Paper 5

Shrinkage Risk Management Initiatives in Retail SMMEs Operating in the Cape Town City Bowl

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Abstract: Failure to manage shrinkage risks may have dire consequences on the economic sustainability of any trading business entity. In a South African Small, Medium and Micro Enterprise (SMME) dispensation, shrinkage risks are among the greatest risks faced by these businesses' entities. According to scholarly literature, shrinkage risks are not appropriately managed in South African SMMEs due to the implementation of inadequate and/or ineffective risk management initiatives. Hence, the inference was made that these business entities, particularly those operating in the retail industry, have weak economic sustainability due to their implementation of ineffective risk management initiatives to appropriately manage shrinkage risks. The foregoing was done by means of conducting empirical research which fell within the positivistic research paradigm by collecting data from 56 members of management of South African SMMEs. Stemming from the results, although sampled South African retail SMMEs were found to have limited exposure to shrinkage risks, their shrinkage risk management initiatives were found to be ineffective

Key words: *SMME, sustainability, shrinkage risk, risk management, shrinkage risk management*

1. Introduction

Across the globe, Small, Medium and Micro Enterprises (SMMEs) are key drivers and stimulants of national economies, primarily due to their socio-economic value adding abilities (Yusuf & Dansu, 2013; Siwangaza, 2013; Chimucheka, 2015; Sibindi & Aren, 2015; Bruwer & Van Den Berg, 2017). Particularly in developing economies such as South Africa, SMMEs are critical in relation to the stimulation of the economy (Schmidt et al., 2016; Maziriri, 2016; Barnes et al., 2016) as they are responsible for approximately 91% of all national business transactions (Ngary et al., 2014), contribute at least 45% to the national Gross Domestic Product and provide employment opportunities to an estimated 60% of the national workforce (Bruwer and Siwangaza, 2016; Naicker et al, 2017).

Notwithstanding the foregoing, previous research shows that South African SMMEs have one of the worst sustainability-rates in the world (Fatoki, 2014; Bruwer, 2016) with approximately 75% of these business entities failing after being in existence for less than four years (Kanguru, 2016; Bruwer, 2016; Bruwer and van den Berg, 2017). Often, the latter dispensation can be pinned on the non-management of economic factors (Siwangaza and Dubihlela, 2016); those factors which take on the form of macro-economic factors and micro economic factors (Bruwer and Siwangaza, 2016). Some of the most pertinent economic factors which are believed to adversely influence South African SMME sustainability include inter alia escalating interest rates, rising inflation, excessive red tape, scarcity of resources, poor access to finance, cash flow problems, ineffective inventory management practices, absence of adequate and effective internal controls, poor financial management, ineffective marketing (Kunene, 2008; Bruwer 2010; Olawale and Garwe, 2010; Kadocsa & Francsovics, 2011; Siwangaza, 2013). In addition, the economic environment[1] in which South African SMMEs have to operate in can be described as "harsh" since these entities are confronted with a plethora of economic factors which, in turn, cultivate risks which may threaten the sustainability of SMMEs (Bruwer and van den Berg, 2017; Naicker et al, 2017). Therefore, the inference can be made that South African SMMEs are constantly subject to risks which may adversely and imminently influence their overall sustainability and, consequently, their existence.

If risks are not properly managed, they are likely to transform into loss events (Smit and Watkins, 2012); those risks which have realised with their potential impact being detrimental to the attainment of business objectives (Bruwer et al, 2018). Unfortunately, prior research (Siwangaza, 2013; Sunjka and Emwanu, 2015; Bruwer and Siwangaza, 2016; Bruwer et al, 2018) suggests that South African SMMEs make use of customised risk management initiatives which are deemed to be inadequate and/or ineffective. In fundamental nature risk management initiatives should mitigate risks to such an extent that they have an absolute minimum negative potential impact on the attainment of business objectives, in the foreseeable future (Yusuf and Dansu, 2013; Bruwer et al, 2013; Bruwer et al, 2018). Albeit the latter, the inference can be made that the adequacy and/or effectiveness of risk management initiatives, as utilised by South African SMMEs leave much to be desired – it may be the ultimate cause of their weak sustainability.

