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Implications to mitigate business failure: Aligning the impact of the South African business environment on SMEs' trade credit management with trade credit theories

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Background: Trade credit mismanagement results in cash-flow constraints that impair business liquidity, which can be attributed to several primary reasons for small- and medium-sized enterprises (SME) failure. By understanding how several trade credit management theories align with the impact of the South African business environment on SME trade credit management, the study contributes to formulating implications for three primary challenges associated with SMEs' trade credit management to mitigate SME failure, resulting in business exits.

Aim: To reveal how the impact of the South African business environment on SME trade credit management aligns with several trade credit management theories towards providing implications for SMEs to mitigate business failure.

Setting: This study was conducted by administering an online questionnaire.

Methods: Quantitative research design with purposive sampling by administering an online questionnaire to 10 450 SMEs.

Results: The results show the alignment between the significant impact of certain internal and external business environmental variables on SMEs' trade credit management with several theories from which implications were formulated to mitigate business failure because of challenges associated with SMEs' trade credit management.

Conclusion: Understanding how trade credit theories align with the business environments impact on SMEs trade credit management.

Contribution: The formulation of implications to alleviate SMEs business failure.

Keywords: trade credit; small- and medium-sized enterprises; internal and external business environment; access to finance; non-profitability; financial problems; asymmetric information; managerial implications.

Introduction

South Africa is facing major socioeconomic development challenges that include unemployment, income inequality and growing levels of poverty (World Bank 2023a). Todaro and Smith (2020) regard economic development as dependent on reducing these challenges. They further observed that economic development must be sustainable, as sustainable development reduces pollution and environmental degradation. In the case of South Africa, the country's development is constrained by the same factors observed by Todaro and Smith (2020), namely, unemployment (32.1% for the third quarter of 2024), income inequality[1] (63.4% in 2010 decreasing slightly to 63.0% by 2014) and surging poverty[2] (53.2% in 2010 increasing to 55.5% by 2014) (Statistics South Africa 2024, World Bank 2023b, 2023c). South Africa's economic growth forecasts are portrayed as bleak, plummeting to 0.4%, as observed in the 2023/2024 Global Entrepreneurship Monitor (GEM) Report, painting an unfavourable picture of the country's ability to address its socioeconomic challenges (Hill et al. 2023a).

1.Using the Gini index as indicator, which measures the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality and an index of 100 implies perfect inequality.

2.Using the poverty headcount ratio at national poverty lines (percent of population) as indicator, representing the percentage of the population living below the national poverty line(s).

Note: Additional supporting information may be found in the online version of this article as Online Appendix 1.

The entrepreneurial value of small- and medium-sized enterprises

Small- and medium-sized enterprises (SMEs) stimulate entrepreneurship by fostering an entrepreneurial ecosystem, which is crucial for South Africa in addressing its primary development challenges. According to the 2021/2022 GEM South African Report, entrepreneurship, which implies SME creation, cultivates various advantages for a national economy. These include sustainable employment creation, directing structured adaptation by accelerating change in rigid industries overwhelmed by unresponsive businesses that portray the inability to adapt, increased business productivity, competition that results in healthy free market attributes, and economic growth through innovation and creation (Bowmaker-Falconer & Meyer 2022). In addition, entrepreneurship contributes to South Africa's commitment to several United Nations (UN) Sustainable Developmental Goals (SDGs). Entrepreneurship does so through alleviating poverty (SDG 1), reducing inequalities (SDG 10), and contributing to decent employment creation and sustainable economic growth (SDG 8) (Bowmaker-Falconer & Meyer 2022). However, for entrepreneurs to meaningfully contribute to these SDGs, SMEs need to operate in an enabling entrepreneurial ecosystem that stimulates business creation, growth and operational viability to be less exposed to reasons attributable to business exits.

Unfortunately, SMEs remain largely unable to transform into valuable economic vehicles to contribute to these national SDGs because of high business exits exhibited in continued low Establish Business Ownership (EBO) and Total Early-Stage Entrepreneurial Activity (TEA) rates, including high failure rates. Although South Africa's EBO and TEA rates increased from 2022 to 2023, the country still obtained a 28th ranking out of 46 countries for all Level C[3] GEM-participating economies (Hill et al. 2023a; Hill et al. 2023b). The country's entrepreneurial intention indicators are below par in comparison to other Level C countries leaving room for sustainable business creation (Hill et al. 2023a, 2023b). In addition, South Africa's fear of failure rate increased year-on-year (2022–2023) as observed from 2023/2024 GEM Report data (Hill et al. 2023a). Beyene (2002) observed that to raise the African continent from its dismal economic realities, the anticipated entrepreneurial possibilities acquired through SME creation must be cultivated and maintained.

Reasons for small- and medium-sized enterprise failure

According to the 2021/2022 GEM South African Report, apart from the disruptions caused by the coronavirus disease 2019 (COVID-19) pandemic, SMEs primarily fail because of three reasons namely, unprofitability, problems acquiring financing and financial problems (Bowmaker-Falconer & Meyer 2022). In addition, ample credit-lending risks, such as asymmetric information, result in many SMEs neglecting their credit policies, which could impair enterprise viability while banks and financiers often reject SMEs' credit applications because of associated credit-lending risks (Bardhan 2017; Cassar 2004). As a result of this, SMEs are poised to make do with trade credit as a funding alternative, given their restricted access to external funding, leaving SMEs exposed to trade credit risks in the form of late payments expressed in debtor propensity to default (Bams, Pisa & Wolff 2020). Small- and medium-sized enterprises regularly portray volatile cash flow because of trade credit mismanagement practices that testify to SMEs' ineffectiveness in managing trade credit given that these liquidity pressures lead to destructive 'spill-over' effects between participating SMEs, as the incoming delay in cash receipts must be matched with an outgoing delay in cash payments (Braimah et al. 2021; Bams et al. 2020; Otto 2018; Poutziouris, Michaelas & Soufani 2005). It is deduced that trade credit mismanagement can lead to cash flow constraints resulting in low SME creation rates because SMEs fail to develop into sustainable enterprises. In addition, ample authors support the damage caused by financial problems associated with trade credit informing that it holds a direct link to lowered profitability because irrecoverable debts resonate into bad debt expenses expanding unprofitability ((Zimon & Dankiewicz 2020; Main & Smith 1992). As a remedy to this, the study argues in favour of SMEs' trade credit management effectiveness to support SMEs' financial viability, thereby (1) limiting exposure to financial problems, (2) effectively utilising trade credit despite their deficiency of more formal capital sources, and so doing, (3) aiding profitability as a result of fewer credit sales materialising into bad debt expenses.

Small- and medium-sized enterprises business environment surrounding their trade credit management

Small- and medium-sized enterprises ability to operate in an enabling business environment stimulating the effective management of trade credit is important to business success because, if neglected, it could result in severe cash flow problems contributing to failure resulting in business exits (Otto 2022; Padachi et al. 2008). Internal business environment variables are mainly under the control of the business, yet these could impact SMEs' trade credit management (Issahaku & Haku 2022; Otto 2022; Cassar 2004). In the case of South African SMEs, several internal variables constrain the development of SMEs from emerging to thriving establishments because of resource deficiencies. The study identifies the following internal business environment variables: access to business networks, unavailability of collateral, managerial competency limitations, and inadequate financial and business information (Sitharam & Hoque 2016; Cacciotti & Hayton 2015; Adzido & Azila-Gbettor 2014). In addition, SMEs are susceptible to external variables beyond their control, which can impact their operational viability

3.Economies with a GDP per capita of $25 000 or less as included in the 2023/2024 GEM's Adults Population Survey.

(Virglerova et al. 2017; Oyelana & Smith 2015). The study considers the following external business environment variables: legal system efficiency, business ethics and macroeconomic environment.

Summary

Because numerous business environment variables in South Africa could impact SMEs' trade credit management, it should be investigated to understand the impact of South Africa's business environment on SMEs' trade credit management. In so doing, the study intends to align the obtainable results with certain trade credit management theories. Various stakeholders would be better equipped to understand which environmental factors benefit effective trade credit management in creating a more conducive environment for SMEs as entrepreneurial vehicles to contribute to the country's SDGs. Apart from a theoretical contribution, the study also aims to deliver a practical contribution by providing managerial implications to SMEs' operational viability, specific to their trade credit management as impacted by the South African business environment to realistically approach and overcome three primary reasons for SME failure resulting in business exits. The study findings can inform SME owners to become more effective in managing trade credit to increase SME creation rates and business sustainability lowering business exits through the insights drawn from the proposed managerial implications intended to oppose SMEs' likelihood of failure.

