Impact of Insurance Coverage on Bank Financing and the Cost of Debt

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Abstract

This study tested the impact of commercial insurance coverage (CIC) and life insurance coverage (LIC) on bank financing (B_FIN) and the cost of debt (INT) for small business enterprises (SBEs) in India. We used a survey research design to collect data from SBE owners. This study used logistic regression, ordinary least square regression, and a three-stage least square (3SLS) regression to analyze data. Empirical analysis shows that CIC and LIC increase access to B_FIN and decrease INT. The results also suggest that insurance coverage increases cognitive, regulatory, and normative legitimacies in the eyes of lenders. In particular, CIC and LIC increase the probability of B_FIN by 53.11% and 74.02%, respectively. Besides, CIC and LIC increase the chances of decreasing INT by 4.40% and 6.60%, respectively, for SBEs in India. In addition, B_FIN increases the chances of a decrease in INT by 57.90%. The empirical analysis contributes to the literature on the impact of insurance coverage on B_FIN and INT. The findings can help scholars develop further studies in insurance coverage, B_FIN, and INT areas. Empirical results may help SBE owners improve access to B_FIN and reduce INT. Additionally, SBE management consultants may find the empirical results helpful in providing consulting services.

Keywords: Commercial insurance, Life insurance, Bank financing, Cost of debt, India

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1. Introduction

Small business enterprises (SBEs)[1] are financially constrained, face bank financing (B_FIN) challenges, and pay the high cost of debt (INT) (Joeveer, 2013; Beck and Demirguc-Kunt, 2006). In addition, the COVID-19 pandemic hit the Indian economy hard and negatively impacted firm performance, leading to financial losses (Shen et al., 2020). Besides, environmental uncertainties create difficulties for firms by increasing the unpredictability of future events (e.g., accidents, errors, omissions, fire, causality, workplace hazards, and lawsuits), leading to legitimacy[2] issues and affecting profitability (Lawrence et al., 2009), survivability, and prosperity of the firm. This is particularly true for SBEs as most of them must overcome liabilities of newness (Stinchcombe, 1965; Aldrich and Auster, 1986) emanating from, among others, a lack of financial resources and difficulty in meeting high-interest payments (Abatecola et al., 2012). Consequently, SBEs face B_FIN challenges and pay the higher INT.

This study explored how insurance coverage helps SBEs attain legitimacy and overcome the liabilities of newness to gain access to *B_FIN* and reduce INT. Legitimacy is the generalized perception that the firms' actions are desirable, proper, and appropriate for society to maintain norms, values, and beliefs (Suchman, 1995). Scott (1995) segmented legitimacy into regulatory legitimacy, cognitive legitimacy, and normative legitimacy. Regulatory legitimacy refers to conformity with rules, laws, and sanctions (Cruz-Suarez et al., 2014). Normative legitimacy touches on a set of standards, norms, and values by which society judges a firm (Wang et al., 2014), for example, purchasing insurance required by law. Although all three areas of legitimacy are essential, cognitive legitimacy is the most potent source of legitimacy because it shows that firms' actions are appropriate. Cognitive legitimacy involves determining whether an organization exhibits recognizable characteristics acknowledged by society (Mitteness et al., 2013; Suchman, 1995), such as commercial insurance to cover internal and external losses to the third party.

Mitigating financial risk with adequate insurance coverage is among the critical strategic actions to increase legitimacy (Zimmerman and Zeitz, 2002) in the eyes of debt capital suppliers to increase access to *B_FIN* and reduce *INT*. However, most business owners need more insurance coverage to mitigate risk in India (The Associated Press, 2013; Khan et al., 2013). It may be because people underweight outcomes that are merely probable (e.g., probability of riots) compared with the certainty of outcomes (Kahneman and Tversky, 1979). A previous study by Schmidt (2016) analyzed insurance demand under prospect theory and indicated that insurance coverage decision depends on the probability of the loss. However, economic utility theory assumes that insurance consumers use a

[1] The average assets in the sample are INR 2,319,362. Therefore, firms included in the sample of this study are considered SBEs. Small firms with an investment of less than ten crore rupees (i.e., one hundred million rupees) and turnover of up to fifty crore rupees (i.e., five hundred million rupees) are considered small enterprises in India (Mishra, 2021).

[2] Dowling and Pfeffer (1975) pioneered the legitimacy theory.

psychological pathway in which aversion to variability drives a risk preference (e.g., risk preference from operations of SBEs) (Harrison and Ng, 2019).

Clark (2018) segmented commercial insurance into two main categories (i.e., property and liability insurance). While commercial property insurance coverage mitigates direct and indirect losses resulting from hazards, commercial liability insurance reduces the chances of losses from day-to-day operations, such as the expected losses from general, professional, and employer liabilities (Clark, 2018; Gill et al., 2021). Madura and Gill (2022) segmented life insurance policies into three categories -- whole life, universal life, and term to 100. Insurance policies (i.e., life insurance policies) can be used as collateral to pay off a loan in the case of a borrower's death. Thus, the insurance policies help SBEs increase cognitive legitimacy in the debt capital suppliers' eyes by decreasing the probability of loss.

