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Bridging the financial access gap for Palestinian SMEs: The role of CRD and CGS in sustainable growth

Rabah Abdaljawad[1+]
W Muhammad Zainuddin Wan Abdullah[2]

[1,2]*Faculty of Business, Economic and Social Development, 'Universiti Malaysia Terengganu, Malaysia.*
[1]*Email: rabah22055@gmail.com*
[2]*Email: w.zainuddin@umt.edu.my*

(+ Corresponding author)

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ABSTRACT

Small and medium-sized enterprises (SMEs) play a vital role in the Palestinian economy by fostering innovation and creating jobs. However, insufficient access to external finance hinders their sustainable growth. Credit infrastructure such as a Credit Risk Database (CRD) and a Credit Guarantee Scheme (CGS) are recognized as crucial tools for promoting SME development. This study employed a deductive, quantitative research approach using a developed questionnaire distributed to owners, CEOs, and CFOs of industrial SMEs in Palestine, generating 363 valid responses. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal a significant mediating effect of access to finance in the relationship between CRD, CGS, and sustainable SME growth. Specifically, robust credit risk databases and the implementation of credit guarantee schemes indirectly foster SME growth by improving access to finance. From a policy perspective, the results highlight the need for Palestinian authorities to institutionalize CRD and expand CGS frameworks as key components of national financial infrastructure. A credit risk database that accurately assesses SME creditworthiness can reduce information asymmetries and lending risks, while CGS mitigates financial risk for lenders, enhancing external funding opportunities and reinforcing resilience strategies, private sector growth, and job creation.

Contribution/ Originality: This study offers both theoretical and practical contributions by enhancing the understanding of financial infrastructure mechanisms that support the growth of SMEs in developing economies. The findings emphasize the importance for policymakers and financial regulators to prioritize the establishment of comprehensive CRD systems and the adoption of effective CGS frameworks to promote the long-term sustainability of SMEs in Palestine.

1. INTRODUCTION

In Palestine, as in many other emerging nations, there has been a significant rise in unemployment and poverty rates, reflected in the persistent decline of its gross domestic product (GDP). According to the International Labour Organization, the annual unemployment rate in the occupied Palestinian territory (Gaza and the West Bank) exceeded 46% due to the ongoing war in the Gaza Strip as of June 2024. Current estimates suggest that unemployment has reached 79% in Gaza (Khalidi & Iwidat, 2024). Moreover, prolonged isolation and recurrent conflict have severely constrained economic growth, particularly in Gaza. Between 2007 and 2022, Gaza's real GDP

growth averaged only 0.4%, while real GDP per capita declined at an average annual rate of 2.5% during a period of rapid population growth (MFI, 2023).

Within this fragile economic landscape, small and medium-sized enterprises (SMEs) emerge as a potential engine of resilience. SMEs are globally recognized as a cornerstone of economic development, given their demonstrated role in enhancing income distribution, creating job opportunities, and reducing poverty (Diabate, Sibiri, & Ouedraogo, 2019; Maarif, Pramono, & Prasetyo, 2022; Mamo, 2020; Pu, Pathak, & Xu, 2021). In the context of Palestine, however, the industrial sector meets only about 20% of the local market's needs (Dwikat, Zidan, & Hamed, 2022) and operates at nearly half of its potential capacity. According to Aburaida and Nunes (2018), Morrar and Arman (2020), and Muhtaseb, Alawneh, and Barakat (2019), raising capacity utilization to 70% could generate roughly 40,000 new jobs, indicating the sector's considerable but untapped potential to drive economic recovery.

Yet, despite this potential, SMEs the backbone of the Palestinian economy continue to face serious challenges in accessing finance, which restricts their capacity to fully capitalize on available opportunities. According to the World Bank Group (2019), some of the most critical barriers include weak credit ratings, insufficient collateral, and the stringent conditions imposed by Basel III regulations, all of which hinder SMEs' access to the formal banking sector.

These issues are further intensified by poor financial management, inadequate data infrastructure, and a lack of transparency, factors that make banks even more hesitant to extend credit to SMEs (Talahama, 2020). This persistent financing gap presents a dual challenge, both theoretical and practical. Although SMEs have the potential to alleviate unemployment and stimulate economic growth, their development remains systematically restricted by financial constraints. Bridging this gap requires innovative solutions, particularly the implementation of Credit Risk Databases (CRDs) and Credit Guarantee Schemes (CGSs), which can enhance access to finance and unlock the sector's untapped potential.

2. THEORETICAL LITERATURE REVIEW

The primary aim of this article is to enhance the creditworthiness of SMEs by reducing information asymmetries and improving their access to external funding. The contribution of the article is significant at both theoretical and practical levels: it aids in understanding the mechanisms of credit infrastructure that support SME growth in emerging and developing economies, while also addressing financial challenges that limit their access to capital. The findings emphasize the vital role of policymakers and financial regulators in establishing robust Credit Risk Database (CRD) systems and developing well-structured Credit Guarantee Scheme (CGS) frameworks to ensure the long-term sustainability of SMEs in Palestine.

