

# Inspection of Market Products: a Case Study

Makibane Daniel Ntlhane, *Member, IAENG*, Stephen A. Akinlabi, *Member, IAENG* and Charles Mbohwa, *Member, IAENG*

**Abstract**— This study investigates the effectiveness of the inspection body of market products in the Republic of South Africa (RSA) and to determine if the body is able to reduce non-compliance and also if they add value to the economy of RSA. The objective of this study is to investigate how effective is the inspection body dealing with products that are in the market or imported to the country. The survey shows that RSA respondents indicate that the inspection division play a key role in reducing the importation of non-compliance products and also add value to the economy of RSA.

**Index Terms**— Accreditation, Inspection, Internal audit, Judgment, Product, Professional.

## I. INTRODUCTION

INSPECTION is the examination of a product design, product serviced, process or plant and the determination of conformity with specific requirements on the basis of professional judgment [1]. According to the definition of International Organization for Standardization [2] regarding inspection, the inspection body can be defined as an organization that examines product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements.

Inspection of products affects daily lives of people in the sense that most products if not all, need to meet specific requirements of standard or technical regulation before they can be place in the market. Inspectors are appointed so that they can visit the factories to inspect and assess the way the products are produced. When the products meet the requirements of the standard or technical regulation, the products can be allowed in the market.

## II. PROBLEM STATEMENT AND RESEARCH OBJECTION

There are lots of products imported into RSA, which need to be inspected for compliance with technical regulation before they are allowed in the market. If inspection is not conducted thoroughly at the port of entry and the market, non-

compliance might characterize the market and pollute the economy and cause extensive and long-term harm to consumers and environment.

By looking into the problem statement, the following research objectives were considered in this study:

- To determine the effectiveness of the inspection body in RSA.
- To determine the impact the inspection body has on dealing with non-compliance.

## III. OVERVIEW OF INSPECTION

### a) Inspection Body

Inspection body is expected to meet the requirements of ISO/IEC 17020 as a proof that the body is competent to perform their tasks [3] Swiss Accreditation Service [4] stated that in order for inspection body to be accredited it must have quality system in accordance with ISO/IEC 17020 standard. ISO/IEC 17020 requires that the inspection body periodically, and in accordance with a predetermined schedule and procedure, conduct internal audits of its activities to verify that its operations continue to comply with the requirements of the management system and the relevant standard [5]. It is important to decide on the inspection body to conduct inspection in order to keep the reputation of the organization. The organizations that are inspected by accredited inspection body are therefore confidence of the results or outcome of the inspection.

United Nations Industrial Development Organization [6] highlighted that inspection is whereby a product during production or after production is checked to determine if it meets the requirements that are specified. While ISO/IEC 17000 defines inspection as examination of a product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements [2]. International Organization for Standardization [2] further explains that professional judgment means that inspection bodies' competence is based on the knowledge, experience and interpretative skills of the inspection bodies' personnel.

Product specification is needed in order to help set up inspection instruction to determine which test need to be carried out, the measuring instrument or test equipment to be used and the criteria for deciding acceptance of the product with respect to each characteristic [6]. United Nations Industrial Development Organization [6] further mentioned

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Mr Stephen A. Akinlabi is with the Department of Mechanical Engineering Science, University of Johannesburg, South Africa. Private Bag X3, Johannesburg, South Africa, 2006. Phone Number: +27783160281; Email: [stephenakinlabi@gmail.com](mailto:stephenakinlabi@gmail.com).

Prof Charles Mbohwa is a Professor with the Department of Quality and Operations Management, University of Johannesburg, South Africa. Phone Number: +27782071516; Email: [cmbohwa@uj.ac.za](mailto:cmbohwa@uj.ac.za).

that the inspection instruction should include details of sampling plan, this includes size of the sample and criteria of acceptance.

The followings are inspection techniques that can be used to conduct conformity assessment as stated by International Organization for Standardization [2] :

- Visual examination of physical items.
- Measurement or testing of physical items.
- Examination of specification documents such as design drawings.
- Comparison of the findings with the requirements of specification documents or with generally accepted good practice in the field.
- Drawing up a report on the results of the inspection.

