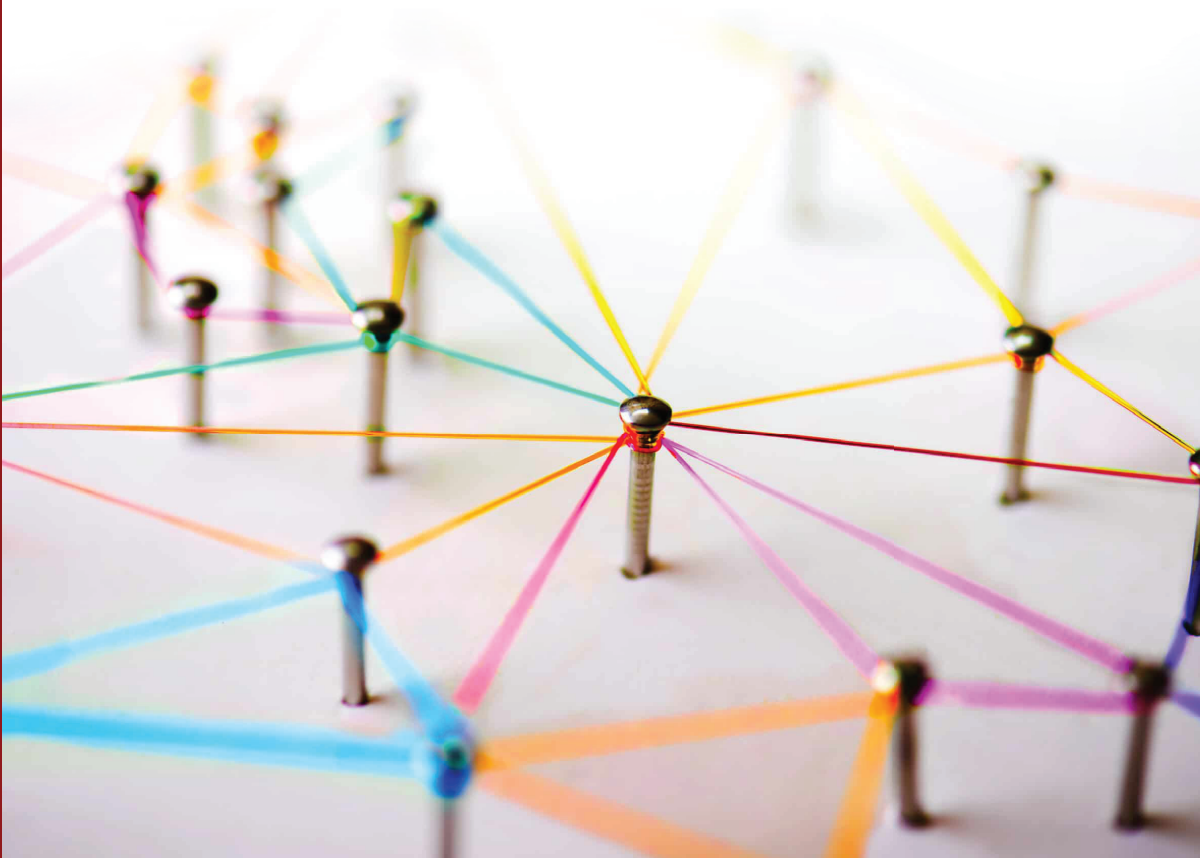


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BIMTECH Business Perspectives is a scholarly Open Access journal of Birla Institute of Management Technology, India. The journal publishes original contribution in the functional areas of business management (see Aims and Scope). Furthermore, the journal is a platform for interdisciplinary studies that provide both empirical evidence and nuanced perspectives on business management in the national, regional, and global contexts. The contexts include, but not limited to, the contemporary economic, political, social, technological, and environmental challenges facing business stakeholders.

The journal brings out two issues per year, and it follows a double-anonymized peer-review process. All contributions should be well written in English. Submission to the journal should be relevant to one or more business and allied disciplines and backed by suitable methodology, sound analysis, practical perspectives, and managerial or policy implications.

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The objectives of *BIMTECH Business Perspectives*, the journal, are to encourage and publish research in the field of business management. The terms business and management are both broadly defined. While the former encompasses both discipline and business problem-based research, the latter includes the management of firms, groups, industries, regulatory bodies, government, and other institutions. The journal has a special focus on emerging and functional areas of business management. Consistent with the policy, the journal publishes peer-reviewed research in financial markets, emerging economies, entrepreneurship and start-ups, emerging technology and innovation in business functions, consumer behaviour, human behaviour in management decisions, risk management, supply chain management, business strategy, and other domains having a direct or indirect bearing on business management. The journal encourages both quantitative and qualitative research methods to unearth relevant findings. The journal aims to nurture a debate among individuals and groups, which have keen interest in business and managerial processes. The journal encourages inter-disciplinary studies that may lead to new understanding of business and management functions. The journal welcomes research papers examining dynamics of business management in the backdrop of changes in the global business environment. The journal serves as a platform that connects thought-leaders and researchers from diverse fields to address crucial business and management issues. Published twice a year (June and December), *BIMTECH Business Perspectives* is an official publication of Birla Institute of Management Technology (BIMTECH), Greater Noida, India. The journal has been publishing in its current form since 2019. Prior to 2019, the journal was known as *Business Perspectives*, which had a publication history of more than a decade.

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Exploring the Moderating Role of Owner's Education in the Relationship Between Strategic Planning and Small Business Performance: Evidence from Bangladesh

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Rajendra Pandit^{1,2} 

Abstract

Small and medium enterprises (SMEs) are central to economic development and employment generation, particularly in emerging economies such as Bangladesh. This study investigates the determinants of small business performance using firm-level data from 1,603 enterprises drawn from the World Bank Enterprise Survey. The analysis examines how firm characteristics, business strategies—specifically business planning, record-keeping and customer orientation—and owner attributes influence performance outcomes. Owner education is introduced as a moderating variable to assess its effect on the relationship between strategic planning and firm performance. Employing a multivariate moderation regression framework, the results reveal that owner education significantly strengthens the positive association between business planning and performance. The findings highlight the importance of owner–manager education in effectively implementing business strategies to enhance the resilience and performance of SME in Bangladesh.

Keywords

SMEs, business strategy, firm performance, owner education

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Introduction

Small and medium enterprises (SMEs) form the backbone of most economies, particularly in developing countries. Globally, they account for about 90% of all businesses and employ nearly half of the world's workforce (World Bank, 2022). When informal enterprises are included, SMEs contribute almost half of the national gross domestic product (GDP) in many economies. In Bangladesh, as in other low and middle income nations, the SME sector plays a pivotal role in driving economic growth and development. SME, together with micro-enterprises, constitute 99% of private sector businesses in Bangladesh (Asian Development Bank, 2015). The sector employs approximately 70%–80% of the non-agricultural labour force and contributes nearly 25% to Bangladesh's GDP and around 40% to total manufacturing output (Ahmed, 2018).

Bangladesh recognises micro, SMEs (MSMEs) as key drivers of employment generation, poverty reduction and equitable income distribution, while simultaneously fostering overall economic growth (Dhar et al., 2024). Supported by a vibrant entrepreneurial culture, the country has cultivated a diverse MSME sector encompassing industries such as textiles, agriculture, manufacturing and technology (Alam, 2021). The entrepreneurial ecosystem has evolved through policy initiatives such as the SME Policy 2019 and Industrial Policy 2016, which promote access to finance, training and infrastructure, among others (Dhar et al., 2024; Khondker & Pettinotti, 2024). This ecosystem is shaped by multiple stakeholders, including government agencies, financial institutions, educational organisations, NGOs and private sector actors (Alam, 2021).

Despite their economic significance, MSMEs in Bangladesh face persistent challenges. These include limited access to finance (Dhar et al., 2024), inadequate technology adoption, weak infrastructure, and regulatory and bureaucratic hurdles (Kumar & Suppiah, 2023). Moreover, women entrepreneurs encounter disproportionate barriers compared to their male counterparts, often rooted in cultural norms and unequal access to resources (Sarkar, 2024).

Given the central role of SMEs in economic development, research on their success and failure has expanded considerably in recent years, with growing emphasis on identifying the determinants of firm performance (Keats & Bracker, 1988). Although findings remain mixed, much of this literature highlights firm characteristics as primary predictors of performance (Baker et al., 2021). However, other scholars have underscored the importance of technological capability and understanding consumer behaviour as critical drivers of financial outcomes (Poudel et al., 2019). Additionally, owner demographics—such as age, experience and education—have been shown to significantly influence firm performance (Kalleberg & Leicht, 1991). Overall, the literature broadly agrees that organisational factors and owner attributes jointly shape business outcomes, often exerting greater influence than strategy alone (Blackburn et al., 2013).

In the context of Bangladesh, the research has identified innovation, product quality, cost efficiency, reliability and service excellence as central to SME performance (Islam et al., 2009). Furthermore, entrepreneurial characteristics, rather than firm-level traits, were found to be key drivers of SME success in Bangladesh

(Aminul Islam et al., 2011). It has also been observed that strategic execution among Bangladeshi private enterprises remains weak, constrained by limited flexibility and rigid organisational cultures (Dhar et al., 2022). Although managers recognise the importance of coordination and behavioural control, many firms—particularly smaller and younger ones—continue to struggle to align strategic intent with effective implementation.

Building on this context, the present study aims to advance the literature on small firm performance by examining the combined effects of strategic planning and owner characteristics on firm outcomes. Using SMEs in Bangladesh as a case study, it investigates whether strategic planning significantly contributes to firm performance relative to other strategic factors and explores how owner education moderates the relationship between strategic planning and performance outcomes.

The remainder of this article is structured as follows. The second section outlines the theoretical framework, reviews relevant literature and develops hypotheses on the factors influencing firm performance. The third section describes the data, methodology and variables used in the analysis. The fourth section presents and interprets the empirical results, followed by a discussion of policy and practical implications in the fifth section. The final section concludes with the study's limitations and directions for future research.

Theoretical Framework, Literature Review and Hypothesis Development

The definition of small firms differs across countries and sectors, with no universally accepted standard (Storey, 1994). According to Bangladesh's industrial policy (2010), manufacturing firms with assets up to Tk 300 million (US\$3.86 million) and 250 employees, and service or trade firms with assets up to Tk 150 million (US\$1.93 million) and 100 employees, are classified as MSMEs (Asian Development Bank, 2015). This study adopts the World Bank's definition, which classifies small firms as those employing fewer than 100 workers (World Bank, n.d.).

Although definitions of performance vary, financial indicators remain the primary tools for assessing firm performance, complemented by subjective measures such as stakeholder satisfaction (Delen et al., 2013). This study focuses on financial indicators to assess firm performance.

One of the earliest explanations of firm growth dynamics is Gibrat's law of proportionate growth, which posits that firm growth is random and independent of firm size (Gibrat, 1931; as cited in Fiala & Hedija, 2019). Building on this, Mueller's (1972) life cycle theory of a firm suggests that firms initially grow through innovation, improved processes, marketing and management, followed by rapid expansion until market saturation slows growth. The resource-based view further explains performance differences by emphasising that firms possess heterogeneous, imperfectly mobile and non-substitutable resources that create sustained competitive advantage (Barney, 2001; Wernerfelt, 1984).

Macroeconomic and sociopolitical factors, such as GDP growth, inflation, road safety and refugee inflows in Bangladesh, also influence sectoral performance.

Kuri et al. (2025) studied tourism performance in Bangladesh and revealed that infrastructure improvements enhance long-term tourism demand and the need to align tourism strategies with sustainable development goals by integrating cleaner energy, road safety and social inclusivity initiatives.

Storey (1994) emphasises the value of examining the growth of small firms through a combination of three interrelated domains: the characteristics of the entrepreneur(s), the firm's demographics and its business strategy. These three components, each encompassing a set of relevant factors, collectively shape the success trajectory of small businesses. Figure 1 illustrates the interaction among these spheres.

Storey (1994) categorises various determinants within each of the three components. Entrepreneurial characteristics and resources encompass factors such as motivation, educational background, managerial experience, number of founders, prior self-employment, family business history, social marginality, functional skills, training, age, prior business failure, sector-specific experience, previous firm size exposure and gender. Firm-specific characteristics include variables such as age, sector, legal form, location, size and ownership structure. Strategy-related factors capture elements such as workforce and management training, access to external equity, technological sophistication, market positioning and responsiveness, planning, product innovation, managerial recruitment, government support, customer concentration, competitive environment, access to information and advice, and export orientation.

The conceptual framework underpinning this study is grounded in Storey's (1994) model, which posits that the interaction among three core components determines firm performance. The study investigates the relationship between each of these components and firm performance and further extends the model to examine the moderating role of owner's education in the relationship between business planning and firm performance. A visual representation of the conceptual model is presented in Figure 2.

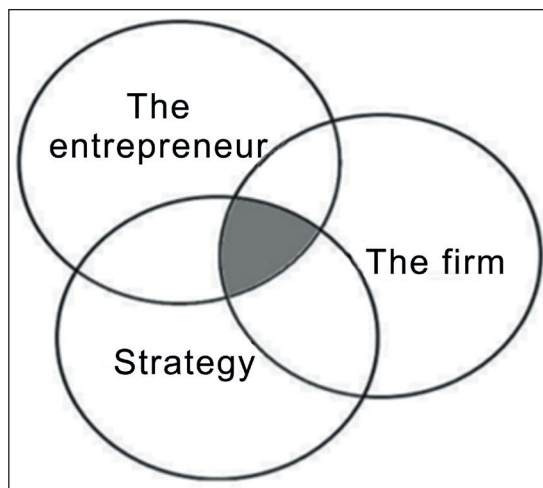


Figure 1. Theoretical Framework.

Source: Storey (1994).

Business Strategy and the Firm's Performance

Recent research has increasingly emphasised the strategic dimensions of small firm growth, and how owner–managers adapt to dynamic business environments (O'Farrell & Hitchens, 1988). This study focuses on three key strategic dimensions: marketing (customer orientation), business planning and financial recording. Among these, financial reporting has received comparatively limited attention, and evidence of its direct link to firm growth remains inconclusive (McMahon, 2001; McMahon & Davies, 1994).

Customer orientation is a key strategic dimension that focuses on understanding and responding to customer needs. It is widely recognised as a driver of customer satisfaction, loyalty and improved firm performance. Empirical studies show that, when supported by strong business and social networks, customer orientation can substantially boost sales and overall firm outcomes (Neneh, 2018).

Strategic planning is a key managerial practice linked to organisational effectiveness, yet evidence on its impact on small firm performance remains inconclusive. While several studies have reported a positive association between formal strategic planning and improved performance (Bracker & Pearson, 1986; Schwenk & Shrader, 1993), others note that many small firms operate successfully without formalised planning systems (Robinson & Pearce, 1984). Furthermore, some scholars contend that informal or unwritten planning approaches can generate

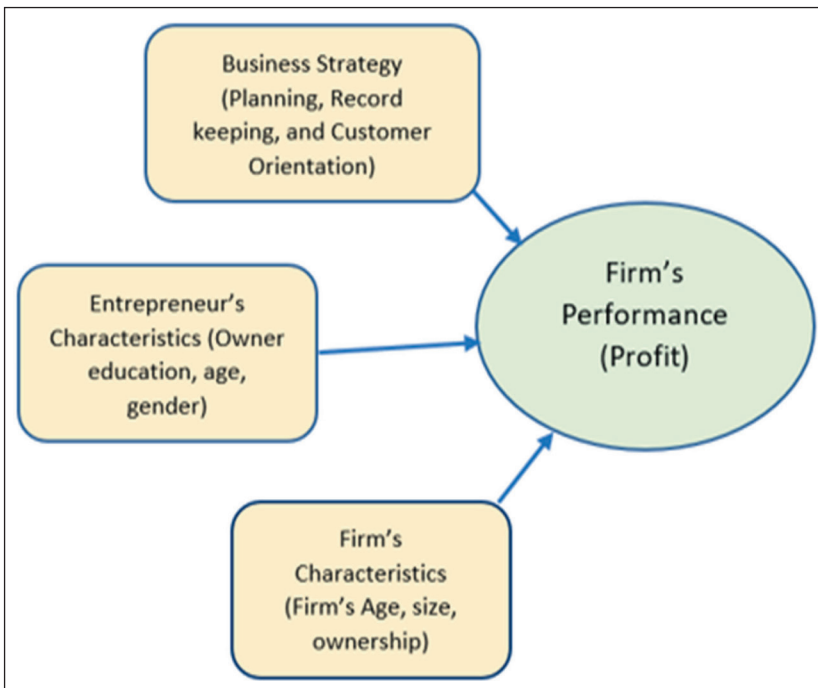


Figure 2. Conceptual Model.

performance outcomes comparable to those achieved through formal planning, suggesting that excessive structure may introduce unnecessary rigidity and complexity (Thurston, 1983).

Based on the foregoing discussion, the following hypotheses are proposed to examine the relationship between business strategy and firm performance:

- H_1 : Maintaining systematic record-keeping has a positive effect on SME's financial performance.
- H_2 : A customer-oriented strategy enhances a small firm's financial performance.
- H_3 : The implementation of strategic planning positively influences the financial performance of SMEs.

Entrepreneur's Characteristics and the Firm's Performance

Scholars have long emphasised owner–manager characteristics—such as age, education, personal objectives, attitudes and values—as key determinants of firm growth (O'Farrell & Hitchens, 1988). Storey's (1994) framework highlights age, strategic leadership, knowledge and managerial capability as central entrepreneurial attributes influencing firm performance. These traits enable owners to interpret environmental changes, address challenges and adapt strategies effectively (Williams & Ramdani, 2018). Although experience is expected to enhance managerial competence, empirical findings on the relationship between owner age (as a proxy for experience) and firm performance remain mixed (Acar, 1993).

Gender has also been examined as a determinant of firm performance. Some studies suggest that male-owned firms tend to outperform female-owned firms (Khalife & Chalouhi, 2013; Rosa et al., 1996), whereas others highlight women-owned enterprises' resilience and long-term survival advantage in specific contexts (Kalleberg & Leicht, 1991; Maliranta & Nurmi, 2019).