The study is grounded in two central theoretical perspectives: the Resource-Based View (RBV), which emphasizes the strategic importance of unique and intangible resources, and the Pecking Order Theory (POT), which explains firms' financing preferences and constraints. The RBV underscores the importance of internal resources in attaining and sustaining competitive advantage; in this context, the credit database functions as a critical strategic resource that indirectly supports organizational growth and sustainability (Freeman, Dmitriev, & Phillips, 2021). POT, on the other hand, describes SME financing behavior whereby firms prioritize internal financing and only turn to external sources when internal funds are insufficient (Singh, Pillai, & Rastogi, 2021; Yildirim & Celik, 2021). Grounded in POT, CGSs and improved access to finance address issues of information asymmetry and financing costs. According to Myers (1984) and Myers and Majluf (1984), financing strategies that reduce costs and preserve financial independence are essential for mitigating the effects of information asymmetry and adverse selection (Adair & Adaskou, 2011).

3. REVIEW OF EMPIRICAL LITERATURE

This article examines the capacity of financial policymakers in Palestine to develop and implement credit systems that reduce barriers to finance and promote the sustainable growth of SMEs. The analysis focuses on three key areas: enhancing SME creditworthiness, bridging the information gap between borrowers and lenders, and expanding access to external funding.

In framing this study, the review of empirical literature is guided by two theoretical lenses: the Resource-Based View (RBV), which highlights the strategic importance of intangible assets such as reliable credit information, and the Pecking Order Theory (POT), which explains firms' financing choices and their challenges in securing external capital. Within this context, special attention is given to credit risk databases (CRDs) and credit guarantee schemes (CGSs) as institutional tools for addressing the SME financing gap in Palestine (European Investment Bank, 2023).

3.1. Sustainable Growth in SMEs

In recent research, sustainable SME growth has become a central focus. A growing body of literature indicates that many SMEs face difficulties in transitioning from small entrepreneurial ventures into sustainable businesses, primarily due to internal, structural, and administrative challenges, particularly their difficulty in obtaining external financing. Restricted access to finance remains a widespread constraint, limiting firms' capacity to grow or innovate (World Bank, 2017).

The lack of sufficient funding hampers investment in key growth-oriented activities, including research and development, innovation, and market diversification (Beck, Demirgüç-Kunt, & Maksimovic, 2008; Fatoki, 2014; Lee & Persson, 2020). In addition to financial issues, SMEs also face various external pressures such as resource shortages, political and social instability, and the escalating effects of environmental change, all of which significantly impact their long-term competitiveness and sustainability. Addressing financing barriers is therefore essential to empowering SMEs to achieve sustainable growth, enhance productivity, and generate broader economic benefits (Eggers, Hansen, & Davis, 2012; Linnenluecke, Smith, & Griffiths, 2017).

Firms that integrate environmental and social responsibility into their core business practices are more likely to succeed, as they are better equipped to navigate today's complex business environment and capitalize on opportunities in a global market increasingly driven by values of integrity and accountability (Lopez-Gamero, Molina-Azorín, & Claver-Cortés, 2020; Sharma, Maurya, & Pandit, 2021). Leveraging technology and innovation to embed sustainable practices can enhance operational efficiency, strengthen brand image, and build stakeholder trust (Stubbs & Cocklin, 2008; Tariq, Razzaq, & Mehmood, 2021). Recent studies show that the adoption of advanced technologies improves efficiency, reduces costs, and supports the development of high-quality products, thereby reinforcing the long-term viability of SMEs (Kim, 2021; Taslim, Rahman, Hossain, & Alam, 2019).

3.2. Credit Risk Database CRD

The Credit Risk Database (CRD) functions as a non-profit membership system; institutions provide data, which the CRD Association then processes (CRD Association, 2006). With government backing, the CRD was created in Japan in 2001. Its aim was to use big data to predict default likelihood and reduce lending uncertainty (Yoshino & Taghizadeh-Hesary, 2016). This information allows the CRD to develop credit-scoring models, evaluate SME risk profiles, and validate them repeatedly. Yang, Zhang, Kang, Wang, and Wu (2021) stated that the system provides members with consulting services in addition to data provision, including data analysis and business advisory support.

Studies show that national SME databases are valuable for reducing information gaps between lenders and borrowers. Specifically, the CRD supplies financial indicators such as current asset turnover, operating growth rate, and debt-to-asset ratio that assist in reducing operational risks and expanding access to finance. Scholars argue that

databases like these are crucial in fostering financial inclusion and alleviating financing constraints for SMEs (Nguyen & Sagara, 2020; Yoshino & Taghizadeh-Hesary, 2016).

Credit risk databases enable lenders to more accurately assess borrower creditworthiness when financial institutions are provided with reliable and standardized information (Anito, 2021; Bakar et al., 2022). This not only strengthens the safety of credit (Bou-Hamad, 2017) but also enhances the resilience of the broader financial system by improving transparency, data quality, and risk management practices (Kohara et al., 2019).

Considering the theoretical perspective, this article situates the CRD within the Resource-Based View (RBV), which emphasizes the strategic importance of scarce, intangible, and hard-to-replicate resources. Reliable credit information acts as a valuable resource by enhancing SMEs' credibility with lenders and enabling more informed lending decisions. In this context, the CRD can serve as a source of sustainable competitive advantage for SMEs (Nguyen & Sagara, 2020). According to this theoretical foundation and supporting evidence, this study proposes the following hypothesis:

H_1: The Credit Risk Database has a significant positive impact on the sustainable growth of SMEs.