As far as can be established, no study has set out to relate knowledge around the impact of the South African business environment on SMEs' trade credit management by, firstly, aligning provided study results with several trade credit management theories and, secondly, providing implications around the three primary reasons for SME failure resulting in business exits. This article aims to address both research gaps. Therefore, the primary research objective is to reveal how the impact of the South African business environment on SME trade credit management aligns with several trade credit management theories. The secondary research objective is to provide managerial implications on how certain internal and external business environmental variables can be used to improve SME trade credit management to promote SME creation, thereby lowering business exits by addressing the three primary reasons for SME failure.

Literature review

In revealing how the impact of the South African business environment on SMEs trade credit management aligns with several trade credit management theories, the sections to follow will review literature around the role SMEs play in cultivating economic development and their propensity to fail. Trade credit is discussed followed by a review of trade credit theories such as asymmetric information and other relevant theories.

Small- and medium-sized enterprise's role in cultivating economic development

Small- and medium-sized enterprises are instrumental to a country's economic development aspirations by uplifting employment and gross domestic product (GDP) and mitigating poverty and income inequality (Burgstaller & Wagner 2015). Small- and medium-sized enterprises engage in various economic activities, resulting in healthy competitive pressures for local economies by providing a firm foundation for economic growth in developed and developing countries (Baker, Kumar & Singh 2019; Kumar & Rao 2015). Small- and medium-sized enterprises are viewed as globally dynamic mechanisms of growth contributing to approximately 80% of global economic growth, indicating their potential to become dynamic vehicles for economic advancement (Baker et al. 2019; Canto-Cuevas, Palacin-Sánchez & Di Pietro 2019; Jutla, Bodorik & Dhaliqal 2002). However, SMEs' role in cultivating economic development in South Africa is amplified, given the country's ongoing constraints related to its economic development challenges. South African SMEs contribute to approximately 91% of formalised businesses and employ approximately 60% of the national labour force, as approximately 5.78 million SMEs contribute to alleviating unemployment and other economic development challenges while contributing to around 34% of GDP (Bowmaker-Falconer & Meyer 2022; Botha & Maylie 2020). Despite SMEs' role in fostering economic development and addressing primary economic development challenges in transforming a developing economy into a developed economy, SMEs continue to show a low propensity for success because of high failure rates resulting in business exits.

Small- and medium-sized enterprise entrepreneurial activity and failure estimates resulting in business exits

South Africa's EBO rate seems to fluctuate increasing from 3.5% in 2019 to 5.2% in 2021 yet decreasing to 1.8% in 2022. The country's EBO rate is lower than that of participating African countries such as Egypt (72.4%), including that of the global average (6.8%) (Hill et al. 2022, 2023b; Bowmaker-Falconer & Meyer 2022). More recently, South Africa obtained an EBO rate of 5.9% (2023), showing little growth appreciation, which is a testament to the continual low economic growth (Hill et al. 2023a). South Africa's TEA rate totalled 17.5% (2021) ranking the country 11th out of 47 participating countries, still lower compared to other African countries such as Egypt (63.4%) while the county's TEA rate further declined to 11.1% (2023) (Hill et al. 2023a). Since 2005, South Africa's entrepreneurial performance indicators in the GEM Report have consistently been below the median with this trend remaining constant (Hill et al. 2022; Bosma et al. 2020; Singer, Herrington & Menipaz 2018; Kelly, Singer & Herrington 2016). In addition, the 2021/2022 GEM South African Report reveals valuable entrepreneurship data such as entrepreneurial intention[4]

4.The indicator equates the population percentage aged 18–64 years (excluding individuals involved in any stage of entrepreneurial activity) who are latent entrepreneurs intending to start a business within the next 3 years.

and business discontinuous rate[5]. For entrepreneurial intention, the Report reveals an increased trajectory from 2003 (12.2%) to 2021 (20%) for South Africa; however, these figures are still below the average for the African region (40.6%), level C GEM Economies (38%), these are economies with a GDP per capita of less than $20 000, including the global average (23.4%) for 2021 (Bowmaker-Falconer & Meyer 2022). In 2021, South Africa ranked the second worst in the business discontinuance rate (13.9%) among level C GEM Economies and third worst among all participating GEM countries (47 countries), while the national business discontinuance rate for 2022 improved to 4.9%; however, this figure remained higher compared to the overall Level C country average of 3.62%, including countries such as China (3.40%) and Morocco (4.25%) (Bowmaker-Falconer & Meyer 2022).

Furthermore, SME business exits exceed one in 10 adults in just 11 out of the 47 GEM economies, of which 5 fall within level C GEM Economies' income classification, including South Africa (Bowmaker-Falconer & Meyer 2022). South Africa's fear of failure rate varied from 53% (2021), 59.4% (2022) and 59.5% (2023) ranking the country 5th out of 47 countries and positioning the country as one of the highest-ranked participating countries according to GEM Report data, with this measure steadily increasing since 2001 (Bowmaker-Falconer & Meyer 2022; Hill et al. 2022, 2023a, 2023b). Moreover, the county's failure rate further escalated to 59.4% (2022) and 59.5% (2023) (Hill et al. 2022, 2023a). From 2006 to 2017, non-profitability was the highest cause of business failure for South African SMEs closely followed by financial problems, which include access to external finance, as the second highest cause of business failure (Singer et al. 2018; Kelly et al. 2016). Bowmaker-Falconer and Meyer (2022) confirm these as the main reasons for SME failure resulting in business exits. To remain competitive in a challenging business environment, trade credit becomes a lifeline and important marketing tool for most SMEs offering numerous incentives and motives for business. However, SMEs that occupy financially unstable positions need to extend increased volumes of trade credit, to guarantee product quality and quantity in an ever-competitive market, highlighting the importance of effective trade credit management for SMEs (Long, Malitz & Ravid 1993).

Trade credit

Trade credit acts as funding facilitating the transactions of goods and services on credit consisting of the time differential between the delivery of products and payment and the cash discount allowed for earlier payment while unique to trade credit is the knowledge a creditor can come to realise about the debtor's creditworthiness (McGuinness, Hogan & Powell 2017, 2016). Trade credit positions SMEs as financial intermediaries as most SMEs regard it as a viable funding source for working capital needs because of the unavailability of external debt from financial institutions (Andrieu, Staglianò & Van der Zwan 2018). This limited access to external funding is termed the 'finance gap' that forms part of South African SMEs broader financial problems constraining operational suitability (Bosma et al. 2020; Le & Doan 2020; Phaladi & Thwala 2008). Therefore, trade credit could be an important solution to SMEs' access to credit emphasising the importance of applying effective trade credit management practices for credit rationed SMEs (Herrington & Kew, 2018; Yazdanfar & Öhman, 2017; Stiglitz & Weiss, 1981).

Furthermore, SMEs should be responsible when selecting a credit lender as creditors can opt to siege the supply of products and inflate the trade credit contractual terms in the event of default, thereby disrupting operations until mitigation of default risk (Cunat 2006). Because credit-lending SMEs are dependent and vulnerable to regular cash inflows to secure enterprise survival and growth, which is key for SMEs to contribute to employment creation and other related developmental goals in becoming instruments of economic prosperity, proper management of trade creditors becomes essential (Andrieu et al. 2018). However, creditors benefit from the receipt of knowledge about debtors' creditworthiness through regular and ongoing monitoring of repayment schedules and sale orders, including benefitting from competencies to enforce the repayment of outstanding debtor accounts or to stop future supplies (McGuinness et al. 2016). Trade credit does embody a 'two-way transaction' in nature, making the importance of trade debtors recognisable (Martinez-Sola, Garcia-Teruel & Martinez-Solano 2013).

Trade debtors carry an element of default risk and should be carefully assessed when evaluating credit requests (Peter et al. 2022; Barad 2010). Owing to asymmetric information as a financial problem, SMEs regularly fall short of evaluating credit applications resulting in overdue accounts and potentially irrecoverable debts impairing SMEs' trade credit management (Kosgey & Njiru 2016). Trade credit allows the debtor to obtain discounts, should the business be able to pay earlier resulting in more favourable credit terms and reducing financing costs associated with trade credit (McGuinness et al. 2016).

The theory of trade credit is not novel, leading to the creation of various trade credit theories classified into six main theories. Because the study results align with specific trade credit theories, for this article, the relevant theories to be reviewed include asymmetric information theory and transaction cost theory of trade credit.