Based on the above discussion, the following hypotheses are proposed:

- H_4 : Owner age contributes positively to SME performance.
- H_5 : Male-owned firms perform better than female-owned firms.

Owner Education and Its Moderating Role

Higher educational attainment strengthens managerial resources, raises income expectations and fosters motivation for superior performance (Kangasharju, 2000). Accordingly, human capital—embodied in education and personal commitment—is viewed as a critical determinant of microenterprise success (Berrone et al., 2014). Empirical evidence supports a positive association between owner education and firm outcomes in both developed and emerging contexts, such as the United States (Fairlie & Robb, 2009) and Turkey (Karadag, 2017), though some studies find no significant link (Barbieri & Mshenga, 2008). Given these discussions, this study predicts the following:

- H_6 : Owner education positively influences SME performance.
- H_7 : Owner education positively moderates the relationship between business planning and SME performance.

Firm Demographics and Performance

As Storey (1994) highlights, firm-specific characteristics—such as age, size and ownership structure—play an important role in shaping small firm performance. The relationship between firm age and performance has been interpreted in diverse ways. Some studies suggest that the likelihood of failure declines as firms mature, implying a negative relationship between age and mortality (Aga & Francis, 2017). Others contend that once firms reach a certain level of maturity, age ceases to be a major determinant of performance (Kalleberg & Leicht, 1991).

Mueller's (1972) life cycle hypothesis links firm age to performance, proposing that growth rates tend to decline as firms mature. He further contended that firm age was a stronger predictor of growth than size, with younger firms expanding more rapidly than their older counterparts (Mueller, 1972). Subsequent research supports this life cycle pattern, showing that firm performance generally decreases with age (Coad et al., 2018; Yazdanfar & Öhman, 2014). For instance, Cowling et al. (2018) found a negative association between firm age and growth among UK SMEs following the 2008–2009 global financial crisis.

At the same time, older firms often demonstrate greater resilience and accumulated capabilities that enhance their long-term survival prospects, supporting a positive link between age and sustainability (Acar, 1993). Studies also demonstrated that the failure rate decreases as the firm's size increases, supporting the liability of smallness (Carreira & Teixeira, 2011; Fackler et al., 2013).

Regarding the relationship between firm size and performance, this study considers Kalleberg and Leicht's (1991) conclusion that size influences growth, contrasting with Dunne and Hughes's (1994) finding that smaller firms grow faster than larger ones. Regarding ownership structure in shaping firm performance, Storey (1994) noted that firms with shared equity were more likely to grow than those that were unwilling to share ownership. Nonetheless, empirical research on the ownership–performance relationship remains limited.

Based on these insights, the following hypotheses are proposed:

- H_8 : Firm age positively influences firm performance.
- H_9 : Firm size has a significant influence on firm performance.

Data Definition and Methodology

Sample and Data Collection

This study utilises data from the World Bank's survey of micro and small enterprises conducted in Bangladesh between 2008 and 2014. Given the SME sector's critical

role in employment and income generation, Bangladesh provides a suitable case for analysis. The survey instrument, which was developed jointly by the World Bank and the University of Warwick, assesses business practices in areas such as marketing, inventory management, record-keeping and financial planning, alongside firm and entrepreneur characteristics (McKenzie & Woodruff, 2016).

The survey offers a representative sample of firms defined by specific size thresholds, with the firm (specifically, SMEs) serving as the unit of analysis. Twenty-six questions evaluated core business practices employed in daily operations, including marketing, purchasing and inventory control, costing and record-keeping and financial planning.

The dataset comprises responses from 1,725 small enterprises randomly selected from urban areas across 19 districts in Bangladesh. The sample was stratified by firm size, based on full-time employment, and by industry type, including manufacturing, trade and services. After excluding observations with missing data and those with 100 or more paid employees, the final sample comprises 1,603 firms.

Variables and Measures

Dependent Variable

This study employs firm financial performance, commonly used as a dependent variable in entrepreneurship and small business research, as the primary outcome variable. Despite its prevalence, the conceptualisation and measurement of firm performance remain contested, with scholars debating its definition, dimensionality and appropriate indicators (Santos & Brito, 2012). While performance can be viewed through both financial (e.g., profitability) and non-financial (e.g., stakeholder satisfaction) dimensions (Quinn & Rohrbaugh, 1983), financial indicators are favoured for their objectivity, comparability and reliability (Walker & Brown, 2004). Accordingly, consistent with prior studies (Walker & Brown, 2004; Yazdanfar & Öhman, 2014), this article adopts profitability, measured as the natural logarithm of annual profit, as a proxy for firm performance in the regression analysis.

Independent Variables

The independent variables used in this study were derived from survey responses, and their construction, along with the related items, is summarised in Table 1.

Costing and Recording. Financial record-keeping serves as a key explanatory variable, capturing the extent of a firm's financial documentation practices, as many small enterprises lack complete financial statements. The recording index was developed from six survey questions through factor and reliability analysis, and used to measure the comprehensiveness of their record-keeping, ranging from 0 to 1.

Marketing or Customer Orientation. Customer orientation reflects the firm's responsiveness to market needs, measured through the owner's interaction with customers and suppliers. This index, constructed from survey questions on customer feedback, follow-ups with former clients and supplier negotiations, was derived using factor and reliability analysis and ranges from 0 to 1.

Planning. Strategic and financial planning represents an important dimension of entrepreneurial orientation and firm proactiveness. Firms that establish annual sales targets, prepare cost budgets and monitor progress towards these goals are considered to demonstrate higher planning capacity. The index, based on four survey items, ranges from 0 to 1 depending on the comprehensiveness of planning activities.

Control Variable

This study includes control variables that are theoretically and conceptually justified as relevant determinants of firm performance. Firm age, measured by the number of years in operation, is considered a control variable as consistent with

Table 1. Factor Analysis and Reliability Test.

Survey Questions/Variables	Factor Loading	Initial Eigenvalue	Cronbach's α
Maintain records		4.184	0.862
1. Able to use records to see how much cash the business has on hand at any point in time	0.871		
2. Records every purchase and sale made by the business	0.852		
3. Keeps written business records	0.826		
4. Uses records regularly to know whether sales of a particular product are increasing or decreasing from one month to another	0.775		
5. Has records documenting that there exists enough money each month after paying business expenses to repay a loan in the hypothetical situation that this business wants a bank loan	0.677		
6. Has a written budget, which states how much is owed each month for rent, electricity, equipment maintenance, transport, advertising and other indirect costs to the business	0.517		
Marketing/customer orientation		1.932	0.716
1. Asked existing customers whether there are any other products the customers would like the business to sell or produce	0.829		
2. Asked a supplier about which products are selling well in this business' industry	0.780		
3. Talked with at least one former customer to find out why the former customer has stopped buying from this business	0.758		
Business planning		1.788	0.705
1. Compares their sales achieved to their target at least monthly	0.816		
2. Has a target set for sales over the next year	0.734		
3. Has a budget of the likely costs their business will have to face over the next year	0.667		
4. Review the financial performance of their business and analyse where there are areas for improvement at least monthly	0.630		

Note: KMO measure of sampling adequacy = 0.82.

prior studies (e.g., Coad et al., 2018). Firm size, proxied by the number of paid employees, is included to account for size-related effects commonly observed in small firm performance studies (e.g., Stam & Elfring, 2008). The owner's age in years serves as a proxy for managerial experience, which has been shown to positively influence business performance (Gielnik et al., 2017). Owner education, measured as total years of formal schooling (ranging from 0 to 20 years), is included both as an independent variable and as a moderator assessing the impact of business strategy on performance. Next, ownership structure is controlled for given evidence that ownership type may affect firm growth and performance (Davidsson & Henrekson, 2002). Finally, in line with the standard production theory, particularly the Cobb–Douglas production framework, the logarithm of capital stock is included as a control variable to account for variations in firms' productive capacity and scale, thereby mitigating potential bias arising from differences in capital intensity (Bloom & Van Reenen, 2007).

Reliability and Validity Test

Several tests were conducted to ensure the reliability and validity of the dataset. Factor analysis was first employed for data reduction, based on the premise that multiple observed variables share similar response patterns due to their association with a common latent factor (Hutcheson, 1999). Thirteen observed variables were reduced to three underlying constructs using the eigenvalue-greater-than-one criterion. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.82, which, according to Kaiser (1974), is considered 'meritorious'. To further confirm the number of extracted factors, a parallel analysis was conducted following the approach recommended by Patil et al. (2008).

A reliability test was conducted using Cronbach's α to assess internal consistency. Coefficients of 0.70 or higher are generally regarded as acceptable (Cronbach, 1971, as cited in Su et al., 2015). As presented in Table 1, all constructs yielded Cronbach's α values above 0.705, surpassing the reliability threshold.

Regarding common method bias, the survey design incorporated a combination of dichotomous items and quantitative response questions, reducing the likelihood of bias. As noted by Jordan and Troth (2020), such bias typically occurs when both independent and dependent variables are collected simultaneously using identical response formats (e.g., Likert scales). Given the diverse question structure of the dataset, the risk of common method bias is minimal.

Model Description

The preceding discussion underpins the conceptual framework for this analysis. Based on Storey's (1994) model of three key determinants of firm success (Figure 3), the framework incorporates owner education as a moderating variable between business strategies and firm performance. Similar frameworks have been applied in prior studies (Khan et al., 2021).

Recent research has further introduced diverse moderating variables, such as strategic flexibility in Bangladeshi SMEs (Dhar et al., 2022), family ownership in Saudi firms (Bazhair & Sulimany, 2023), financial literacy in developing countries (Okello Candiya Bongomin et al., 2017), entrepreneurship education in South Indian SMEs (Selvan et al., 2025) and financial distress in Indian firms (Agarwal et al., 2024). Accordingly, this study estimates two models: a baseline model and an extended model incorporating the moderating effect of owner education.

Basic model. The basic model is in the following form:

$$PERFORM = f(RECORD, CORIENT, BPLAN, OEDU, OAGE, PWORK, FAGE, OWNSHIP, MALE, LCAPSTK).$$

In the moderation model, an interaction term is created by multiplying the business planning variable by the moderating variable, the owner’s education level (*OEDU*). This constitutes a two-way interaction, as it involves both independent and moderating variables (Dawson, 2014). Both variables are quantitative, and as noted in the literature, there are no restrictions on whether variables in a moderation model must be categorical or continuous (Allen, 2017; Warner, 2020).

A model with an owner’s education as a moderator is as follows:

$$PERFORM = f(RECORD, CORIENT, BPLAN, OEDU, OAGE, FAGE, PWORK, OWNSHIP, MALE, LCAPSTK, BPLAN \times OEDU),$$

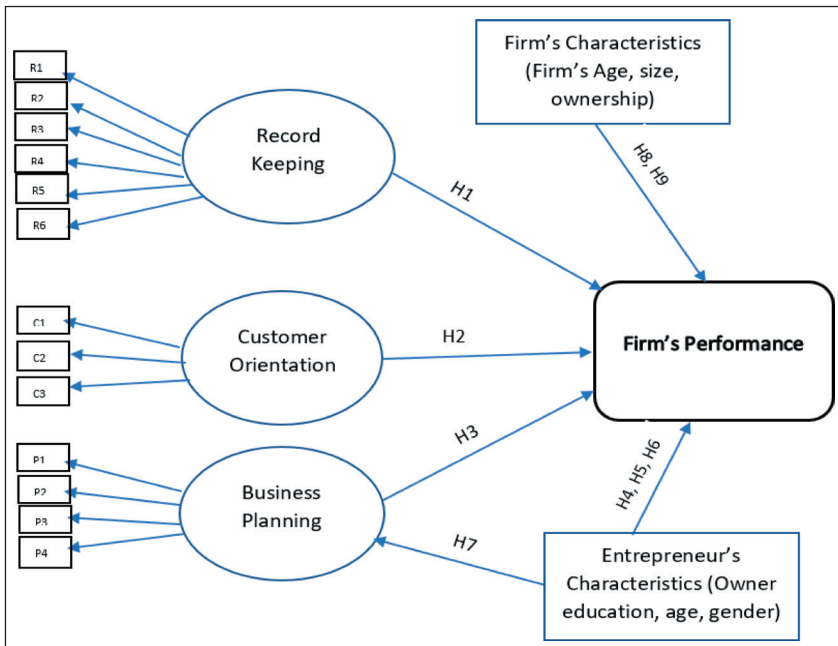


Figure 3. Methodological Framework.

where *PERFORM* denotes firm financial performance, serving as the dependent variable. *RECORD* represents the status of record-keeping, and *CORIENT* captures the degree of customer orientation. *BPLAN* indicates whether the firm has a formal business plan, while *OEDU* refers to the education level of the owner. *OAGE* and *FAGE* denote the age of the owner and the firm, respectively. *PWORK* represents the number of paid workers. *OWNSHIP* refers to the ownership structure of the firm, and *MALE* is a binary variable indicating whether the manager is male. *LCAPSTK* denotes the natural logarithm of the firm's capital stock. The interaction term ($BPLAN \times OEDU$) captures the moderating effect of owner education on the relationship between business planning and firm performance.

Results

This section presents the descriptive statistics of the variables and the empirical results from multivariate regression analysis.

Correlations and Multicollinearity

The correlation analysis (Table 2) reveals that firm performance is moderately associated with record-keeping ($r = 0.422$), number of paid workers ($r = 0.541$) and capital stock ($r = 0.446$), indicating that firms with better record-keeping practices, larger workforces and higher capital investment tend to perform better. Owners' education ($r = 0.277$) and business planning ($r = 0.187$) also show a positive relationship with the firm's performance. Firm and owner age display small positive correlations, suggesting a limited influence of experience and maturity on performance. Customer orientation and gender show negligible correlations with performance, implying minimal direct effects.

The correlation matrix also helps assess potential multicollinearity among predictors. Prior studies suggest that low to moderate correlations generally do not pose multicollinearity concerns (Cohen et al., 2003; Kim & Miner, 2009).

Table 2. Pairwise Correlations.

Variables	1	2	3	4	5	6	7	8	9	10	11
(1) perform	1.000										
(2) record	0.422	1.000									
(3) corient	-0.035	0.083	1.000								
(4) bplan	0.187	0.350	0.070	1.000							
(5) oedu	0.277	0.294	0.085	0.163	1.000						
(6) oage	0.187	0.115	-0.037	0.035	-0.039	1.000					
(7) pwork	0.541	0.212	0.024	0.198	0.170	0.179	1.000				
(8) fage	0.142	0.036	0.070	-0.011	0.048	0.346	0.105	1.000			
(9) ownship	0.287	0.128	0.007	0.076	0.092	0.027	0.345	-0.021	1.000		
(10) male	0.039	-0.034	-0.035	-0.010	-0.052	0.019	-0.003	0.038	-0.013	1.000	
(11) lcapstk	0.446	0.247	0.064	0.136	0.287	0.217	0.454	0.294	0.198	-0.009	1.000

As a rule of thumb, correlations above 0.70 may indicate problematic multicollinearity that could bias regression estimates (Radulovich, 2008). Since the highest correlation in this study is 0.50, multicollinearity is unlikely to affect the reliability or efficiency of parameter estimates.

Descriptive Statistics

The descriptive statistics (Table 3) indicate that the average firm performance score is 12.53, suggesting a moderate level of variation across firms. A majority of firms maintain formal record-keeping practices (60.9%) and demonstrate customer-oriented behaviour (36.4%), whereas only 24.5% report having a formal business plan. On average, firm owners are approximately 42 years old and have attained around 10 years of education, while the firms themselves have operated for an average of 12.4 years. Both capital stock and the number of paid workers exhibit some variability, reflecting considerable dispersion in firm size within the sample.

Regression Results

The regression analysis comprises two specifications: the basic model and the moderation model, the latter introducing an interaction term between business planning and owner's education ($BPLAN \times OEDU$). Table 4 presents the regression results from both models.

Record-keeping shows a consistently strong and significantly positive effect on performance in both models at the 1% level, indicating that a unit increase in record-keeping leads to an increase of 80% in profit. This denotes that maintaining records is a crucial factor in improving firm outcomes. Customer orientation has a significant negative effect on both models at the 1% level, suggesting that customer orientation, perhaps in isolation or without supporting capabilities, may not contribute positively to performance. Business planning is not significant in

Table 3. Descriptive Statistics.

Variable	Mean	SD	Min.	Max.
Performance	12.534	1.064	9.575	18.417
Record	0.609	0.366	0	1
Customer orientation	0.364	0.383	0	1
Business plan	0.245	0.308	0	1
Owner education	10.172	4.024	1	18
Owner age	41.689	10.963	18	85
Number of paid works	7.488	12.141	0	99
Firm age	12.394	12.48	0	110
Ownership	1.125	0.396	1	4
Male	0.985	0.121	0	1
Capital stock	11.652	2.235	5.298	19.554

Table 4. Regression Results from Both Models.

Predictors	Basic Model		Moderation Model	
		Significance		Significance
Record-keeping	0.798	***	0.805	***
Customer orientation	-0.221	***	-0.221	***
Business plan	-0.062		-0.462	**
Owner's education	0.025	***	0.015	**
Owner's age	0.004	**	0.004	**
Number of paid workers	0.032	***	0.032	***
Firm's age	0.003		0.003	
Ownership of the firm	(Base)		(base)	***
Sole proprietor	0.324		0.329	
Partnership	0.299	***	0.363	
Cooperative	0.376		0.342	
Private limited liability				
Owner's gender (Male)	0.449	***	0.460	***
Capital stock	0.076	***	0.076	***
<i>BPLAN</i> × <i>OEDU</i>			0.038	**
Constant	10.074	***	10.146	***
<i>N</i>	1,603		1,603	
<i>r</i> ²	0.448		0.450	

Note: *** and ** denote 99% and 95% levels, respectively.

the basic model, but becomes significant at the 5% level, with a negative coefficient in the moderation model. This implies that business planning does not help enhance performance unless moderated by other factors, such as education.