3.3. Credit Guarantee Schemes CGSs

Credit guarantee schemes (CGSs) represent a common policy tool through which governments seek to ease the financing constraints faced by small and medium-sized enterprises (SMEs). They provide third-party credit risk mitigation by covering part of lenders' losses in the event of SME default, typically in exchange for a fee (European Investment Bank, 2014; World Bank, 2015). While privately run schemes are more common in advanced economies, their central role is to foster public–private partnerships that expand credit access for SMEs, particularly those in marginalized or vulnerable sectors (World Bank, 2025).

Various studies indicate that CGSs improve SMEs' creditworthiness and financial accessibility. Using the Pecking Order Theory (POT), Arbing et al. (2010) highlighted the role that CGSs play in job creation and economic development. Research by Kwan et al. (2015), Ogito, Kuwahara, and Sato (2017), and Larin and Queiroz (2006) demonstrates that government guarantees lower lender risk and promote the growth of SMEs, while CGSs facilitate access to investment funding (Caselli, Corbetta, Rossolini, & Vecchi, 2019; Heineke et al., 2019). These schemes minimize default risk (Adhikary, Kutsuna, & Stephannie, 2019) and boost SME competitiveness when paired with financial infrastructure such as CRD systems (Terzyowski, 2010).

Empirical evidence supports the effectiveness of credit guarantee programs in facilitating financing for SMEs. Moreover, their benefits extend to supporting gross domestic product (GDP) growth and increasing employment rates. In the United Kingdom, CGSs have proven more effective than traditional support programs in promoting SME growth and employment (Allinson, Robson, & Stone, 2013; Cowling, 2010; Riding & Haines Jr, 2001). Similar findings in Italy and Germany show that credit guarantee programs support SME survival and improve performance, particularly after the financial crisis, by supporting GDP growth and contributing to employment (Bartoli, Ferri, Murro, & Rotondi, 2013; Boschi, Girardi, & Ventura, 2014; Hennecke, Kuczera, & Werner, 2019; Zecchini & Ventura, 2009). In Chile, empirical evidence from the FOGAPE program has significantly increased the volume of SME lending (Cowan, Drexler, & Yañez, 2015; Larraín & Quiroz, 2006).

In emerging markets, credit guarantee systems are widely adopted to bridge financing gaps and promote long-term, affordable credit for underserved SMEs (Catalán, Garza-Sánchez, & González, 2022). The World Bank (2015) recognizes credit guarantee systems as key public tools for SME development. While some concerns remain such as a bias toward working capital over investment loans (Ughetto, Scellato, & Cowling, 2017), the broader consensus emphasizes that CGSs are essential tools in high-risk environments such as Palestine. They play a crucial role in reducing information asymmetry, transferring risk, and lowering collateral requirements, thereby easing access to external financing.

According to this evidence, this study proposes the following hypothesis:

H_2: Credit guarantee schemes have a significant positive impact on the sustainable growth of SMEs.

3.4. Access to Finance

Access to finance is widely acknowledged as one of the greatest challenges to the expansion and long-term success of small and medium-sized enterprises (SMEs). It continues to be a decisive element in their survival and growth (Organisation for Economic Co-operation and Development (OECD), 2024). SMEs face greater barriers to external financing compared to larger firms and often rely on informal sources such as family and friends. Banks are typically reluctant to provide loans, a hesitation often linked to poor record-keeping, limited credit histories, and a lack of sufficient collateral, all of which create information gaps and hinder accurate credit evaluation (Funding Societies, 2023).

Improving credit information systems has been proven to reduce these information gaps and broaden financing opportunities for SMEs. Empirical evidence shows that without such systems, SME growth is restricted, whereas credit information centers promote transparency, build trust, and enhance access to finance (Xie & Lin, 2025; Yoshino & Taghizadeh-Hesary, 2016). This aligns with the Resource-Based View (RBV), which emphasizes the strategic importance of information capital and data infrastructure in improving organizational performance.

Complementary mechanisms such as credit risk databases and guarantee schemes also help mitigate lender risk and bridge the financing gap (Goff et al., 2021; Song, Zhang, & Wang, 2021). From a Pecking Order Theory (POT) perspective, once internal resources are exhausted, SMEs ultimately require external funding. However, financial constraints often represent a major obstacle to job creation and productivity (Ayyagari, Hasannaeimi, Grewal, Arora, & Mukherjee, 2018). Credit risk databases (CRDs), when designed around pillars such as accessibility, robust procedures, monitoring, and reliable data systems, provide dynamic capabilities that strengthen SME financing ecosystems (Bou-Hamad, 2017; Nguyen & Sagara, 2020; Pu et al., 2021; Riding & Haines Jr, 2001; Sharma et al., 2021).

H_3: Access to finance mediates the relationship between the credit risk database and the sustainable growth of SMEs in Palestine.

H_4: Access to finance mediates the relationship between the credit guarantee scheme and the sustainable growth of SMEs in Palestine. Figure 1 illustrates the Theoretical Framework of the Study.

