change the balance of power in the chains.

As can be seen from the above, the factors that influence supply chains and therefore the customer service that they provide are numerous and complex, but they all have an impact on and therefore influence logistics. According to Ruske et al. (2010), new trade corridors between Asia and Africa, Asia and South America and within Asia will re-chart global supply chains. Trade volumes will shift towards emerging markets and the least developed countries will take their first steps into the global marketplace. The southern African states wish to exploit this and become significant players in the global supply chain community. To do so successfully, they have to compete in the global market by ensuring that logistics serviceability levels reach international standards and match or better those offered by alternative destinations.

The southern African region has massive economic potential, as is evidenced by its economic growth rates over the past ten years. Although the region indicated slowdowns in 2008, 2009 and 2011, which were largely associated with the global economic slowdown, the region shows relatively consistent growth. (Banco Nacional de Angola, 2012, SADC, 2012). “Southern African Development Community (SADC) region has an immense growth potential associated to natural resources availability. Investment opportunities arise in mining, agriculture, manufacturing, financial services, ICT, tourism and infrastructural development. Yet, the region performance continued to fall short of its potential ....” (Banco Nacional de Angola, 2012:4).

There are multiple and diverse reasons for southern Africa not yet reaching its full potential. These include a multitude of obstacles to trade including delays, complex documentation requirements, skills shortages and unpredictable border procedures all contribute to the high costs and relative low

levels of trade in the region. Hasse (n.d.) states that “Africa’s economic development and ability to compete internationally depend on removing these roadblocks.”

The skills gap in southern Africa is well documented. The Global Competitiveness Report 2013-2014 identifies an inadequately trained workforce as the single most problematic factor for doing business in both South Africa and Namibia (World Economic Forum, 2013). Although it may not be the most problematic factor to doing business in other southern African states, it is one of the most frequently cited in most cases.

According to the World Economic Forum (2012) “the logistics and supply chain sector underpins the entire global economy.” As such, it must be recognized that without adequate supply chain skills, southern African countries cannot meet global customer requirements and cannot participate meaningfully in global trade. Barloworld logistics study (Barloworld Logistics, 2013) indicates that the supply chain skills shortage is the one of the top 5 constraints to South African supply chains and the single biggest constraint on their competitiveness. Furthermore, the South African Government Gazette (No. 37678, Notice 380 of 2014) identifies supply and distribution managers as well as logistics as being amongst the Top 100 scarce skills in the country (Republic of South Africa, 2014). As the World Bank’s Logistics Performance Index identifies South Africa as the top logistics performer in the region and its logistics competence as exceeding the regional average, it can be concluded that logistics competence, which is essentially driven by logistics skills, is generally below par in the region (World Bank, 2014).

A review of the literature revealed that supply chain skills shortages are not unique to the region, but rather are global. In a worldwide survey done by Manpower Group polling approximately 39,000 employers in 33 countries across the globe, 30% reported having difficulties in recruiting appropriate staff due to a lack of suitable talent (Zieminski, 2009). Although this pertains to skills in general, Zieminski (2009) goes on to state that ‘Work is getting more complex, employers are looking for more specific skills, so there is more of a mismatch between supply and demand.’ Although this pertains to skills in general, the problem appears to be even more complex in the supply chain. Kisperska-Moron (2010) perhaps illustrates this most clearly when she asserts that a different skills set will be required in the future as excellence is required from the beginning of operations as there is no time to improve performance during its [the supply chain’s] lifetime, which she regards as usually not more than 5–7 years.