SBEs face challenges of greater growth volatility (Bottazzi et al., 2014), have less access to debt financing (Canton et al., 2013), and face tight price terms and conditions (Drakos, 2013) due to high default risk. While some ways to handle financial risk are to avoid, control, and retain the risk, another way is to cover risk with adequate commercial and life insurance coverages (Clark, 2018). This study defines commercial and life insurance coverages as the extent to which SBE owners perceive purchasing commercial and life insurance policies to minimize financial losses and pay off loans, mortgages, and other liabilities to reduce the chances of bankruptcy. A theoretical study by Wieczorek-Kosmala (2012) shows that insurance coverage reduces the cost of capital. This study used the following research questions:

Does commercial insurance coverage (CIC) increase access to B_FIN for SBEs?

Does life insurance coverage (LIC) increase access to B_FIN for SBEs?

Does CIC decrease INT for SBEs?

Does LIC decrease INT for SBEs?

Does bank financing decrease INT for SBEs?

This study's empirical analysis shows that insurance coverage increases access to B_FIN and decreases INT for Indian SBEs. In addition, B_FIN decreases INT. Besides, the findings suggest that adequate insurance coverage increases cognitive legitimacy (Scott, 1994), regulatory legitimacy, and normative legitimacy (Scott, 1995) among stakeholders such as bankers by signalling[3] corporate social responsibility (assuming lenders value it), resulting in greater cooperation from them to provide access to B_FIN and to reduce INT. This study's findings lend some support to the findings of Wieczorek-Kosmala (2012) in that adequate CIC reduces INT. The empirical analysis contributes to the literature on the association of insurance coverage with access to B_FIN and INT. The results can

[3] The signalling theory was pioneered by Spence (1973).

help scholars develop further studies in insurance coverage, B_FIN, and INT areas. The findings may help SBE owners increase access to B_FIN and reduce INT. Additionally, SBE management consultants may find the empirical results helpful in providing consulting services.

The following section shows previous literature and develops hypotheses, followed by a discussion of the methodology and results of empirical analysis. Finally, the study provides a discussion, conclusion, limitations/implications, and future research directions.

2. Theory and Hypotheses

2.1 Insurance coverage and legitimacy

This section examines how *CIC* and *LIC* can signal legitimacy to one stakeholder, a lender/banker. Although *CIC* and *LIC* mitigate many business risks, such as property and casualty risks and loan/mortgage default risks, many SBEs lack adequate insurance (Khan et al., 2013). The lack of adequate insurance coverage may be because SBEs are financially constrained (Joeveer, 2013); these firms engage in less risk management (Rampini and Viswanathan, 2010) because they require financial help to afford insurance premium payments. However, insurance coverage is crucial for managing financial risk and reducing capital costs (Wieczorek-Kosmala, 2012). For example, commercial property-liability insurance indemnifies the insured suffering from a covered loss so firms can restore their financial positions to, or near, the level they had before the loss. Furthermore, Kwon (2003) argued that insurance coverage could reduce the firm's financial distress, i.e., bankruptcy risk.

The *LIC* pays a specified beneficiary when the insured dies (Madura and Gill, 2022). With the borrowers' consent, lenders can pledge a life insurance policy to become beneficiaries and pay off the debt in the case of the death of the small business owner. Thus, SBE owners can transfer risk from themselves to the insurer (Clark, 2018) and increase cognitive, regulatory, and normative legitimacies in the eyes of lenders. With insurance coverage, this risk is transferred to insurers, thus allowing lenders to provide access to *B_FIN* and charge a lower *INT*.

Cash flows are smoothed through payouts from *CIC* (e.g., in case of fire) and *LIC* (e.g., cash value), which can be used to cover operating expenses and the opportunity cost of future income (Kwon, 2003). This benefit is especially salient in enhancing the cognitive legitimacy of SBEs. Usually, the entrepreneur is one of the organization's core resources, and stakeholders base their decision to work with the organization on the entrepreneur's characteristics (Chaganti et al., 1996; Zimmerman and Zeitz, 2002). So, circumstances that physically limit the entrepreneur's ability to work are substantial issues of concern to stakeholders, and there is an ex-ante reduction of cognitive legitimacy. Using commercial and life insurance coverages helps the SBEs counter that by maintaining the firm's status quo and reducing the chances of going bankrupt due to corporate liability issues (Kwon, 2003)—consequently, cognitive, regulatory, and normative legitimacy increase in the eyes of lenders.

2.2 Legitimacy, bank financing, and the cost of debt

SBEs typically operate with various liabilities of newness. Most small business ventures need a performance history to convince other constituents of the business ecosystem that they rely on for resources to cooperate with it. For example, lenders may consider investing in such ventures a riskier proposition due to their limited operating experience, leading to survival issues for a business. Consequently, lenders are reluctant to approve financing for SBEs. Moreover, even if *B_FIN* is approved (in some cases with the help of a cosigner), lenders are likely to charge a higher *INT* when they lend, which puts the SBEs at a competitive disadvantage relative to other more established firms. One of the ways to overcome this liability of newness is to increase the legitimacy of the business venture (Stinchcombe, 1965).