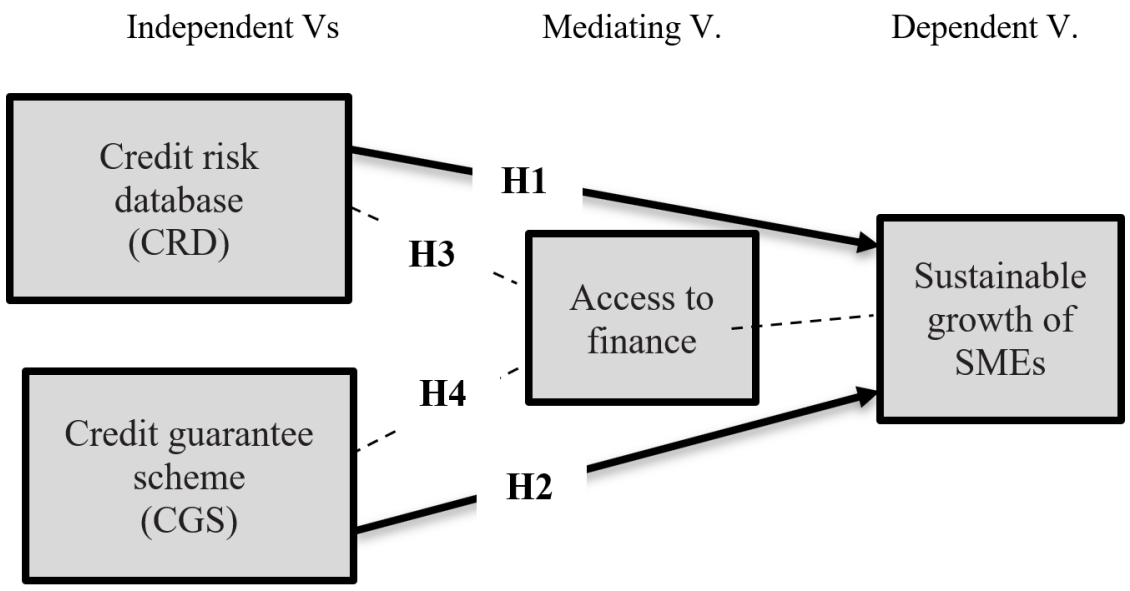

Figure 1. Research model.

4. RESEARCH METHODOLOGY

The study employs a quantitative research design to examine the extent to which the adoption of a Credit Risk Database (CRD) and a Credit Guarantee Scheme (CGS) can help overcome financial access barriers for Palestinian SMEs, ultimately promoting sustainable growth. This research design facilitates the analysis of relationships among variables and the testing of hypotheses through the collection and analysis of numerical data. The target population comprises Palestinian SMEs in the industrial sector, categorized by the number of employees into small enterprises (5–19 employees) and medium-sized enterprises (20–49 employees).

A convenience sampling technique was utilized to ensure a representative sample across various industries and firm sizes. In this study, convenience sampling, a type of non-probability sampling, was employed by selecting individuals from the target group based on practical criteria such as accessibility, geographical proximity, and availability, making them easily reachable as study subjects (Abdullah & Zainudin, 2022). This approach assumes homogeneity within the target population, suggesting that results from neighboring or randomly selected samples would not differ significantly. However, its main limitation lies in the high likelihood of self-selection bias, where the presence of outliers can distort research findings (Etikan, Musa, & Alkassim, 2016). A structured questionnaire was developed to gather data on the study variables. Questions related to the independent variables and the mediator were adapted based on a comprehensive review of relevant literature and validated through expert arbitration by both academic and industry professionals, considering their applicability to the Palestinian context. For the dependent variable, items were directly adopted from validated studies and subjected to further evaluation. Instrument validity and reliability were assessed through Exploratory Factor Analysis (EFA), followed by Confirmatory Factor Analysis (CFA). The final step involved cross-checking the identified factors to ensure measurement accuracy and efficiency. Most of the instrument development procedures adhered to the guidelines provided by Abdullah and Zainudin (2022). Table 1 presents an overview of the data screening process undertaken in this study. In accordance with quantitative research methodology, the data cleaning process was executed meticulously to preserve the integrity of the analysis (Saunders, Lewis, & Thornhill, 2016). Out of 430 questionnaires distributed, 393 were returned, yielding a response rate of 91.4%. Although the response rate was high, data completeness was prioritized. After removing 15 incomplete responses, 378 surveys were deemed valid, representing 87.9% of the total returns. An additional 10 surveys were excluded based on univariate analysis using the Z-score method, and 5 more were eliminated through Mahalanobis D^2 multivariate outlier detection (Pallant, 2016). The final dataset used for analysis comprised 363 valid responses, accounting for 84.4% of the total questionnaires distributed. In the initial stages of data analysis, SPSS software was used for data purification, frequency analysis, and descriptive statistics. Subsequently, data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via Smart-PLS 4.0, which is widely recognized for validating theoretical models using empirical data (Hair & Alamer, 2022).

Table 1. Data screening.

Process	Number of surveys	Percentage (%)
Distributed questionnaire	430	
Collected questionnaire	393	91.4%
Uncompleted answers	15	3.5%
Valid collected answers	378	87.9%
Univariate analysis (Z2)	10	2.3%
Multivariate analysis (Mahalanobis D^2)	5	1.2%
Final valid dataset	363	84.4%

Table 2 presents the demographic analysis of the 363 respondents included in the study. The analysis reveals a notable predominance of small enterprises, which constitute 70.0% (n = 254) of the total sample, compared to medium-sized enterprises, which make up 30.0% (n = 109). The sample is overwhelmingly male, with male

respondents accounting for 98.1% (n = 356), while female respondents are significantly underrepresented, comprising only 1.9% (n = 7).

The age distribution of respondents spans various categories, with the largest proportion aged between 41 and 50 years, representing 40.2% (n = 146) of the sample. This is followed by those aged 31 to 40 years, who make up 32.5% (n = 118). Respondents aged 51 years and older account for 20.4% (n = 74), while the youngest age group, 21 to 30 years, constitutes 6.9% (n = 25) of the total sample.