In their paper, Heyns and Luke (2012) conducted a comprehensive review of the available literature and determined that supply chains typically required a combination of hard and soft skills in order to function effectively and meet the modern customer’s requirements. They concluded that “The changing nature of the supply chain has meant that, over time, the skills required to implement and manage successful supply chains have changed. Today’s supply chain is global and therefore requires high levels of communication, team work and the ability to see the big picture; it is fast moving, which requires strong decision-making and change management skills; it is cross-functional, which requires the ability to think outside the box and look at processes rather than functional silos; it is highly complex, which requires all of these skills as well as high levels of integrity, problem-solving capabilities and leadership” (Heyns and Luke, 2012). They emphasize further that a solid focus on customer service will continue to drive the skills requirements into the future. “The focus on management skills does not, however, detract from the need for supply chain-specific skills,

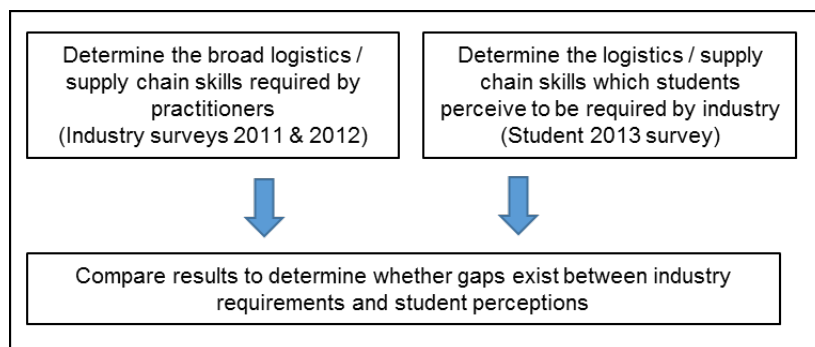
particularly in terms of the strongest cost drivers such inventory, warehouse and transportation.”(Heyns and Luke, 2012). In the conclusion of their literature analysis, they also identified that the requirement for skills such as IT knowledge and total cost management would continue to grow in importance as supply chains become more global and integrated.

## METHODOLOGY

This research is focused on the logistics industries of Namibia and the Republic of South Africa. It is explorative, adopting a critical realism approach to examine tendencies rather than laws, looking at entities, events and experiences, regarding perceptions and reality to derive its data. It draws together data sets from these two countries based on extensive semi-structured interviews with key stakeholders and surveys. The interviews and surveys targeted respondents on a purposeful basis to ensure coverage of a broad spectrum of stakeholders rather than attempting to achieve a statistically based sample of the overall population, which would be difficult to define. The initial research had been disseminated in the form of academic papers (Heyns and Luke, 2012, Heyns and Luke, 2013, Savage et al., 2013, Fransman et al., 2014, Luke and Heyns, 2014) and practitioner workshops. The comments from these have been incorporated into this paper’s data.

The paper uses the combined international data to examine the customer service levels provided by the logistics industry across the two countries. It looks at the skills requirements behind these levels to identify gaps and surfeits. In doing so it evaluates the differences and similarities, their possible causes and the impact on future development of the industry as well as on the countries.

In the South African studies, the purpose of the initial supply chain skills research was, firstly, to determine the different skills sets required by South African businesses in managing their supply chains. These are established from the results of industry surveys that were conducted during 2011 and 2012. Secondly, the research identifies the supply chain skills that students believe are required by industry through the results from a student survey conducted during 2013. Thirdly, the results of these two analyses are compared to determine whether gaps exist between industry requirements and student perceptions, thus highlighting some of the differences between supply and demand. This research framework is depicted in Figure 2.



**Figure 2: Research framework used to determine skill requirements**

To obtain a better understanding of the required logistics skills sets required by businesses in South Africa, two self-administered paper-based surveys were conducted at the annual SAPICS conferences in 2011 and 2012. The SAPICS conference is perceived as the leading logistics and supply chain

management conference in Southern Africa and was attended by more than 1,150 and 1,070 supply chain and operations management professionals in 2011 and 2012 respectively. In both questionnaires the respondents were requested to rate, on a four-point Likert-type scale, the level of importance of the various skills and skills groups in the recruitment process for logistics and supply chain employees. The response format was anchored from **no extent (1)** to **a large extent (4)**. The analysis of the skill requirements are based on the survey results of 204 and 200 respondents in 2011 and 2012 respectively, which represents a response rate of approximately 18% in each year. Although the number of respondents could be viewed as a limitation of the study, the researchers believe that the specialised nature of the sampling pool was capable of eliciting an adequate number of responses from industry practitioners and could therefore be regarded as sufficiently representative of the industry perspective.