Stakeholders dealing with SBEs are subject to high information asymmetry and uncertainty. In such situations, they must complement their rational judgment (e.g., a credit report) with their subjective evaluation of the firm. Suppose the results of this subjective evaluation favour the firm; the stakeholder (e.g., lender) judges the firm as acceptable, appropriate, and desirable concerning its own goals. In that case, the firm is said to have legitimacy (Zimmerman and Zeitz, 2002). Cruz-Suarez et al. (2014) indicated that firms with high cognitive legitimacy have greater access to resources (e.g., financial resources) than those with low cognitive legitimacy.

SBEs can signal cognitive, regulatory, and normative legitimacies by undertaking specific actions. For example, Chaganti et al. (1996) highlighted the high degree of uncertainty and moral hazard when lenders evaluate entrepreneurs' soundness of project proposals. In such situations, lenders appear to resort to subjective judgments about the characteristics of entrepreneurs as individuals to inform decisions about whether a loan is approved or not. Suppose an SBE owner has a reputed alma mater (e.g., university education). In that case, it can increase the cognitive legitimacy of the enterprise, as it is widely believed that a solid business education would generally result in better business decisions made by the entrepreneur (Zimmerman and Zeitz, 2002). Increased cognitive legitimacy increases the chances of *B_FIN* and decreases *INT* since banks charge lower interest rates than private institutions in India (Ghosal and Ray, 2015).

Choi and Shepherd (2005) argued that the extent to which newness is a liability for start-ups depends on the stakeholder's perception (e.g., lender's perception). Thus, it is not just the absolute number of years of experience but also how experienced the firm appears to be incorporated within stakeholders' judgments. This judgment process also underscores the fact that SBEs should engage in specific actions to enhance their perceptions in the eyes of stakeholders such as bankers and work on attaining cognitive, regulatory, and normative legitimacies. With increased cognitive, regulatory, and normative legitimacies, financial institutions will likely perceive less risk, provide access to *B_FIN*, and decrease *INT*.

2.3 Summary of literature review and hypotheses development

To summarize, insurance coverage decreases agency problems between the SBEs (agent) and the stakeholders (principal) such as lenders, government, and society (Jensen and Meckling, 1976). *CIC* and *LIC* reduce the firm's bankruptcy risk, signalling cognitive, regulatory, and normative legitimacies to stakeholders, including lenders. Greater cognitive, regulatory, and normative legitimacies help overcome the liabilities of newness, increase access to *B_FIN*, and reduce *INT* for SBEs. As a result, *B_FIN* decreases *INT*. Hence, the following hypotheses:

First hypothesis: Commercial insurance coverage increases access to B_FIN for SBEs.

Second hypothesis: Life insurance coverage increases access to B_FIN for SBEs.

Third hypothesis: Commercial insurance coverage decreases INT for SBEs.

Fourth hypothesis: Life insurance coverage decreases INT for SBEs.

Fifth hypothesis: Bank financing decreases INT for SBEs.

3. Methods

3.1 Research design and measurement

This study utilized survey research (a non-experimental field study design) and personal interview data collection methods. Gall et al. (1996) considered survey research a valuable tool for studying sensitive opinions, attitudes, preferences, and behaviours. Insurance coverage measures were adopted from the studies by Porter and Garman (1993) and Edwards (1991). The measures related to small business performance were adopted from a study by Gill et al. (2021).

To reduce heteroscedasticity (i.e., reduce variance), the natural logarithm (ln) was calculated for -- firm age, firm size, number of employees, owner age, *INT*, and owner experience. In addition, survey responses were categorized on a five-point Likert Scale, assigning one (1) as “Strongly disagree” and five (5) as “Strongly agree” for *CIC* and *LIC*. In addition, survey responses were categorized on a five-point Likert Scale, assigning one (1) as “Gone down a lot” and five (5) as “Gone up a lot” for the firm performance variable. Finally, we measured the independent, dependent, and control variables as follows:

Bank financing (B_FIN) is measured as a dummy variable with an assigned value 1 for *B_FIN* and 0 otherwise.

Interest rate (INT) is measured as the actual interest rate that SBEs pay to debt capital suppliers.

Small business performance (SBP) is measured as the first principal component of the extent to which SBE owners perceive the changes in 1) net profit margin, 2) return on investment, 3) cash flow from operations, and 4) market value of their SBEs.

Commercial insurance coverage (CIC) is measured as the first principal component of the extent to which SBE owners perceive they purchase 1) commercial property insurance to minimize financial losses, 2) business equipment insurance to minimize financial losses, 3) business equipment insurance to minimize financial losses from a third party, 4) business casualty insurance to minimize financial losses from the third party, and 5) marine insurance to minimize financial losses from the third party.

Life insurance (LIC) is the first principal component of the extent to which small business owners perceive they purchase personal life insurance 1) for the financial security of their businesses, 2) for the financial security of their families, 3) to cover commercial property mortgages liabilities, 4) to cover commercial loans liabilities, and 5) to cover other liability payments.

Internal financing sources (IFS) measure SBE owners' capacity to invest their personal and family assets in their SBE. *IFS variable* is measured as a categorical variable where *IFS* = 1 if an SBE owner has adequate internal (personal and family) financing sources to invest in a small business firm; otherwise, *IFS* = 0.

Firm age (F_AGE) is measured as the age of the SBE.