Regarding educational attainment, the majority of participants, 58.1% (n = 211), hold a tertiary-level qualification. Additionally, 76 participants (20.9%) have completed high school education. A further 39 respondents (10.7%) hold professional diplomas, while 37 individuals (10.2%) have pursued graduate-level studies.

Table 2. Demographic analysis.

Process	Number of surveys	Frequency	Percentage (%)
Company size	Small	254	70.0
	Medium	109	30.0
Gender	Female	7	1.9
	Male	356	98.1
Age	21 - 30 years	25	6.9
	31 - 40 years	118	32.5
	41 - 50 years	146	40.2
	51 Years and Above	74	20.4
Qualifications	High School	76	20.9
	Professional diploma	39	10.7
	University degree	211	58.1
	Graduate studies	37	10.2

The preliminary analysis of the above table reveals the demographic characteristics of the study's respondents. The majority are from small enterprises (70%), while medium-sized enterprises represent 30%. The sample is predominantly male (98.1%). Most respondents are between 41 and 50 years old (40.2%), followed by those aged 31–40 (32.5%). In terms of education, 58.1% hold a university degree, reflecting a knowledgeable and experienced group of SME decision-makers.

5. RESULTS

This section focuses on the software's econometric analysis results, which are intended to test the previously proposed research hypotheses and provide relevant conclusions.

5.1. Descriptive Statistics

Table 3 presents an overview of the descriptive statistics for the key variables in the study. Based on the results, it can be observed that the mean ratings for access to finance and the sustainable growth of SMEs were relatively higher, with values of 3.842 (76.83%) and 3.869 (77.37%), respectively. In contrast, the mean ratings for the credit risk database and credit guarantee schemes were lower, with values of 3.657 (73.13%) and 3.678 (73.57%), respectively. These findings indicate that, from the participants' perspectives, the emphasis on or recognition of access to finance and the sustainable growth of their businesses is marginally greater than that of the existence and perceived efficacy of credit risk databases and credit guarantee schemes.

The preliminary analysis of the above table reveals that the studied variables exhibit low dispersion and moderate standard deviations, suggesting consistent and relatively homogeneous responses from Palestinian SMEs regarding financial mechanisms and growth prospects. Although formal normality tests were not conducted, the data distribution appears symmetrical and slightly platykurtic, indicating generally favorable perceptions toward access to finance and SME sustainability.

Table 3. Descriptive statistics.

Variables	Min.	Max.	Mean	Percentage	Std. Deviation
Credit risk database	1.50	5.00	3.657	73.13%	0.620
Credit guarantee schemes	1.14	5.00	3.678	73.57%	0.650
Access to finance	2.00	5.00	3.842	76.83%	0.636
Sustainable growth of SMEs	2.00	5.00	3.869	77.37%	0.602

5.2. Measurement Model Results

Table 4 presents the reliability and validity results of the measurement model for each variable in the study. Multiple statistical indicators confirm the measurement model's reliability and validity. The outer loadings, which represent the strength of the association between each observed item and its respective latent construct, exceed the standard threshold of 0.7, signifying strong relationships between the constructs and their indicators.

For the Credit Risk Database construct, the item CRD1 shows a strong outer loading of 0.896, confirming that it closely represents the underlying factor. Reliability analysis using Cronbach's alpha and composite reliability demonstrates that all constructs exceed the 0.70 benchmark, with the Credit Risk Database showing particularly strong consistency ($\alpha = 0.893$, CR = 0.918). Convergent validity, assessed through Average Variance Extracted (AVE), also meets the 0.50 threshold across all constructs. For example, the Access to Finance construct records an AVE of 0.688, indicating that nearly 69% of the variance in its indicators is captured by the construct itself.

The Variance Inflation Factor (VIF) is used to detect multicollinearity among the predictor variables. The VIF values remain below the critical value of 5, suggesting no substantial multicollinearity issues. Specifically, the VIF for the association between *Access to Finance* and *Sustainable Growth of SMEs* is 1.457, which is well within the acceptable range, confirming the absence of multicollinearity concerns.

Table 4. Correlation matrix.

Variable	Item	Outer loading	Cro.'s Alpha	C.R	AVE	VIF (ATF)	VIF (SGSME)
Credit risk database	CRD1	0.896					
	CRD2	0.810					
	CRD3	0.841					
	CRD4	0.793	0.893	0.918	0.652	1.063	1.297
	CRD5	0.740					
	CRD6	0.756					
Credit guarantee schemes	CGS1	0.904					
	CGS2	0.763					
	CGS3	0.823					
	CGS4	0.739	--	0.919	0.619	1.063	1.199
	CGS5	0.761					
	CGS6	0.739					
	CGS7	0.767					
Access to finance	ATF1	0.927					
	ATF2	0.753					
	ATF3	0.836					
	ATF4	0.768	0.908	0.929	0.688	--	1.457
	ATF5	0.850					
	ATF6	0.830					
Sustainable growth of SMEs	SGSME1	0.902					
	SGSME2	0.798					
	SGSME3	0.843					
	SGSME4	0.807	0.896	0.921	0.661	--	--
	SGSME5	0.746					
	SGSME6	0.774					

The results in the above table present the measurement model assessment, confirming the reliability and validity of the study constructs. All outer loadings exceed 0.70, ensuring indicator reliability. Internal consistency is

strong, with Cronbach's alpha and composite reliability values ranging from 0.893 to 0.929. The AVE values, ranging from 0.619 to 0.688, demonstrate acceptable convergent validity. Furthermore, VIF values are below 3, indicating no multicollinearity issues. Overall, the results validate the robustness of the measurement model.