To ascertain students' perception of the necessary skill sets required by the supply chain industry, a survey was conducted amongst tertiary students studying supply chain related courses at the University of Johannesburg. The survey was distributed to approximately 5000 tertiary student during 2013, studying various subsidised (e.g. National Diplomas and BCom degrees) and non-subsidised or industry programmes (e.g. certificates and diplomas). The three-page self-administered questionnaire was completed by 1,761 respondents which represents a response rate of more than 35%. Similar to the two practitioners' surveys, the student respondents were requested to rate on a scale of 1 to 4, (1 – to no extent; 2 – to a small extent; 3 – to a moderate extent; and 4 – to a large extent), the perceived importance of the selected skills items typically required by managers in logistics and supply chain organisations.

For the Namibian studies as there was little published information on the country's logistics industry, this research sequence's approach was exploratory. Jenkins et al. (2012) determined the capabilities of the Namibian logistics industry, using a matrix analysis research method as proposed by Nadin and Cassell (2004), then work by Lambourdiere et al. (2012) established the requirements for a successful logistics cluster in developing countries. Savage (2013) applied these to Namibia to assess its capability to meet the criteria and develop a gateway to the S.A.D.C. region. Feedback on those papers as well as further interviews and stakeholder surveys were used to test the reaction of potential users, both inside of Namibia and internationally, to a Walvis-bay port hub as well as the barriers to its successful development and operation. A specific survey into "barriers to the development of the Namibia logistics industry" covered approximately 125 stakeholders. This data has been analysed to assess the critical factors needed for Namibia to develop a successful logistics cluster strategy and the stakeholder perceptions of the barriers that need to be overcome in order for them to be realized.

The results of these analyses, conducted for different purposes in different countries, revealed results that were sufficiently similar that comparisons could be made. In order to conduct the analysis the categories used in each study had to be aligned, Figure 3 shows how the skill categories have been assigned to the barriers and visa-versa.

## FINDINGS

In common with most emerging countries, Namibia and South Africa have explored several strategic measures or plans to achieve their development aims. Both see logistics and transport as ways to

facilitate trade as a means to generate income to enable economic development, but there are significant obstacles that hinder such stratagems. Previous research based on stakeholder experiences (Savage et al., 2014) suggests that customer service issues are major barriers to advancing logistics in the region, whilst work by Heyns and Luke (2013) investigating skills requirements and shortages in the South African logistics industry also showed that lack of customer focus related skills was a major problem. The findings of this paper draw together the output data from these efforts together with some work on customer service in the Namibian logistics industry (Fransman et al., 2014) to comment on the impact of the logistics skills gap on customer service in southern Africa.

Findings based on the two practitioner surveys conducted identified the most sought after skills in South Africa supply chains. The collated results of these two surveys are shown in Table 1. The findings of the Namibian study, indicating the biggest barriers to the development of effective logistics systems in Namibia are featured in Table 2.



**Table 1: Top 25 Mean rating of supply chain skills requirements**

<b>RANK</b>	<b>SKILLS ITEM</b>	<b>MEAN</b>
1	Customer focus	3.64
2	Ability to plan and prioritise	3.62
3	Business ethics	3.62
4	Ability to see big picture	3.57
5	Team work	3.56
6	Problem solving	3.55
7	Ability to think outside the box	3.51
8	Communication skills	3.48
9	Business process improvement	3.47
10	Decision making	3.47
11	Time management	3.38
12	Inventory management	3.34
13	Leadership	3.33
14	Cross-functional coordination skills	3.31
15	Change management	3.29
16	Warehousing / Materials Handling management	3.28
17	Supply chain cost knowledge	3.28
18	Knowledge of the industry	3.24
19	Demand forecasting	3.23
20	Spreadsheet abilities	3.23
21	Motivation skills	3.22
22	Negotiating skill	3.21
23	Quality management	3.19
24	Transport and related regulation knowledge	3.17
25	Supply chain design	3.17