A major risk which South African SMMEs face daily, particularly trading business entities, is that of shrinkage (Jere et al, 2014; Kanguru, 2016). The term "shrinkage" is better known as the shortfall of inventory when comparing actual inventory levels/values (on the shelves and in storage) with estimated inventory levels/values (in the financial statements), due to theft, shoplifting, administrative errors and/or supplier fraud (Hudson, 2018; Knego and Mišević, 2016). Considering that trading businesses are reliant on inventory in order to remain in operation for the foreseeable future (Haribhai-Pitamber & Dhurup, 2014), the inference can be made that the proper management of shrinkage in South African SMMEs is of paramount importance. In contrast, previous studies (Marivate, 2014; Kelkar & Emilus, 2016) found that very little is being done by South African SMMEs to address shrinkage. This is quite concerning as the realisation of shrinkage risks into actual loss events could present serious ramifications on the sustainability of a business entity (Xu and Zhao, 2016). Otherwise stated, the mitigation of shrinkage risks is not negotiable.

Using the above as a basis, clear tangent planes emerge that South African SMMEs are adversely influenced by an array of risks, as spurred on by the "harsh" economic environment in which they operate, one of which is that of shrinkage. Since shrinkage risks, in a South African SMME dispensation, are highly likely to transform into a loss events the following questions, inter alia, can be asked: How adequate are shrinkage risk management initiatives in South African SMMEs? How often are shrinkage risk management initiatives used in South African SMMEs? and How important is shrinkage risk management to South African SMME management? In order for these questions to be addressed by future research studies, this particular study was conducted; serving as a "foundation" and placing emphasis on the effectiveness of shrinkage risk management initiatives deployed by South African SMMEs.

Throughout the remainder of this paper, relevant discussion takes place under the following headings: 1) literature review and formulation of hypothesis, 2) research design, methodology and methods, 3) results and discussion, 4) managerial implications, and 5) conclusion.

2. Literature review and formulation of hypothesis

In order to conceptualise applicable terms and develop a hypothesis for this research study, relevant discussion takes place under the following sub-headings below: 1) risks and risk management, 2) shrinkage in South African SMMEs, 3) formulation of hypotheses.

Risks and risk management: The term "risk" can be described as an event which may or occur which, in turn may have an influence on the attainment of a business entity's objectives, be it favourable or unfavourable (Spekman & Davis, 2004). In fundamental nature, risks are inevitable and can be categorised into four groups, namely that of strategic risks (those risks which may impact on the vision and/or mission of a business entity), operational risks (those risks which may impact on the day-to-day operations of a business entity), reporting risks (those risks which may impact on the integrity of financial- and non-financial information), and compliance risks (those risks which may impact on the adherence of a business entity to applicable laws, rules, regulations, policies and procedures) (Smit, 2012:47-51; Bruwer et al., 2013; Sin and Ng, 2013).

Pending on the severity of risks they need to be appropriately managed. In quintessence, the term "risk management" can be described as a process which should assist management to identify, assess and address significant risks that could threaten the sustainability (and existence) of a business entity (Miller, 1992; Smit, 2012; Brustbauer, 2014; Bruwer, 2016). More often than not, risks are managed by means of avoidance (risks with high potential occurrences and high potential impacts should be avoided), sharing (risks with low potential occurrences and high potential impacts should be outsourced), mitigating (risks with high potential occurrences and low potential impacts should be reduced), and tolerating (risks with low potential occurrences and low potential impacts should be endured) (Bruwer et al., 2018). Albeit the above, it appears that many South African SMMEs do not sufficiently apply risk management practices due to the limited resources which are available to them (Marcelino et. al, 2014; Schmidt et al., 2016). Moreover, these business entities are believed to make use of informal risk management practices inhibiting the building of risk management capacity within the SMME (Masama, 2017; Masama & Bruwer, 2018; Bruwer et al., 2018). The aforementioned is quite concerning as South African SMMEs are more sensitive to risks when compared to larger and more established organisations (Gilmore et al. 2004).

Shrinkage risks in South African SMMEs: The term "shrinkage" can be described as a phenomenon where there are material differences between actual inventory levels/values (as per stock counts) and estimated inventory levels/values (reported in financial statements) (Kibacia et al., 2017; Potdar et al. 2016; Xu and Zhao, 2016; Van Bommel, 2016). In fundamental nature shrinkage is a major problem which, if not properly managed, may adversely influence on the overall sustainability of a business entity; including its actual existence (Kohne & Pekeur, 2014; Xu and Zhao, 2016). Furthermore, shrinkage may also result in decreases in return on investments (by owners) and increases in the selling prices of inventory (Kelkar & Emilus, 2016; Knego & Mišević, 2016).