Firm size (F_SIZE) is measured as a categorical variable with an assigned value of 1 = INR 0 - INR 1,000,000, 2 = INR 1,000,001 - INR 2,000,000, 3 = INR 2,000,001 - INR 3,000,000, 4 = INR 3,000,001 - INR 4,000,000, and 5 = more than INR 4,000,001.

The number of employees (N_EMP) variable is measured as the number of employees working for the SBE.

Firm location (F_LOC) is measured as a dummy variable with an assigned value 1 for a research participant if he or she lives in an urban area and 0 if a research participant lives in a rural area.

Owner age (O_AGE) is measured as the age of the SBE owner.

Owner education (O_EDU) is measured as a categorical variable with an assigned value of one for high school or less, two for a college diploma, three for a bachelor's degree, four for a master's degree, and **five** for a Ph.D. degree.

Owner experience (O_EXP) is measured as the actual number of years of owner experience.

Gender (GENDER) is measured as a dummy variable with an assigned value of 1 for males and 0 for females.

Industry (IND) is a dummy variable indicating whether SBE owners report that their firms are in the manufacturing/production industry with an assigned value of 0 = Service, 1 = Production.

3.2 Sampling

This study obtained a non-probability (purposive) sample because the research population was an "abstract" (Huck, 2008), and it was not possible to obtain a list of all the SBEs and their owners. Therefore, the research participants were screened based on criteria associated with members of the focal population. First, an extensive list of SBE owners' names and telephone numbers was prepared to distribute surveys and conduct telephone interviews. The sample included SBE owners living in Punjab, Haryana, Himachal, Maharashtra, Rajasthan, and Uttar Pradesh. In addition, referrals from friends, relatives, family members, and religious places such as temples were used to prepare a list of telephone numbers and addresses. Finally, telephone directories and the internet to collect business names and addresses were also used to prepare a list of telephone numbers and addresses of research participants.

India was chosen as a data collection site because many Indian business owners either do not buy insurance or lack adequate coverage (Khan et al., 2013). The sample included 1,950 research participants. We completed five hundred thirteen surveys over the telephone, through personal visits, or received by e-mail, and 12 surveys were non-usable. Thus, the response rate was 26.31%. We assumed the remaining cases were assumed to be similar to the selected SBE owners for this study. However, a factor analysis (e.g., Podsakoff and Organ, 1986) was performed. Factor analysis indicated that common method bias is not a concern for this study. Besides, all the research participants were assured that their names would not be disclosed and that all the information would be kept confidential. All the research participants disclosed the purpose of the study.

4. Empirical models and analysis

4.1 Empirical models

From a theoretical model perspective, it is arguable that insurance coverage favours the firm since it reduces the operating risk (Gill et al., 2021) and the cost of capital to maximize shareholders' wealth and increase cognitive legitimacy in the eyes of lenders. Therefore, we assume that insurance coverage increases bank financing and reduces debt costs. The components of insurance coverage (*IC*) include commercial insurance coverage (*CIC*) and life insurance coverage (*LIC*). Insurance coverage positively impacts access to bank financing (*B_FIN*). It negatively affects the cost of debt capital (*INT*) (Wieczorek-Kosmala, 2012) by mitigating loans' default risk and improving cognitive legitimacy in the eyes of bankers/lenders. Therefore, *CIC* and *LIC* were used as the main explanatory variables to estimate the following first-stage regression models:

$$Y_i = \alpha_0 + \alpha_1 IC_i + \sum \beta_i X_{ij} + \varepsilon_i \quad (1)$$

$$INT_i = \beta_0 + \beta_1 B_FIN_i + \sum \beta_i X_{ij} + \varepsilon_i \quad (2)$$

In the above models, *IC* refers to either *CIC* or *LIC*, *i* refers to the small business enterprise (SBE), *Y* is either bank financing or the cost of debt, *INT* refers to the cost of debt, and X_{ij} represents individual control variables (*j*) corresponding to SBE *i*. ε_i is a normally distributed disturbance term.

In the estimated Model (1), α_1 measures the magnitude at which *IC* (i.e., *CIC* or *LIC*) increases access to *B_FIN* and decreases *INT*. In the estimated Model (2), β_1 measures the magnitude at which *B_FIN* decreases *INT*. The above models are extended by considering a different set of control variables once at a time. While logistic regression (logit) analysis was applied to test the first and second hypotheses, ordinary least square (OLS) was applied to test the third, fourth, and fifth hypotheses. We used the logistic regression (logit) analysis to test the first and second hypotheses because the dependent variable (B_FIN) was measured as a dummy variable. A dummy variable is measured as 0 and 1. For example, this study assigned value one if a business had bank financing and zero if the business did not have any bank financing.