Asymmetric information theory

Asymmetric information theory explains the presence of informational asymmetries between creditors and debtors because of uncertainty concerning the debtor's creditworthiness. According to Smith (1987), the acceptance of high trade credit interest rates, defined by generally accepted terms of trade credit, acts as a display mechanism in

5.The indicator equates the adult population percentage involved in early-stage entrepreneurial activity who have, in the past 12 months, discontinued a business either by selling, shutting down or in some other way discontinued their owner/management relationship with the business.

which information about the debtor's default risk is held asymmetrically. Such information is valuable to creditors acting as a strategic resource in protecting their investment or forecasting the possibility of irrecoverable debts. Trade credit is thus a contractual mechanism alleviating financial problems associated with informational asymmetry from which the following theories, because of asymmetric information, exist, namely, quality guarantee theory, market power theory and credit rationing theory. Small- and medium-sized enterprises continue to show a low propensity to survive and a high likelihood to fail because of asymmetric information associated with trade credit management, while the dependency on SMEs as mechanisms to address South Africa's SDGs is continuously growing yet regularly questioned.

Quality guarantee theory

The quality guarantee theory, postulated by Bhattacharya (2008), explains that debtors benefit from purchasing on credit rather than cash because of the mitigation of anxiety related to product quality, given the opportunity they must inspect product quality diligently before payment, not always possible on a cash transaction basis. This theory is based on Smith's (1987) asymmetric information theory of trade credit, which suggests that the decision to afford a debtor the first opportunity to access product quality before payment lies with the creditor (Long et al. 1993). This decision includes an element of default risk for the creditor, which relates to the supply of asymmetric information to the creditor, by informing the SME of any default risks well in advance.

Market power theory

Because trade credit acts as a mechanism to mitigate the risk of product quality, the effects of asymmetric information problems are reduced, resulting in a measure of market power that debtors possess as postulated by Frank and Maksimovic (2003). In utilising their increased market power, debtors' surplus from buying on credit would increase, should asymmetric information problems relating to product quality between creditor and debtor alleviate, ultimately lessening debtors' anxiety about product quality and increasing customer demand (Van Horen 2007). The surge in debtors' surplus expands financial problems associated with asymmetric information between creditor and debtor concerning quality guarantee and market power as part of the asymmetric information theory.

Credit rationing theory

Financial problems in the form of asymmetric information can affect the availability of credit and hence SMEs' capital structure, which led to the articulation of the credit rationing theory by Stiglitz and Weiss (1981). Problems revolving around information asymmetry, adverse selection and moral hazard are prone to develop in the contractual stipulation in credit agreements between providers of credit (Fatoki 2010). Given that credit rationing occurs because of problems such as information asymmetry, the theory of credit rationing forms part of the asymmetric information theory of trade credit. Credit rationing informs that creditors and financial institutions could opt to offer a variety of interest rates that would restrict trade credit to a vast number of debtors. Both choose to do so because of various financial problems namely, information asymmetry, adverse selection, moral hazard, and transaction and monitoring costs, thereby restricting credit, and resulting in credit rationed SMEs.

Transaction cost theory

The transaction cost theory explains that financing a business transaction using trade credit requires two separate transactions to complete what is essentially a single transaction, making trade credit an alternative financing method. This is attained by lowering the exchange costs through a sensation in the exchange of products and/or services from the exchange of money, thereby alleviating monitoring and transaction costs (Emery 1987; Ferris 1981).

Research method

Given that various business environmental variables affect operational viability for most SMEs, several business environment variables could prove to be related to SMEs' trade credit management (Bosma et al. 2020; OECD 2020). Although the article results are based on a bigger study, for this article, the business environmental variables included managerial competencies, collateral, financial and business information and networking (internal) and legal system, ethical management practices, and macroeconomic conditions (external) (Otto 2022). Quantitative survey research was used for the collection of primary data. A structured online questionnaire was distributed to respondents via email.[6] The questionnaire was designed to measure the internal and external business environment variables' impact on SMEs' management of trade credit. In developing the research instrument, scale items were obtained from a detailed study of the literature that led to the formation of theoretical constructs and empirical conclusions, including a reworking of the questionnaire based on a questionnaire used in a bigger study (Otto 2022). After doing so, all developed questionnaire statements were peer debriefed by experienced statisticians and academics. The three questionnaire sections included Section A: demographical measurement, Section B: comprising 49-item testing SMEs' business environment, and Section C: 35 items testing SMEs' trade credit management. Concerning Sections B and C, five- and six-point Likert scale questions were implemented testing the various scale items developed. Since the questionnaire was administered as an online survey, the data-gathering procedure involved sending an email that included a letter detailing the study title, followed by a brief introduction of the researcher, the time for questionnaire completion, and an assurance that the completion of the questionnaire is entirely voluntary alongside the necessary ethical practice's disclosure namely, assurance that any data obtained from the questionnaire will be used to complete research for the University of Johannesburg. This letter further contained the electronic link to access the online questionnaire

6.The questionnaire is available as Online Appendix 1.

as distributed to the target sample. Reminder emails were limited to three only per sample of respondents to ensure a satisfactory questionnaire completion rate. The software used in administering the questionnaire was Typeform.com, as administered by the services of iFeedback Consulting (Pty) Ltd. The study focused on SMEs within all nine provinces across South Africa operating in the following industries: distribution, engineering, financial services, government, information and communication technology (ICT), manufacturing, mining, professional services and retail. To eliminate double counting, all SME names were crosschecked. At the time of sampling, the population of SMEs in South Africa totalled 658719 (SEDA 2018). The total population of SMEs, obtained from the Interactive Direct Business Database, equated to $n = 45313$, which consisted of formal SMEs classified by high volumes of trade credit that proved suitable to the various SME industries listed earlier. In so doing, the data collection source proved appropriate, as recommended by iFeedback Consulting (Pty) Ltd, a private company specialising in data collection. Purposive sampling was used. In calculating sample size, by applying the Zikmund sample size calculation at a 5% margin of error and 95% confidence level when the parameter in the population is assumed to be over 85% or under 15%, the minimum recommended sample size for SMEs amounts to 297 (Zikmund et al. 2010). The total number of questionnaires distributed by iFeedback Consulting (Pty) Ltd via email equates to $N = 10450$ (population frame), and the number of completed questionnaires (actual sample size) equates to $n = 434$, representing a response rate of 4.15%. From this total number of completed questionnaires, a total of 12 respondents answered between 0% and 69.39%, with 422 respondents representing a completion rate between 70.41% and 100% of the questionnaire. Because of this, the researcher accepted these 422 questionnaires and rejected the 12 remaining questionnaires. It should be noted that, among the total accepted questionnaires, the number of item non-response cases may still vary because of missing data, although a low number of item non-response cases were evident. All data were captured in Excel, after which SPSS 29 (Statistical Package for Social Sciences) was applied to analyse the data. Statistical tests used in this study included frequency distribution, mean, standard deviation, internal consistency, factor analysis, and correlation and regression analyses.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Johannesburg and School of Accountancy of Research Ethics Committee (Ref. No. SAREC20180502-02). The research adhered to the required ethical clearance processes from the University in ensuring participant anonymity, voluntary participation, and the ethical treatment of all data. Informed consent was obtained, and no personally identifiable information has been disclosed in the study.

Outline of results

The empirical results aim to report on the impact of the internal and external business environment on SMEs' effectiveness in managing trade credit to align these findings with several trade credit management theories.

Demographical data

The demographic findings reveal the respondent's average age to be 52 years, predominantly classified as a white male with approximately half of all respondents possessing a post-graduate qualification. The average trade credit management experience for the total respondent group amounted to 18 years with the majority of SMEs based in Gauteng and close to half of all respondents indicated to operate within the manufacturing industry. Approximately three-quarters of the total respondent group operate independently while more than half of all SMEs employ up to 50 staff members. The respondents' clientele consisted of both SMEs and individuals.

Validity and reliability statistics for small- and medium-sized enterprise business environment and small- and medium-sized enterprise trade credit management questionnaire sections

Table 1 indicates the relevant validity statistics for the two main sections of the online questionnaire, namely SMEs business environment variables and SMEs trade credit management variables before exploratory factor analysis (EFA).

Table 2 provides Cronbach's alpha for SME internal and external business environmental and SMEs' trade credit management factors after EFA.

Table 1 depicts the results obtained after performing the KMO and BTS tests with results from both tests supporting the appropriateness of the factor analysis technique as explained next. Questionnaire Section B: BTS at 1176 ($p = 0.000$) and questionnaire Section C: BTS at 595 ($p = 0.000$) illustrate that the data were appropriate to perform a factor analysis. The result of the KMO measure of sampling adequacy indicates sufficient items for each factor: 0.860 and 0.934 for questionnaire sections B and C, respectively, indicating high validity. Reliability results from Table 2 reveal Cronbach's alpha values very close to 1 for all 11 SME business environmental factors, illustrating very high internal consistency ranging between 0.80 and 0.90 (6 out of the 11 factors) with the remaining 5 factors ranging between 0.70 and 0.80. Likewise, Cronbach's alpha is very close to 1 for all five SMEs' trade credit management factors, indicating that most of the factors are highly reliable, ranging between 0.80 and 0.90 for three out of the five factors with the remaining two factors ranging between 0.70 and 0.80.