Owner's education has a significant positive effect on the basic model at the 1% level, and at the 5% level in the moderation model, indicating its effect is now captured more fully through the interaction with business planning. The interaction term (*BPLAN* × *OEDU*) is positive and significant at the 5% level, confirming that education enhances the effectiveness of business planning. Business planning improves performance only when coupled with higher levels of the owner's education.

Overall, the findings suggest that education amplifies the effectiveness of business planning, while managerial practices such as record-keeping remain fundamental drivers of firm performance. The moderation model offers nuanced insights into how managerial capabilities and human capital jointly enhance the profitability of small firms in Bangladesh. The significant interaction between business planning and the owner's education indicates that planning alone is insufficient to improve performance unless supported by adequate human capital.

Other control variables, such as the owner's age, number of paid workers, ownership structure, gender and capital stock, exhibit positive associations with firm performance, with most being statistically significant at the 1% level. However, firm age does not show a statistically significant effect on the performance of SMEs in Bangladesh.

The results also indicate that the three components of business strategy have mixed effects on firm performance. As hypothesised, record-keeping demonstrates a positive and statistically significant impact, thereby supporting H_1 . In contrast, customer orientation demonstrates a negative and statistically significant relationship with firm performance, while the business plan variable shows a negative but insignificant effect, leading to the rejection of H_2 and H_3 .

Additionally, both the owner’s experience (proxied by age) and education exhibit positive and statistically significant associations with firm performance in the basic model, thereby supporting H_4 and H_6 .

Notably, the moderating effect of the owner’s education on the relationship between business planning and firm performance is both positive and statistically significant. This result supports H_7 , indicating that education positively moderates the association between business planning and the performance of small firms in Bangladesh. As illustrated in Figure 4, the interaction effect demonstrates that the advantages of having a business plan are contingent upon the owner’s educational level. The firm performance increases substantially when higher education interacts with business planning, indicating that more educated owners are better able to translate business plans into improved SME outcomes.

The positive moderating effect of education on the relationship between business planning and firm performance suggests that education enhances an owner’s capacity to transform plans into effective actions. In the context of small firms in Bangladesh, formal education likely equips owners with better analytical, organisational and strategic management skills, enabling them to utilise business plans more effectively. Conversely, less educated owners may lack the technical and managerial expertise required to translate planning into improved performance

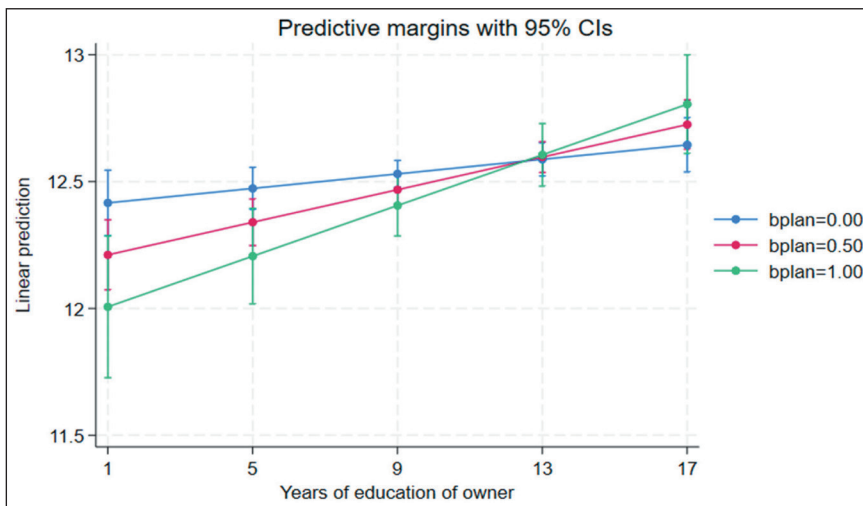


Figure 4. Graphical Illustration of Interaction Effects.

outcomes. This finding highlights managerial capability as a mechanism through which education enhances the benefits of business planning. Overall, it demonstrates a classic moderation effect, where education strengthens the impact of business planning on firm performance.

The results also indicate that male-managed firms outperform their female-led counterparts, supporting H_5 . Since firm age is not statistically significant, the finding does not support the hypothesis regarding the relationship between firm age and performance. However, firm size, measured by the number of paid workers, has a positive and significant effect on firm performance, supporting Hypothesis H_9 . Compared to sole proprietorships (reference category), partnership firms perform significantly better, likely due to shared resources and decisions. Cooperatives and private limited firms show positive but insignificant effects, indicating no substantial performance difference.

Discussion and Conclusion

Firm performance and its determinants have long been a focus of scholars in small business research. This study specifically examines the moderating role of owner education in the relationship between business planning and firm performance. The observed negative associations between customer orientation and firm performance yield important implications for small business owners and managers.

While customer orientation is important, excessive focus on customer needs can strain limited resources, constrain operational flexibility and reinforce rigid competitor-focused thinking (Brockman et al., 2012; Kadic-Maglajlic et al., 2017). The negative effect observed here aligns with Grewal and Tansuhaj (2001) and contrasts with studies suggesting that customer orientation generally enhances performance (Ziggers & Henseler, 2016). Harris (2001) similarly found no significant relationship between customer orientation and performance. These findings underscore that the effectiveness of customer-focused strategies is highly context-dependent, shaped by the interplay of internal capabilities and external conditions rather than by customer orientation alone.

Similarly, this study suggests that the preparation of a formal business plan does not significantly enhance firm performance in small firms, consistent with prior research questioning the utility of formal planning in small enterprises (Robinson & Pearce, 1984; Thurston, 1983). Excessive focus on planning may shift owner-managers' attention towards processes rather than outcomes. Incorporating moderating variables, such as owner education, can strengthen the effectiveness of business planning, providing both theoretical and practical insights.

These findings have important implications for national SME development and leadership strategies in Bangladesh. While business planning and customer-oriented practices alone may not guarantee improved performance, enhancing owner-manager capabilities—particularly through education and skill development—can lead to better outcomes. By aligning SME support initiatives with the contextual realities highlighted in this study, policymakers can foster a more resilient SME sector in Bangladesh.

Limitations and Directions of Future Research

This study, by incorporating a broader set of variables beyond those identified in Storey's framework, provides a more comprehensive understanding of the factors influencing firm performance. A notable methodological contribution lies in the application of a moderation model, which remains relatively underexplored in this context. Furthermore, the study disaggregates business strategy into three components—planning, customer orientation and record-keeping—and evaluates their distinct effects on firm performance, thereby contributing to addressing important gaps in the small business literature.

Nonetheless, future studies using longitudinal data would allow a more rigorous assessment of the stability and direction of these relationships over time, while tracking firm growth across multiple periods would further deepen understanding of performance dynamics (Vinnell & Hamilton, 1999). Moreover, adopting non-linear regression techniques could yield deeper insights into the potentially complex and non-monotonic relationship between firm age and performance.

Future research could further extend the present study by incorporating emerging variables—such as technological adoption and international market exposure—that increasingly shape small firm outcomes. Additionally, utilising data from other countries with similar economic contexts would allow for cross-country comparisons, thereby enhancing the external validity and generalisability of the findings.

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Profitability and Its Determinants in the Automobile Industry: Evidence from Static Panel Data Regression Analysis

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Abstract

As per a report of *The Economic Times*, the Indian automobile industry provides direct and indirect employment to over 19 million people, thereby playing a vital role in the economic growth and development of the nation. However, to survive in the long run, a business needs to maintain its profitability level sufficient for its perpetual existence. Considering the need for profitability, it is equally important to ascertain its determinants. With this objective, this study concerns the determinants of profitability of Indian automobile companies. Based on secondary data, this study considers the financial ratios, including profitability, and performs the panel data regression analysis using secondary data of the selected Indian automobile companies. The financial parameter includes cash earnings–retention ratio (CERR), debt-to-equity ratio (DTR), inventory–turnover ratio (ITR) and price–book value ratio (PBR). All these parameters were found to have a significant impact on profitability. This study concludes that an improvement in CERR, ITR and PBR with a reduction in DTR can improve the profitability of the automobile companies. These findings will fill a gap in the existing literature regarding the financial parameter determinants of profitability.

Keywords

Profitability, financial parameters, automobile companies, panel data regression analysis

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Introduction

In the early 1950s, the share of the manufacturing sector in Indian GDP used to account for only about 10% but, as of 2023, it contributes about 17% (IBEF, 2023). In the automobile industry, being one of the largest industries, a boost was seen after the implementation of liberation–privatisation and globalisation (LPG) in 1992 through de-licensing and opening the sector for foreign direct investments (FDI) (Velmurugan & Annalakshmi, 2015). In India, one of the significant drivers for boosting the economic growth of the nation is the automobile industry. As per a report of *The Economic Times*, the automobile industry of India provides direct and indirect employment to over 19 million people, thereby playing a vital role in the economic growth and development. The automobile industry is one of the largest revenue-generating industries of the nation and the nation's key player in employment generation (Miglani, 2019). This industry has both short-term and long-term goals; short-term goals are to improve the annual profits and value addition, while the long-term goals are to contribute to the national income, employment generation, infrastructure development and holistic development of the economy by improving the standard of living of its people (Abey & Velmurugan, 2018). The automobile industry in India is the fourth-largest by production in the world as per 2022 statistics (OICA, 2023). As of April 2022, India's automobile industry was worth more than \$100 billion and accounts for 8% of the country's total exports and 7.1% of India's GDP (Investindia, 2023). As of 2023, India stands as the third largest automobile market in the world in terms of sales (ETAuto, 2023).

Considering the potential of the automobile industry, the success of every key player in the industry mainly depends on the profitability of the firm. Profitability measures the earning capability of a company (Dharmaraj & Ramaswamy, 2014). To survive in the long run, a business needs to earn a profit and maintain its profitability level sufficient for perpetual existence. The estimation of future profitability and analysing the past and present profitability are vital for strategic business decisions. The systematic and specific analysis of determinants, which impact the profitability, will disclose and signal the message of its efficiency to generate profit to the concerned stakeholders (Ali, 2021). Normally, there are five parameters—that is, profitability, liquidity, solvency, efficiency and market prospect—which indicate the financial position of an industry. The comparative study of these financial parameters explains the holistic performance of the company.

Profitability is a measure of efficiency with powerful incentives for all the concerned stakeholders (Ali, 2021). Efforts have been made to study the determinants of profitability of selected listed automobile firms manufacturing four-wheelers. For a firm, its efficiency is reflected in the market value of its share, whereas the market value of shares is based on the ability of the firm to earn profits, which again depends upon its ability to generate revenue. A company which makes little profit or whose profits fluctuate from year to year will not last long. For these reasons, companies develop strategies to improve their profitability position (Abey & Velmurugan, 2018). However, profitability should not be

studied as an isolated phenomenon; instead, the study should also consider other factors such as liquidity (Zubairi, 2010), solvency (Korankye & Adarquah, 2013), efficiency (Quayyum, 2012) and market prospects (Basu & Das, 2016), which impact profitability.

The motive behind the analysis of profitability determinants of the automobile industry arises with the fact that the automobile industry remains an important driver behind overall economic development of every emerging economy by contributing significantly towards employment and production (Tyagi & Mahajan, 2022). This industry generates employment for both skilled and semi-skilled workers at a large scale (Jaisinghani et al., 2018) with potential to cater to domestic and international markets (Athukorala & Veeramani, 2019). Considering the position of India as an emerging global automobile market (IBEF, 2023) backed by an emerging high-income group with an increasing population, India holds a thriving environment for the automotive market, with its profitability controlled by several determinants. Considering this issue as a research avenue, an attempt is made to study the determinants of profitability with special reference to the selected Indian automobile companies.

Literature Review

Profitability has always been a primary objective for all industries. The industries will not be able to survive in the long run without profitability. Over time, scholars have analysed profitability through various proportions, firm-specific, financial metrics, operational efficiency, capital structure, liquidity, working capital ratios and the role of macroeconomic and policy variables where the conclusion has often been divergent and contradictory. Samuels and Smyth (1968) claimed that the size of the firm and net assets regulate the profit-earning capacity, highlighting that larger enterprises enjoy economies of scale and resource advantages that smaller ones cannot replicate. McDonald (1999) emphasised the importance of lagged profitability, establishing that past profit performance serves as a strong predictor of current-year profits, thereby underlining the path-dependent nature of profitability. Agarwal (1991) further found that structural and institutional factors such as the legacy of the firm, perpendicular combination, expansion and government policy, all of which have a prominent contribution to profitability outcomes. Vijayakumar and Kadirvelu (2003) found that legacy is the robust factor of profitability, followed by determinants like perpendicular combination, leverage, dimension, operating expenses to sales ratio, current ratio, growth rate and inventory turnover ratio, thereby providing a multi-dimensional understanding of financial performance determinants. The emphasis on operational performance and market expansion as profitability drivers was reinforced by Tahir and Anuar (2011), who argued that progression in sales clearly influences industry profitability. Jamali (2012) studied the Indian automobile sector and witnessed a strong positive association between management efficiency and profitability. Similarly, Dharmendra (2012) highlighted that debt–equity ratio, size and inventory turnover are the determinants that influence an enterprise's profitability

in Indian enterprises. Some studies have focused specifically on liquidity and leverage. Attari and Raza (2012) found that the length of the cash retention cycle and the return on owners' funds negatively impact profitability in the Indian automobile industry. Similarly, Paliwal and Chouhan (2017) found that the profitability and liquidity of the Indian automobile industry have a positive relationship. The study also suggested that a trade-off exists between liquidity and profitability. Mathuva (2009) observed that the profitability and the average payment period have a significant relationship between them; the longer the time taken to pay creditors, there is increase in profitability. Kaur and Kaur (2016), in their study of Indian automobile firms listed in the Bombay Stock Exchange from 2003–2004 to 2013–2014, found that the profitability of Indian automobile sector companies is mainly ruled by the liquidity, operational efficiency, growth of the firm manufacturing velocity, proprietary position and payment to creditors.

The relationship between profitability and capital structure has also generated substantial debate. Suresh and Sengottaiyan (2015) establish a mixed relationship between profitability and capital structure in Indian automobile firms, which suggests that debt can provide tax rebate and leverage benefits. Simlai and Guha (2019) studied the Indian automobile companies arrange funding from their sources, as the debt–equity ratio is not as per the standard, that is, 2:1, pointing to unique financing structures that may influence profitability outcomes in the sector. Aggarwal and Singla (2001) found that inventory turnover ratio, interest coverage ratio, net profit to total assets and earnings per share are important parameters of financial performance. Gandhi (2017) studied two Indian automobile companies, Tata Motors Ltd and Mahindra and Mahindra Ltd, for the period 2005–2006 to 2014–2015, and found differences in profitability among the companies. Both gross profitability and operating profit were satisfactory, except in the case of Tata Motors Ltd. The role of working capital management and cash flow efficiency has attracted substantial attention in profitability research. The firm's earning capacity can be maximised by minimising the number of days in inventories, cash retention cycle, and net trade cycle, as identified by Raheman et al. (2011). A negative relationship between cash retention cycle, inventory maintenance and the firm's performance measures was found by Aloy (2012). Hiran (2016) found a negative relationship between operating profit and the inventory turnover ratio. On the other hand, a positive correlation was observed between the quick ratio and both operating profit and net profit. Ganesamoorthy and Rajavathana (2012) observed that profitability had a positive relationship with current ratio and cash conversion cycle, whereas average payment period and average collection period had a negative relationship with profitability.

Within the Indian automobile industry, which plays a vital role in driving economic growth and employment, profitability has been a subject of deep inquiry by researchers, policymakers and professional institutions. Swalih et al. (2021) explored the financial soundness of the Indian automobile industry. It was ascertained that they will be able to pay off their debt smoothly in the near future. A strong and positive relationship between management efficiency and profitability in the Indian automobile industry was explored by Jamali (2012) and suggesting the heightening of the management efficiency to improve the profitability. However, across studies,

findings remain mixed, with some highlighting the positive role of liquidity and operational efficiency (Kaur & Kaur, 2016; Paliwal & Chouhan, 2017), while others point out negative correlations with certain ratios like inventory turnover and leverage (Attari & Raza, 2012; Hiran, 2016), thus indicating the lack of a consistent and universally accepted framework to explain profitability in the automobile sector. Among the most recent studies, Tyagi and Mahajan (2022) observed the determinants of profitability in Indian automobile firms and offered important insights into the relationships between profitability and firm-level financial ratios. Their work contributes to the growing body of knowledge on sector-specific profitability determinants and provides valuable empirical evidence for specialists and policymakers. However, their analysis was constrained by certain limitations, including the use of a relatively narrow dataset, limited financial ratios, and reliance on conventional regression methods that do not adequately address firm-level heterogeneity or temporal variations. As a result, while their study is foundational, it leaves room for further exploration and methodological advancement.

The role and importance of the automobile sector in the economic development of a country, keenly in a developing nation like India, has fascinated many academicians, professional institutions, researchers and administration to undertake differentiated studies in this sector. Thus, in this study, an attempt has been made to obtain the financial parameter determinants of the profitability of listed Indian automobile four-wheeler manufacturers. By concentrating on this specific subset, the study avoids the dilution of results that arises from analysing heterogeneous groups of firms and provides sharper, more context-specific insights. Furthermore, the study extends the scope of variables by including not only traditional determinants such as liquidity, leverage and growth ratios but also underexplored indicators such as cash flow-based measures, proprietary position and advanced working capital efficiency indicators, thereby offering a more comprehensive and holistic framework for understanding profitability. The study is to check the relationship between financial parameter determinants and profitability in the selected Indian automobile companies. The research will help the stakeholders to get an overview of the relationship between financial parameters and profitability in selected Indian automobile companies for the period of study. The study will also fill the gap in the existing literature, as it provides a sector-specific and segment-focused analysis, expands the set of explanatory variables beyond those traditionally considered, employs advanced econometric techniques for more robust inference and contextualises the analysis within a rapidly evolving policy and economic environment. While earlier research laid the groundwork for understanding profitability, this study advances the discourse by offering a more nuanced, comprehensive and timely analysis that reflects the complexities of today's dynamic industrial environment.