Because of issues related to endogeneity and reverse causality between insurance coverage, *B_FIN*, and *INT*, a three-stage least squares (3SLS) regression was used to address the endogeneity issues (Goss and Roberts, 2011). For example, a decrease in *INT* could be associated with *B_FIN* because banks charge lower *INT* than private institutions in India (Ghosal and Ray, 2015; Gill and Mathur, 2018). In addition, higher internal financing sources reduce the chances of bankruptcy, and a decrease in *INT* could be associated with internal financing sources. Therefore, *B_FIN* and internal financing sources are good candidates to act as instruments for a decrease in *INT*. The 3SLS regression equations are as follows:

$$INT_i = \theta_0 + \theta_1 IC_i + \sum \beta_i X_i + e_i \quad (3)$$

$$INT_i = \gamma_0 + \gamma_1 B_FIN_i + \gamma_2 IFS_i + \gamma_3 IC_i + \sum \beta_i X_i + \Omega_i \quad (4)$$

In the above models, *IC* refers to either *CIC* or *LIC*. In Equation (2), θ_1 measures the magnitude at which insurance coverage (i.e., *CIC* or *LIC*) influences the probability of a decrease in *INT*. In Equations (3), γ_1, γ_2, and γ_3 measure the magnitude at which *B_FIN*, internal financing sources, and insurance coverage influence the probability of a decrease in *INT*. X_i represents individual control variables corresponding to SBE *i*. e_i and Ω_i are normally distributed disturbance terms. 3SLS model is a more efficient estimator than the two-stage least squares (2SLS) model (Greene, 2012); therefore, 3SLS was utilized to perform a robustness check instead of the 2SLS Model.

4.2 Descriptive data analysis

Table 1 shows descriptive statistics and factor analysis. Except for *CIC*, *LIC*, and *SBP* indices, some variables are individual dummy variables in the dataset. The distribution of *the variables (i.e., CIC, LIC,* and *SBP*) is almost symmetrical around their mean values, showing no outlier present in either index. The skewness value for all the scales used in this study is within the range of -0.634 to -0.848, which is an excellent range. According to Mason et al. (1991), skewness values usually range from -3 to +3 when the data are normally distributed.

Table 1. Descriptive statistics

	Mean	Standard Deviation	Minimum	Median	Maximum	Factor Scores 1	2	3
BF	0.76	0.43	0	1	1			
INT	2.53	0.39	1.79	2.40	3.53			
CIC#	0.00	1.00	-2.47	0.27	1.18			
CIC1	3.72	1.12	1	4	5		0.896	
CIC2	3.76	1.12	1	4	5		0.900	
CIC3	3.69	1.13	1	4	5		0.914	
CIC4	3.68	1.13	1	4	5		0.911	
CIC5	3.67	1.15	1	4	5		0.905	
LIC##	0.00	1.00	-2.20	0.37	1.18			
LIC1	3.61	1.24	1	4	5	0.908		
LIC2	3.69	1.23	1	4	5	0.913		
LIC3	3.59	1.21	1	4	5	0.915		
LIC4	3.55	1.20	1	4	5	0.904		
LIC5	3.56	1.20	1	4	5	0.906		
IFS	0.68	0.47	0	1	1			
F_AGE	2.59	0.80	0.00	2.71	4.32			
F_SIZE	14.40	0.80	13.12	14.73	15.20			
N_EMP	1.36	0.94	0.00	1.10	4.44			
F_LOC	0.47	0.50	0	0.00	1			
SBP###	0.00	1.00	-2.92	0.29	1.36			
SBP1	3.72	0.98	1	4	5			0.913
SBP2	3.72	0.95	1	4	5			0.922
SBP3	3.71	0.97	1	4	5			0.922
SBP4	3.76	0.96	1	4	5			0.905
O_AGE	3.69	0.31	0.00	3.69	4.32			
O_EDU	2.34	1.14	1	3	5			
O_EXP	2.49	0.73	0.00	2.56	3.81			
GENDER	0.79	0.41	0	1	1			
IND	0.34	0.47	0	0	1			

Notes: † $p<0.10$, * $p<0.05$, and ** $p<0.01$; Variables include bank financing (B_FIN), the cost of debt (INT), commercial insurance coverage (CIC), life insurance coverage (LIC), internal financing sources (IFS), firm age (F_AGE), firm size (F_SIZE), number of employees (N_EMP), firm location (F_LOC), small business performance (SBP), owner age (O_AGE), owner education (O_EDU), owner experience (O_EXP), gender (GENDER), and industry (IND).

Cronbach Alpha: CIC = 0.985. Five factors of CIC (CIC1, CIC2, CIC3, CIC4, and CIC5) index explain approximately 94.36% of the variation. The correlation values of the five measures range from 0.898 to 0.966. The five principal components' eigenvalues are 4.718, 0.144, 0.056, 0.049, and 0.033, respectively.

Cronbach Alpha: LIC = 0.986. Five factors of LIC (LIC1, LIC2, LIC3, LIC4, and LIC5) index explain approximately 94.55% of the variation. The correlation values of the five measures range from 0.916 to 0.950. The five principal components' eigenvalues are 4.727, 0.109, 0.065, 0.051, and 0.048, respectively.

###Cronbach Alpha: SBP = 0.978. Four factors of the SBP (SBP1, SBP2, SBP3, and SBP4) index explain approximately 93.69% of the variation. The correlation values of the four measures range from 0.894 to 0.947. The eigenvalues of the four principal components are 3.748, 0.123, 0.080, and 0.050.