TABLE 1: Validity statistics for sections B and C of the questionnaire before exploratory factor analysis.

Questionnaire section before EFA	Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy	Barlett's test for item validity (*df*)	Barlett's test for item validity (Sig)
SMEs business environment	0.86	1176	0.00
SMEs trade credit management	0.93	595	0.00

df, degrees of freedom; Sig., significance; SMEs, small and medium enterprises; EFA, exploratory factor analysis.

Factor analysis and total variance explained

EFA was performed on the final 422 questionnaires returned by SMEs in the main survey to test the homogeneity of the underlying constructs. EFA of the responses allowed for construct validity using Cronbach's alpha to analyse the 49 Section B, testing SME business environment, and 35 Section C, testing SMEs' trade credit management, questionnaire components. According to factor analysis rules, only factors with eigenvalues greater than one should be retained. The initial eigenvalues for questionnaire Sections B and C had cumulative percentages of 70.374% and 65.824%, respectively.

Correlation and regression analysis results

Table 3 tabulates the correlation analysis result between SMEs' internal/external business environment factors and SMEs' trade credit management factors.

The Pearson correlation (Table 3) was used to test the direction and strength of the relationship between SMEs internal and external business environmental factors and SMEs' trade credit management factors. The *p*-value for each factor was compared against a significance level of 0.05. If the *p*-value is < 0.05, a significant relationship exists between the factor and SMEs' management of trade credit. As observed from Table 3, first concerning internal factors, *FI* displays a weak-to-moderate significant positive correlation with all SME trade credit management factors. To follow is *MC*, which displays a weak-to-moderate significant positive correlation with all SME trade credit management factors. Similarly, *DED* shows a significant positive correlation, ranging between weak and moderate, with all SME trade credit management factors. In addition, *NET* obtained a weak to moderate significant positive correlation with all SMEs trade credit management factors while *COL* indicated a weak-to-moderate significant positive correlation with all SMEs trade credit management factors. Regarding external factors (Table 3), *ELS* displays a significant positive correlation, ranging between weak and moderate, with all SME trade credit management factors. Meanwhile, *MEC* shows a weak but significant positive correlation with two computed SME trade credit management factors, namely, *MTC1* and *MTC2*. Lastly, a weak-to-moderate significant positive correlation between *DEP* and all SME trade credit management factors is observed (Otto, Botha & Els 2022).

TABLE 2: Reliability statistics for small- and medium-sized enterprises business environment and small- and medium-sized enterprises trade credit management factors after exploratory factor analysis.

Independent and dependent factors	Cronbach's alpha
SME internal and external business environmental factors after EFA	
Financial information (*FI*)	0.82
Managerial competencies (*MC*)	0.85
Efficiency of the legal system (*ELS*)	0.91
Debtor's ethical disclosure of accurate and transparent financial and business information (*DED*)	0.71
Networking (*NET*)	0.89
Macroeconomic conditions (*MEC*)	0.72
Collateral (*COL*)	0.85
SME and debtor ethical performance (*DEP*)	0.75
SME trade credit management factors after EFA	
SMEs' effectiveness in providing trade credit management activities (*MTC1*)	0.91
Mechanism and insurance to assist with the collection of, or protection against the risk of outstanding debt (*MTC2*)	0.77
SMEs' effectiveness in managing trade credit management principles (*MTC3*)	0.91
SMEs' effectiveness in managing trade credit management aspects (*MTC4*)	0.84
SMEs' effectiveness in applying credit policy components when granting credit (*MTC5*)	0.78

EFA, exploratory factor analysis; SMEs, small and medium enterprises; MTC, management of trade credit.

Table 4 tabulates the results of the five multiple regression models.

The results from Table 4 illustrate that the following internal factors significantly impact *MTC1*: *MC* (β = 0.242, *p* = 0.000) followed by *DED* (β = 0.184, *p* = 0.000) and *FI* (β = 0.083, *p* = 0.061). The following external factors significantly impact *MTC1*: *DEP* (β = 0.252, *p* = 0.000) and *ELS* (β = 0.149, *p* = 0.001). Results from Table 4 further show that one internal and two external variables significant impact on *MTC2*, provided from highest to the lowest significant impact: *ELS* (β = 0.340, *p* = 0.000) and *DED* (β = 0.135, *p* = 0.020). Additionally, the results show that the following internal factors *MC* (β = 0.208, *p* = 0.000), *NET* (β = 0.153, *p* = 0.005) and *FI* (β = 0.109, *p* = 0.033), and one external factor, *DEP* (β = 0.271, *p* = 0.000), significantly impact on *MTC3*. Table 4 further illustrates that three internal factors and one external factor significantly impact *MTC4*, namely, *MC* (β = 0.285, *p* = 0.000), *COL* (β = 0.143, *p* = 0.002), *FI* (β = 0.118, *p* = 0.016) and *DEP* (β = 0.237, *p* = 0.000), respectively. Lastly, the following three internal factors, *MC* (β = 0.169, *p* = 0.001), *COL* (β = 0.100, *p* = 0.001), *DED* (β = 0.098, *p* = 0.086), and one external factor, *DEP* (β = 0.283, *p* = 0.000), significantly impact on MTC5 (Table 4).

Discussion of results

The study's primary objective was to reveal how the impact of the South African business environment on SMEs' trade credit management aligns with several trade credit management theories. The following sections intend to do so with the provided regression results discussed next. The five significant internal factors are listed first followed by the two significant external factors.

Financial information

It is evident from the results that, for creditors, a decrease in SMEs' financial problems in the form of asymmetric information received from debtors, because of the availability of *FI*, is of pivotal importance in effectively managing trade credit (Nguyen, Tran & Truong 2022). Therefore, given the significant positive relationship between *FI* and *MTC1*, *MTC3* and *MTC4*, the results suggest that *FI* will enable credit-lending SMEs to be better equipped to make informed trade credit management decisions. This result aligns with the asymmetric information theory of trade credit by Smith

TABLE 3: Correlation analysis results between small- and medium-sized enterprises internal/external business environment and small- and medium-sized enterprises trade credit management.

SMEs business environment variables	SMEs trade credit management variables									
	MTC1		MTC2		MTC3		MTC4		MTC5	
	r	Sig.	*r*	Sig.	*r*	Sig.	*r*	Sig.	*r*	Sig.
FI	0.37***	0.000	0.23***	0.000	0.31***	0.000	0.34***	0.000	0.27***	0.000
MC	0.43***	0.000	0.13***	0.007	0.40***	0.000	0.43***	0.000	0.29***	0.000
ELS	0.41*	0.000	0.48*	0.000	0.21*	0.000	0.29*	0.000	0.28*	0.000
DED	0.45***	0.000	0.35***	0.000	0.27***	0.000	0.31***	0.000	0.34***	0.000
NET	0.42***	0.000	0.21***	0.000	0.43***	0.000	0.36***	0.000	0.28***	0.000
MEC[7]	0.10*	0.031	0.21*	0.000	-0.07	0.161	-0.10	0.854	0.07	0.155
COL	0.32***	0.000	0.22***	0.000	0.23***	0.000	0.33***	0.000	0.24***	0.000
DEP	0.46*	0.000	0.24*	0.000	0.41*	0.000	0.40*	0.000	0.42*	0.000

SMEs, small and medium enterprises; MTC, management of trade credit; Sig., significance; FI, financial information; MC, managerial competencies; ELS, efficiency of the legal system; DED, debtor's ethical disclosure of accurate and transparent financial and business information; NET, networking; MEC, macroeconomic conditions; COL, collateral; DEP, debtor ethical performance.

*, Significance on a 90% confidence level.

**, Significance on a 95% confidence level.

***, Significance on a 99% confidence level.

TABLE 4: Multiple linear regression results between small- and medium-sized enterprises internal and external business environment and SMEs' trade credit management.