Figure 2, titled *"Measurement Model,"* presents the results of the structural model, revealing that P2P lending Fintech and business support services significantly impact access to finance, which in turn has a significant effect on the sustainable growth of SMEs.

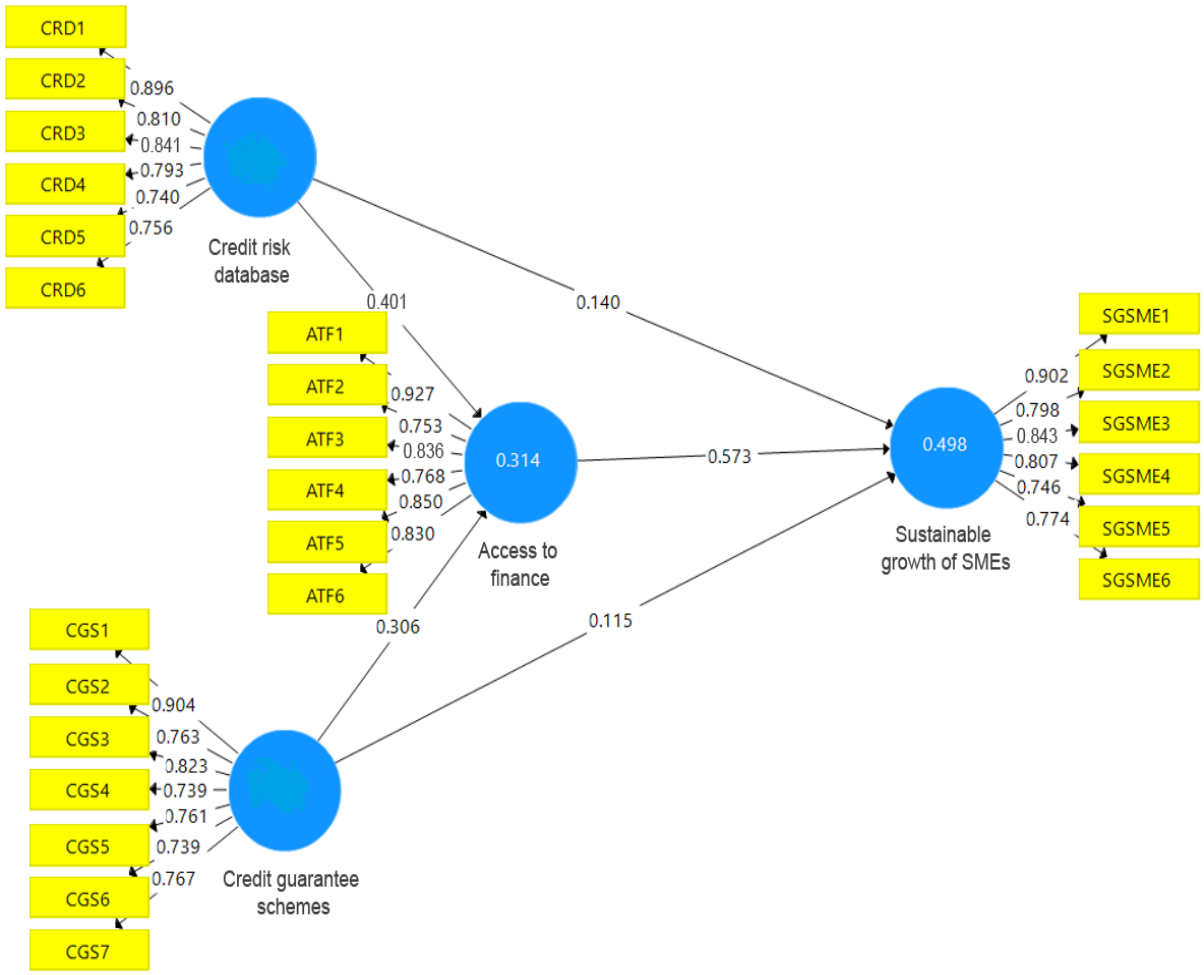

Figure 2. Measurement model with outer loadings.

Table 5 presents the results of the Heterotrait-Monotrait ratio (HTMT) analysis, a modern criterion for assessing discriminant validity by measuring the degree of distinction between latent constructs (Henseler, Ringle, & Sarstedt, 2015). As noted by Franke and Sarstedt (2019), lower HTMT values provide stronger evidence of discriminant validity. The results of this study show that all constructs meet this requirement, with values remaining below the recommended threshold of 0.85.

More specifically, the HTMT value for the relationship between access to finance and credit guarantee schemes is 0.444, while the relationship between access to finance and credit risk databases is 0.523. The relationship between SMEs' sustainable growth and access to finance yields a value of 0.760. The other construct combinations also yield acceptable results. Taken together, these findings demonstrate that each construct reflects a unique dimension of the phenomenon under study, reinforcing the strength of the measurement model and increasing the reliability of the study's conclusions.