Objectives of the Study

The primary objective of this article is to analyse the impact of companies' financial parameters, namely their liquidity/retention, solvency, efficiency/turnover and the

market prospects on the profitability of selected Indian automobile companies by using panel data analysis. So, the objectives are:

- To assess the impact of liquidity/retention ratio on profitability.
- To assess the impact of the solvency ratio on profitability.
- To assess the impact of efficiency/turnover ratio on profitability.
- To assess the impact of market prospect ratio on profitability.

Research Methodology

This section explains the tools and techniques used in research methodology, along with reliability and validity for robustness of the study.

Data

To examine the overall significant impact of financial parameter determinants on the profitability of selected automobile companies in India, secondary data were extracted from the respective companies' annual reports and from www.moneycontrol.com. For this study, five listed automobile companies which manufacture only four-wheelers have been selected on the basis of their market capitalisation and products manufactured. Selected companies are given in Table 1.

The study period of this study is spread over 10 years, from financial year 2013–2014 to 2022–2023, so that the analysis immediately follows the year of enactment of the Companies Act, 2013, as this legislation introduced significant reforms in corporate governance, financial reporting and accountability standards for Indian companies. These regulatory changes, including enhanced disclosure requirements, audit committee provisions and corporate social responsibility mandates, are likely to influence managerial decisions regarding liquidity, debt management and operational efficiency. Considering this period allows the analysis to capture the impact of these reforms on the profitability of Indian automobile companies, ensuring that the findings are both contemporary and relevant for managers, policymakers and researchers.

Table 1. Companies Selected for the Study.

Sl No	Name of the Companies	Market Capitalisation (as on 1 January 2024)
1	Maruti Suzuki India Ltd	₹3,13,330 crores
2	Tata Motors Ltd	₹2,72,639 crores
3	Mahindra and Mahindra Ltd	₹2,03,106 crores
4	Ashok Leyland Ltd	₹51,411 crores
5	Force Motors Ltd	₹4,660 crores

Source: Extracted from moneycontrol.com.

Empirical Model of the Study

The analysis is based on the multivariate regression method through a quantitative research approach. The study is apprehensive with the performance of the four-wheeler manufacturing automobile companies in India by examining the relationship between profitability and other financial parameters such as liquidity and retention, solvency, efficiency and market prospect, which reflect their financial position. The study integrates the ordinarily used financial parameters from the company's annual report and includes the parameters published on moneycontrol.com. The financial parameter return on assets (ROA), which indicates profitability, has been used as a dependent variable (Gurung & Sarkar, 2022; Suresh & Sengottaiyan, 2015; Vijayakumar & Kadirvelu, 2003). Cash earning–retention ratio (CERR) has been used as a liquidity and retention parameter, debt-to-equity ratio (DTR) has been used as a solvency parameter, inventory–turnover ratio (ITR) has been used as an efficiency/turnover parameter and price-to-book value ratio (PBR) has been used as a market prospect parameter. Among these parameters, ROA has been used as the dependent variable, representing the profitability of the automobile companies. The remaining parameters have been used as independent variables, as described in Table 2.

The conceptual framework to explain the relationship between profitability and other financial parameters, which is the objective of the study, has been represented in Figure 1.

This conceptual framework, along with the objectives of the study, resulted in the following hypotheses:

H_{01} : There is no significant impact of liquidity and retention ratio on profitability.

H_{02} : There is no significant impact of solvency ratio on profitability.

H_{03} : There is no significant impact of the efficiency ratio on profitability.

H_{04} : There is no significant impact of market prospect ratio on profitability.

Table 2. Description of the Variables.

Variable	Dimensions	Description	Indicator	Formula
Dependent Variable	Profitability ratio	Return on assets %	ROA	Net income/total assets
Independent Variables	Liquidity and retention ratio	Cash earning retention ratio	CERR	(Net income – dividend distributed)/net income
	Solvency ratio	Debt–equity ratio	DTR	Total debt/equity
	Efficiency/turnover ratio	Inventory turnover ratio	ITR	Cost of goods sold/average inventory
	Market prospect ratio	Price–book value ratio	PBR	Price/book value

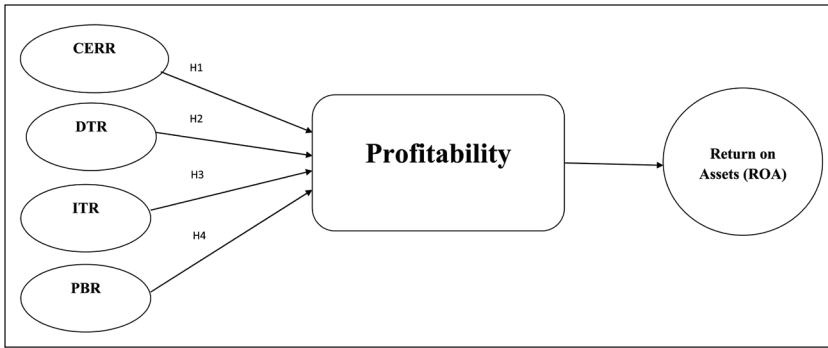


Figure 1. Conceptual Framework of the Study.

To test these hypotheses, the static panel data are modelled, and multivariate panel regression is performed as shown and discussed in the following sections.

Model Specification

The multi-dimensional panel data are obtained by including both time-series and cross-sectional data, looking at several individual firms taken over a period, giving special attention to firm-specific heterogeneity with low collinearity and adequate variation of data for superior dimensions and precise effects.

So, the panel data regression model takes the form of:

$$Y_{it} = \alpha + \beta X_{it} + \gamma_{it} \quad (i = 1 \dots N), (t = 1 \dots T),$$

with $\gamma_{it} = \mu_i + \varepsilon_{it}$,

where i is the cross-section identifier for the individual company, t is the time identifier for the individual company, γ_{it} is the composite error of the specification, μ_i is the individual-specific time-invariant unobserved effect and ε_{it} is the idiosyncratic error term.

To estimate the regression model and the model stated below, the panel least squares method is being used:

$$ROA_{it} = \alpha + \beta_1 CERR_{it} + \beta_2 DTR_{it} + \beta_3 ITR_{it} + \beta_4 PBR_{it} + \gamma_{it}.$$

The fixed effects model (FEM) and the random effects model (REM) are included in the panel data analysis. The basic assumption is that if an individual-specific unobserved error term correlates with any of the explanatory variables included in the specification, the omitted variable bias is treated using FEM and on the divergent when the assumption is that if an individual-specific unobserved error term has no correlation with the explanatory variable REM is used, but the omitted

variable may prompt sequential correlation in the time-variant error component. Thus, in order to understand the appropriate and suitable model, the Hausman test comes to the rescue, whose null hypothesis supports REM while the alternative supports the FEM.

Empirical Results and Discussion

Descriptive Analysis

Descriptive analysis of the study is a statistical approach to summarise and present a clear overview of a dataset. Table 3 presents the analysis where the mean value of ROA is 4.5522, testified to be positive but ranges from -11.64 to 14.34 , denoting average performance. As the median is higher than the mean, it indicates few automobile companies have moved towards positive significance of ROA for the period of study. The mean value of CERR is 67.1922, and the median is 81.33, indicating a negative skew as the mean is less than the median, while DTR, ITR and PBR are positively skewed, which indicates only a few companies have lower values which are less common but have a larger impact on the mean value indicating the variability in the dataset.

Correlation Analysis

Table 4 presents the correlation matrix for all the variables included in the specification for the period 2013–2022.

Table 3. Descriptive Statistics of Automobile Companies for the Period 2013–2022.

	ROA	CERR	DTR	ITR	PBR
MEAN	4.55	67.19	0.347	12.14	3.61
MEDIAN	5.13	81.33	0.135	10.60	3.33
MAXIMUM	14.34	100.00	1.350	25.87	11.93
MINIMUM	-11.64	-39.69	0.000	3.56	0.37
STD. DEV.	5.89	37.23	0.40	6.27	2.25
Coefficient of variation (%)	129.4505	55.41	115.27	51.64	62.32

Table 4. Correlation Matrix of the Variables.

	ROA	CERR	DTR	ITR	PBR
ROA	1.000000				
CERR	0.556705	1.000000			
DTR	-0.770112	-0.540715	1.000000		
ITR	0.621160	0.206836	-0.424926	1.000000	
PBR	-0.171446	-0.468686	0.432509	0.084956	1.000000

The correlation matrix for the period of study clearly shows that ITR and CERR are positively correlated with ROA, while PBR and DTR are negatively correlated with ROA. In the study, it is also found that DTR is moderately correlated with PBR with a correlation coefficient of 0.432, indicating that debt to equity is correlated with price and book value. ITR is slightly correlated with PBR, and CERR is negatively correlated with PBR, indicating that cash retention and price to book value cannot go side by side.

Regression Analysis

The secondary data extracted from the annual report and moneycontrol.com are the basis of the study to know the significant impact of other financial parameters on the profitability of automobile companies after the enactment of the Companies Act 2013. Table 5 presents the results obtained from the panel data regression analysis. The random effect (REM) and fixed effect (FEM) of the panel data analysis are applied to express the effect of omitted variables. The analyses of the results from REM and FEM for the period of study are made, and the Hausman specification test at a significance level of 5% ($\alpha = 0.05$) is applied to obtain the appropriate result for the study (see Table 6). The result has selected the random effect model for the study.

The Hausman test (Table 6) has selected the random effect model for the period, which reports an R-squared value of 74.92% and an adjusted R-squared of 72.70% with an F-statistic value of 33.62% and probability (F-statistics) is 0.00,

Table 5. Panel Data Regression Results.

Variable	Fixed Effects		Random Effects	
	Coefficient	Prob.	Coefficient	Prob.
CERR	0.039	0.012	0.042	0.005
DTR	-8.243	0.000	-8.325	0.000
ITR	0.325	0.0462	0.290	0.0007
PBR	0.501	0.069	0.452	0.0600
C	-1.002	0.731	-0.551	0.763
	Mean of dependent var = 4.552		Mean of dependent var = 4.552	
	SD of dependent var = 5.894		SD of dependent var = 5.894	
	R-squared = 0.784		R-squared = 0.749	
	F-statistic = 18.637		F-statistic = 33.621	
Weighted statistics	Prob(F-statistic) = 0.000		Prob(F-statistic) = 0.0000	
	Durbin-Watson stat = 1.527		Durbin-Watson stat = 1.2615	

Table 6. Hausman Specification Test.

Test Summary	χ^2 Statistic	χ^2 df	Prob.
Cross-section random	6.661605	4	.1549

indicating that the coefficient of determination resulting from the model is significant, where 74.92% of the variation in ROA, used as a proxy for profitability, is explained by the significant explanatory variables included in the model. As per the results shown in Table 5, CERR, ITR and PBR have a positive and significant impact on ROA at a significance level of 5%, 5% and 10%, respectively. DTR has a negative and significant impact on ROA at a significance level of 5%.

The other financial parameters for the period of study, namely CERR, ITR and PBR, have a significant impact on the ROA results. The study shows that CERR has a significant impact on the ROA, where a 1 unit increase in CERR would increase the profitability by 0.05 units, indicating that the profitability of the companies is slightly affected by CERR. The significant relationship between liquidity and profitability leads to the rejection of H_{01} , which posited no significant relationship. The presence of a significant relation between liquidity and retention and profitability rejects the first hypothesis (H_{01}) to report that there exists no significant relationship between liquidity and retention and profitability. The DTR having a negative significant impact at the 1% significance level indicates that a 1 unit increase in DTR would reduce profitability by 8.325 units, implying that the profitability of automobile companies was highly reactive towards DTR. The results for the DTR lead to the rejection of the second hypothesis (H_{02}), which stated that the solvency parameter has no significant impact on profitability. The efficiency parameter, inclusive of ITR, has a positive and significant impact at a 1% level, where a 1 unit increase in ITR would increase profitability by 0.29 units, which also signifies the dependence of profitability on ITR. These results also lead to the rejection of the third hypothesis (H_{03}), which posited that the efficiency ratio has no significant impact on profitability. The market prospect parameter, including the PBR, has a positive and significant impact at the 5% level. A one-unit increase in PBR would increase profitability by 0.45 units, indicating that the profitability of automobile companies is influenced by PBR. These results also lead to the rejection of the fourth hypothesis (H_{04}), which stated that the market prospect ratio has no significant impact on profitability. Thus, the study found that profitability is determined by several other financial parameters.

For the above panel data regression analysis, the normality of residuals is examined with the help of normal quantile–quantile plots (Q–Q plots), and it is presented in Figure 2. Further, the robustness of the normality of data is performed through the Jarque–Bera test in Figure 3, which favours the null hypothesis indicating the sample to be normally distributed (Jarque & Bera, 1987), a normal distribution as presented for the residual, along with the residual of the specification conform and along with it the normal Q–Q plots of the residuals.

Once the normality check was conducted, the presence of multicollinearity between the variables was studied using the variance inflation factor (VIF) in Table 7.

The VIF above 10 will reflect the existence of multicollinearity between the explained variables included in the specification (Hair et al., 2009), and in this study, the problem of multicollinearity is not encountered as the stats of VIF are found to be less than 10 for all the independent variables.

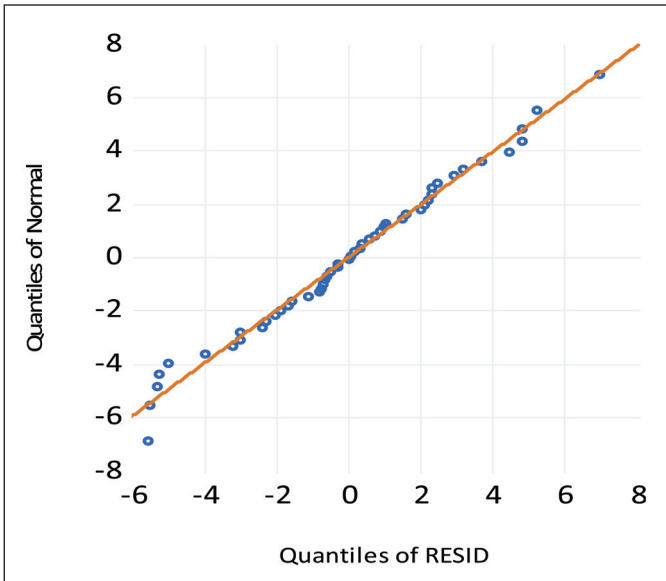


Figure 2. Normal Q–Q Plots of Residual.

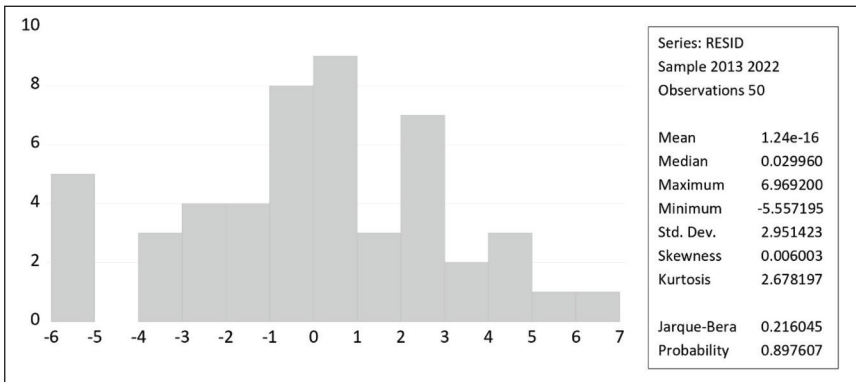


Figure 3. Histogram and Jarque–Bera Test.

Table 7. Variance Inflation Factor (VIF).

Variable	VIF
CERR	1.57
DTR	1.89
ITR	1.37
PBR	1.53

Conclusion

The quantitative research has been conducted in this study using descriptive analysis, correlation analysis and panel data regression analysis to know the significant impact of selected financial parameters on the profitability of four -wheeler manufacturing automobile companies listed in the NSE. The financial parameter is inclusive of CERR, DTR, ITR and PBR. All these parameters were found to have a significant impact on profitability. The correlation analysis showed that ITR and CERR are positively correlated with ROA, while PBR and DTR are negatively correlated with ROA. The study further found that CERR, ITR and PBR have a positive impact, while DTR has a negative impact on profitability, which states that improving this parameter will have a significant impact on the profitability of the selected companies.

The result presented through panel data analysis shows that the CERR has a moderate impact on profitability, indicating that if the profit earned is ploughed back into companies, it will have a moderate growth in profitability and performance, as internal sources of funding are less costly than external ones. This finding is similar to the findings of Paliwal and Chouhan (2017) that the profitability and the liquidity of the Indian automobile industry have positive relationship between the profitability and liquidity. Another vital finding of the study is the inverse relationship between DTR and ROA, which indicates that the preference for debt funding, should be reduced to improve profitability, as higher debt preference induces higher risk with higher leverage resulting in more cash outflows as interest payments. This finding is similar to the findings of Abey and Velmurugan (2018). The analysis of the report of the panel shows that ITR is reasonable and vital for making decisions by management. The result indicates that management must improve its ITR to obtain growth in profitability, because if ITR is not improved, then the finished stock gets piled up in the warehouse, and will not be converted to sales in the required period. Higher ITR is preferred as the automobile industry is a sector where new features and modifications of the variant produced is practised at a higher frequency. This finding is similar to the findings of Dharmaraj and Ramaswamy (2014). Further, the PBR has a positive and significant impact on profitability, suggesting that a higher market price induces an increased prosperity for profitability. This finding is similar to the findings of Noviana et al. (2022).

The study concludes that an improvement in CERR, ITR and PBR with a reduction in DTR can improve the profitability of the selected automobile companies. These findings impactfully contribute to the existing literature on profitability and its determinants.