**Table 2 Barriers to logistics development in Namibia**

<b>RANK</b>	<b>BARRIER</b>	<b>%</b>
1	Lack of international standards of customer service	11.3
2	Customs procedures/clearance	9.6
3	Limited management education	8.7
4	Harmonisation of regional (&SADC) trade procedures	8.7
5	Attitude (Siloism, narrow mindedness, reluctance to take responsibility for own actions, willingness to work etc.)	8.7
6	Lack of integration of parastatals with industry	7.8
7	High road and rail transport rates	7.0
8	Corruption	7.0
9	Lack of government awareness (of Logistics needs)	6.1
10	High fuel costs	6.1
11	Limited driver/operator training	5.2
12	Work permits & conditions (for non-nationals)	4.3
13	Port Capacity	4.3
14	Safety	3.5
15	Nepotism in appointments and contract awards	1.7

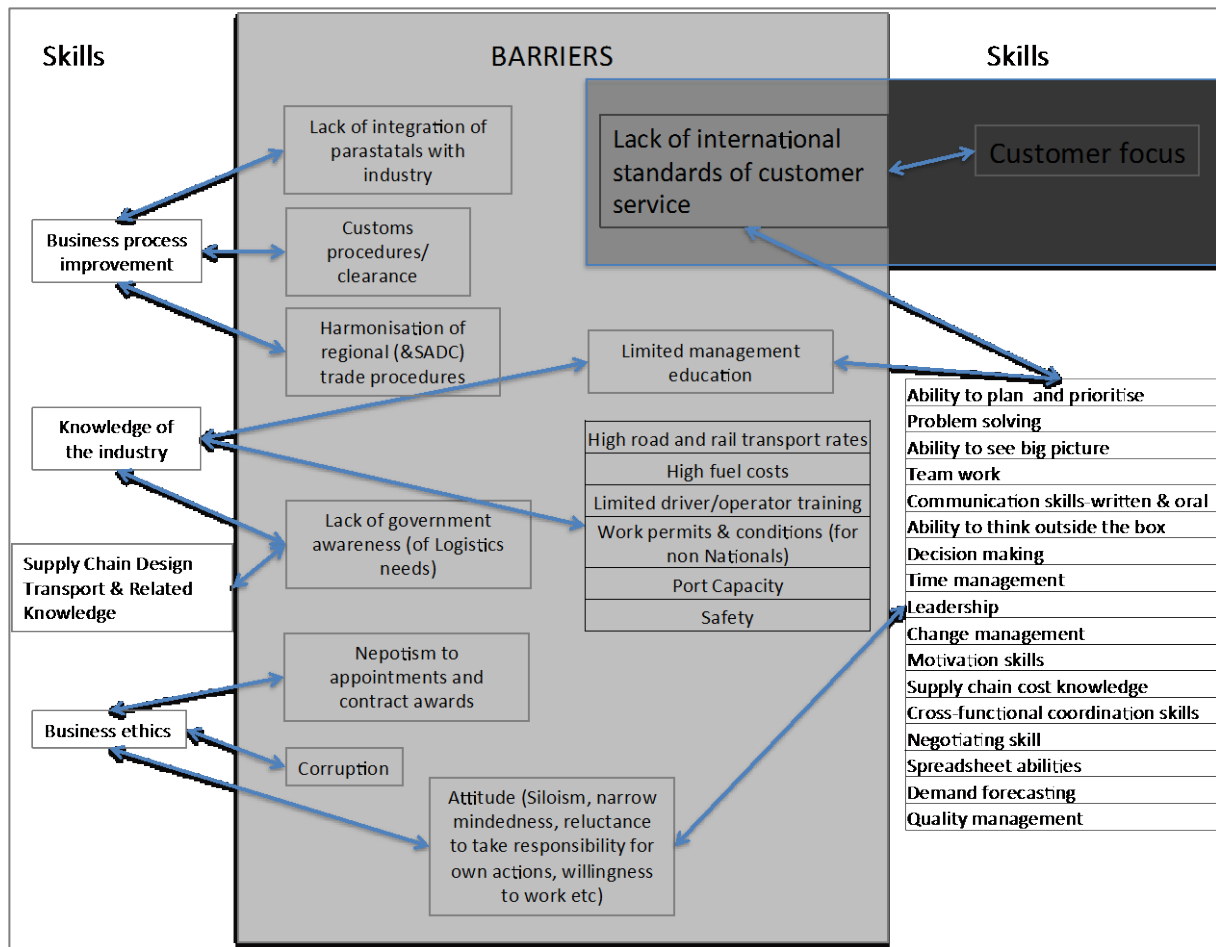
As mentioned above, both data sets suggest that customer service issues are of paramount importance despite the samples being from different populations. The “lack of international standards of customer service” identified in the second table suggests that there is a major skills gap in this area that will need be addressed in southern Africa. This paper postulates that this illustrates the need for customer focused management education. Further, the findings suggest that this need has already been acknowledged as being a barrier to logistics development.