Table 5. Heterotrait-Monotrait Ratio of Correlations Results of Measurement Model

Variables	Access to finance	Credit risk database	Credit guarantee schemes	Sustainable growth of SMEs
Access to finance	--			
Credit risk database	0.444			
Credit guarantee schemes	0.523	0.269		
Sustainable growth of SMEs	0.760	0.424	0.489	

The Table 5 presents the results of the Heterotrait-Monotrait Ratio (HTMT) analysis, conducted to assess discriminant validity among the study's constructs, show that the HTMT values range between 0.269 and 0.760, all comfortably below the recommended cutoff of 0.85. These results confirm that each construct is conceptually distinct from the others, indicating sufficient discriminant validity. Overall, the findings reinforce the robustness of the measurement model and affirm the distinctiveness of the study's variables.

5.3. Structural Model Result

Table 6 presents the predictive power results of the structural model for Access to Finance and the Sustainable Growth of SMEs. The R-squared values of the structural model reflect a moderate level of predictive capability. The independent variables Credit Risk Database and Credit Guarantee Schemes account for 31.4% of the variance in access to finance, as indicated by an R-squared value of 0.314. This reflects moderate predictive strength, suggesting that while these factors have a meaningful influence on access to finance, they do not capture its full complexity. The R-squared value for the sustainable growth of SMEs is 0.498, demonstrating that the independent variables, along with the mediator (Access to Finance), explain 49.8% of the variance in sustainable growth. This also represents a moderate level of predictive power, indicating that these elements contribute to the sustainable development of SMEs, although additional variables may also play a significant role.

Table 6. Predictive power results of the structural model.

Variables	R square	Prediction rate	Prediction rate
Access to finance	0.314	31.4%	Moderate
Sustainable growth of SMEs	0.498	49.8%	Moderate

The previous results shown in the table highlight the predictive strength of the structural model. Particularly, the model accounts for a moderate share of the variance in both access to finance and the sustainable growth of SMEs, indicating that it provides an acceptable level of explanatory power for the key dependent variables under investigation.

Table 7 presents the relationships among the constructs within the structural model and the outcomes of hypothesis testing.

Hypothesis 1 tested whether the Credit Risk Database (CRD) influences the sustainable growth of Palestinian SMEs. The analysis supports this hypothesis, with a t-value of 2.882 and a p-value below 0.005. The results show a positive direct effect of CRDs on SME growth ($\beta = 0.140$), suggesting that strengthening the efficiency of CRDs contributes to greater SME sustainability. This finding is consistent with prior research (e.g., Chen and Wang (2018)).

Hypothesis 2 tested whether Credit Guarantee Schemes (CGSs) influence the sustainable growth of Palestinian SMEs. The results again provide support, showing a statistically significant effect ($\beta = 0.115$, $t = 2.809$, $p < 0.005$). This indicates that CGSs play a constructive role in SME development by easing financing barriers, echoing evidence from earlier studies (Gaston & Song, 2016).

Hypothesis 3 tested whether access to finance mediates the relationship between CRDs and SME growth in Palestine. The findings confirm partial mediation ($\beta = 0.230$, $p < 0.000$), demonstrating that CRDs foster long-term

SME growth primarily by improving access to finance. This result aligns with the work of Nguyen, Wright, Dedding, Pham, and Bunders (2019), who highlight the central importance of finance in SME expansion.

Hypothesis 4 tested whether access to finance also mediates the relationship between CGSs and SME growth in Palestine. The analysis confirms this pathway, showing partial mediation ($\beta = 0.175$, $p < 0.000$). These results underscore the importance of financial accessibility as the mechanism through which CGSs enhance SME sustainability, consistent with findings by Ono, Uesugi, Miyakawa, Hosono, and Uchida (2018).

Hypothesis 5 tested the direct effect of access to finance on SME growth. The results provide strong support, revealing a significant positive relationship ($\beta = 0.573$, $t = 9.849$, $p < 0.000$). This finding underscores the pivotal role of financial resources in enabling SME sustainability, in line with earlier studies (Ayyagari et al., 2018).

Finally, the structural model offers a comprehensive explanation of the sustainable growth of Palestinian SMEs. The path analysis demonstrates that CRDs, CGSs, and access to finance contribute significantly both directly and indirectly to fostering SME sustainability.

Table 7. Relationships result of the structural model.

#	Relationship	Effect type	Path coefficient	T statistics	P values	
H1	Credit risk database -> Sustainable growth of SMEs	Direct	0.140	2.882	0.004	Significant
H2	Credit guarantee schemes -> Sustainable growth of SMEs	Direct	0.115	2.809	0.005	Significant
H3	Credit risk database -> Access to finance -> Sustainable growth of SMEs	Direct	0.140	2.882	0.004	Partial mediation
		Indirect	0.230	6.902	0.000	
		Total	0.369	8.548	0.000	
H4	Credit guarantee schemes -> Access to finance -> Sustainable growth of SMEs	Direct	0.115	2.809	0.005	Partial mediation
		Indirect	0.175	5.000	0.000	
		Total	0.290	6.296	0.000	
H5	Access to finance -> Sustainable growth of SMEs	Direct	0.573	9.849	0.000	Significant

All direct links between these constructs are positive and statistically significant, highlighting the crucial role of financial infrastructure and access in promoting SME growth. Moreover, access to finance partially mediates the effects of the Credit Risk Database and Credit Guarantee Schemes on SME growth. These findings emphasize the crucial role of financial infrastructure in both directly and indirectly supporting sustainable SME development.