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Global Solutions to Homelessness: Legal Frameworks, Evidence, and Policy Design

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Abstract

This analytical paper synthesizes academic research, statutory and regulatory frameworks, and programmatic evidence to assess global solutions to homelessness. Drawing on human rights law (e.g., the International Covenant on Economic, Social and Cultural Rights), national statutes (e.g., the United Kingdom’s Homelessness Reduction Act 2017 and Canada’s National Housing Strategy Act 2019), key court decisions (e.g., *City of Grants Pass v. Johnson*, 2024; *Government of the Republic of South Africa v. Grootboom*), and large-scale evaluations of Housing First and prevention systems, it identifies concrete policy designs that reduce homelessness sustainably. The article argues that legal duties of prevention, rights-based housing frameworks, scaled affordable housing, and fidelity-consistent Housing First—integrated with coordinated access and targeted supports for veterans, youth, and families—produce the strongest, most durable results when paired with fair public-space management and non-criminalization approaches.

Keywords

Homelessness policy, housing first, comparative homelessness policy, affordable housing systems, homelessness prevention, rights-based housing frameworks, social housing policy, coordinated access systems

Introduction

Homelessness—the condition of lacking a stable, safe, and adequate nighttime residence—remains one of the most visible failures of modern societies. Although

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often dismissed as an individual problem, homelessness is shaped by structural factors such as poverty, inadequate housing supply, mental and physical illness, addiction, domestic violence, and social welfare policies. International comparisons are instructive because countries have adopted different policy frameworks, levels of investment, and service models. This article compares the United States' approach to homelessness with strategies employed in several other countries, including Finland, Canada, the United Kingdom, Japan, Australia, and Germany. It draws on government reports, academic studies, and news coverage to provide an up-to-date overview of policy initiatives and their outcomes. The goal is to identify what works, where policy gaps remain and what lessons the United States might learn from successful models overseas.

Homelessness is not a single programmatic failure but the intersection of housing market dynamics, income poverty, behavioral health needs, discrimination, and administrative fragmentation. Across the OECD and the European Union (EU), at least two million people were recorded as experiencing homelessness in 2024—acknowledged by the OECD as an underestimate due to persistent measurement challenges (OECD, 2024). At the same time, the United Nations' Sustainable Development Goal 11 targets access to adequate, safe, and affordable housing by 2030 (UN, SDG 11). These dual realities—rising ambition and incomplete progress—have spurred countries to test complementary solutions: rights-based frameworks, prevention duties, Housing First, coordinated entry, and targeted interventions for specific subpopulations (OECD, 2024; USICH, 2022; ECFR 24 CFR Part 578).

Homelessness is a persistent global social challenge affecting both high-income and middle-income nations. While commonly associated with poverty or individual vulnerability, contemporary scholarship emphasizes that homelessness is primarily shaped by structural conditions such as housing affordability, labor market instability, welfare state design, and governance capacity (Fitzpatrick et al., 2013). Despite differing legal definitions and measurement practices, homelessness broadly refers to the absence of stable, adequate, and secure housing. Homelessness exists along a continuum of housing exclusion rather than as a single condition.

In Europe, the most influential framework is the European Typology of Homelessness and Housing Exclusion (ETHOS), which classifies homelessness into rooflessness, houselessness, insecure housing, and inadequate housing (FEANTSA, 2017). This typology recognizes that homelessness includes not only rough sleeping but also temporary accommodation, overcrowding, and legal insecurity. Housing exclusion has increased in several EU countries due to post-pandemic inflation, housing shortages, and migration pressures (FEANTSA, 2025). The adoption of ETHOS has improved conceptual consistency, but measurement remains uneven across member states.

In contrast, countries such as the United States and Canada rely on narrower statutory definitions that emphasize the absence of a “fixed, regular, and adequate nighttime residence,” focusing primarily on shelter use and unsheltered homelessness (Employment and Social Development Canada, 2022; HUD, 2024). These definitional differences significantly affect both measurement and policy design.

Structural theories identify homelessness as a consequence of housing market failures, income inequality, and welfare retrenchment. Scholars argue that rising housing costs, stagnating wages, and insufficient social housing supply are central drivers of homelessness across advanced economies (Shinn & Khadduri, 2020). Comparative research shows that countries with stronger social housing sectors and income support tend to experience lower rates of chronic homelessness (Stephens et al., 2019).

While structural forces dominate, individual factors such as mental illness, substance use disorders, family breakdown, and exposure to violence also play an important role in pathways into homelessness (Toro et al., 2007). However, research consistently demonstrates that these vulnerabilities become homelessness-producing primarily in contexts where affordable housing and support systems are inadequate (Fitzpatrick et al., 2013).

International human rights law increasingly frames housing as a fundamental right, emphasizing state obligations to prevent homelessness and ensure housing adequacy (United Nations, 2014). The Housing First model, first widely implemented in Finland, reflects this rights-based approach by prioritizing permanent housing without preconditions, followed by supportive services (Pleace, 2016).

This article proceeds in six key parts. First, it frames homelessness as a human-rights and system-design problem. Second, it examines the evidence base for Housing First and integrated behavioral health supports. Third, it compares prevention-forward legal regimes, including England's Homelessness Reduction Act and Scotland's right-to-housing orientation. Fourth, it analyzes coordinated-access models and national strategies in Canada, the United States, New Zealand, Australia, Finland, Portugal, Japan, and Singapore. Fifth, it discusses public-space governance and recent judicial developments in the United States. Finally, it offers a policy blueprint that unifies these approaches under measurable outcomes and durable governance (CESCR; ECFR; National Housing Strategy Act).

Human Rights Framework for Policy

International human rights law recognizes the right to adequate housing as part of the right to an adequate standard of living (ICESCR, art. 11). The UN Committee on Economic, Social and Cultural Rights' General Comment No. 4 clarifies that adequacy encompasses legal security of tenure, availability of services and infrastructure, affordability, habitability, accessibility, location, and cultural adequacy (CESCR, General Comment No. 4). General Comment No. 7 prohibits forced eviction without due process and appropriate safeguards. These interpretive texts do not mandate a single national model, but they ground a "progressive realization" duty, requiring reasonable measures within available resources to expand access to adequate housing.

Domestic courts and legislatures have operationalized these principles in different ways. In South Africa, the Constitutional Court's decision in *Government of the Republic of South Africa v. Grootboom* held that the state's housing

program was unreasonable because it failed to provide emergency relief for those in desperate need (Grootboom). Canada's National Housing Strategy Act (2019) expressly recognizes housing as a fundamental human right and creates an institutional architecture—the National Housing Council and Federal Housing Advocate—to promote accountability and systemic remedies (S.C. 2019, c.29, s.313). At the EU level, the 2021 Lisbon Declaration launched the European Platform on Combatting Homelessness, committing member states and stakeholders to work toward ending homelessness by 2030 through shared principles and peer learning (Lisbon Declaration).

Comparative analysis is complicated by divergent definitions and counting methods. The OECD notes large cross-country variation in whether national statistics include rough sleepers only, people in shelters, or households in precarious or temporary housing (OECD, 2024). Country notes (e.g., the United States and Portugal) reveal that some countries use point-in-time counts, while others report administrative flows or stock measures. This heterogeneity affects the interpretation of trends and the evaluation of policy impact; it also argues for investments in consistent data standards and the adoption of integrated homeless management information systems (HMIS) that facilitate coordinated access and outcome tracking (OECD, 2024).

The United States: Context and Current Policy

Scale and Demographics of Homelessness

The United States conducts an annual point-in-time (PIT) count each January to estimate the number of people experiencing homelessness. According to USA Facts (2024–2025), HUD's January 2024 PIT count found that about 771,480 people (23 out of every 10,000 Americans) were homeless, an 18% increase from 2023. Homelessness declined from 2007 to 2022 but rose 12% in 2023 and another 18% in 2024 (usafacts.org). Unsheltered homelessness accounted for roughly 40% of the total population, with significant geographic concentration in large metropolitan areas and West Coast states (HUD, 2024). Structural contributors include severe housing shortages, rising rents, and insufficient behavioral health infrastructure (Shinn & Khadduri, 2020).

The U.S. Interagency Council on Homelessness attributes the rise to inadequate affordable housing, stagnant wages, and inequitable health and economic systems (usafacts.org). Life expectancy for people experiencing homelessness is around 50 years, compared with 77 years for the average American. Black and African-American people constituted 31.6% of the homeless population in 2024 despite being 13.7% of the total population (usafacts.org), illustrating disproportionate impacts.

Housing affordability is widely recognized as the most significant economic determinant of homelessness in the United States. Over the past several decades, housing costs have increased far more rapidly than wages for low-income

households, particularly in metropolitan areas with strong job growth and limited housing supply (Joint Center for Housing Studies [JCHS], 2024). Researchers consistently find that regions with high rents and low vacancy rates experience substantially higher rates of homelessness, even after controlling for individual risk factors (Glynn & Fox, 2021; Quigley & Raphael, 2001).

The shortage of affordable rental housing is acute for extremely low-income renters. National estimates indicate that there are only a fraction of affordable and available units for households earning at or below 30% of the area median income, forcing many households to spend more than half of their income on housing (JCHS, 2024). When even modest income shocks occur, such cost burdens significantly increase the risk of eviction and subsequent homelessness.

Housing First and Permanent Supportive Housing

The U.S. federal government has not adopted a single strategy equivalent to those in Finland or the Netherlands; instead, it funds a patchwork of programs under the McKinney–Vento Act and the Housing First–based Continuum of Care system. Housing First approaches prioritize immediate placement into permanent housing without preconditions and then provide voluntary services. Critics have blamed the rise in homelessness on Housing First, yet the Urban Institute (2024) notes that these claims ignore decades of evidence (housingmatters.urban.org). Randomized controlled trials in U.S. cities show that permanent supportive housing programs (most of which use Housing First) improve housing and quality-of-life outcomes, reduce use of emergency services and increase access to community-based care (housingmatters.urban.org).

One example is the Denver Supportive Housing Social Impact Bond (SIB). The program provided housing subsidies and intensive services for chronically homeless individuals. During the first year, participants in the treatment group were housed for an average of 172 days compared with 19 days for the control group (housingmatters.urban.org). After three years, 80% of treatment participants had been housed at least once, versus 18% in the control group, and they spent 654 days housed on average compared with 94 days in the control group. A similar four-year trial in Santa Clara County, California, found that 86% of treatment participants were ever housed compared with 36% of controls; participants spent 84% of each year housed, while controls spent 20% (housingmatters.urban.org). These trials demonstrate that Housing First can achieve durable housing outcomes for chronically homeless people.

However, Housing First has not been scaled nationally to meet the magnitude of need. The United States relies on local Continuum of Care networks and state decisions to determine program scale and funding. The limited supply of affordable housing and rising rents restrict the ability to place people into permanent housing, even when vouchers are available. According to USAFacts, by 2024, only one in five eligible households received federal rental assistance, underscoring the gap between demand and supply (usafacts.org).

Specialized Programs and Veterans

The United States also funds targeted programs. Veteran homelessness has fallen from 73,367 people in 2009 to 32,882 in 2024 (usafacts.org) thanks largely to the HUD-Veterans Affairs Supportive Housing (HUD-VASH) program, which provides housing vouchers and case management. This success shows that sustained federal funding and interagency coordination can reduce homelessness within a specific population. More recently, the federal government announced the “All Inside” initiative, partnering with states to accelerate housing placements, though its implementation remains limited compared with national strategies in other countries.

Finland: A Housing-First Success Story

Policy Evolution and Philosophy

Finland is widely regarded as a model for reducing long-term homelessness. Over the past 16 years, the country has shifted from “treatment first” to a progressive Housing First approach. Finland’s program, launched in the early 2000s, treats decent, safe housing as a basic human right (pulitzercenter.org). Unlike traditional models that require sobriety or mental-health treatment before housing, Finland provides a permanent home first and then offers supportive services. This philosophy is rooted in the belief that without a stable home, it is almost impossible to improve other areas of life (pulitzercenter.org).

Finland’s labor market structure plays a significant role in homelessness prevention. Compared to more liberal market economies, Finland has lower levels of in-work poverty and income volatility (OECD, 2023a). Active labor market policies—including job placement services, retraining programs, and wage subsidies—help reduce long-term unemployment, which is a known risk factor for homelessness (Stephens et al., 2019).

Nevertheless, certain groups remain economically vulnerable. Young adults, migrants, and individuals with limited education or health challenges face higher risks of labor market exclusion, which can increase homelessness risk when combined with urban housing shortages (Y-Foundation, 2022). Even in a strong welfare economy, homelessness persists where labor market participation is constrained by structural or personal barriers.

According to data from the Finnish Ministry of the Environment, homelessness declined dramatically from the 1980s through the 2010s, reaching approximately 3,800 individuals in recent counts (Ministry of the Environment, 2023).

While recent years have seen slight increases due to housing market pressures, Finland remains the only European country with a sustained long-term reduction in homelessness (Pleace, 2016). Most homeless individuals in Finland now reside in temporary accommodation rather than sleeping rough.

Implementation and Services

Finland's Housing First strategy involves comprehensive policy changes, investment in low-cost housing, and a broad support system. The Finnish government collaborated with municipalities, nongovernmental organizations (NGOs), and private actors to convert hostels into permanent housing and fund new housing units (pulitzercenter.org). The Housing Finance and Development Centre of Finland (ARA) provides grants and low-interest loans for housing projects, while municipalities manage local implementation. Scattered-site housing units allow people with lower support needs to live in regular apartments across the community, reducing stigma and promoting integration (pulitzercenter.org).

Several NGOs play crucial roles. The Y-Foundation (Y-Säätiö) owns around 19,000 apartments and cooperates with municipalities and private actors to provide housing and support. Its services include counseling, job placement assistance, and health-care referrals to help tenants maintain stability (pulitzercenter.org). Another NGO, VVA ry (the Finnish Association for the Homeless), emerged from a movement of homeless people in 1986. It provides emergency shelter, transitional housing, outreach services, and day centers. VVA ry's day centers not only offer shelter but also reduce crime by meeting basic needs, as people have less incentive to steal when provided with food and essentials (pulitzercenter.org).

Outcomes and Challenges

Despite its success, Finland faces new economic challenges that may affect homelessness trends. Inflation, rising construction costs, and tighter public budgets have constrained the expansion of affordable housing (OECD, 2023b). Additionally, urbanization continues to concentrate economic opportunity in metropolitan areas, increasing demand for rental housing in cities where supply growth is slower.

Finland's Housing First program has produced measurable declines in homelessness. The number of long-term homeless people has fallen steadily since 2008; by 2023, Finland had among the lowest homelessness rates in Europe. The scattered-site model helps integrate formerly homeless people into neighborhoods and reduces stigma. Government support for rent ensures that even people without steady employment can afford their apartments (pulitzercenter.org). Nevertheless, the program faces challenges. Funding has stagnated, and some localities have shifted their focus from ending homelessness to merely reducing long-term homelessness. Former housing minister Jan Vapaavuori expressed skepticism that Helsinki will meet its goal of eradicating homelessness by 2025 because the current administration has not prioritized the issue. Activists worry that cuts to NGO funding could undermine the community-based services central to Housing First (pulitzercenter.org).

Canada: Reaching Home Strategy and Mixed Results

Canada's federal homelessness policy is framed by Reaching Home, a community-based program launched in 2019 as part of the National Housing Strategy. According to the Parliamentary Budget Officer (2023), planned spending on homelessness programs at Infrastructure Canada averages C\$561 million per year from 2018–2019 to 2027–2028 (pbo-dpb.ca). This funding flows almost entirely through Reaching Home and supports tens of thousands of people annually. The funding provided placements into stable housing for 17,849 people per year, emergency housing for 5,399 people per year, and prevention services for 31,164 people per year between 2019–2020 and 2022–2023 (pbo-dpb.ca).

Rising Homelessness Despite Investment

Despite increased spending, homelessness has grown. The PIT count published by Infrastructure Canada indicates that the number of homeless people increased by 20% relative to 2018, the chronically homeless population rose 38%, and the number of individuals living unsheltered increased 88% (pbo-dpb.ca).

Canada measures homelessness through coordinated national PIT counts under the federal Reaching Home strategy. The most recent national estimates suggest that approximately 235,000 people experience homelessness at some point during a year, with about 30,000 to 35,000 people homeless on a given night (Employment and Social Development Canada, 2022).

Homelessness in Canada disproportionately affects Indigenous peoples, reflecting historical and structural inequalities related to colonization and housing access (Gaetz et al., 2016). Federal policy emphasizes community-based prevention, supportive housing, and data standardization.

The Parliamentary Budget Officer estimates that current interventions reduce homelessness by about 6,000 individuals (15%) compared to what would occur without them. Achieving the strategy's goal of reducing chronic homelessness by 50% would require an additional C\$3.5 billion per year, a seven-fold increase over current funding (pbo-dpb.ca).

Policy Goals and Critique

Canada's National Housing Strategy initially aimed to reduce chronic homelessness by 50% by fiscal year 2027–2028 and later pledged to eliminate chronic homelessness by 2030. Reaching Home is the central program to achieve this target (pbo-dpb.ca). However, Infrastructure Canada has not formally adopted reductions in chronic homelessness as performance indicators (pbo-dpb.ca). Critics argue that without clear accountability and sufficient funding, Canada's federal plan risks failing to meet its ambitious goals. Additionally, Canada lacks a national Housing First mandate; implementation is decentralized across communities, leading to variation in program fidelity and effectiveness.

United Kingdom: Rough Sleeping Strategy

The United Kingdom distinguishes between statutory homelessness, temporary accommodation, and rough sleeping; furthermore, it has long grappled with the rise in rough sleeping. In England, 182,540 households were assessed as homeless and owed a prevention or relief duty in 2023–2024 (UK Department for Levelling Up, Housing and Communities, 2024).

The Rough Sleeping Snapshot recorded approximately 4,667 individuals sleeping rough on a single night in England in autumn 2024, representing a year-over-year increase (DLUHC, 2025). Analysts attribute rising homelessness to housing shortages, welfare reforms, and cost-of-living pressures (Bramley & Fitzpatrick, 2018).