Independent variables	Regression models (dependent variables)									
	Model 1 (MTC1)		Model 2 (MTC2)		Model 3 (MTC3)		Model 4 (MTC4)		Model 5 (MTC5)	
	Std. Beta	Sig.	Std. Beta	Sig.	Std. Beta	Sig.	Std. Beta	Sig.	Std. Beta	Sig.
FI	0.08*	0.061	0.02	0.635	0.1**	0.033	0.12**	0.016	0.04	0.473
MC	0.24***	0.000	0.03	0.495	0.21***	0.000	0.28***	0.000	0.17***	0.001
ELS	0.15***	0.001	0.34***	0.000	-0.05	0.324	0.06	0.256	0.04	0.419
DED	0.18***	0.000	0.13**	0.020	-0.02	0.756	-0.01	0.896	0.10*	0.086
NET	0.05	0.309	-0.02	0.702	0.15***	0.005	0.02	0.623	0.00	0.956
MEC[8]	0.01	0.859	0.06	0.201	-	-	-	-	-	-
COL	0.06	0.162	0.00	0.920	0.051	0.314	0.15***	0.002	0.10*	0.055
DEP	0.25***	0.000	0.02	0.620	0.27***	0.000	0.24***	0.000	0.28***	0.000
Adjusted R-squared	0.49		0.24		0.28		0.35		0.26	

MTC, management of trade credit; Std., standard; Sig., significance; FI, financial information; MC, managerial competencies; ELS, efficiency of the legal system; DED, debtor's ethical disclosure of accurate and transparent financial and business information; NET, networking; MEC, macroeconomic conditions; COL, collateral; DEP, debtor ethical performance.

*, Significance on a 90% confidence level.

**, Significance on a 95% confidence level.

***, Significance on a 99% confidence level.

(1987) given that the availability of *FI* will enable a decrease in asymmetric information received from debtors, which should lower SME failure because of financial problems. This result is important to credit-lending SMEs when deciding on increasing or decreasing the supply of trade credit to credit-borrowing SMEs, given the presence of asymmetric information between creditor and debtor and the important role that *FI* plays in mitigating asymmetric information problems to increase SMEs' effectiveness in managing trade credit.

This result enables credit-lending SMEs to eliminate trade credit management uncertainties that can result in the formation of a credit agreement from which the creditor can exploit the undeserved cash discount related to the market power theory of trade credit, thereby improving SMEs' profitability (Van Horen 2007; Frank & Maksimovic 2003; Long et al. 1993). In addition, asymmetric information can also affect the availability of credit, as Palazuelos, Crespo and Del Corte (2018) observed a direct link between the perception of loan officers (trade credit managers) relating to the quality of the accounting information, resulting in higher lending volumes for audited firms. Therefore, it can be deduced from the results on *FI* that its significantly positive impact on *MTC1*, *MTC3* and *MTC4* aligns with the market power theory and credit rationing theory of trade credit. Concerning the latter theory aligning with study results, the finding is valuable for SMEs in indicating how the availability of *FI* can expand SMEs' access to finance and lowering SME failure because of credit restrictions.

Managerial competencies

The results reveal that *MC* significantly impacts *MTC1*, *MTC3*, *MTC4* and *MTC5*, which aligns with the literature observing the importance of *MC* to mitigate business failure and sustain business success (Malinao & Ebi 2022; Veliu & Manxhari 2017; Lefebvre & Lefebvre 2002). The study by Phaladi and Thwala (2008) showed that the lack of general management, financial management, entrepreneurial skills and proper training are all contributing reasons why South African SMEs fail. The 2023/2024 GEM South African Report observed that the increase in entrepreneurial activity in the country is stifled, specifically because of the poor South African education system (Bowmaker-Falconer, Meyer & Samsami 2023). Therefore, given the regularity with which financial problems and unprofitability results in SME failure

7.The regression results between the independent variable, MEC, and MTC3, MTC4 and MTC5 were excluded due to lack of correlation with the dependent variables mentioned.

8.The regression results between the independent variable, MEC, and MTC3, MTC4 and MTC5, were excluded because of lack of correlation with the dependent variables mentioned.

(Singer et al. 2018; Kelly et al. 2016), the results suggest that *MC* is important to mitigate associated financial problems because of asymmetric information leading to unprofitability because of high transaction costs related to trade credit. Therefore, given that *MC* significantly positively impacts *MTC1*, *MTC3*, *MTC4* and M*TC5*, the results are consistent with the asymmetric information theory and transaction cost theory of trade credit. It can be observed that an increase in *MC* would result in increased SMEs' effectiveness in managing trade credit, thereby mitigating business exits caused by financial problems and unprofitability.

Debtor's ethical disclosure of accurate and transparent financial and business information

The results reveal that *DED* significantly impacts *MTC1*, *MTC2* and *MTC5*, revealing the significance of debtors to ethically disclose accurate and transparent financial and business information to SMEs. This result aligns with both asymmetric information and credit rationing theory of trade credit as supported by the findings of Palazuelos et al. (2018) and Vander Bauwhede, De Meyere and Van Cauwenberge (2015). These authors agree to the value of providing accurate and transparent financial and business information to, firstly, mitigate asymmetric information problems and, secondly, increase lending volumes in mitigating the effects of credit rationing. Concerning the latter, the observations by the above two authors, along with the study results, are important for SMEs, as access to finance is a primary reason for SME failure (Herrington & Kew 2018). The results assist in both understanding how an increase in *DED* would increase SMEs' effectiveness in managing trade credit and, in doing so, mitigating the effect of South African SMEs becoming credit rationed, thereby lessening SMEs' propensity to fail. In conjunction with the asymmetric information theory, it can be observed that credit-lending SMEs should be more secure in lending to potential debtors willing to ethically disclose accurate and transparent financial and business information, in so doing, increasing SMEs' trade credit management effectiveness (*MTC1*, *MTC2* and *MTC5*). SMEs are regularly constrained by asymmetric information challenges resulting in financial problems that are a primary reason for SME failure, accentuating the study results (Singer et al. 2018; Kelly et al. 2016).

Networking

The results reveal the statistically significant impact of *NET* on *MTC3*. This observation aligns with the study by Song, Yang and Yu (2020), which indicates the importance of networks for healthy business relationships in eliminating conditions of uncertainty because of asymmetric information between creditors, which enables the redistribution of trade credit. Therefore, *NET* should enable improved SME access to finance, contributing to a more secure environment for the supply of trade credit because of the increased accessibility of information between credit-lending and credit-borrowing SMEs. This, in turn, improves SMEs' willingness to redistribute trade credit as their business relationships expand, making the study's results consistent with both the asymmetric information and redistribution theories of trade credit. The findings highlight the importance of networking for South African SMEs, who are often burdened by the 'finance gap', as observed by the 2017/2018 GEM South Africa Report including financial problems, showing the significance of networking to expand SMEs' access to finance (Herrington & Kew 2018; Singer et al. 2018; Kelly et al. 2016).

Furthermore, the findings by Amoako and Matlay (2015) support the necessity for SMEs to cultivate business networks to benefit from cost reductions. The findings by Frank and Maksimovic (2003), Ferris (1981) and Schwartz (1974) support this observation as aligned with the study results indicating the importance of *NET* in reducing costs for creditors for the repossession of salvageable assets because SMEs' increased effectiveness in managing trade credit should mitigate asset repossession. However, because SMEs operate in closely linked industries, there is still a migration of negative 'spill-over' effects from debtors to creditors (Otto 2018). This, in turn, highlights the importance of *NET* to increase SMEs' effectiveness in managing trade credit specific to *MTC3*, limiting creditors' need for asset repossession, as SMEs now benefit from improved trade credit management principles. Therefore, the value of this result is not only applicable to creditors benefitting from lowered costs but also to debtors, given that a mutual benefit develops, should SMEs do business in closely linked networks to lower the combined transactional costs of trade credit rather than the costs of each individual business. The results reveal the importance of networking for improved SME profitability, which accentuates the study results as *NEt* also enables SMEs to better use a cost benefit when repossessing salvageable assets while exploiting a mutually beneficial advantage in the form of lowered transaction costs for SMEs to become more profitable given that unprofitability is the primary non-COVID-19-related reason for SME business exits (Bowmaker-Falconer & Meyer 2022; Herrington & Kew 2018; Hill et al. 2023a, 2023b; Singer et al. 2018). Therefore, the findings reveal that *NET*, significantly positively impacting *MTC3*, is further consistent with the transaction cost theory of trade credit.