At a more detailed level, the importance of customer service issues to the logistics industry is confirmed by data from Fransman et al. (2014), which ranks them by the level of importance assigned by business stakeholders see Table 3.

**Table 3: The ranking of service factors selected by the Namibian retailers sampled**

<b>Ranking</b>	<b>Service Factor</b>
1	Delivery time
1	Conditions of delivered goods
3	Product Quality
3	Product availability
5	Cost (Handling and Delivery)
6	Packaging
6	Reliability of planned deliveries
8	Invoicing accuracy and procedures
8	Service level agreements
10	Type of product
10	Flexible supply options
10	Tracking status information
10	Service support during and after
10	Returns procedures
10	Order fulfilment

Reverting to the two earlier data sets, before they can be compared, it is important to show how the categories used in each study align with one another. Figure 3 shows how the various skill categories have been assigned to the barriers and visa-versa, thus giving an indication of cause and effect. The figure also confirms the customer service correlation and importance.



**Figure 3: The combined findings of the two studies showing the relationship between logistics barriers and skill gaps.**

Further, correlations show a lack of management education as a barrier to logistics, with 7 out of the top 10 skills requirements directly relating to this weakness. Skills like the ability to plan and prioritise, problem solving, and decision making are essential for managers operating in today’s environment where the most important aspect is to ensure the customers’ requirements are met without endangering business prosperity. Other important skills are the ability to see the big picture and think outside the box, which are key attributes of successful middle and top managers. This has become very important to ensure sustainability in the highly competitive global environment where every organisation is striving to better their current service levels, retain their customers and remain ahead of their competitors. This requires not only skilled individuals that understand the sector and its customers, but also appreciate how to improve it and ensure there are minimal disruptions in their supply chains.

Corruption and nepotism feature in the top 15 barriers to logistics development, which suggests a correlation with the need for business ethics’ skills that are ranked second on the list of requirements for managers. SA and Namibia have been identified as countries where corrupt practises are a common, and are ranked 71 and 56 respectively out of 177 countries on the corruption perceptions index (Transparency.org, 2013). These rankings, together with the lack of sufficient focussed customer skills, could seriously inhibit the prospects of attracting international customers to the region and / or retaining them for the extended periods essential if enhanced trade

is to be used as a vehicle for development. Customers, particularly the ones potentially interested in entering foreign trade markets, investigate the transparency of business procedures, ease of doing business and measures that there are to protect their investments. If a country fails or is shown to have difficulty in conforming in these areas, it is likely to deter potential customers. Attitude, ranked 5<sup>th</sup> in the findings, is another barrier that pertains to business ethic skills when it comes to the lack of willingness to work and avoiding taking responsibility for actions. Perhaps more importantly, like the other factors noted, it plays vital part in determining the level of customer service that is delivered in a country or region.