Shrinkage can realise from various shrinkage risks, with the most popular being employee theft, shoplifting, vendor fraud and administrative errors (Langner, 2010; Kohne and Pekeur, 2014; Enofe et al. 2015; Beck, 2016; Kanguru, 2016; Kelkar & Emilus, 2016; Xu & Zhao, 2016; Dani & Fassam, 2016; Knego & Mišević, 2016; Kennedy & Benson, 2016; Kibacia, et al., 2017; Farmer & Dawson 2017; Gu, 2018; Mohan and Vijayakumar, 2017). These shrinkage risks are briefly described below:

- **Employee theft:** When an employee intentionally, and without authorisation, take assets belonging to the employer for personal consumption and/or personal gain. A number of factors contribute to employee theft which include, but are not limited to personality clashes among employees, low morale among employees, management's overall management style, gambling habits and employees having disorders (e.g. bipolar).
- **Shoplifting:** The intentional act of taking and/or concealing assets belonging to a business during official business trading hours by a person who pretends to be shopping. The problem with shoplifting is that it is usually perpetrated by individuals who make living out of it or by people who often regard themselves as 'experts' or 'professionals' in committing such acts.
- **Vendor fraud:** The international act by a supplier and/or its subsidiaries to defraud a business entity through blatantly causing differences between expected inventory (per purchase order) and actual inventory (per delivery note) and/or over-stating invoice amounts.
- **Administrative errors:** Administrative errors are non-malicious errors which are either intentionally and/or unintentionally made by employees whereby information on inventory is incorrectly captured on business systems. Examples of these errors include but are not limited to incorrect pricelists, point of sale system errors, "bottom of the basket misses" and the use of incorrect product codes.

From the foregoing, it becomes apparent that shrinkage risks should be managed on a proactive basis (preventive) as opposed to a reactive basis (corrective). This view is supported by previous studies (Van der Walt et al, 2016; Mbuvi, et al, 2016; Beck, 2016; Bruwer et al., 2018) where it is recommended that shrinkage risk management methods include the tagging of inventory with security tags, installing closed circuit television (CCTV) camera systems, making use of security guards that are visible on the sales floor, displaying security signage to warn potential perpetrators about the consequences of being caught, and installing shelf-based devices which prevents items from being removed from the shelf. In the same vein it is also imperative that management sets a clear tone at the top whereby an ethical culture is promoted (Kelkar & Emilus, 2016; Bruwer, 2016) to contribute to the fight against shrinkage.

Unfortunately, South African SMMEs are not exempted from shrinkage risks. According to a local study (Jere et al., 2014) it was found that crime and theft were two of the greatest factors which had an adverse influence on the sustainability of these business entities. In a more recent study (Kanguru, 2016) it was found that South African SMMEs encounter challenges around inventory theft, shortage of inventory, inventory errors and physical inventory not tying up with theoretical records. Moreover, another local study (Van der Walt et al, 2016) found that South African SMMEs are exposed to various shrinkage risks which include employee-related crimes (e.g. pilferage), supply chain-related crimes (e.g. theft of stock in transit), and customer-related crimes (e.g. shoplifting). Thus, it becomes apparent that shrinkage risks are mammoth problems in a South African SMME dispensation, particularly those that are classified as trading business entities.

Notwithstanding the above, South African SMMEs are believed to encounter difficulties during the mitigation of shrinkage risks, mainly due to the fact that intended shrinkage risk management initiatives can be circumvented by the very same people whom they are meant to deter (Kelkar & Emilus, 2016). This is especially true where such business entities employ very few employees – segregation of duties are not always practically possible (Marivate 2014; Bruwer, 2016).

Formulation of hypothesis: Taking the above into account, the inference can be made that South African SMMEs, mainly trading business entities, are adversely influenced by loss events (realised risks) which stem from shrinkage risks. Unfortunately, it does not appear that management of these business entities are doing much to curb shrinkage risks from realising. If risks are not properly managed it may result in potential losses which, in turn, may have an adverse influence on the overall sustainability of any business entity; including its actual existence. Thus, apart from shedding light on the shrinkage risk management initiatives deployed by South African SMMEs, the following hypothesis was also tested in this study:

H_1: There is a statistically negative significant relationship between the effectiveness of shrinkage risk management initiatives deployed by South African SMMEs and the exposure of these business entities to shrinkage risks.