In September 2022, the UK government published “Ending rough sleeping for good,” a cross-government strategy signed by eight ministers. The strategy organizes interventions under four themes—Prevention, Intervention, Recovery, and a transparent and joined-up system—and defines success as making rough sleeping rare, brief, and non-recurrent (homeless.org.uk). The strategy commits £2 billion over three years to tackle homelessness (homeless.org.uk).

Major components include (homeless.org.uk):

- Rough Sleeping Initiative (£500 million): Funding local authorities to support people sleeping rough.
- Single Homelessness Accommodation Programme (£200 million): Delivery of up to 2,400 homes by March 2025, including supported housing and Housing First accommodation, aimed at adults with multiple disadvantages and young people.
- Single Homelessness Prevention Grant (£316 million): Funding for local authorities to prevent people from becoming homeless.
- Housing First pilots: Extensions of the three government-funded Housing First pilots in Liverpool, Greater Manchester, and the West Midlands until 2025. The government plans to develop a Housing First Fidelity Framework to ensure adherence to the model’s principles.
- Support for people leaving prison (£550 million): Expansion of accommodation and support for ex-offenders.
- Drug and Alcohol Treatment Grant (£186 million): Increased funding to expand treatment for people sleeping rough.
- Data-led framework and integrated systems: A new data-led framework will measure rough sleeping and promote integrated health, housing, and social care systems.
- Night Shelter Transformation Fund (£10 million) and Test and Learn Programme (£12 million) to improve night-shelter provision and trial innovative approaches.

The UK’s strategy is notable for its comprehensive, cross-departmental approach, and explicit recognition that homelessness must be prevented, not just managed. It invests in both emergency responses and long-term housing

supply, extends Housing First pilots, and emphasizes data integration. However, funding is modest compared with the scale of need and the UK's ambitious goal of eliminating rough sleeping. Many homelessness charities argue that investment in social housing remains insufficient to address systemic shortages, and critics question whether the government will meet its target after previous pledges were missed (homeless.org.uk).

Japan: Generous Welfare but Significant Cultural Barriers

Extensive Public Assistance

Japan's visible street homelessness is remarkably low relative to other industrialized nations. Official surveys in Tokyo counted 862 people sleeping outside in 2022, but advocacy groups estimate 1,500–2,000 people sleeping rough and note that thousands more are “internet-cafe refugees”—people renting booths in 24-hour cafés (homelessnessimpact.org). Japan's social safety net helps explain the low numbers. Public assistance cases are typically approved within a month and rarely rejected (melbournmicrofinance.com). The Public Assistance Act (*seikatsu hogo-hou*) includes eight forms of assistance; living assistance cash benefits cover about 75% of the relative poverty line, and people who are homeless receive housing assistance that lifts their benefits to roughly 126% of the poverty line. This generosity makes the gap between minimum wage and assistance smaller than in other OECD countries (melbournmicrofinance.com).

Japan's core national statistic comes from the Ministry of Health, Labour and Welfare (MHLW) National Survey on the Actual Conditions of Homelessness (approximate survey). Local governments conduct visual street enumeration (e.g., parks, riverbanks, roads, stations, and other public facilities) during January and report the number of people meeting the legal definition of “homeless” under Japan's homelessness legislation (MHLW, 2025).

In the most recently published national results, MHLW reported 2,591 homeless people nationwide (January 2025)—2,346 men, 163 women, and 82 individuals whose gender could not be determined—representing an 8.1% decrease compared with the previous year (MHLW, 2025). MHLW also reported that homelessness is highly concentrated in large cities, with Osaka Prefecture (763), Tokyo (565), and Kanagawa (366) among the highest counts, and that Tokyo's 23 wards and designated major cities account for roughly 80% of the national total (MHLW, 2025).

International compilations align with these national figures but also illustrate how definitional differences affect cross-national comparisons. The OECD's homelessness country note for Japan reports a national estimate of 3,065 people (2023)—a PIT count based on Japan's national survey—and notes that the Japanese count primarily corresponds to ETHOS Light “living on the streets, in public spaces,” rather than including emergency accommodation or broader

housing exclusion categories (OECD, 2024). Put plainly, Japan's official headline number is best interpreted as an estimate of rough sleeping/visible street homelessness at a single point in time, not a comprehensive estimate of all people lacking stable housing (MHLW, 2025; OECD, 2024).

The national data consistently show a heavily gendered profile, with men representing much of the counted population (MHLW, 2025). The OECD country note similarly reports that approximately 94% of the counted homeless population are men and about 6% are women (OECD, 2024). MHLW's reporting also provides insight into where people are found during the street count. In the 2025 results, the most common locations included urban parks (25.5%), roads (24.1%), river areas (21.6%), stations (5.8%), and other facilities (22.9%), with distributions broadly stable compared with the prior year (MHLW, 2025). This pattern underscores that Japan's official measurement is oriented toward visible public-space residence—precisely the form of homelessness most amenable to visual enumeration.

Employment plays a central role in Japan's homelessness dynamics. Studies indicate that many people experiencing homelessness in Japan have prior work histories and enter homelessness following labor market exclusion rather than long-term unemployment alone (Okamoto, 2007). The rise of non-regular employment has increased income volatility and weakened the traditional link between work and housing security.

During economic downturns, such as the global financial crisis and the COVID-19 pandemic, individuals dependent on daily wages or short-term contracts were particularly vulnerable to sudden income loss (Fujita, 2020). While emergency government measures mitigated some effects, these episodes revealed how segments of the Japanese economy produce homelessness risk despite low aggregate unemployment.

Invisible Homelessness and Help-avoidance

Although welfare provisions are generous, Japan's definition of homelessness is narrow (focused on rough sleeping), and a culture of not asking for help discourages some people from applying for assistance. Homelessness in Japan increasingly manifests as "invisible homelessness," with younger people rotating between friends' homes, internet cafés, fast-food restaurants, and occasional nights on the street (homelessnessimpact.org). Advocacy groups note that the number of people seeking emergency housing assistance jumped 34-fold during the COVID-19 pandemic, rising from under 4,000 to nearly 135,000 approved cases. When internet cafés closed during the state of emergency, the Tokyo government secured thousands of hotel rooms to house people temporarily. Tokyo has no night-only shelters; instead, the city operates about 150 longer-term dormitory-style shelters housing around 4,000 people, though these facilities have poor reputations due to crowding and restrictions. Authorities aim to move people directly into permanent housing rather than maintain shelters (homelessnessimpact.org).

Policy Implications

Japan's experience shows that robust welfare systems can minimize visible homelessness, but cultural attitudes and bureaucratic definitions may leave hidden homelessness unaddressed. Policies focusing solely on rough sleepers risk ignoring the thousands of people living in precarious situations. A more inclusive definition and proactive outreach may be needed, along with the destigmatization of seeking help.

Australia: Toward a National Strategy

National Housing and Homelessness Plan

Australia relies primarily on census-based estimates. The 2021 Australian Census identified approximately 122,494 people experiencing homelessness, a 5.2% increase from 2016 (Australian Bureau of Statistics, 2022).

Homelessness rates are significantly higher among Indigenous Australians, who experience homelessness at nearly ten times the rate of non-Indigenous Australians (Australian Bureau of Statistics, 2022). Policy responses emphasize early intervention, social housing investment, and specialist homelessness services.

Australia is developing a National Housing and Homelessness Plan as part of a broader housing reform agenda. The Department of Social Services stresses that safe and affordable housing is central to the security and dignity of Australians, and the plan aims to unite efforts to improve housing and reduce homelessness (dss.gov.au). The plan complements several major investments:

- A 10% increase to the maximum Commonwealth Rent Assistance (building on a 15% increase in September 2023).
- A A\$10 billion Housing Australia Future Fund to support 30,000 new social and affordable homes over five years.
- A National Housing Accord to build 1.2 million new, well-located homes over five years from July 2024, with an additional A\$350 million to support 10,000 affordable homes.
- Tax incentives and increased lending capacity to support build-to-rent developments and loans to community housing providers.
- A A\$2 billion Social Housing Accelerator payment to deliver around 4,000 new and refurbished homes.
- A commitment to A Better Deal for Renters, including limits on rent increases, minimum rental standards and requirements for genuine grounds for eviction.

National Inquiries and the Role of Housing First

Australia has yet to institutionalize a nationwide Housing First program. However, a 2021 federal parliamentary inquiry identified three key reforms: prevention and

early intervention, a Housing First approach, and reducing the shortfall in social and affordable housing. A Victorian parliamentary inquiry recommended strengthening early intervention and providing more long-term housing (unsw.edu.au). The Productivity Commission's In Need of Repair review found that the existing national agreement had not improved homelessness outcomes and urged governments to establish a separate funding pool for prevention and early intervention programs targeting people leaving institutional settings, Indigenous Australians, young people and others at risk (unsw.edu.au).

These inquiries underscore that prevention and early intervention, alongside expanding social housing supply, must complement Housing First-style programs. Australia's emerging national plan emphasizes supply-side measures and renter protections but has not yet committed to a dedicated Housing First program. Advocates argue that without a shift from crisis-driven responses to long-term solutions, homelessness will remain a "forever problem" (unsw.edu.au).

Germany: National Action Plan to End Homelessness by 2030

Rising Homelessness and Policy Response

Germany maintains one of Europe's largest homeless populations, largely due to broad definitions that include temporary accommodation. The Bundesarbeitsgemeinschaft Wohnungslosenhilfe (BAG W, 2025) estimated that over 1,029,000 people experienced homelessness in 2024, including approximately 56,000 unsheltered individuals (BAG W, 2025).

Germany's social welfare system provides extensive emergency accommodation, resulting in relatively low levels of street homelessness compared to total homelessness figures (Busch-Geertsema, 2010).

Germany has experienced rising homelessness amid a severe shortage of affordable housing. Estimates vary: the German government calculates around 375,000 homeless people, whereas the Federal Working Group on Assistance for the Homeless puts the number closer to 600,000, including about 50,000 people living on the streets. German authorities provide emergency shelters, but many people avoid them because they lack privacy and safety (dw.com).

In May 2024, the federal government released its first National Action Plan to eliminate homelessness by 2030 (Deutsche Welle, 2024). The 31-point plan includes measures such as providing funds to state governments to build social housing, combating discrimination in the housing market, helping people obtain health insurance, and making counseling services more accessible. Housing Minister Klara Geywitz emphasized that affordable housing is at the heart of the fight against homelessness. The plan calls for €18.15 billion for social housing construction between 2022 and 2027 (dw.com).

Critique and Housing First Initiatives

Homelessness charities welcomed the government's attention but criticized the plan as vague and lacking binding commitments. Critics noted that many measures

had already been announced and that the social housing fund falls far short of the target of 100,000 new units per year—only 22,545 new units were delivered in 2022 (dw.com). Advocates argued that local authorities should reserve quotas for homeless people in social housing, and the federal government should require that a proportion of funds be used for Housing First placements (dw.com). Without stronger mandates and dedicated funding, the plan may remain a statement of intent rather than a transformative strategy.

Some German cities have pioneered Housing First projects, notably Berlin's Housing First program, which provides unconditional permanent housing coupled with intensive support. The program reports high housing retention rates and improved well-being for participants, demonstrating the model's potential. However, scale remains small, and national adoption would require significant shifts in social-housing policy and funding.

Evidence on Solutions

A robust literature finds that Housing First—permanent housing with voluntary services and without preconditions of treatment compliance or sobriety—dramatically improves housing stability for people experiencing chronic homelessness and serious behavioral health needs. Tsemberis et al.'s (2024) pathbreaking studies demonstrated high housing retention and improved consumer choice. The Canadian multicity At Home/Chez Soi randomized trial found Housing First with Intensive Case Management or Assertive Community Treatment cost-effective, with strong gains in days stably housed and net service cost offsets (Latimer et al., 2013; Aubry et al., 2015). Early cost studies in New York City similarly showed large reductions in public service use among supportive housing tenants (Culhane et al., 2002).

Finland's national strategy operationalizes Housing First at scale: converting shelters into apartments, building new supply, and aligning social support services. Long-term homelessness has fallen sharply, and Finland is widely cited as the most successful national application of Housing First (Shinn & Khadduri, 2020; Y-Foundation materials). Portugal's "Casas Primeiro" (Lisbon) has shown fidelity to Housing First principles and high retention, adding to a growing European evidence base (Duarte et al., 2018). In the United States, federal policy endorses Housing First as a best practice through Continuum of Care (CoC) standards and program notices (24 CFR Part 578; HUD Exchange).

Prevention and Legal Duties

Downstream emergency responses cannot substitute for the upstream prevention of homelessness. England's Homelessness Reduction Act 2017 (HRA) reshaped statutory duties: local authorities must provide advisory services, assess all eligible applicants, and take reasonable steps to prevent or relieve homelessness regardless of priority need (HRA, 2017, ss 1–6). The act extends the period during

which a household is “threatened with homelessness” and emphasizes personalized housing plans, data reporting, and cooperation duties (UK LGA overview). Scotland went further, abolishing “priority need” and introducing nationally enforceable standards for temporary accommodation—the Unsuitable Accommodation Order—which now applies to all households and limits time in unsuitable placements (Homelessness etc. (Scotland) Act 2003; UAO 2014 as amended 2020).

Prevention duties are similarly embedded in North American frameworks. Canada’s Reaching Home strategy funds community-led systems with coordinated access, by-name lists, and explicit prevention and diversion interventions (Infrastructure Canada, 2025; Homelessness Learning Hub). In the United States, the HEARTH Act strengthened community planning through the CoC program, standardized definitions, and incentivized rapid rehousing and prevention (HEARTH; 24 CFR Part 578). Specialized statutes protect subpopulations: the McKinney–Vento Act guarantees immediate school enrollment and transportation for homeless children and youth, minimizing harmful educational disruption (U.S. Code; NCHE). Veterans’ programs—HUD-VASH and Supportive Services for Veteran Families (SSVF)—pair housing subsidies with intensive case management and time-limited financial assistance, contributing to steep declines in veteran homelessness in many communities (HUD, 2024; VA, 2025; 38 CFR Part 62).

Coordinated Access and System Design

Modern responses to homelessness require integrated governance. Coordinated access (or ‘coordinated entry’) creates a single, transparent front door for services; standardizes assessment; prioritizes the most vulnerable; and routes households to the right intervention—prevention, rapid rehousing, permanent supportive housing, or other supports. The United States codified system planning through CoCs (24 CFR Part 578). Canada requires coordinated access in Reaching Home communities, supported by national guidance (Infrastructure Canada, 2025; Homelessness Learning Hub). The USICH’s federal strategic plan (“All In”) sets a national reduction goal and emphasizes multisector alignment—health, human services, justice, and housing—recognizing that homelessness is a cross-systems outcome (USICH, 2022).

Public-space Governance, Criminalization, and Recent U.S. Jurisprudence

Public-space policy sits at the contentious intersection of community safety, individual rights, and scarcity of shelter and housing. In the Ninth Circuit, *Martin v. City of Boise* held that punishing people for sleeping outdoors when no shelter is available violates the Eighth Amendment’s prohibition on cruel and unusual punishment. In 2024, however, the U.S. Supreme Court in *City of Grants Pass*

v. Johnson held that generally applicable anti-camping ordinances regulate conduct rather than status, limiting the reach of Martin and expanding municipal authority to enforce camping bans (*City of Grants Pass v. Johnson*, 2024; *Martin v. Boise*). These developments heighten the importance of coupling fair time-place-manner rules with real, immediately accessible alternatives—low-barrier shelter, sanctioned sleeping sites, safe parking, and rapid pathways to housing—so that enforcement does not devolve into displacement without solution.

Comparative experience suggests that durable reductions in unsheltered homelessness arise not from punitive measures but from scaling exits to permanent housing, reducing entry through prevention, and aligning health and social care with outreach. Jurisdictions with legal rights to shelter (e.g., New York City’s Callahan consent decree) illustrate one approach, though rights without sufficient affordable housing supply can strain temporary systems (*Callahan v. Carey* materials). By contrast, Finland demonstrates how sustained investment in small, self-contained units aligned with support teams can close mass shelters almost entirely (Shinn & Khadduri, 2020; Y-Foundation, 2022).

Country Cases and Comparative Lessons

Finland: The long-term national strategy replaced overnight shelters with permanent flats, combining scattered-site and congregate models, and financed acquisitions and conversions. Between the late 2000s and late 2010s, Finland reduced emergency beds dramatically and expanded independent apartments for formerly homeless tenants; the Y-Foundation became one of the largest social landlords (Shinn & Khadduri, 2020; Y-Foundation, 2022; HUD User). Key levers included national targets, capital subsidies, municipal–NGO partnerships, and fidelity to Housing First principles.

United Kingdom & Scotland: England’s HRA 2017 created universal prevention and relief duties, backed by monitoring and practice guidance (HRA, 2017; UK LGA). Scotland’s abolition of priority need, strong temporary accommodation standards (UAO), and a policy commitment that anyone becoming homeless through no fault of their own is entitled to settled accommodation by local authorities, represents a rights-forward model (Homelessness etc. (Scotland) Act; gov. scot guidance).

Canada: The National Housing Strategy Act enshrines a right-to-housing approach and creates accountability institutions, while Reaching Home funds coordinated access, prevention, and Housing First across communities (National Housing Strategy Act; Infrastructure Canada, Reaching Home, 2025). Economic evaluations of Housing First from Canadian trials demonstrate cost-effectiveness and improved outcomes at scale (Aubry et al., 2015; Latimer et al., 2013).

United States: The HEARTH Act consolidated and modernized homelessness programs, prioritizing rapid rehousing and permanent supportive housing through the CoC program (24 CFR Part 578). The McKinney–Vento Act protects educational continuity for homeless children and youth, while HUD-VASH and SSVF have been central to reductions in veteran homelessness (U.S. Code; HUD,

2024; VA, 2025; 38 CFR Part 62). The USICH's All In plan calls for a 25% reduction by 2025 and emphasizes upstream prevention, cross-system coordination, and a Housing First orientation (USICH, 2022).

New Zealand: The Aotearoa New Zealand Homelessness Action Plan (2020–2023) defines actions across prevention, supply, support, and system enablers, complemented by Māori-led housing strategies (HUD NZ). Evaluations of case management and navigator initiatives align with the plan's goals of making homelessness rare, brief, and non-recurring (MSD NZ; HUD NZ progress reports).