Accredited inspection bodies are regularly re-assessed to ensure that they are up to standard with technical and regulatory changes in their area of expertise, which will enhance continued compliance [7]. The followings are some of factors that an inspection body has to reflect as proof that they are competent enough to cope with technical and regulatory changes [7]. Staff with sound knowledge, skills, experience and professional judgment:

- The right equipment – properly maintained and, where necessary, calibrated.
- Appropriate sampling practices.
- Sound inspection procedures.
- Accurate recording and reporting of evidence and inspection results.
- Adequate quality assurance and quality control.

The followings are benefits of being an accredited inspection body in accordance with ISO/IEC 17020 [1]:

- It is a means of providing independent assurance of inspection bodies' technical competence and integrity.
- It provides confidence in the quality of service provided by inspection bodies.
- It enhances credibility and reputation of inspection bodies.
- It reduces costs associated with repetitive inspections and lost time is minimized.
- It provides a benchmark with international best practices.
- It reduces risk associated with accidents and injuries.
- It can be used as a defense against litigation.
- It improves acceptance of goods internationally thus facilitates trade and economic development.

The risks that are associated with using inspection bodies that are not accredited are identified by United Kingdom Accreditation Service [7] are as follows:

- Inexperienced staff – competence is built on qualifications, knowledge and experience.
- Insufficient resource leading to inadequate and incomplete work and possibility of incorrect inspection results being reported.
- A lack of impartiality.

- No comeback (No formal complaints procedure).
- Lack of due diligence/exposure to the future claims.
- Use of inappropriate inspection equipment.

#### b) Internal audit

The inspection body should conduct internal audit to check if its activities continue to comply with the requirements of its management system [5]. The internal audit helps to check if the requirements of management system are applied across the board. Internal audits should be planned in a way that each element of management system is checked at least once a year [5]. This audit should be carried out by qualified personnel who have sufficient technical knowledge of the area they are auditing, and who are trained how to apply auditing techniques [5]. Personnel should not audit their own activities or activities under their own direct responsibility except where there is no alternative and it can be demonstrated that an effective audit can be carried out [5]. This helps to ensure that the outcome of the audit is not biased, but be fair and impartial, however, internal auditing and quality assurance procedures should be encouraged in firms.

## IV. RESEARCH METHODOLOGY

The research methodology is a way to systematically solve the research problem as identified by the work of Freddy [8].

## V. RESULT AND DISCUSSION

This research reveals that NRCS as an inspection body in RSA has impact in controlling non-compliance in the market by either confiscating or destroying them. The following represents some of the results as shown in Figure 1- 10:

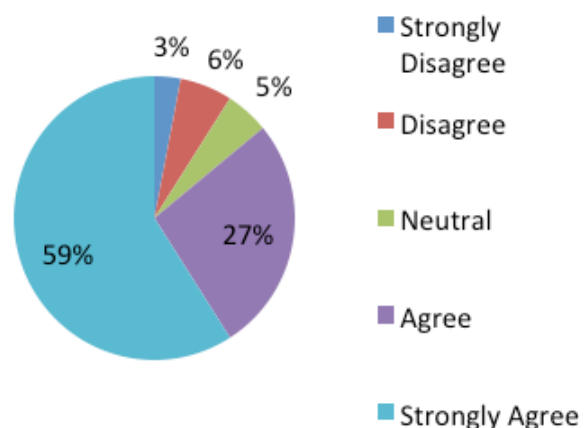


Fig 1: Inspection at Port of Entry

Figure 1 shows that 59% of the respondents strongly agree and 27 % of respondents agree that inspections are done at port of entry whereas 3% of the respondents strongly disagree and 6% of the respondents disagree that inspections are done

at port of entry. Only 5% of the respondents are either sure or not that inspections are done at port of entry.