3. Research design, methodology and methods

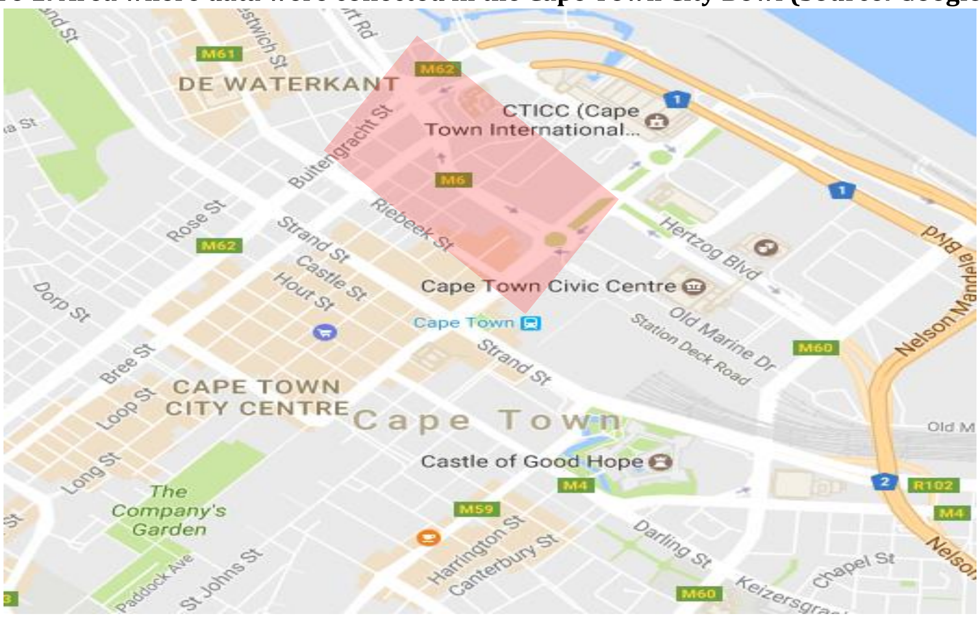
This research study was empirical in nature, taking on the form of survey research. In quintessence, questionnaires were disseminated to a targeted population in a face-to-face-approach. The questionnaire used comprised mostly closed-questions which 10 were multiple choice questions and three were Likert-scale questions (5-point scales); all questions were asked with the intent to obtain primary quantitative data. Moreover, this study was mostly descriptive in nature (shedding light on the shrinkage management initiatives deployed by South African SMMEs) and partially exploratory in nature (testing a relationship between applicable phenomena – see hypothesis H1).

Although the size of the population was unknown to the authors, a total of 80 respondents were targeted in this study of which only 56 were deemed as valid (70% response rate). The chosen sampling methodology for this study was that of non-probability sampling; comprising a mixture of purposive sampling (respondents had to adhere to a list of delineation criteria) and convenience sampling (respondents had to be based in the Cape Town City Bowl), all with the intent to obtain rich data. All respondents had to adhere to the following delineation criteria in order for their responses to be regarded as valid:

- Respondents should have been owners and/or managers of their SMME(s).
- All SMMEs should have been regarded as non-franchised.
- All SMMEs should have been related as trading business entities.
- All SMMEs should have operated in the indicated area in the Cape Town City Bowl (Figure 1).
- All SMMEs should have been regarded as sole traders.

- All SMMEs should have operated in the retail industry.
- All SMMEs should have operated from 08:00 – 17:00 on weekdays.
- All SMMEs should have employed between 1 and 50 employees[2].
- All SMMEs should have been in operation for at least 1 year.

Figure 1: Area where data were collected in the Cape Town City Bowl (Source: Google, 2017)



All collected data were analysed through means of both descriptive statistics and inferential statistics through SPSS version 24. Throughout this study, relevant ethical considerations were also taken into account.