Australia: Intergovernmental agreements (formerly the NHHA, now the National Agreement on Social Housing and Homelessness) structure shared Commonwealth–state responsibilities for social housing funding and specialist homelessness services (DSS, 2023–2024; AIHW technical materials). Recent updates aim to strengthen supply and service delivery while improving performance accountability.

Portugal: The ENIPSSA strategy (2017–2023) and municipal initiatives (e.g., Lisbon's Casas Primeiro) advanced a housing-led response and demonstrated high retention and improved quality of life among participants (Duarte et al., 2018; ENIPSSA, 2017; OECD, 2024).

Japan and Singapore: Japan's 2002 Act on Special Measures concerning Assistance in Self-Support of Homeless People and subsequent basic policies emphasized self-reliance supports and local action plans; national counts indicate a long-term decline in street homelessness (IPSS; JIL; Homelessness Impact). Singapore's coordinated PEERS Network, Safe Sound Sleeping Places (S3Ps), and regular street counts reflect a prevention-plus-stabilization approach tailored to a city–state context with extensive public housing (MSF, 2022; Tan et al., 2024).

Brazil: The 2001 City Statute (Lei 10.257) operationalized the Constitution's urban policy provisions, offering legal tools—such as social function of property and participatory planning—that support regularization and affordable housing strategies linked to homelessness prevention (City Statute; COHRE).

Program Design: What Works in Combination

Comparative evidence highlights a consistent pattern. First, permanent housing—subsidized, supportive, or rapidly rehousing—must be available at the scale of need. Without permanent housing, shelters overflow and encampments proliferate. Second, fidelity matters: Housing First succeeds when paired with appropriate support intensity (ACT or ICM), consumer choice, harm reduction, and landlord engagement strategies (Aubry et al., 2015; Tsemberis et al., 2024). Third, prevention must be a legal duty, not merely an aspiration; front-door triage, eviction prevention, and mediation can stop inflow. Fourth, coordinated access aligns scarce resources with the highest needs and improves transparency and fairness across providers (24 CFR 578; Reaching Home). Fifth, targeted subpopulation programs (veterans, youth and families, survivors of violence) address distinct pathways into homelessness and produce outsized returns when well-implemented (McKinney–Vento; HUD-VASH; SSVF).

Finally, rights frameworks and fair public-space management must connect. Where courts recognize justiciable housing rights, governments still need credible delivery systems and capital financing to avoid rights without remedies. Where municipalities enforce camping ordinances, they should do so with alternatives in place and pathways to housing to avoid carceral churn and legal exposure (City of Grants Pass v. Johnson, 2024; Martin v. Boise; Callahan line).

Implementation Challenges and Trade-offs

Scaling supply requires overcoming zoning constraints, construction capacity, and neighborhood opposition. Acquisition and conversion of existing buildings (hotels and office-to-residential), modular construction, and public land disposition can accelerate timelines. Sustainable financing blends capital subsidies (tax credits and social housing bonds), operating subsidies (vouchers), and service funding (health and human services), ideally under multi-year compacts. Data infrastructure needs sustained investment to maintain by-name lists, HMIS quality, and outcome dashboards while respecting privacy. Workforce pipelines for case managers, peer specialists, and housing navigators are critical; burnout and turnover weaken fidelity and outcomes.

Different legal environments also matter. Prevention duties without sufficient private rental access may stall; Housing First without adequate clinical capacity risks attrition; and rights to shelter without parallel housing production can create costly bottlenecks. These are design problems, not evidence failures: jurisdictions that align legal duties, capital pipelines, and case-rate service funding see durable gains (Finland; Canada trials; UK/Scotland statutory duties).

Comparative Analysis of Approaches

Philosophical Foundations and Goals

A key distinction among countries is whether they treat housing as a basic human right. Finland's Housing First program explicitly frames housing as a prerequisite for addressing other problems (pulitzercenter.org). Japan's generous public assistance implicitly acknowledges the right to a minimum standard of living, but cultural attitudes and narrow definitions limit its reach. Canada and the United Kingdom seek to prevent and reduce homelessness, but do not constitutionally guarantee housing. Germany's new plan aspires to eliminate homelessness but has yet to commit to rights-based legislation. The United States has no national recognition of housing as a right; homelessness policies are largely reactive and targeted at subpopulations (e.g., veterans).

Scale of Investment and Housing Supply

Homelessness cannot be solved without addressing housing supply. Finland invested heavily in social housing and converted shelters into permanent homes

(pulitzercenter.org). By contrast, the United States and Canada continue to face severe shortages of affordable housing. USAFacts notes that only one in five eligible U.S. households receives federal rental assistance (usafacts.org). Canada's Reaching Home funding averages C\$561 million per year (pbo-dpb.ca), but the Parliamentary Budget Office estimates that achieving the 50% reduction goal would require an additional C\$3.5 billion annually (pbo-dpb.ca). The UK strategy's £2 billion over three years funds both emergency responses and housing supply (homeless.org.uk) but is modest relative to the country's housing deficit. Germany's plan includes €18.15 billion for social housing construction over five years (dw.com), yet this sum was already committed and has delivered far fewer units than planned.dw.com. Australia's plan offers significant new funding, including A\$10 billion for a housing future fund and a commitment to build 1.2 million homes (dss.gov.au).

Prevention Versus Response

Countries vary in emphasis on prevention and early intervention versus reactive approaches. Finland's integrated system invests in prevention, outreach, and scattered-site housing. Canada's Reaching Home funds prevention services, but rising homelessness suggests that investments are insufficient. The UK strategy explicitly organizes interventions around Prevention, Intervention, and Recovery and allocates £316 million for a Single Homelessness Prevention Grant (homeless.org.uk). Australia's parliamentary inquiries stress early intervention and propose separate funding for prevention (unsw.edu.au). Germany's plan mentions counseling and health-insurance access but lacks detailed preventive mechanisms. The United States invests relatively little in prevention; most funding goes toward emergency shelters and short-term assistance.

Housing First Fidelity and Program Scale

Finland's model demonstrates high program fidelity—housing without preconditions, scattered-site units and integrated services. The United Kingdom is still piloting Housing First and developing a fidelity framework (homeless.org.uk). Canada and Australia lack national mandates, leading to varied fidelity. Germany's plan references Housing First but does not guarantee scaling. In the United States, Housing First is implemented through specific programs such as permanent supportive housing; trials like the Denver SIB show high effectiveness (housingmatters.urban.org). However, limited funding and local discretion lead to inconsistent fidelity and insufficient coverage.

Cultural and Definitional Factors

Japan illustrates how cultural norms and official definitions influence homelessness. Despite generous welfare, a help-avoidance culture, and a narrow definition of homelessness mean many precariously housed individuals are not

counted (melbournemicrofinance.com/homelessnessimpact.org). This invisibility reduces political urgency. The United States counts sheltered and unsheltered people, but misses those doubled up with friends or family. Accurate enumeration is critical for policy design; undercounting can lead to underinvestment.

Japan's relatively low levels of visible homelessness are closely linked to its economic structure, housing supply, and social policy framework. Stable aggregate employment, modest housing price inflation, and public assistance programs have limited large-scale street homelessness.

At the same time, labor market dualism, wage stagnation, and barriers to rental housing have produced significant forms of hidden homelessness that are less visible in official statistics. Japan's experience demonstrates that economic stability alone does not eliminate homelessness; rather, the quality of employment, access to housing, and inclusiveness of welfare systems shape how homelessness manifests. Understanding homelessness in Japan, therefore, requires attention not only to headline economic indicators but also to the distributional and institutional features of the economy.

Strength of Nongovernmental Actors

NGOs play vital roles everywhere. Finland's Y-Foundation and VVA ry provide housing and services (pulitzercenter.org). Canadian communities implement Reaching Home funding through local service providers. UK charities like Homeless Link (2022) help shape policy and deliver services. Japan's advocacy groups highlight hidden homelessness, and many workers at day centers were once homeless themselves (pulitzercenter.org). In the United States, NGOs and faith-based organizations operate shelters and supportive housing. Sustained funding and collaboration with the government are critical for these organizations to succeed.

A Policy Blueprint for Ending Homelessness

Basic Framework

Based on the comparative analysis of the various nations, the following framework is suggested:

- Codify prevention duties. Require early identification and reasonable steps to prevent or relieve homelessness for all eligible households, with enforceable timelines and personalized plans (HRA, 2017).
- Scale Housing First with fidelity. Fund ACT/ICM teams, landlord incentives, and tenancy supports tied to quality metrics; prioritize chronic and high-acuity cohorts (Tsemberis et al., 2024).
- Expand affordable housing supply. Acquire and convert shelters/hotels to apartments; produce deeply affordable units with predictable operating subsidies; leverage public land and expedited approvals (Finland; City Statute).

- Institutionalize coordinated access. Maintain by-name lists, triage tools, and transparent prioritization; integrate domestic violence, youth, and veteran systems while protecting safety and privacy (Reaching Home; 24 CFR 578).
- Protect children and youth. Enforce immediate enrollment, transportation, and stability supports under McKinney–Vento; develop family rapid rehousing with child-centered services (U.S. Code; NCHE).
- Support veterans. Pair HUD–VASH vouchers with case management and SSVF-funded prevention/rapid rehousing; formalize collaborative case management (HUD; VA; 38 CFR Part 62).
- Adopt rights-based accountability. Establish independent housing advocates/councils to monitor systemic barriers and recommend remedies (National Housing Strategy Act).
- Ensure fair public-space rules. Use time-place-manner limits only alongside low-barrier alternatives and lawful, trauma-informed outreach and encampment resolution protocols (City of Grants Pass v. Johnson, 2024; Martin).
- Invest in health integration. Co-locate primary care, behavioral health, harm reduction, and benefits navigation within housing programs; pursue Medicaid/health payer partnerships where applicable.
- Measure what matters. Track inflow, active homelessness, exits to permanent housing, and returns; publish dashboards; fund continuous improvement capacity at provider and system levels (OECD, 2024; USICH, 2022).

Policy Recommendations

Scale up Housing First with fidelity: Evidence from Finland and U.S. trials shows that Housing First combined with supportive services dramatically improves housing stability (housingmatters.urban.org). Governments should ensure program fidelity—permanent housing without preconditions, voluntary services, and harm-reduction approaches—and scale up funding to meet demand. A U.S. national Housing First strategy could replicate Finland’s model while adapting to local contexts.

Expand affordable housing supply: A shortage of social and affordable housing undermines all homelessness strategies. Finland’s progress relied on converting shelters and building new units (pulitzercenter.org). Germany, Canada, and the United States must invest far more in constructing and preserving affordable housing. Australia’s housing future fund and housing accord provide a model for large-scale investment (dss.gov.au).

Invest in prevention and early intervention: Homelessness is easier and cheaper to prevent than to resolve. This requires targeted support for people exiting foster care, hospitals, prisons, domestic violence shelters, and other institutions. The UK’s prevention grants (homeless.org.uk) and Australia’s recommended prevention funding (unsw.edu.au) offer useful models. The United States should dedicate a portion of homeless-assistance budgets to prevention programs.

Integrate health, social services, and housing: Homelessness often co-occurs with mental illness, substance use and chronic disease. Integrated service delivery—combining housing with health care, employment and case management—improves outcomes. Finland’s model and U.S. permanent supportive housing provide effective examples. Germany’s plan to facilitate health-insurance access (dw.com) could be broadened to include full health–housing integration.

Address structural determinants: Policies must tackle the root causes of homelessness: low wages, high rents, racial inequities and inadequate health care. This includes raising minimum wages, expanding rental assistance, enforcing fair-housing laws, and providing universal health coverage. USAFacts notes that many homeless individuals are employed but cannot afford housing (usafacts.org); bridging this gap requires systemic reforms.

Adopt rights-based approaches: Recognizing housing as a human right can galvanize political will and accountability. Finland frames housing as a right (pulitzercenter.org), and Germany’s plan emphasizes a nationwide guideline (dw.com). Codifying such rights in the United States and other countries could shift policies from managing homelessness to ending it.

Improve data and definitions: Accurate counts and inclusive definitions are essential. The U.S. PIT count misses people in precarious living arrangements; Japan’s definition excludes many hidden homeless (homelessnessimpact.org). Governments should invest in year-round data collection and expand definitions to include those doubled up, in informal settlements or transient arrangements.

Conclusion

Ending homelessness is achievable with the right mix of law, resources, and implementation. The comparative record is clear: jurisdictions that treat housing as the platform—through rights, duties, and scaled investment—and that organize systems around prevention, Housing First, and targeted supports, make sustained progress. Global commitments like the Lisbon Declaration and SDG 11 set the horizon; national strategies and local delivery systems translate ambition into outcomes. The decisive task for the next decade is not discovering what works but doing what works—at the scale of need and with fidelity to people’s rights and dignity.

Homelessness persists across high-income countries despite wealth and resources. International comparisons reveal that Housing First, when implemented with fidelity and supported by adequate housing supply and services, is an effective strategy to reduce chronic homelessness. Finland’s experience demonstrates the power of treating housing as a right and investing in permanent homes. The United States has evidence of Housing First’s effectiveness, but lacks national coordination and sufficient affordable housing. Canada’s Reaching Home program illustrates the limits of incremental funding without structural reforms. The UK’s cross-government strategy and Australia’s emerging plan signal growing emphasis on prevention and supply but require sustained investment and

fidelity to Housing First principles. Germany's national action plan shows awareness but needs clearer commitments. Japan illustrates how generous welfare can minimize rough sleeping, yet cultural barriers and narrow definitions conceal a larger problem.

Ending homelessness will require integrated, rights-based strategies that prioritize housing, expand social housing supply, invest in prevention, and address structural drivers of poverty and exclusion. By learning from the successes and failures of different approaches, policymakers in the United States and elsewhere can craft more effective and humane responses to homelessness.

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Mapping the Intellectual Landscape of Bank Mergers and Risk: A Bibliometric Perspective

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Abstract

This review article examines merger and acquisition (M&A) activity in the banking sector, driven by the expanding use of bibliometric evaluations in finance and global consolidation trends. The systematic review portion of the study was conducted in accordance with the PRISMA guidelines, ensuring transparent identification, screening, eligibility, and inclusion of the studies. Using co-citation, co-authorship, and keyword co-occurrence network analysis, we present a novel and integrative literature review that not only maps influential journals, authors, papers, and countries but also critically synthesises existing knowledge, highlights theoretical and methodological gaps, and proposes future research directions for the field. Analysing 7,734 papers from the Scopus database (2000–2023) highlights the dominance of wealthy nations, which creates opportunities for the study of risk-return dynamics and regulatory changes in emerging economies. The project is the first of its kind in the field of research on bank mergers, and it will contribute to a reservoir of literature by identifying prospective research areas using Scopus database articles.

Keywords

Banks, merger and acquisition, credit risk, systemic risk, bibliographic analysis

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Introduction

Mergers and acquisitions (M&A) serve as a strategic approach for companies seeking to reorganise or unify their business operations.

The statistics associated with these phenomena are alarming, as indicated by studies conducted by Ferreira et al. (2014), Moschieri and Campa (2014) and Homburg and Bucerius (2005).

M&A are widely recognised as a feasible approach to reorganising corporate business operations. Following the economic decline triggered by the COVID-19 pandemic, M&A activities have reached unprecedented levels, with analysts projecting a consistent upward trajectory in the foreseeable future. This surge is primarily attributed to the dynamic regulatory landscape. In contrast, scholarly investigations of M&A focus on their financial effectiveness, economic dynamics, and implications across national boundaries. A considerable body of evidence suggests that a substantial number of M&A fail to yield successful outcomes (Weber et al., 2014). Various studies have estimated failure rates for M&A activities to be within the range of 60%–80% (Homburg & Bucerius, 2005; Papadakis & Thanos, 2010; Schoenberg, 2006; Thorbjørnsen & Dahlén, 2011).

Reddy et al. (2025) revealed significant clustering among Indian banks, particularly within public sector institutions and large private sector banks. Their study demonstrates that these institutions exhibit strong positive correlations in credit exposure patterns, which may pose systemic risks to the financial system. Their findings suggest that such highly correlated credit exposures heighten contagion risk, whereby distress in one institution can spill over across the cluster, thereby amplifying financial instability. Soedarmono et al. (2017) analysed how abnormal loan growth can affect bank systemic risk in emerging markets from a sample of publicly traded commercial banks in the Asia Pacific region and revealed that higher abnormal loan growth increases bank systemic risk 1 year ahead. However, the results were conditional on the quality of credit information sharing at the country level.

Credit risk-taking is increased in the post-merger period if the banks are state-owned, have a deficient internal governance mechanism, and are part of a banking system with quality issues in supervision. The post-M&A performance is unaffected by ownership or governance but is improved by a lackadaisical oversight framework (Asandului et al., 2016). While the literature on M&A is expected to grow significantly over time, we are concerned with exploring (a) the areas on which contemporary studies are focused and (b) the scant areas on which future research should focus. In their study titled 'Bank mergers: The cyclical behaviour of regulation, risk and returns', Hassan and Giouvriss (2021) revealed that large acquiring banks decrease systemic risk contribution in cross-border M&A with non-bank financial institutions. According to Ngo (2019), there is a positive and direct relationship between banks' default risk and their Marginal Expected Shortfall (MES) and idiosyncratic risk during the pre-merger period. Later on, in relation to the impact of bank mergers, no significant associations were observed between changes in default risk and changes in MES or

between changes in default risk and changes in beta. This underscores that consolidation is not a ‘risk cure’—the core vulnerabilities of banks persist regardless of M&A activity. In a study conducted by Nguyen et al. (2019), empirical evidence was presented to support the occurrence of a risk shift characterised by a positive (negative) trend. This shift was observed when the equity beta of the acquiring firm was lower than (higher than) the beta of the target firm. During the initial 5 and 10 days after the announcement, the cumulative abnormal returns exhibit a negative and statistically significant pattern. However, these negative abnormal returns diminish rapidly when beta adjustments are incorporated in the estimation of abnormal returns.