4.3 Principal component analysis (PCA)

This study utilized the principal component analysis to reduce dimensionality (i.e., the number of variables). Factor analysis extracted three factors (Component 1, Component 2, and Component 3), and all the items loaded on the expected factors show that common factor bias is not a concern. Varimax rotation explains 94.26% of the variance in the original scores. The test statistic for Kaiser-Meyer-Olkin (KMO), a Measure of Sampling Adequacy, is 0.92. Kaiser (1974) suggests accepting values greater than 0.50 as indicative of the validity of factor analysis. Each question subset was analyzed to calculate the weighted factor scores. Due to the transformation using factor analysis, the mean values of *CIC*, *LIC*, and *SBP* are zeros. Cronbach's alpha was also calculated for each variable.

4.4 Bivariate correlation analysis

Table 2 shows the Pearson correlation analysis. The correlation coefficient matrix exhibits that *B_FIN* is positively and significantly correlated with *CIC*, *LIC*, *IFS*, *F_SIZE*, *F_LOC*, *SBP*, *O_EDU*, and *N_EMP* ($\rho_{CIC,\ B_FIN}$ = 0.391; $\rho_{LIC,\ B_FIN}$ = 0.429; $\rho_{IFS,\ B_FIN}$ = 0. 691; $\rho_{F_SIZE,\ B_FIN}$ = 0.230; $\rho_{F_LOC,\ B_FIN}$ = 0.221; $\rho_{SBP,\ B_FIN}$ = 0.365; $\rho_{O_EDU,\ B_FIN}$ = 0.228; and $\rho_{N_EMP,\ B_FIN}$ = 0.091), significant at the one percent and five percent levels; and negatively and significantly correlated with *INT* ($\rho_{INT,\ B_FIN}$ = -0.800), significant at the one percent level, implying that *CIC*, *LIC*, firm size, firm location, small business performance, owner education, and the number of employees positively, and *INT* negatively impact access to *B_FIN* in India.

The correlation coefficient matrix also exhibits that *INT* is negatively and significantly correlated with *B_FIN*, *CIC*, *LIC*, *IFS*, *F_SIZE*, *SBP*, *O_EDU*, *F_AGE*, *F_LOC*, and *IND* ($\rho_{BF,\ INT}$ = -0.800; $\rho_{CIC,\ INT}$ = -0.355; $\rho_{LIC,\ INT}$ = -0.405; $\rho_{IFS,\ INT}$ = -0.686; $\rho_{F_SIZE,\ INT}$ = -0.201; $\rho_{SBP,\ INT}$ = -0.301; $\rho_{O_EDU,\ INT}$ = -0.182; $\rho_{F_AGE,\ INT}$ = -0.096; $\rho_{F_LOC,\ INT}$ = -0.100 and $\rho_{IND,\ INT}$ = -0.095), all significant at the one percent and five percent levels, suggesting that *B_FIN*, *CIC*, *LIC*, internal financing sources, firm size, small business performance, owner education, firm age, firm location, and industry negatively impact *INT* debt in India.

Table 2. Correlations

		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1	*B_FIN*	1														
2	*INT*	-0.800**	1													
3	*CIC*	0.391**	-0.355**	1												
4	*LI*	0.429**	-0.405**	0.572**	1											
5	*IFS*	0.691**	-0.686**	0.350**	0.367**	1										
6	*F_AGE*	0.050	-0.096*	0.099*	0.007	0.040	1									
7	*F_SIZE*	0.230**	-0.201**	0.272**	0.220**	0.226**	0.278**	1								
8	*N_EMP*	0.091*	-0.022	0.219**	0.213**	0.123**	-0.019	0.273**	1							
9	*F_LOC*	0.221**	-0.100*	0.141**	0.218**	0.142**	-0.149**	0.051	0.223**	1						
10	*SBP*	0.365**	-0.310**	0.499**	0.483**	0.276**	0.175**	0.339**	0.236**	0.175**	1					
11	*O_AGE*	0.003	-0.022	0.099*	0.053	-0.007	0.409**	0.188**	0.089	0.072	0.098*	1				
12	*O_EDU*	0.228**	-0.182**	0.173**	0.258**	0.220**	-0.156**	0.213**	0.305**	0.297**	0.214**	-0.010	1			
13	*O_EXP*	-0.001	-0.050	0.123**	0.046	-0.012	0.619**	0.227**	0.037	-0.004	0.183**	0.694**	-0.129**	1		
14	*GENDER*	0.059	-0.021	-0.040	-0.060	-0.013	0.161**	0.148**	-0.009	-0.155**	-0.041	0.045	-0.114*	0.100*	1	
15	*IND*	-0.001	-0.095*	-0.036	-0.050	0.039	0.307**	0.287**	-0.006	-0.394**	0.061	0.015	-0.110*	0.066	0.161**	1

Notes: * $p<0.05$ and ** $p<0.01$

4.3 Regression Results

Table 3 reports the estimated coefficients of Equations (1) to (4). Table 3 shows that *B_FIN* is positively and significantly associated with *CIC, LIC, IFS, F_LOC, SBP*, and *GENDER*. In addition, Table 3 shows that *INT* is negatively and significantly associated with *CIC, LIC, IFS, SBP, O_EDU, O_EXP*, and *IND*, and positively and significantly associated with *N_EMP* and *GENDER*.