4. Results and Discussion

Generic results: Out of all sampled retail South African SMMEs, 100% were classified as non-franchised, trading retail sole traders which employed between 1 and 50 employees, while operating from 08:00 – 17:00 (on weekdays) in the Cape Town City Bowl (as per Figure 1); being operational for at least one year. To shed light more on the demographics of both respondents and their respective SMMEs, respondents were asked an array of questions. When respondents were asked what position, they fulfilled in their respective retail South African SMMEs, 30.4% were regarded as owners, 42.9% were regarded as managers and 26.8% were regarded as owner-managers. Albeit the fact that all respondents (100%) had decision-making power, 98.2% of respondents were South African while 1.8% of respondents were non-South African. In addition, when respondents were asked about their managerial experience, 26.8% were found to have less than 2 years' managerial experience, 44.6% had between 3- and 5-years' managerial experience, 17.9% had between 6 and 10 years' managerial experience and 10.7% of had at least 10 years' managerial experience. Thus, the inference can be made that the average respondent was a South African owner of a SMME with between 3- and 5-years' managerial experience.

Respondents were also asked to describe their respective South African SMMEs – 71.4% were regarded as retail stores, 12.5% were regarded as wholesale stores, 7.1% were described as liquor stores, 3.6% were described as cafés, 3.6% were described as convenience stores and 1.8% was described as spaza shops. Furthermore, in terms of employment, 64.3% of retail South African SMMEs employed between 1 and 5 employees, 16.1% of

[2] According to the South African National Small Business Act No. 102 of 1996, in the retail industry, a micro enterprise employs between 0 and 5 employees, a very small enterprise employs between 6 and 10 employees, while a small enterprise employs between 11 and 50 employees (South Africa, 1996).

SMMEs employed between 6 and 10 employees and 19.6% of SMMEs employed between 11 and 50 employees. Alternatively stated, majority of sampled retail South African SMMEs were classified as micro enterprises (64.3%) with the remainder being classified as either very small enterprises (16.1%) or small enterprises (19.6%). Lastly, 51.8% of sampled retail South African SMMEs existed for at least 5 years, while 30.4% of SMMEs existed for between 6 and 10 years; the remaining 17.9% existing for at least 10 years. Therefore, the inference can be made that the average SMME was a micro, sole trading retail enterprise which have been in existence for at least 5 years.

Shrinkage risks and shrinkage management initiatives: In order to understand whether sampled SMMEs were exposed to shrinkage risks, respondents were asked to rate their agreement on statements through means of a 5-point Likert Scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The base sentence for each statement was "This SMME is exposed to the following shrinkage risks …". A summary of the responses received is shown in Table 1.

Table 1: Summary of responses in relation to shrinkage risks faced by sampled SMMEs

This SMME is exposed to the following shrinkage risks …	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std Dev
Shoplifting	44.6%	25.0%	25.0%	3.6%	1.8%	1.93	1.01
Waste (expired / obsolete stock)	42.9%	33.9%	16.1%	3.6%	3.6%	1.91	1.03
Incorrect counting of stock	50.0%	23.2%	21.4%	3.6%	1.8%	1.84	1.01
Stock damages	50.00%	33.9%	10.7%	3.6%	1.8%	1.73	0.92
Supplier fraud	62.5%	21.4%	12.5%	-	3.6%	1.61	0.97
Theft of stock	58.9%	25.0%	14.3%	1.8%	-	1.59	0.80

From the results in Table 1, it is apparent that SMMEs were either not exposed to listed shrinkage risks or their exposure thereto was limited to a large extent. This observation is supported by mean-scores which range between 1.59 and 1.93 – translating to an average response which ranges between "strongly disagree" and "disagree". Albeit the latter, the standard deviation also sheds light that respondents largely had similar perceptions on the statements. It should however be noted that these responses received stem directly from the perceptions of members of management of sampled SMME – responses received may have been biased. Otherwise stated, respondents may not necessarily have been honest in their answers provided. This sentiment is supported when focus is shifted on previous studies where it was found that South African SMMEs, in general, are susceptible to an array of shrinkage risks (see Section 2.2).

Notwithstanding the above, the low exposure to shrinkage risks may be as a result of sound (adequate and/or effective) shrinkage management initiatives however, it may also be the case that respondents were biased when providing their perceptions on the relevant statements. In order to shed some light on the matter, respondents were asked whether they assessed shrinkage risks in their respective South African retail SMMEs. Based on the results, 71.4% of respondents answered "yes" while 28.6% of respondents answered "no". As a follow-up question, respondents who said yes were asked how often they assessed shrinkage risks in their South African retail SMMEs. A summary of the results are shown in Table 2.