6. DISCUSSION

In light of the objectives and hypotheses of this research, and to interpret the findings within the framework of existing literature, this section provides an in-depth discussion of the factors influencing SMEs' access to finance in Palestine and the subsequent impact on their sustainable growth. The empirical results are connected to relevant theoretical frameworks to deepen the understanding of these relationships.

The analysis indicates that the Credit Risk Database (CRD) has a positive and statistically significant impact on the long-term growth of Palestinian SMEs. The path coefficient ($\beta = 0.140$), supported by a p-value of 0.004 and a t-statistic of 2.882, both exceeding the 1.96 threshold at the 5% significance level, confirms this association. This result implies that a well-established and efficiently managed CRD can facilitate SME development by reducing financial institutions' concerns about credit risk, thereby improving SMEs' chances of securing external financing. Theoretically, this finding aligns with the Resource-Based View (RBV), which posits that firms can achieve competitive advantage and sustained growth by effectively leveraging valuable and unique resources, such as enhanced credit information systems. This conclusion is consistent with previous studies, including Huang and Kisgen (2013), who emphasized the role of credit data in promoting financial accessibility and growth.

With respect to the second independent variable, Credit Guarantee Schemes (CGSs), the findings indicate a statistically significant positive effect on SMEs' sustainable growth ($\beta = 0.115$, $t = 2.809$, $p = 0.005$). Although the coefficient size is modest, its significance suggests that while CGSs may not be the strongest determinant of growth in absolute terms, they nonetheless play a meaningful role by reducing lenders' perceived risks and enhancing SME resilience. This outcome supports the financial intermediation theory, which posits that intermediaries such as credit guarantee schemes mitigate information asymmetries and expand financing opportunities for underserved sectors. The result also resonates with prior evidence, particularly (Honohan, 2010), who emphasized the effectiveness of CGSs in improving SME access to finance and supporting sustainable development.

The analysis emphasizes the mediating role of access to finance. Both CRD and CGS function as partial mediators, influencing SMEs' sustainable growth through a combination of direct and indirect pathways. It is worth mentioning that the indirect effect via financial access surpasses the direct effect, indicating the crucial role of accessibility in enhancing financial mechanisms to drive long-term development. This aligns with existing research that identifies financial access as a key driver of SME growth and sustainability (Beck et al., 2008; Levine, 2005). Generally, the findings indicate that while tools like CGSs may have a limited direct impact, their real strength lies in strengthening the financial infrastructure that enables SMEs to turn financing opportunities into long-term sustainable growth.

7. CONCLUSION

As we have seen, this study provides empirical evidence from the context of Palestine, highlighting the crucial importance of credit risk databases (CRDs), credit guarantee schemes (CGSs), and financing accessibility in promoting SMEs' sustainable growth. The results indicate the necessity of strengthening CRD systems and ensuring the effective implementation of CGSs as key initiatives for supporting SME growth. Access to finance is central to these findings, serving both as a direct driver of growth and as a catalyst for enhancing the effectiveness of broader financial infrastructure improvements.

Furthermore, this study carries important theoretical implications for the body of literature on SME development. It enhances our understanding of how financial services influence sustainable SME growth in developing and financially constrained environments such as Palestine. The evidence demonstrates that CRDs and CGSs generate distinct yet complementary effects, operating both directly and indirectly through access to finance. This dual mechanism provides new insights into how financial support instruments function together to influence SME performance. Additionally, the study's examination of access to finance as a mediator contributes to existing theory by clarifying its role in linking credit risk management with SME sustainability.

Nonetheless, a number of limitations should be noted. The reliance on a convenience sample, while practical, limits the representativeness of the data and may introduce bias, reducing the extent to which the results reflect the full diversity of Palestinian SMEs. Moreover, the demographic imbalance in the sample, with 98% of respondents being male, may limit the applicability of the findings, as the perspectives of female SME owners or entrepreneurs remain underrepresented. In addition, because the study focuses specifically on SMEs in Palestine's industrial sector, its findings are not readily generalizable to other sectors or to countries with different political, economic, or regulatory conditions. The unique challenges of the Palestinian environment may therefore constrain the transferability of these results to other contexts.

For future research, it is recommended to examine additional mediating and determining factors not addressed in this study. Variables such as managerial capabilities, financial technology tools, and business support services may further explain variations in SME performance and, at the policy level, highlight areas where capacity-building and digital infrastructure support could be most effective. Longitudinal research would also be valuable, as it could capture how financial and institutional dynamics evolve over time, offering stronger evidence for causal relationships. Such findings would help policymakers design adaptive interventions that respond to SMEs'

changing needs, rather than relying on static, one-size-fits-all policies. Furthermore, expanding research beyond the manufacturing sector and incorporating mixed-methods or qualitative approaches would provide richer insights into sector-specific challenges and opportunities. This broader evidence base could guide more targeted policy frameworks, ensuring that financial support, training programs, and institutional reforms are tailored to the realities of diverse SME contexts.

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Institutional Review Board Statement: The study involved minimal risk and adhered to ethical guidelines for fieldwork in the social sciences. At the time the study was conducted, formal approval from an Institutional Review Board was not required, in accordance with the policies of Universiti Malaysia Terengganu (UMT), Malaysia. Informed verbal consent was obtained from all participants, and all data were anonymized to protect participant confidentiality
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.
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