In model specifications (1) and (2) shown in Table 3, the coefficients for *CIC* and *LIC* are 0.426 and 0.554, significant at the five percent and one percent levels, suggesting that *CIC* and *LIC* improve access to *B_FIN* for SBEs in India. Similarly, in model specifications (3) to (5) shown in Table 3, the coefficients for *CIC, LIC*, and *B_FIN* are -0.044, -0.066, and -0.579, all significant at the one percent level, implying that *CIC, LIC*, and *B_FIN* decrease *INT* for SBEs in India. Thus, all the hypotheses -- first, second, third, fourth, and fifth are supported.

In model specifications (1) and (2) shown in Table 3, the coefficients for *IFS, SBP, GENDER*, and *F_LOC* are positive and significant at the one percent and five levels, indicating that internal financing sources, small business performance, gender, and firm location improve access to *B_FIN* for SBEs. Similarly, in the model specification (3) shown in Table 3, the coefficients for *IFS, SBP, O_EDU*, and *IND* are negative and significant at the one percent, five percent, ten percent, and five levels, suggesting that internal financing sources, small business performance, owner education, and industry decrease *INT* for SBEs. Likewise, in the model specification (4) in Table 3, the coefficients for *IFS, SBP*, and *IND* are negative and significant at the one percent, ten percent, and five levels, implying that internal financing sources, small business performance, and industry decrease *INT* for SBEs. Further, the *IFS, IND*, and *O_EXP* coefficients are negative and significant at the one percent and ten percent levels, respectively, indicating that internal financing sources, industry, and owner experience reduce *INT*. Finally, in model specifications (3) to (5) in Table 3, the coefficients for *N_EMP* and *GENDER* are positive and significant at the one percent and ten percent levels, respectively, suggesting that a higher number of employees increases *INT*. In addition, there is a gender difference related to *INT* for SBEs in India.

In summary, *CIC* and *LIC* increase *B_FIN* and decrease *INT*. A three-stage least square (3SLS) Model was used as a robustness check. 3SLS model shows that *CIC* and *LIC*, directly and indirectly, decrease *INT* through *B_FIN* and internal financing sources.

Table 3. Insurance coverage, bank financing, and the cost of debt[1]

Dependent variables = B_FIN and INT

	Logit		OLS			3SLS			
Variables	B_FIN	B_FIN	INT	INT	INT	INT	INT	INT	INT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CIC	0.426*		-0.044**			-0.113**	-0.054**		
	(2.31)		(-2.83)			(-5.93)	(-4.53)		
LIC		0.554**		-0.066**				-0.135**	-0.073**
		(2.88)		(-4.35)				(-7.24)	(-6.08)
B_FIN					-0.579**		-0.359**		-0.348**
					(-16.83)		(-13.29)		(-12.99)
IFS	3.904**	3.854**	-0.531**	-0.519**	-0.221**		-0.135**		-0.132**
	(9.94)	(9.86)	(-17.67)	(-17.44)	(-7.29)		(-5.67)		(-5.61)
F_AGE	0.217	0.230	-0.014	-0.018	-0.003	-0.024	-0.012	-0.033	-0.016
	(0.80)	(0.86)	(-0.63)	(-0.85)	(-0.19)	(-0.88)	(-0.65)	(-1.25)	(-0.96)
F_SIZE	-0.015	0.096	0.006	0.003	0.006	-0.024	0.004	-0.032	-0.008
	(-0.07)	(0.41)	(0.34)	(0.17)	(0.39)	(-0.97)	(0.26)	(-1.33)	(-0.55)
N_EMP	-0.295	-0.286	0.051**	0.051**	0.032**	0.057**	0.043**	0.055**	0.042**
	(-1.47)	(-1.41)	(3.41)	(3.46)	(2.69)	(2.99)	(3.64)	(2.92)	(3.64)
F_LOC	1.043*	0.896*	0.036	-0.026	0.023	-0.067†	-0.012	-0.043	-0.001
	(2.53)	(2.15)	(1.22)	(-0.88)	(0.98)	(-1.76)	(-0.49)	(-1.15)	(-0.03)
SBP	0.611**	0.573**	-0.036*	-0.028†	-0.013	-0.059**	-0.026*	-0.049*	-0.020
	(2.91)	(2.67)	(-2.20)	(-1.71)	(-1.03)	(-2.84)	(-2.07)	(-2.37)	(-1.58)
O_AGE	-0.138	-0.202	0.036	0.037	0.028	0.052	0.038	0.049	0.038
	(-0.14)	(-0.20)	(0.63)	(0.65)	(0.60)	(0.70)	(0.85)	(0.68)	(0.84)
O_EDU	0.204	0.161	-0.024†	-0.020	-0.015	-0.046**	-0.027**	-0.037**	-0.022*
	(1.24)	(0.97)	(-1.85)	(-1.54)	(-1.50)	(-2.85)	(-2.69)	(-2.32)	(-2.26)
O_EXP	-0.205	-0.148	-0.023	-0.024	-0.039†	0.007	-0.213	0.005	-0.022
	(-0.52)	(-0.37)	(-0.82)	(-0.84)	(-1.73)	(0.20)	(-0.95)	(0.13)	(-0.98)
GENDER	1.220**	1.200**	-0.019	-0.018	0.043†	-0.021	0.018	-0.012	0.018
	(2.94)	(2.86)	(-0.59)	(-0.58)	(1.67)	(-0.52)	(0.70)	(-0.47)	(0.70)
IND	-0.105	-0.180	-0.084*	-0.080*	-0.083**	-0.110**	-0.095**	-0.096*	-0.090**
	(-0.24)	(-0.40)	(-2.62)	(-2.54)	(-3.25)	(-2.69)	(-3.81)	(-2.40)	(-3.62)
Constant	-1.202	-2.528	2.809**	2.843**	3.022**	2.852**	2.929**	2.973**	2.979**
	(-0.29)	(-0.60)	(9.16)	(9.43)	(12.50)	(7.28)	(12.22)	(7.76)	(12.57)
N	501	501	501	501	501	501	501	501	501
χ^2/F-test	261.01**	264.10**	40.35**	42.17**	86.57**	105.41**	779.36**	125.09**	800.25**
Pseudo R^2/ R^2	0.513	0.519	0.512	0.511	0.693	0.182	0.623	0.209	0.626