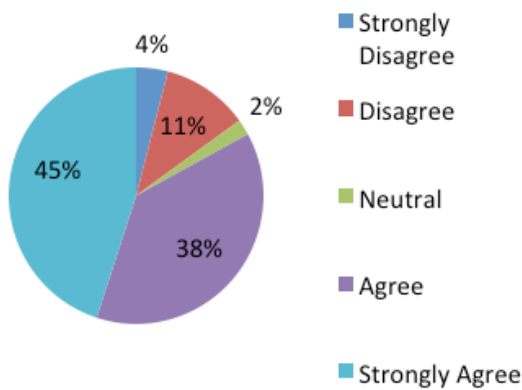


Fig 2: Inspection at Retailer and Wholesaler

Figure 2 shows that 45% of the respondents strongly agree and 38% of the respondents agree that inspections are done at retailer and wholesaler, whereas 3% of the respondents strongly disagree and 6% of respondents disagree that inspections are done at retailer and wholesaler. Only 2% of respondents are either sure or not that inspections are done at retailer and wholesaler.

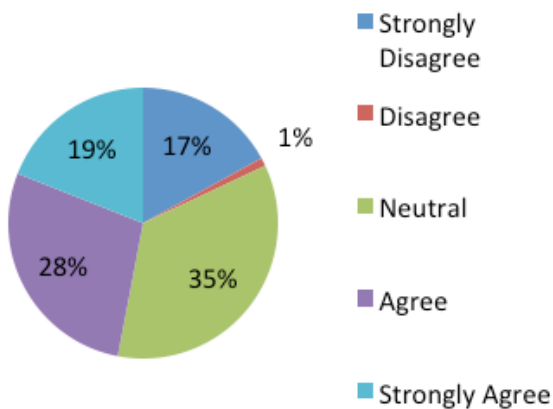


Fig 3: Inspection at Importer and Manufacturer

Figure 3 shows that 19% of the respondents strongly agree and 28% of respondents agree that most inspections are done at importer and manufacturer, whereas 17% of respondents strongly disagree and 1% of respondents disagree that most inspections are done at importer and manufacturer. Only 35% of respondents are either sure or not that most inspections are done at importer and manufacturer.

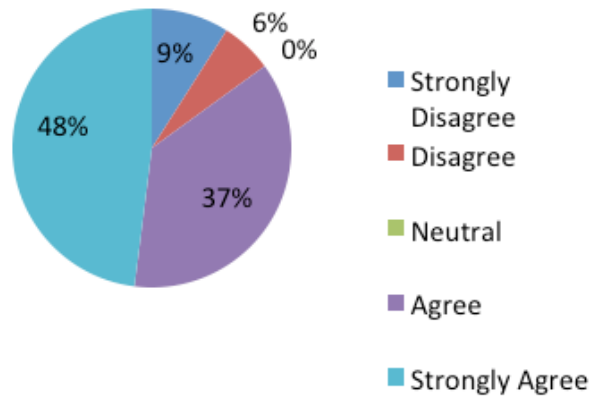


Fig 7: Products that are locally manufactured meet the requirements of technical regulation

Figure 7 shows that 48% of the respondents strongly agree and 37% of respondents agree that most products that are locally manufactured meet the requirements of technical regulation, whereas 9% of respondents strongly disagree and 6% disagree that most products that are locally manufactured meet the requirements of technical regulation. There are no (0%) neutral respondent shows that most products are locally manufactured meet the requirements of technical regulation.

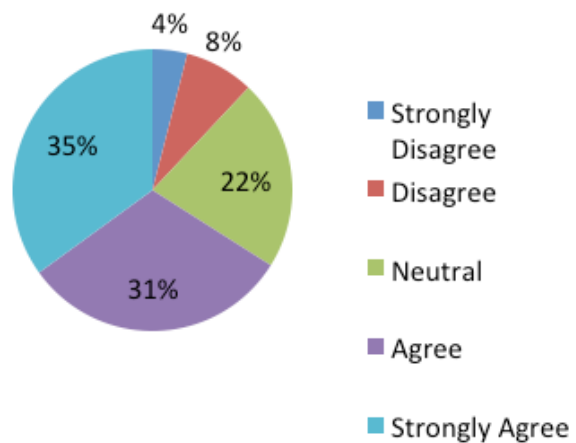


Fig 8: Non-compliance is either confiscated or destroyed

Figure 8 shows that 35% of the respondents strongly agree and 31% of respondents agree that products that do not meet the requirements of technical regulation are either confiscated or destroyed, whereas 4% of respondents strongly disagree and 8% disagree that products that do not meet the requirements of technical regulation are either confiscated or destroyed. Only 22% of respondents are either sure or not that products that do not meet the requirements of technical regulation are either confiscated or destroyed.