Collateral

The results reveal that *COL* has a significant positive impact on *MTC4* and *MTC5*. The results align with the findings of Gassiah and Kikula (2022) and Voordeckers and Steijvers (2006) relating to the asymmetric information theory, including the findings by Cole, Cowling and Liu (2022) and Voordeckers and Steijvers (2006) relating to the redistribution theory. This holds, given that an increase in *COL* should lower the risk of default associated with credit-borrowing SMEs (asymmetric information theory), as SMEs would be more effective in managing trade credit management aspects and in applying credit policy components, which could reduce the likelihood of having to provide additional security as collateral. Those SMEs once labelled as default risks can now use *COL* as a signalling mechanism to mitigate financial problems such as

asymmetries and adverse selection that once existed between themselves and the credit-lending SMEs. This, in turn, would improve SMEs' management of trade credit, while expanding SMEs' access to credit improving their trade credit redistribution potential as a spin-off benefit from supplying adequate *COL*. The 2017/2018 GEM South African Report suggests that access to finance for SMEs is restricted because of their inability to acquire collateral, which leaves financial institutions exposed to SMEs' associated financial risks (Herrington & Kew 2018). Therefore, should credit-borrowing SMEs be able to acquire *COL*, these businesses would be more effective in managing trade credit as the study sheds valuable insights into understanding the benefits of *COL* in broadening SMEs' access to finance (redistribution theory) and lowering the associated financial risk for credit-lending SMEs because of financial problems because of asymmetric information.

Efficiency of the legal system

The results reveal that *ELS* has a significant positive impact on *MTC1* and *MTC2*, aligning with Bhattacharya's (2008) quality guarantee theory and the market power theory of trade credit, as supported by Van Horen (2007), which observed the following. Firstly, under quality guarantee theory, the cost of information asymmetry regarding product quality will be more for SMEs operating in countries categorised by diminishing legal resources and, therefore, a less efficient legal system, such as South Africa. Therefore, when asymmetric information problems relating to product quality between credit lenders and borrowers decrease, the surplus a debtor would obtain from buying a product and/or service through trade credit would increase or similarly costs would decrease, improving SME profitability (Van Horen 2007). Secondly, for market power theory, if debtors exercise their market power to mitigate asymmetric information problems, they would do so especially in countries whose rule of law is less efficient (Van Horen 2007). However, Van Horen (2007) observed that a debtor's surplus would increase should they exert their market power while this surge in surplus expands the degree of asymmetric information between credit lender and borrower, thus increasing SMEs' associated financial problems to the detriment of business success. As a result, debtors could exploit their position by taking advantage of creditors because of them possessing higher asymmetric information volumes. Thus, from a market power perspective, an increase in *ELS* would minimise the possibility of creditors becoming victim to debtors exploiting their market power, to gain a higher surplus, resulting in debtors unfairly benefitting from higher volumes of asymmetric information that could otherwise raise SMEs associated financial problems resulting in business exits (Singer et al. 2018; Kelly et al. 2016). These results are of value to South African SMEs by illustrating the importance of an efficient legal system to mitigate information asymmetry problems, as the literature suggests that an inefficient legal system contributes to the primary reason for SMEs failure, namely, non-profitability and financial problems (Singer et al. 2018).

Small- and medium-sized enterprises and debtor ethical performance

The results reveal that *DEP* significantly positively impacts on *MTC1*, *MTC3*, *MTC4* and *MTC5*. SMEs operating as credit borrowers are dependent on acquiring trade credit as funding while operating as credit lenders, to increase sales and remain competitive. As a result, problems relating to information asymmetry (asymmetric information theory) remain a regular constraint for SMEs and lead to creditors being exposed to the risk of outstanding payments. This leaves SMEs exposed to negative implications related to their trade credit management and cash flow because of an increase in associated financial risk, while the debtor's incentive will be to default on outstanding credit payments. Authors such as Howorth and Moro (2006) and Stiglitz and Weiss (1981) support this observation by stating that ethics plays a pivotal role in any business environment to reduce financial problems such as asymmetric information. In addition, these authors further observed that asymmetric information, adverse selection and moral hazard problems can affect the availability of credit (credit rationing theory), while ethics is also important in reducing monitoring and screening costs (transaction cost theory). Therefore, the results on *DEP* having a significant positive impact on *MTC1*, *MTC3*, *MTC4* and *MTC5* are consistent with these three trade credit theories as supported by De La Torre, Peria and Schmukler (2008). The study findings are valuable to SMEs, as several global and national GEM reports reveal access to finance and non-profitability as primary reasons for SME failure (Hill et al. 2023a, 2023b; Herrington & Kew 2018; Singer et al. 2018).

Managerial implications

As observed from the literature, access to finance and non-profitability are identified as the two major reasons for SME failure (2017/2018 and 2021/2022 GEM South African Reports) while financial problems, including non-profitability, observe as the third major reason for SME failure (2015/2016 and 2017/2018 GEM Reports) (Bowmaker-Falconer & Meyer 2022; Herrington & Kew 2018; Kelly et al. 2016; Singer et al. 2018). The findings of this study provide several managerial implications for these three primary reasons for SME failure, resulting in business exits (secondary research objective).

Managerial implication 1: Improving small- and medium-sized enterprises access to external funding

The results show that a combination of internal and external business environmental variables can help address the SME finance gap reducing credit rationing (credit rationing theory), thus improving SMEs' access to finance. The discussion of regression results revealed that an increase in *FI*, *DED*, *NET* and *COL* would contribute towards SMEs becoming less credit rationed. Furthermore, the results showed that an increase in *DEP* would result in SMEs becoming less credit rationed. Therefore, the results contribute to addressing the 'finance gap', which arises when SMEs face credit rationing due to

limited access to external funding (Bowmaker-Falconer & Meyer 2022; Herrington & Kew 2018) while contributing to the effective management of trade credit.

Therefore, in improving access to funding, SMEs are poised to increase their availability of financial information, expand their business linkages by forming networks, and act responsibly in the extension of credit by screening potential debtors that disclose accurate and transparent financial and business information, thereby showing strong tendencies to business ethics. In continuing, SMEs should strive to accumulate forms of collateral to serve as marketable security offerings. Altogether, these actions will strengthen their quest for external capital.

Managerial implication 2: Improving small- and medium-sized enterprises profitability

The results reveal that several internal and external business environmental variables would assist SMEs in lowering their combined transactional costs associated with trade credit financing (monitoring and screening, including financing charges), including *FI*, *MC* and *DED*. This would be attained through a reduction in asymmetric information, effectively lowering the combined transactional costs of trade credit financing and contributing to less bad debt expenses, because of increased effectiveness in managing trade credit. In addition, the results revealed that *NEt* also positively contributes to SMEs' profitability through lowered costs associated with asset repossession, including financing and an overall decline in trade credit transactional costs (transaction cost theory). In addition, an increase in *ELS* and *DEP* would assist SMEs in becoming more profitable because of a mitigation of asymmetric information problems. Starting with *ELS*, costs associated with information asymmetry about product quality will be less for SMEs operating in an efficient South African legal system (quality guarantee theory), while debtors would opt to exercise their market power, especially in countries whose rule of law is less efficient (market power theory), emphasising the importance of *ELS* for improved SME profitability. *DEP* shows a positive contribution to SMEs' profitability through a decrease in monitoring and screening costs associated with trade credit financing (transaction cost theory).

Therefore, SMEs should be cognisant of how these business environment variables will improve trade credit management, resulting in higher profits through a reduction in various transactional costs, asset reposition costs, and information asymmetry costs to credit, altogether lowering the likelihood of credit sales turning into bad debt expenses. In so doing, SMEs should be more profitable, strengthening their financial viability and ability to expand as high profits enable retention of earnings that could be used for future investments.

Managerial implication 3: Reducing small- and medium-sized enterprises' financial problems associated with trade credit management

The results reveal that an increase in *FI*, *MC*, *DED*, *NET*, *COL*, *ELS* and *DEP* would contribute to a reduction in asymmetric information (asymmetric information theory) received from debtors lowering SMEs' financial and default risk associated with trade credit. This could lead to less uncertainty between debtor and creditor, as the mitigation of asymmetric information enables creditors to be better positioned to make informed credit-lending decisions. The positive contribution of these significant SME business environmental variables could improve SMEs' management of trade credit, by improving SMEs' screening ability, because of higher quantities of information about the debtors' default risk. SMEs will benefit from improved effectiveness in managing trade credit because of a decrease in SMEs' financial problems associated with asymmetric information such as adverse selection and moral hazard (Singer et al. 2018; Kelly et al. 2016).

By presenting these implications, the study aims to contribute to a more sustainable entrepreneurial environment. It is intended that SMEs and various stakeholders examine and utilise them as business enablers, thereby reducing the likelihood of SMEs exiting the market.

Limitations

Firstly, not all the variables in the business environment were considered in the study; variables such as crime including the international and technological environments were not included. Secondly, the study only focused on the supply-and-demand side of trade credit financing from an SMEs' perspective. It is also important to examine more holistically working capital that includes the management of cash and inventory.