Table 2: Summary of frequency of assessment of shrinkage risks by sampled SMMEs

Frequency	Agreed
Annual	5.0%
Quarterly	12.5%
Monthly	47.5%
Weekly	25.0%
Daily	10.0%
TOTAL	100%

Taking into account that shrinkage risks should be consistently managed, it is concerning that only 10% of SMMEs who made use of shrinkage risk assessment actually assessed their shrinkage risks on a daily basis. Otherwise put, the analogy can be drawn that out of all sampled SMMEs, only 7.1% assessed shrinkage risks every day. In order to understand how sampled SMMEs managed shrinkage risks, respondents were asked to rate their agreement on statements through means of a 5-point Likert Scale (1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree). The base sentence which was used for each statement was "In this SMME, the following shrinkage management initiatives are used …" A summary of the responses are shown in Table 3.

From the results in Table 3, it is apparent that sampled SMMEs made only partial use of listed shrinkage management initiatives. In particular, the shrinkage management initiatives which were mostly used were that of "quality checks on stock sold to customers" (mean score of 3.41), "quality checks on stock delivered from suppliers" (mean score of 3.36), "fire extinguishers and hose reels" (mean score of 3.23), "inventory counts" (mean score of 3.21), "control over keys" (mean score of 3.21) and "staff training and development" (mean score of 3.20). Despite the fact that these shrinkage management initiatives had the highest mean scores, their values ranged between 3.20 and 3.41 – translating to an answer which ranges between "average" and "agree". In the same vein, 15 shrinkage risk management initiatives were found to have mean scores which ranged between 1.59 and 3.00 – translating to an answer which ranges between "disagree" and "average". It may be possible that respondents made use of other shrinkage management initiatives which were not listed as per Table 3 above however it may also be the case that sampled SMMEs did not have a need for shrinkage management initiatives as shrinkage risks were not concerning. Furthermore, it may also be probable that respondents were biased with their answers as they related purely to the perception of respondents.

Table 3: Summary of responses in relation to shrinkage management initiatives used by sampled SMMEs

In this SMME, the following shrinkage management initiatives are used …	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	Std Dev
Quality checks on stock sold to customers	12.5%	12.5%	7.1%	57.1%	10.7%	3.41	1.22
Quality checks on stock delivered from vendors / suppliers	14.3%	7.1%	16.1%	53.6%	8.9%	3.36	1.20
Fire extinguishers and hose reels	16.1%	5.4%	23.2%	44.6%	10.7%	3.29	1.23
Inventory counts	17.9%	8.9%	10.7%	57.1%	5.4%	3.23	1.25
Control over keys	19.6%	8.9%	12.5%	48.2%	10.7%	3.21	1.33
Segregation of duties	16.1%	16.1%	5.4%	55.4%	7.1%	3.21	1.28
Staff training and development	16.1%	14.3%	16.1%	41.1%	12.5%	3.20	1.30
Proper authorisation of transactions	12.5%	12.5%	30.4%	41.1%	3.6%	3.11	1.09
Adequate documents and records (source document design)	19.6%	14.3%	12.5%	42.9%	10.7%	3.11	1.34
Checks upon removal of garbage bags	19.6%	7.1%	23.2%	42.9%	7.1%	3.11	1.26
Access controls at storage points	19.6%	10.7%	16.1%	48.2%	5.4%	3.09	1.27
Independent checks	19.6%	8.9%	23.2%	44.6%	3.6%	3.04	1.22
Counting of stock delivered by vendors / suppliers	25.0%	10.7%	14.3%	37.5%	12.5%	3.02	1.42
Staff supervision	21.4%	12.5%	16.1%	44.6%	5.4%	3.00	1.29
Incident reporting	23.2%	10.7%	14.3%	48.2%	3.6%	2.98	1.30
Staff monitoring	21.4%	12.5%	21.4%	41.1%	3.6%	2.93	1.25
CCTV Cameras	25.0%	16.1%	12.5%	37.5%	8.9%	2.89	1.38