Barriers not directly related to human skills such as the high road and rail transport costs, high fuel cost and the limitations of port capacities are influenced by infrastructure shortcomings and/or outside market prices. Though the specific skills to manage or operate within these factors were not tested; there could be some correlation with knowledge of the industry skill requirement. Work permits & conditions as a barrier could fall under the skills requirement of an understanding of the industry and perhaps the government processes and procedures as most managers when recruiting will usually expend significant time obtaining permits for employees. Safety, or the understanding thereof, also did not feature as a specific skill required for managers, but should fall under specific functions such as: manufacturing, warehousing, material handling and transport.

Safety is a serious issue in southern Africa both in terms of human misfortune and disruption to supply chains. This is illustrated by the very poor road safety record of Namibia and South Africa, which exhibit fatalities of 25 and 31.9 deaths /100,000 head of population respectively (World Health Organisation, 2013). This represents an unacceptable loss of human life as well as having a serious impact on the serviceability of their supply chains.

For businesses (and countries) to succeed in meeting international customer service levels, the critical barriers will need to be addressed. Understanding the correlation or effects the lack of skills and education has on logistics barriers is of utmost importance to ensure mitigation measures are implemented. South Africa and Namibia have tried to mount education programmes in recent times but the question is, whether this been effective and whether there was any sign of a dramatic catch-up with the developed world levels when it comes to economic well-being. Education foundations are questioned in both countries, where illiteracy is having an impact on both economies (World Economic Forum, 2013). Recent figures show the decline of the South African economy, that directly influences Namibia and other southern African countries, against those of developed countries, and further weakening is forecast (Maswanganyi, 2014, Pani, 2014). Since these economic difficulties place the region in a weakening trading position, it is vital that this is not exacerbated by any lack of international customer service standards and customer-focussed skills. If these issues are not addressed it may become difficult for South Africa, Namibia and other southern African countries to hold on to existing international business and trade that should assist in achieving the thriving economies foreseen in development plans.

These result show that there are major barriers to developing appropriate logistics systems in southern Africa, not least of which are the skills which will enable such development. As an inadequately educated workforce is frequently cited as one of the most problematic factors of doing business in most southern African countries, and the lack of logistics skills are specifically an issue, it

seems unlikely that these countries will be able to reach their desired trading potential in the near future.

Luke and Heyns (2014) expanded their research by considering the mismatch between the supply of and the demand for logistics skills. Based on the skills identified in the practitioner surveys, students were asked to identify the skills that they believed were valued by industry. The comparison of the skills requirements is shown in Table 4 below.

**Table 4: Skills comparison between practitioners and students**

SKILLS ITEM – PRACTITIONERS *	SKILLS ITEM - STUDENTS
Customer focus Business ethics Ability to plan and prioritise Problem solving Team work Ability to see big picture Ability to think outside the box Business process improvement Communication skills Decision making	Transport management Decision making Customer focus Problem solving Communication skills Ability to plan and prioritise Warehousing / Materials Handling Knowledge of the industry Laws & regulations Team work

\* Represents the results of the combined practitioners survey data sets

The results show a mismatch between the supply of logistics skills as perceived by students and its demand from the view of practitioners. There may be a number of reasons for this, for example, that students may have a limited and perhaps inaccurate view of the needs of industry due to their lack of practical experience or that practitioners, hardened by the reality of everyday drudgery, may be sceptical of the value of theoretical knowledge. The evidence from one of the surveys in South Africa (Luke and Heyns, 2014) suggests that newly employed supply chain students are adequately prepared in hard skills areas, however require considerable soft skills in order to meaningfully contribute to the effectiveness of the local supply chains. Whatever interpretation or nuance is applied, the underlying research indicates that there are significant skills shortages and that redressing the situation to develop sufficient logistics competence in the region will not be easily achieved in the short term. This suggests that it should be considered a long term process and that associated development targets should be adjusted accordingly.