Conclusion

The study revealed how several trade credit management theories contribute to forming implications to challenges caused by the impact of the South African business environment on SMEs' trade credit management to mitigate SME failure resulting in business exits. The study's practical value is in the formulation of several managerial implications detailing how a set of internal and external business environmental variables can be used to promote SME creation. The study can contribute to the mitigation of these primary reasons for SME failure associated with SMEs' trade credit management because of asymmetric information problems, such as adverse selection, moral hazard and credit rationing, including transaction cost constraints. Through assessing their business operations, SMEs can now use these results and suggested managerial implications to mitigate business failure associated with the primary reasons for business exits, thereby improving their operational viability and overall propensity to sustainably contribute to South Africa's SDGs.

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Data availability

The data that support the findings of this study are available from the corresponding author, W.H.O., upon reasonable request.

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References

Adzido, R.Y.N. & Azila-Gbettor, E.M., 2014, 'Assessment of supply-side financing of lower end market SMEs by rural banks in Ghana', *Research Journal of Finance and Accounting* 5(18), 196–206.

Amoako, I.O. & Matlay, H., 2015, 'Norms and trust-shaping relationships among food-exporting SMEs in Ghana', *International Journal of Entrepreneurship & Innovation* 16(2), 123–124. https://doi.org/10.5367/ijei.2015.0182

Andrieu, G., Staglianò, R. & Van der Zwan, P., 2018, 'Bank debt and trade credit for SMEs in Europe: Firm-, industry-, and country-level determinates', *Small Business Economics* 51(1), 245–264. https://doi.org/10.1007/s11187-017-9926-y

Baker, H.K., Kumar, S. & Singh, H.P., 2019, 'Working capital management: Evidence from Indian SMEs', *Small Enterprise Research* 26(2), 143–163. https://doi.org/10.1080/13215906.2019.1624386

Bams, D., Pisa, M. & Wolff, C.C.P., 2020, 'Spillovers to small business credit risk', *Small Business Economics* 57(1), 323–352. https://doi.org/10.1007/s11187-019-00308-9

Barad, M.M., 2010, 'A study on liquidity management of Indian steel industry', PhD thesis, Saurashtra University, viewed 27 September 2016, from http://etheses.saurashtrauniversity.edu/id/eprint/77.

Bardhan, P., 2017, 'Corruption and development: A review of issues', in *Political corruption*, pp. 321–338.

Beyene, A., 2002, 'Enhancing the competitiveness and productivity of small and medium scale enterprises (SMMEs) in Africa: An analysis of differential roles of national governments through improved support service', *Africa Development* 27(3), 130–156. https://doi.org/10.4314/ad.v27i2.22167

Bhattacharya, H., 2008, *Theories of trade credit: Limitations and applications*, viewed 11 June 2018, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1286443.

Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J. & Tarnawa, A., 2020, *Global entrepreneurship monitor report*, viewed 28 March 2020, from https://www.gemconsortium.org/file/open?fileId=50443.

Botha, A. & Maylie, D.N., 2020, *The MSME voice: Growing South Africa's small business sector*, viewed 14 July 2020, from https://documents.worldbank.org/en/publication/documents-reports/documentdetail/225911587028924010/the-msme-voice-growing-south-africas-small-business-sector.

Bowmaker-Falconer, A. & Meyer, N., 2022, *Global entrepreneurship monitor South African report*, viewed 20 February 2023, from https://www.gemconsortium.org/economy-profiles/south-africa.

Bowmaker-Falconer A., Meyer, N. & Samsami, M., 2023, *Global entrepreneurship monitor 2023/2024*, South African Report Entrepreneurial Resilience during Economic Turbulence, Stellenbosch University, Stellenbosch, viewed 13 August 2024, from https://www.gemconsortium.org/report.

Braimah, A., Mu, Y., Quaye, I. & Ibrahim, A.A., 2021, 'Working capital management and SMEs profitability in emerging economies: The Ghanaian case', *SAGE Open* 11(1), 21582440219. https://doi.org/10.1177/2158244021989317

Burgstaller, J. & Wagner, E., 2015, 'How do family ownership and founder management affect capital structure decisions and adjustment of SMEs? Evidence from a bank-based economy', *Journal of Risk Finance* 16(1), 73–101. https://doi.org/10.1108/JRF-06-2014-0091

Cacciotti, G. & Hayton, J.C., 2015, 'Fear and entrepreneurship: A review and research agenda', *International Journal of Management Reviews* 17(2), 165–190. https://doi.org/10.1111/ijmr.12052

Canto-Cuevas, F., Palacin-Sánchez, M. & Di-Pietro, F., 2019, 'Trade credit as a sustainable resource during an SME's life cycle', *Sustainability* 11(3), 670. https://doi.org/10.3390/su11030670

Cassar, G., 2004, 'The financing of business start-ups', *Journal of Business Venturing* 19(2), 261–283. https://doi.org/10.1016/S0883-9026(03)00029-6

Cole, R., Cowling, M. & Liu, W., 2022, *The effect of collateral on small business rationing of term loans and lines of credit*, European Financial Management Association (EFMA), Norfolk, VA.

Cunat, V., 2006, 'Trade credit: Suppliers as debt collectors and insurance providers', *Review of Financial Studies* 20(2), 491–527. https://doi.org/10.1093/rfs/hhl015

Dary, S.K., Issahaku, H. & Abu, B.M., 2022, 'Trade credit financing and firm growth: A panel study of listed firms in Africa', in E.F. Wamboye & B. Fayissa (eds.), *The Palgrave handbook of Africa's economic sectors*, pp. 551–576, Palgrave Macmillan, Cham.

De la Torre, A., Peria, M.S.M. & Schmukler, S., 2008, *Bank involvement with SMEs: Beyond relationship lending*, viewed 07 October 2019, from http://www.worldbank.org.

Emery, G.W., 1987, 'An optimal financial response to variable demand', *Journal of Financial and Quantitative Analysis* 22(2), 209–225. https://doi.org/10.2307/2330713

Fatoki, O., 2010, 'The impact of the South African business environment on the availability of debt finance to new small and medium enterprises in South Africa', PhD thesis, Business Management, University of the Free State.

Ferris, J.S., 1981, 'A transactions theory of trade credit use', *Quarterly Journal of Economics* 96(2), 243–270. https://doi.org/10.2307/1882390

Frank, M.Z. & Maksimovic, V., 2003, *Trade credit, collateral and adverse selection*, University of Maryland, Working Paper.

Gassiah, N. & Kikula, J., 2022, 'Challenges small and medium enterprises (SMEs) face in acquiring loans from commercial banks in Tanzania', *African Journal of Business Management* 16(4), 74–81. https://doi.org/10.5897/AJBM2021.9295

Herrington, M. & Kew, P., 2018, *Global entrepreneurship monitor South African report*, viewed 10 July 2020, from https://www.gemconsortium.org/economy-profiles/south-africa.

Hill, S., Ionescu-Somers, A., Coduras, A., Guerrero, M., Menipaz, E., Boutaleb, F. et al., 2023a, *Global entrepreneurship monitor report global report: 25 years of growing*, viewed 24 May 2024, from https://www.gemconsortium.org/report.

Hill, S., Ionescu-Somers, A., Coduras, A., Guerrero, M., Roomi, M.A., Bosma, N. et al., 2022, *Global entrepreneurship monitor report: Opportunity amid disruption*, viewed 28 May 2022, from https://www.gemconsortium.org/reports/latest-global-report.

Hill, S., Ionescu-Somers, A., Coduras Martínez, A., Guerrero, M., Menipaz, E., Boutaleb, F. et al., 2023b, *Global entrepreneurship monitor 2022/2023 adapting to a 'new normal'*, viewed 25 January 2024, from https://gemconsortium.org/reports/latest-global-report.

Howorth, C. & Moro, A., 2006, 'Trust within entrepreneur bank relationship: Insight from Italy', *Entrepreneurship Theory and Practice* 5(2), 26–40.

Jutla, D., Bodorik, P. & Dhaliqal, J., 2002, 'Supporting the e-business readiness of small and medium-sized enterprises: Approaches and metrics', *Internet Research* 12(2), 139–164. https://doi.org/10.1108/10662240210422512

Kelly, D., Singer, S. & Herrington, M., 2016, *Global entrepreneurship monitor report*, viewed 17 March 2016, from http://www.gemconsortium.org/report.

Kosgey, T. & Njiru, A., 2016, 'Influence of working capital management on the financial performance of small enterprises: A survey of Nakuru County', *Journal of Business and Management* 18(4), 41–47.