Current period to prior period comparisons	28.6%	12.5%	7.1%	46.4%	5.4%	2.88	1.40
Access control at entrances	21.4%	17.9%	21.4%	32.1%	7.1%	2.86	1.29
Insurance of inventory	30.4%	10.7%	7.1%	46.4%	5.4%	2.86	1.42
Background checks on prospective employees	32.1%	8.9%	8.9%	41.1%	8.9%	2.86	1.47
Access control at exit points	25.0%	16.1%	17.9%	37.5%	3.6%	2.79	1.29
Alarm system	35.7%	7.1%	14.3%	35.7%	7.1%	2.71	1.45
Shrinkage policies and procedures	35.7%	12.5%	10.7%	35.7%	5.4%	2.63	1.42
Shrinkage measurement	35.7%	7.1%	23.2%	28.6%	5.4%	2.61	1.37
Burglar bars	37.5%	8.9%	16.1%	32.1%	5.4%	2.59	1.41
Surprise visits at vendor / supplier premises	39.3%	10.7%	16.1%	30.4%	3.6%	2.48	1.37
Security guards	46.4%	10.7%	12.5%	28.6%	1.8%	2.29	1.36
Theft detection system at entrances / exit points	50.0%	12.5%	16.1%	16.1%	5.4%	2.14	1.34
Body searches	69.6%	8.9%	14.3%	3.6%	3.6%	1.63	1.09
Hand bag searches	66.1%	14.3%	14.3%	5.4%	-	1.59	0.93

It may be possible that respondents made use of other shrinkage management initiatives which were not listed as per Table 3 above however it may also be the case that sampled SMMEs did not have a need for shrinkage management initiatives as shrinkage risks were not concerning. Furthermore, it may also be probable that respondents were biased with their answers as they related purely to the perception of respondents.

Relationship between the exposure of shrinkage risks and the effectiveness of shrinkage management initiatives: In order to determine whether the effectiveness of shrinkage management initiatives had a statistically negative significant relationship with sampled South African retail SMMEs' exposure to shrinkage risks, multiple regression analyses were performed. The dependent variables constituted the shrinkage risks while the independent variables constituted only those shrinkage management initiatives which had a mean score of at least 3.00. Each regression was tested at the 1% level.

Table 4: Summary of multiple regression analyses performed

Independent variable		**Shoplifting**	**Waste (expired / obsolete stock)**	**Incorrect counting of stock**	**Stock damages**	**Supplier fraud**	**Theft of stock**
	R^2	0.414	0.279	0.396	0.249	0.211	0.247
	F	2.066	1.134	1.918	2.305	0.781	0.960
	Sig	0.036	0.360	0.053	0.019	0.682	0.508
Quality checks on stock sold to customers	Std β	**0.423**	-0.084	**0.551**	**0.401**	-0.131	-0.013
	Sig.	**0.036****	0.700	**0.038****	**0.042****	0.567	0.954
Quality checks on stock delivered from vendors / suppliers	Std β	**-0.397**	-0.175	**-0.391**	**-0.467**	-0.386	**-0.408**
	Sig.	**0.056***	0.440	**0.064***	**0.023****	0.107	**0.082***
Fire extinguishers and hose reels	Std β	0.023	-0.017	-0.067	-0.072	0.002	0.058
	Sig.	0.884	0.920	0.672	0.638	0.989	0.744
Control over keys	Std β	0.271	0.076	0.017	0.018	**0.396**	**0.359**
	Sig.	0.139	0.703	0.035	0.919	**0.065***	**0.085***
Segregation of duties	Std β	0.044	**0.524**	**0.848**	0.150	0.139	0.202
	Sig.	0.833	**0.027***	**0.071***	0.460	0.564	0.392
Staff training and development	Std β	0.286	0.203	0.734	**0.340**	0.351	**0.446**
	Sig.	0.110	0.300	0.179	**0.053***	0.091	**0.030***
Proper authorisation of transactions	Std β	**-0.343**	-0.033	0.318	-0.214	0.012	0.027
	Sig.	**0.058***	0.878	0.183	0.259	0.956	0.901
	Std β	0.295	0.055	0.351	0.178	0.098	0.067