## Conclusion

The findings from this research demonstrate that Namibia's logistics development is being inhibited by a number of significant barriers and that South Africa lacks the skills to fully develop its logistics sector. Both of these show that the respective logistics services will be unable to supply a level of customer service commensurate with the countries' visions and ambitions of enabling economic and social development through the benefits of becoming fully-fledged members of the "global supply chain community". Whilst the research depends on data from two disparate sources, the analysis has revealed that the problems besetting both countries' industries are similar and, at least to a substantial degree, due to human capital issues just as much as more concrete ones such as infrastructure limitations.

Although the data analysed is from only two of SADC's fifteen or Southern African Customs Union (SACU)'s five member states, it is not unreasonable to postulate that similar issues are likely to prevail across both communities and therefore across southern Africa as a whole. Although this would need confirmation by further research, it suggests that the achievement of internationally recognised "good customer service levels" are unlikely to be achieved throughout the region in the near future.

The literature review established that good customer service levels are essential for achieving competitiveness and sustainability in supply chains. Without such competitiveness, companies and their host countries are not able to support the trade necessary to generate the wealth that is needed for development, particularly in emerging economies. Further, the review confirmed that good logistics and supply chain management is necessary for the provision of satisfactory serviceability. It then showed that effective and efficient logistics management rely upon high levels of human skills to underpin them.

The findings show that there is an acute shortage of logistics skills even compared to current demand which is acting as a significant barrier to the achievement of current objectives. Looking to the future, it is clear that the current skill levels will not allow the achievement of adequate levels of customer service and this will act as a serious obstacle for national development in Namibia, South Africa and, in all probability, across the southern Africa.

Although the research can be, and has been, treated as a discrete entity from which conclusions can be drawn, there is inevitably room for enhancement. There are a number of possibilities for future work to validate and extend the research, which can be considered using three levels:

1. Consolidation & checking.

In order to ratify the conclusions drawn from the analysis it will be useful to replicate the research already carried out in the reciprocal countries. That is to carry out a "logistics barrier" survey in South Africa and a "skills survey" in Namibia. This is already at the preliminary planning stage. It is envisaged that this will be carried out contemporaneously with expanding and updating the samples within the populations already examined.

## 2. Extension through southern Africa.

Having established and proved the effectiveness of the methodologies used to investigate logistics barriers and skills shortages, it will be useful to extend the research into other SADC / SACU countries. This will enable the team to test the homogeneity of these issues across the southern African region.

## 3. Comparison with more developed countries.

As noted above, the general conclusions of this work suggest that limited human capital, in terms of logistics education and training, is inhibiting the growth of efficient logistics and supply chain operations within the southern African region. It does not imply that these are the only limitations or that their rectification would bring “instant success”. In other words, a reversed hypothesis of (say) “Enhancing the levels of logistics skills will lead to a sea change improvement in supply chain capability” may not be valid. Therefore, it would be interesting to examine the impact of skills levels on barriers in countries that are regarded as slightly more developed than South Africa and Namibia. These could be selected on a number of criteria such as the World Bank logistics Performance Index (LPI), the Human Development Index (HDI) or by membership of an economic bloc such as the BRICS (Brazil, China, India, Russia and South Africa) group (of countries).

Notwithstanding the potential further work, the research to date makes it abundantly clear that, if South Africa and Namibia want to achieve their potential within the global supply chain market, they must offer customer service levels that are appropriate for the task. To do so, it is vital to address the skills shortage issues in order to overcome the logistics barriers that have been identified. Moreover, it is apparent that, although this cannot guarantee immediate success as improving human capital is inevitably a slow process, starting suitable programmes must be treated as a very high priority. Such education must address cultural issues and soft skills as well as the more obvious functionally related ones. It is therefore recommended very strongly that the governments of Namibia and South Africa immediately allocate resources to fully identify the logistics educational needs and address them as a matter of great urgency. Failure to do so may negate any efforts to improve service levels through infrastructure development and condemn both countries to be spectators to globalisation rather than benefiting from it.



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