Kumar, S. & Rao, P., 2015, 'A conceptual framework for identifying financing preferences of SMEs', *Small Enterprise Research* 22(1), 99–112. https://doi.org/10.1080/13215906.2015.1036504

Le, A. & Doan, A., 2020, 'Corruption and financial fragility of small and medium enterprises: International evidence', *Journal of Multinational Financial Management* 57–58, 1–22. https://doi.org/10.1016/j.mulfin.2020.100660

Lefebvre, E. & Lefebvre, L.A., 2002, 'Determinant of export performance and behaviour: A longitudinal study of manufacturing SMEs in Kleinknecht', *Econometric Explorations of Survey Data* 5(1), 281–309. https://doi.org/10.1057/9780230595880_12

Long, M.S., Malitz, I.B. & Ravid, S.A., 1993, 'Trade credit, quality guarantees, and product marketability', *Financial Management* 22(4), 117–127. https://doi.org/10.2307/3665582

Main, S.L. & Smith, C.W., 1992, 'Account receivable management policy: Theory and evidence', *The Journal of Finance* 47(1), 169–200. https://doi.org/10.1111/j.1540-6261.1992.tb03982.x

Malinao, C.W.M. & Ebi, R.G., 2022, 'Business management competencies as the driver of small-medium enterprises' survival during COVID-19 pandemic', *Puissant* 3, 296–315.

Martinez-Sola, C., Garcia-Teruel, P.J. & Martinez-Solano, P., 2013, 'Trade credit and SME profitability', *Small Business Economics* 42(3), 561–577. https://doi.org/10.1007/s11187-013-9491-y

McGuinness, G., Hogan, T. & Powell, R., 2016, 'Bank credit and trade credit: Evidence from SMEs over the financial crises', *International Small Business Journal* 34(4), 1–34. https://doi.org/10.1177/0266242614558314

McGuinness, G., Hogan, T. & Powell, R., 2017, 'European trade credit use and SME survival', *Journal of Corporate Finance* 49(C), 81–103. https://doi.org/10.1016/j.jcorpfin.2017.12.005

Nguyen, D.N., Tran, Q.N. & Truong, Q.T., 2022, 'The ownership concentration – Innovation nexus: Evidence from SMEs around the world', *Emerging Markets Finance and Trade* 58(5), 1288–1307.

Organisation for Economic Cooperation and Development (OECD), 2020, *Economic surveys: South Africa*, viewed 06 August 2020, from http://www.treasury.gov.za/comm_media/press/2020/20200731%20OECD%20Economic%20Survey%20SA%202020.pdf

Otto, W.H., 2018, 'Management of trade credit by small and medium-sized enterprises', *Journal of Economic and Financial Sciences* 11(1), 1–8. https://doi.org/10.4102/jef.v11i1.178

Otto, W.H., 2022, 'The impact of the business environment in South Africa on the management of trade credit in SMEs', PhD thesis, Finance, University of Johannesburg.

Otto, W.H., Botha, I. & Els, G., 2022, 'The impact of the South African business environment on SMEs trade credit management effectiveness', *Southern African Journal of Entrepreneurship and Small Business Management* 14(1), a563. https://doi.org/10.4102/sajesbm.v14i1.563

Oyelana, A.A. & Smith, W., 2015, 'An investigation into challenges as well as means to overcome challenges facing small and medium enterprises (SMEs) in South Africa', *Journal of Economics* 6(2), 177–188.

Padachi, K., Narasimhan, M.S., Durbarry, R. & Howorth, C., 2008, 'An analysis of working capital structure and financing pattern of Mauritian small manufacturing firms', *Journal of Applied Finance* 14(7), 41–62.

Palazuelos, E., Crespo, A.H. & Del Corte, J.M., 2018, 'Accounting information quality and trust as determinants of credit granting to SMEs: The role of external audit', *Small Business Economics* 51(4), 861–877. https://doi.org/10.1007/s11187-017-9966-3

Peter, F.O., Peter, A.O., Bamidele, R., Adeniyi, M.M., Adama, I., Decster, L.H. et al., 2022, 'Trade credit management and SMEs sustainability: A study of selected SMEs in Lagos, Nigeria', *International Journal of System Assurance Engineering and Management* 13(4), 1834–1844. https://doi.org/10.1007/s13198-021-01569-y

Phaladi, M.J. & Thwala, W.D., 2008, 'Critical success factor for small and medium sized contractors in North-West province, South Africa', in J.J.P. Verster & H.J. Marx (eds.), *5th Post Graduate Conference on Construction Industry Development,* pp. 64–71, Department of Quantity Surveying and Construction Management, University of the Free State, Bloemfontein.

Poutziouris, P., Michaelas, N. & Soufani, K., 2005, *Short-term financial management of working capital in small-medium sized enterprises*, viewed 14 June 2015, from https://www.coursehero.com/file/7562732/mfc-130/.

Schwartz, R.A., 1974, 'An economic model of trade credit', *Journal of Financial and Quantitative Analysis* 9(4), 643–657. https://doi.org/10.2307/2329765

SEDA, 2018, *SMME quarterly update: 1st quarter 2018*, viewed 25 September 2018, from http://www.seda.co.za/Publications/Publications/SMME%20Quarterly%202018-Q1.pdf.

Singer, S., Herrington, M. & Menipaz, E., 2018, *Global entrepreneurship monitor report*, viewed 02 September 2019, from http://www.gemconsortium.org/report.

Sitharam, S. & Hoque, M., 2016, 'Factors affecting the performance of small and medium enterprises in KwaZulu-Natal, South Africa', *Problems and Perspectives in Management* 14(2), 277–288. https://doi.org/10.21511/ppm.14(2-2).2016.03

Smith, J.K., 1987, 'Trade credit and informational asymmetry', *Journal of Finance* 42(4), 863–872. https://doi.org/10.1111/j.1540-6261.1987.tb03916.x

Song, H., Yang, X. & Yu, K., 2020, 'How do supply chain networks and SMEs' operational capabilities enhance working capital financing? An integrative signalling view', *International Journal of Production Economics* 220, 107447. https://doi.org/10.1016/j.ijpe.2019.07.020

Statistics South Africa, 2024, *Quarterly labour force survey (QLFS)*, 3rd Quarter 2024, viewed 24 January 2025, from https://www.statssa.gov.za/publications/P0211/P02113rdQuarter2024.pdf.

Stiglitz, J. & Weiss, A., 1981, 'Credit rationing in markets with imperfect information', *American Economic Review* 71(3), 393–410.

Todaro, M.P. & Smith, S.C., 2020, *Economic development*, 13th edn., Pearson Education, Harlow.

Van Horen, N., 2007, *Customer market power and the provision of trade credit: Evidence from Eastern Europe and Central Asia*, Policy Research Working Paper No. 4284, World Bank, Washington, DC.

Vander Bauwhede, H., De Meyere, M. & Van Cauwenberge, P., 2015, 'Financial reporting quality and the cost of debt of SMEs', *Small Business Economics* 45(1), 149–164. https://doi.org/10.1007/s11187-015-9645-1

Veliu, L. & Manxhari, M., 2017, 'The impact of managerial competencies on business performances: SMEs in Kosovo', *Vadyba Journal of Management* 30(1), 59–65.

Virglerova, Z., Homolka, L., Smrcka, L., Lazanyi, K. & Kliestik, T., 2017, 'Key determinants of the quality of business environment of SMEs in the Czech Republic', *Business Administration and Management* 20(2), 87–101. https://doi.org/10.15240/tul/001/2017-2-007

Voordeckers, W. & Steijvers, T., 2006, 'Business collateral and personal commitments in SMEs lending', *Journal of Banking and Finance* 30(11), 3067–3086. https://doi.org/10.1016/j.jbankfin.2006.05.003

World Bank, 2023a, *Overview*, viewed 28 May 2022, from https://www.worldbank.org/en/country/southafrica.

World Bank, 2023b, *GINI index (World Bank estimate)*, viewed 16 November 2023, from https://databank.worldbank.org/source/world-development-indicators#.

World Bank, 2023c, *Poverty headcount ratio at national poverty lines (% of population)*, viewed 16 November 2023, from https://databank.worldbank.org/source/world-development-indicators#.

Yazdanfar, D. & Ohman, P., 2017, 'Substitute or complement? The use of trade credit as a financing source among SMEs', *Management Research Review* 40(1), 20–27. https://doi.org/10.1108/MRR-06-2015-0153

Zimon, G. & Dankiewicz, R., 2020, 'Trade credit management strategies in SMEs and the COVID-19 pandemic – A case of Poland', *Sustainability* 12(5), 6114.

Zikmund, W.G., Babin, B.J., Carr, J.C. & Griffin, M., 2010, *Business research methods*, 8th edn., South-Western Cengage Learning, Mason, OH.