Notes: † p<0.10, * p<0.05, and ** p<0.01; Dependent variables are bank financing (*B_FIN*) and the cost of debt (*INT*). Independent variables include commercial insurance coverage (*CIC*), life insurance coverage (*LIC*), internal financing sources (*IFS*), firm age (*F_AGE*), firm size (*F_SIZE*), number of employees (*N_EMP*), firm location (*F_LOC*), small business performance (*SBP*), owner age (*O_AGE*), owner education (*O_EDU*), owner experience (*O_EXP*), gender (*GENDER*), and industry (*IND*).

[1]The lowest tolerance is 0.371, and the highest VIF is 2.693, indicating multicollinearity is not severe.

5. Discussion, conclusion, limitations, and recommendations for future research

In this study, we assumed that commercial and life insurance coverage increases bank financing and reduces debt costs. In addition, we assumed that bank financing decreases debt costs. We normalized data as (X-Xbar)/Sigma and used normalized values for regression analysis. The empirical results show that SBE owners using *CIC* and *LIC* enjoy better access to *B_FIN* and pay the lower *INT* by increasing cognitive legitimacy. Thus, this study's findings support the findings of Wieczorek-Kosmala (2012) in that adequate *CIC* reduces *INT*. In addition, the results suggest that *CIC* and *LIC* signal cognitive legitimacy (Scott, 1994), regulatory legitimacy, and normative legitimacy (Scott, 1995) in the eyes of lenders by signalling corporate social responsibility. Thus, *CIC* and *LIC* increase access to *B_FIN* and decrease *INT*.

Empirical analysis shows that internal financing sources, firm location, small business performance, and gender improve access to *B_FIN*. Findings suggest that internal financing sources, small business performance, owner education, owner experience, and industry reduce *INT*. However, there are gender differences in the perceptions of access to *B_FIN* and *INT* (see Table 3). Table 2 shows that insurance coverage, owner education, and owner experience improve firm performance. Since insurance coverage, owner education, and owner experience improve firm performance, SBE owners should consider having adequate insurance coverage, training, and experience. Kwon (2003) also asserted that insurance coverage could reduce financial distress and the chances of bankruptcy.

In conclusion, insurance coverage benefits SBEs by improving access to *B_FIN* and reducing *INT*. Insurance coverage also signals cognitive legitimacy in the eyes of capital suppliers. Based on the empirical analysis, *CIC* and *LIC* increase the chances of *B_FIN* by $e^{0.426} - 1$ or 53.11% and $e^{0.554} - 1$ or 74.02%, respectively, increasing the chances of a decrease in *INT* by -4.40% and -6.60%, respectively, for SBEs in India. In addition, *B_FIN* increases the chances of a decrease in *INT* by -57.90% (see Table 3). These findings show that *LIC* has a higher impact on *B_FIN* and *INT* than *CIC*. This outcome may be because lenders can pledge life insurance policies to pay off loans in the case of the SBE owner's death. Since insurance coverage improves access to *B_FIN* and reduces *INT* by increasing cognitive legitimacy, it is strongly recommended to have adequate insurance coverage to cover liabilities.

5.1 Managerial implications and limitations

A managerial implication of this study is that individuals who perceive a higher level of insurance coverage tend to perceive higher *B_FIN* and a lower *INT*. Another managerial implication is that individuals who perceive higher access to *B_FIN* tend to perceive a lower *INT*. However, the impact of insurance coverage and *B_FIN* may differ for each SBE and small business owner. Therefore, one financial planning policy for all the SBE owners may not be formulated. Besides, this study is limited to perceptions and judgments that asked for responses from the fixed format, set-question survey tools.

Further, the respondents could not provide additional input because a survey questionnaire was used to collect data. In addition, the findings of this study may not be generalized to SBEs and SBE owners who are different from those surveyed in this research. Therefore, the findings of this study should be used with caution.

5.2 Recommendations for future research

The data collection for this research study was limited to parts of India. Therefore, the generalizability of this study's results and implications requires further quantitative and qualitative research conducted in other Indian regions, demographics, and countries. In addition, future studies can improve the methodological focus and framework by collecting data from a more significant number of SBEs and including other qualifying elements, such as corporate governance, among the investigated variables.

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