Adequate documents and records (source document design)	Sig.	0.120	0.789	0.208	0.330	0.653	0.751
Checks upon removal of garbage bags	Std β	-0.302	-0.315	**0.276**	0.035	-0.004	-0.223
	Sig.	0.235	0.264	**0.064***	0.887	0.988	0.438
Access controls at storage points	Std β	0.133	-0.063	**0.804**	0.008	-0.223	-0.075
	Sig.	0.569	0.808	**0.057***	0.972	0.412	0.776
Independent checks	Std β	0.102	0.203	0.809	0.199	0.005	0.021
	Sig.	0.615	0.369	0.102	0.318	0.982	0.927
Counting of stock delivered by vendors / suppliers	Std β	-0.215	-0.317	0.621	-0.130	-0.034	-0.026
	Sig.	0.292	0.163	0.114	0.512	0.886	0.911
Staff supervision	Std β	0.188	0.086	**0.580**	0.217	-0.038	-0.072
	Sig.	0.265	0.641	**0.074***	0.189	0.843	0.703
* p-value ≤ 0.1 (significant at 10% level), ** p-value ≤ 0.05 (significant at 5% level), N = 56							

From the results in Table 4 the R^2 ranged between 0.211 and 0.414, meaning that the independent variables which were tested were responsible for variances in the dependent variables of between 21.1% and 41.4%. A total of 84 relationships were tested of which 31 relationships were negative and 53 were positive. Of the positive relationships, 12 were found to be statistically significant[3] and of the negative relationships, 5 were found to be statistically significant across all regressions. A summary of these relationships are provided below:

- The risk of shoplifting increased when quality checks on stock sold to customers were performed (β=0.423); decreased when quality checks on stock delivered from vendors/suppliers were performed (β=-0.397) and when proper authorisation of transactions took place (β=-0.343).
- The risk of waste (expired/obsolete stock) increased when segregation of duties were performed (β=0.524).
- The risk of incorrect stock counting increased when quality checks on stock sold to customers were performed (β=0.551), when segregation of duties were performed (β=0.848), when checks upon the removal of garbage bags were performed (β=0.276), when access controls at storage points were evident (β=0.804), when staff were supervised (β=0.580); decreased when quality checks on stock delivered from vendors/suppliers were performed (β=-0.391).
- The risk of stock damages increased when quality checks on stock sold to customers were performed (β=0.401), when staff training and development took place (β=0.340); decreased when quality checks on stock delivered from vendors/suppliers were performed (β=-0.467).
- The risk of supplier fraud increased when control over keys were present (β=0.396).
- The risk of stock theft increased when control over keys were present (β=0.359), when staff training and development took place (β=0.446); decreased when quality checks on stock delivered from vendors/suppliers were performed (β=-0.408).

5. Managerial implications

In fulfilling their responsibilities, sampled South African retail SMME management should ensure that the assets of the business are adequately and effectively safeguarded. One of such assets is inventory, which is very much susceptible to shrinkage risks. Due to the negative impact that the realisation of shrinkage risks may have on the sustainability of sampled South African retail SMMEs, it is paramount for the management of these entities to assess their risks on an ongoing basis and ensure that adequate shrinkage management initiatives are in place and working effectively.

Conclusion: The results of the survey analysis revealed that sampled South African retail SMMEs had very little exposure to shrinkage risks. Furthermore, the results of the analysed data indicated that there were not many sampled South African retail SMMEs who were assessing their shrinkage risks on ongoing basis, which raises

[3] Statistical significance was tested at the 1% level (p-value <= 0.01), 5% level (p-value <= 0.05) and the 10% level (p-value <= 0.10).

concerns as shrinkage risks must be closely monitored. Moreover, although sampled South African retail SMMEs made use of shrinkage management initiatives, it became apparent that these initiatives are not very widely used in these business entities. Stemming from the results of the multiple regression analyses, there exist more positive statistically significant relationships between the effectiveness of shrinkage management initiatives used by SMMEs and the exposure of these business entities to shrinkage risks when compared to the negative statistically significant relationships. Though the statistical evidence is not enough to accept H_1, it can be deduced that South African SMMEs make use of ineffective shrinkage risk management initiatives.

Avenues for further research: Using this study as a foundation, it further research can be conducted on inter alia:

- Control activities utilised by SMMEs to mitigate shrinkage risks.
- Adequacy of control activities in SMMEs to mitigate shrinkage risks.
- Effectiveness of control activities in SMMEs to mitigate shrinkage risks.
- Feasibility of control activities in SMMEs to mitigate shrinkage risks.

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