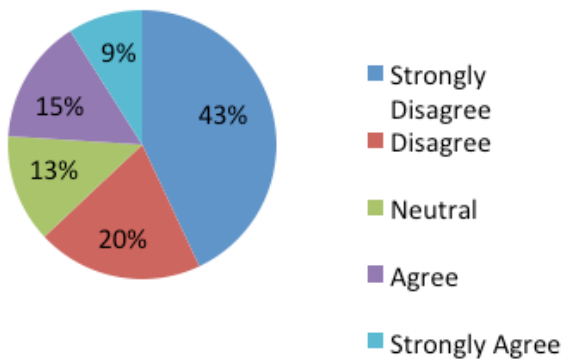


Fig 9: Legal action is taken when products released under embargo is sold

Figure 9 shows that 9% of the respondents strongly agree and 15% of respondents agree that legal action is taken if client sell the products that are released under embargo, whereas 43% of respondents strongly disagree and 20% of respondents disagree that legal action is taken if client sell the products that are released under embargo. Only 13% of respondents are either sure or not that legal action is taken if client sell the products that are released under embargo.

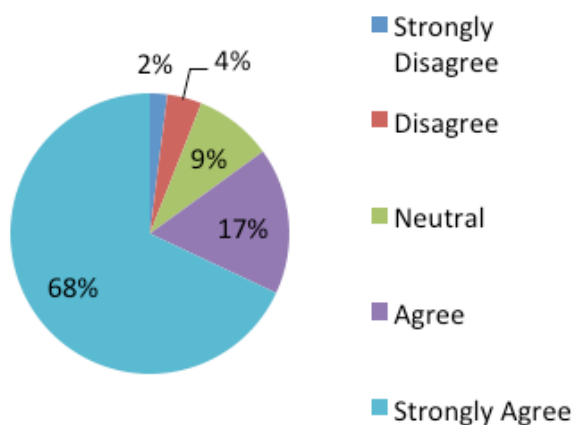


Fig 10: Inspection body has impact in the economy of the country

Figure 10 shows that 68% of the respondents strongly agree and 17% of respondents agree that inspection body has impact in the economy of the country, whereas 2% of the respondents strongly disagree and 4% of respondents disagree that inspection body has impact on the economy of the country. Only 9% of respondents are either sure or not that inspection body has impact in the economy of the country.

## VI. RESEARCH FINDINGS AND DISCUSSIONS

The following are summary of the findings from this study:

- Figure 1 shows that 86% of the respondents agree that inspections are done at port of entry whereas 9% did not agree that inspections are done at port of entry.

- Figure 3 shows that 47% of respondents do agree that inspections are done at port of entry whereas 18% did not agree that inspection are done at importer and manufacturer.
- Figure 4 shows that 90% of respondents agree that products are imported into the country whereas 4% did not agree that products are imported.
- Figure 5 shows that 12% of the respondents agree that products are locally manufactured whereas 86% did not agree that inspections are done at port of entry.
- Figure 6 shows that 30% of respondents agree that most products that are imported meet the requirements of technical regulation whereas 64% of the respondents did not agree that most products imported meet the requirements of technical regulation.

## VII. CONCLUSION

The respondents show that inspections are done at port of entry, retailers, wholesalers, importers and manufacturers, which will help to prevent non-compliance to reach the public.

The research findings show that the inspection body as a law enforcement has impact in controlling non-compliance of products in the market. The research shows that inspection body has power to confiscate or destroy non-compliant products in the market. The research also shows that the inspection body has a positive impact on the economy through regulations of both produced and imported products to the country.

## ACKNOWLEDGEMENT

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