Concerning cross-country issues, Weiß et al. (2014) examine the systemic risk effects of bank mergers to assess ‘concentration fragility’ and find clear evidence of a substantial increase in the merging banks’, the combined banks’, and their competitors’ contributions to systemic risk following mergers. In contrast, Van Dellen et al. (2018) investigated the systemic risk implications of bank mergers from 1998 to 2015, including the post-global financial crisis period, and found that on average, M&A do not alter acquiring banks’ contribution to systemic risk, even in cross-border or cross-industry deals. However, factors such as payment method, target status, relative size, rule of law, and political stability significantly influence changes in systemic risk. Brealey et al. (2019) found that short-term increases in acquirer risk after mergers occur only in the first few mergers conducted by the same acquirer and only in systematic risk. Using a novel method for quantifying the long-term effect, it was found that the change in risk associated with mergers is nonlinearly dependent on the acquirer’s total number of mergers.

Studies on M&A are no exception to the literature’s predominant concentration on the banking sector. However, a few research examined Acquirers of listed versus unlisted firms: factors in different legal and institutional settings (Feito-Ruiz & Menéndez-Requejo, 2013), despite different effects found for the impact of payment methods and acquisition modes on risk and revenue metrics by Dube and Glasscock (2006), and the alterations in bank credit risk subsequent to a merger (Knapp & Gart, 2014). The credit risk performance of private banks is significantly higher than that of government banks, which is not surprising given the operational freedom enjoyed by private banks and their objective of achieving superior performance. The government banks suffer due to interference from different agencies of government (Sharifi et al., 2019).

The current pandemic and the recent global financial crisis might have sparked significant consolidation waves in the fiscal sector that are distinct from earlier ones with regard to their geographic extent and the specific products or services involved. Hence, it is imperative to conduct a bibliometric analysis that investigates the dynamics and crucial determinants of M&A within the financial industry.

Bibliometric analysis is a widely used instrument for evaluating scientific output that necessitates examining multiple viewpoints (Bojović et al., 2014). However, the task of analysing a substantial volume of systematic data and recognising prevailing patterns poses an enormous challenge. Nevertheless, this

analysis prompts further investigation into the voids and potential avenues for novel theoretical frameworks and empirical discoveries (Botelho et al., 2011). In accordance with the findings of Liu et al. (2014), this methodology effectively demonstrates the dynamics of publication patterns, along with the emergence of new disciplines and their evolution over time. As a result, these domains can be configured utilising efficient methodologies and specialised software. The bibliometric approach, when combined with content analysis, provides a comprehensive lens through which the influential and intellectual structure of a research field can be examined. This dual perspective not only maps patterns of scholarly output and citation networks but also uncovers thematic trends, key contributors, and the evolution of ideas over time. By integrating quantitative bibliometric indicators with qualitative content insights, researchers gain a broad view of how knowledge is produced, disseminated, and interconnected, thereby offering a deeper understanding of the dynamics shaping the field (Chiaramonte et al., 2023). To be more specific, this methodology assists us in finding answers to the study questions listed below:

- Which elements of the published literature on banking M&A are the most influential??
- Which journals, authors, keywords, and countries are most commonly mentioned in published research on banking M&A??
- Which ideas do you have for the research that should be done in this field in the future?

The data presented here were extracted from Scopus-indexed publications published between 2000 and 2023 to ensure both historical depth and contemporary relevance. From the early 2000s onward, bibliometric databases provide comprehensive coverage, allowing for consistent data collection. This timeframe encompasses critical events such as the 2008 Global Financial Crisis, subsequent regulatory reforms, and the rise of digital banking, all of which significantly shaped scholarly discourse on bank mergers and risk. By extending the analysis to 2023, the study captures the most recent intellectual contributions, offering a holistic view of the field's evolution.

We chose Scopus index as it covers more journals than WoS, especially in social sciences, business, and economics. Scopus database is the world's largest abstracting and indexing database, and updates daily and is comparatively more up-to-date with trending topics such as the Web of Science, which updates weekly (Burnham, 2006; de Moya-Anegón et al., 2007). Moreover, sufficient literature published in reputed journals uses the Scopus database for bibliometric and content analysis (Goodell et al., 2021; Patel et al., 2022). Our article is organised as follows. The technique and data selection procedure are explained in the second section. The third section discusses our findings, whereas the fourth section illustrates network visualisations of the M&A literature. The fifth section summarises limitations and makes recommendations for future research, and the sixth section concludes our article.

Data and Methodology

Methodology Employed

Price (1965) first proposed bibliometrics, which seeks to comprehend scholarly networks across articles. Following the aforementioned methodological structure, we analyse the following dimensions: (a) Bibliographic analysis of citation, (b) bibliographic analysis of co-authorship and (c) keyword/cartographic analysis.

We use VOS viewer software to analyse the data and derive visualisation networks (Baker, Kumar, & Pandey, 2020; Baker, Kumar, & Pattnaik, 2020; Khan et al., 2020; Van Eck & Waltman, 2010) as it is highly renowned and extensively utilised by researchers engaged in bibliometric analyses (Baker, Kumar, & Pandey, 2020; Baker, Kumar, & Pattnaik, 2020; Khan et al., 2020; Paltrinieri et al., 2023).

Data Selection

The process of sample selection encompasses three distinct stages. The initial phase entails the selection of a database from which data will be extracted for the purpose of conducting bibliometric analysis. In this review, we have chosen to utilise the Scopus database, which is widely recognised as a dependable source for conducting bibliometric analysis. Notably, Scopus surpasses WoS in terms of its extensive size, making it particularly advantageous for mapping out niche research domains that may have been insufficiently represented in the past. (Zupic & Cater, 2015). During the second stage, a literature search is conducted using relevant keywords. A comprehensive search was conducted in the entire database, encompassing articles for the period 2000–2023 as it encompasses pivotal events such as the 2008 Global Financial Crisis, the European debt crisis, Brexit, the COVID-19 pandemic, and recent banking stresses. These milestones profoundly influenced both merger activity and risk scholarship, making this timeframe essential for mapping the intellectual landscape. We searched for ‘bank merger’, ‘credit risk’, and ‘systemic risk’ in the Title, Abstract, and Keywords columns. This process resulted in a total of 14,886 articles.

The PRISMA approach review procedure is depicted in Figure 1.

The acronym PRISMA refers to the ‘Preferred Reporting Items for Systematic Reviews and Meta-Analyses’ set of guidelines. Data are extracted and analysed from the literature in a methodical and transparent manner with the use of this methodology (Moher et al., 2010; Paul & Dhiman, 2021).

Identification: Identification encompasses an exhaustive examination of a desktop search. The first step was a desktop search of Scopus, the largest and most comprehensive database of scholarly publications and studies. The time frame for the search was set to go from 2000 to 27 May 2023. The next step was to identify the bank merger-related keywords that would aid in achieving the study’s objectives. When searching for papers by title, abstract, or keywords, a list of pertinent search phrases (Table 1) was used, and the initial results returned 14,886 papers.

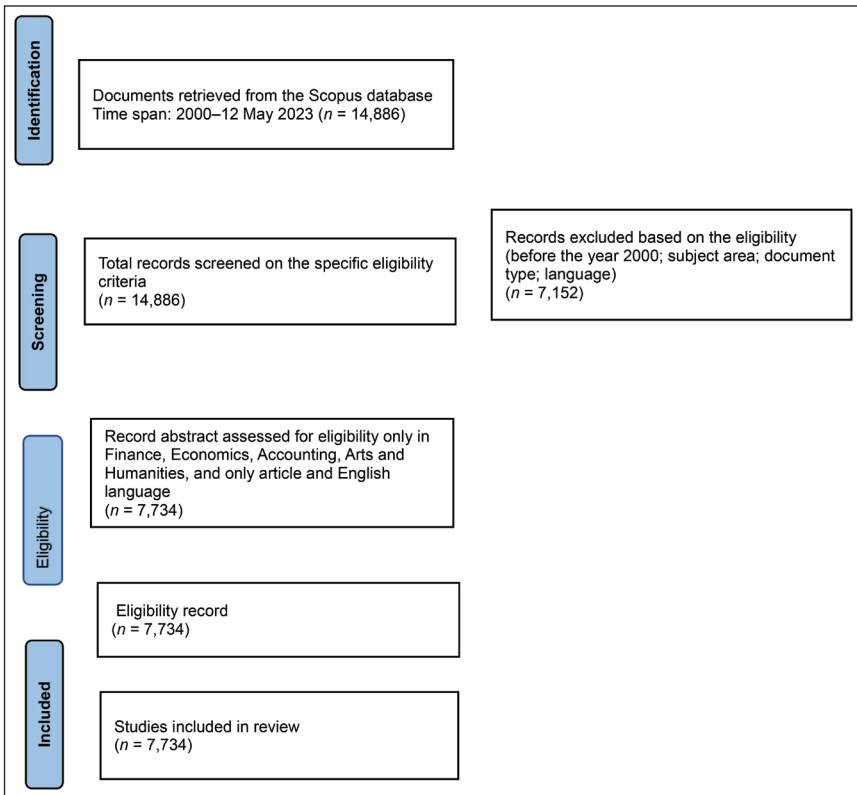


Figure 1. Prisma Flow Diagram in the Identification and Screening of Publications on Bank Mergers, Credit Risk, and Systemic Risk from 2000 to 12 May 2023.

Screening: Due to the small number of articles published prior to the year 2000, we exclude them from the screening process. Furthermore, we have chosen to include only review articles/papers in English, and the publication must be in the fields of ‘Economics’, ‘Econometrics’, ‘Finance’, ‘Business Management’, ‘Accounting’, ‘Social sciences’, and ‘arts’. In this phase, 7,152 documents were eliminated based on the application of predetermined criteria, and a total of 7,734 articles and studies were found relevant.

Eligibility: The current phase of the PRISMA methodology holds significant importance. The term ‘eligible papers’ refers to the number of research articles that meet certain predetermined criteria established by the researcher. A total of 7,734 papers have been deemed eligible for inclusion in the study, as per the aforementioned criteria.

Included: The ultimate database of the study consisted of 7,734 studies. The aforementioned studies were taken into account for the purpose of conducting a citation analysis, with the aim of identifying the most influential authors, sources, organisations, and countries within this particular field of study.

Findings

General Data and Performance Evaluation

The primary structure of the collated data is presented in Table 2. Our publications span the years 2000 to 27 May 2023 and include 7,734 articles by 7,204 authors.

Table 1. The Scopus Search Syntax Used Is as Follows.

Source	Syntax
Database of Scopus: (https:// www.scopus.com)	TITLE-ABS-KEY ('bank mergers' OR 'credit risk' OR 'systemic risk') AND (LIMIT-TO PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUB YEAR, 2021) OR LIMIT-TO (PUB YEAR, 2020) OR LIMIT- TO (PUB YEAR, 2019) OR LIMIT-TO (PUB YEAR,2018) OR LIMIT-TO (PUB YEAR, 2017) OR LIMIT- TO (PUB YEAR, 2016) OR LIMIT-TO (PUB YEAR, 2015) OR LIMIT-TO (PUB YEAR, 2014) OR LIMIT- TO (PUB YEAR,2013) OR LIMIT-TO (PUB YEAR, 2012) OR LIMIT-TO (PUB YEAR, 2011) OR LIMIT-TO (PUB YEAR, 2010) OR LIMIT-TO (PUB YEAR, 2009) OR LIMIT-TO (PUB YEAR, 2008) OR LIMIT-TO (PUB YEAR,2007) OR LIMIT-TO (PUB YEAR, 2006) LIMIT-TO (PUB YEAR, 2005) OR LIMIT- TO (PUB YEAR, 2004) OR LIMIT-TO (PUB YEAR, 2003) OR LIMIT-TO (PUB YEAR, 2002) OR LIMIT-TO (PUB YEAR,2000)) AND LIMIT-TO (TO SUBJAREA, 'ECON') OR LIMIT-TO (SUBJAREA, 'BUSI') OR LIMIT-TO (SUBJAREA, 'SOCI') OR LIMIT-TO (SUBJAREA, 'ARTS')) AND LIMIT-TO (DOC TYPE, 'ar')) AND LIMIT-TO (LANGUAGE, 'ENGLISH'))

Table 2. Descriptive Statistics.

Description	Result
Total research documents	7,734
Total authors	7,204
Total countries	246
Time period (year)	2,023
The first article (year) in the database	2,000
Total keywords	16,003
Author keywords	13,538
Cited sources	1,099
Cited documents	6,344
Cited authors	5,937
Cited countries	217

Highly Prominent Outlook of Bank Mergers

Table 2 provides a synopsis of the 7,734 articles that were found. The 7,734 papers were from 1,099 publications, had 7,204 authors, 16,003 keywords, and represented 246 countries. The subsequent sections of this article present a comprehensive overview of the existing literature on bank mergers, focusing on the bibliographic details of the sources.

Highly Prominent Authors

As a criterion for identifying highly influential authors, the authors of at least five publications with a minimum of five citations were selected. 13 out of 7,204 authors satisfy the criteria. Table 3 presents a compilation of authors who have garnered the highest number of citations for their published research on bank mergers. The individuals Avramov D., Chordia T., and Jostovag have made the highest number of contributions, with a total of five documents and 343 citations. Following closely is Ozili P. K., who has received six documents and 142 citations. On the other hand, it is noteworthy to mention that Kanno M. has emerged as the most prolific author in the domain of bank mergers, with a cumulative publication count of 12 documents. However, their work was less cited than that of others.

Table 3. Highly Prominent Authors.

Author	Documents	Citation	Affiliation	Country	Economy
Avramov D., Chordia T., Jostovag	5	343	Goizueta Business School	USA	Developed
Ozili P. K.	6	142	University of Essex	United Kingdom	Developed
Sufian F.	8	136	Universiti Putra Malaysia	Malaysia	Developing
Kanno M.	12	116	Nihon University	Japan	Developed
Bandyopadhyay A.	5	74	National Institute of Bank Management	India	Developing
Jarrow R. A.	5	57	Cornell University	United States	Developed
Foglia M., Angelini E.	6	36	University of G. d' Annunzio Chieti and Pescara	Italy	Developed
Jr.	10	33	Yale University	United States	Developed
Rosch D., Scheule H.	5	31	Universitat Regensburg	Germany	Developed
Jacobs M.	7	26	Hofstra University	United States	Developed

Table 4. Highly Prominent Countries.

Country	Type of Economy	Documents	Citation
USA	Developed	1,916	59,306
United Kingdom	Developed	1,003	24,588
Germany	Developed	651	13,693
China	Developing	757	9,646
Italy	Developed	509	9,573
France	Developed	442	7,787
Canada	Developed	349	6,928
Switzerland	Developed	230	6,879
Netherlands	Developed	231	6,209
Spain	Developed	259	5,874

Highly Prominent Countries

Table 4 presents the citations categorised by nations, with a criterion of at least 5 documents and 10 citations, revealing that only 86 of the 246 countries met the condition. Table 4 displays the world's 10 most prominent and cited nations. In the categories of documents (1,916) and citations (59,306), the United States, a country with a 'developed' status, came in first. In addition, the United Kingdom ranked second with 1,003 documents containing 24,588 citations, followed by Germany, China, and others.

Highly Prominent Journals

From sources containing at least five documents and at least five citation sources, a comprehensive citation map was generated. There were only 13 sources out of 189 that fulfilled the criteria. Table 5 lists the top 10 journals with the most citations. The Elsevier publication *Journal of Banking and Finance* has the highest impact factor, with 20,466 citations over 399 documents, and is ranked with SCImago Journal Rank (SJR). The second most cited publication was *Elsevier's Journal of Financial Economics*, a multidisciplinary journal with 7,240 citations and 70 documents cited. *Elsevier's Journal of Financial Stability* contains 5,825 citations and 195 documents in total.

Highly Prominent Keywords

To facilitate analysis, the authors constructed a keyword co-occurrence map utilising the terms they provided. Table 6 presents a compilation of keywords that are found within a proximity of five instances of each other, accompanied by their corresponding thresholds. Out of the total of 13,538 keywords, only 972 keywords were able to meet the requirement. It was inevitable that the term 'credit risk' would have the most occurrences, given that the purpose of this study is to

Table 5. Highly Prominent Journals.

Sources	Publisher	Discipline	Ranking and Indexing	Documents	Citations
<i>Journal of Banking and Finance</i>	Elsevier	Economics, Econometrics and Finance	<i>SCImago Journal Rank (SJR)</i>	399	20,466
<i>Journal of Financial Economics</i>	Elsevier	Business, Management, Accounting, Economics and Finance	<i>SCImago Journal Rank (SJR)</i>	70	7,240
<i>Journal of Financial Stability</i>	Elsevier	Economics, Econometrics and Finance	<i>SCImago Journal Rank (SJR)</i>	195	5,825
<i>Review of Financial Studies</i>	Oxford University Press	Business, Management, Accounting, Economics and Finance	<i>SCImago Journal Rank (SJR)</i>	37	4,620
<i>Journal of Finance</i>	American Finance Association	Business, Management, Accounting, Economics and Finance	<i>SCImago Journal Rank (SJR)</i>	24	3,728
<i>Management Science</i>	Institute for Operations Research and Management Sciences	Business, Management, Accounting and Decision Sciences	<i>SCImago Journal Rank (SJR)</i>	53	3,143
<i>Journal of Financial Intermediation</i>	Academic Press Inc.	Economics, Econometrics and Finance	<i>SCImago Journal Rank (SJR)</i>	49	2,577
<i>Finance Research Letters</i>	Elsevier	Economics, Econometrics and Finance	<i>SCImago Journal Rank (SJR)</i>	125	2,408
<i>Journal of Money Credit and banking</i>	Wiley-Blackwell	Business, Management, Accounting, Economics and Finance	<i>SCImago Journal Rank (SJR)</i>	47	2,063
<i>Journal of Economic Dynamic and Control</i>	Elsevier	Economics, Econometrics, Finance and Mathematics	<i>SCImago Journal Rank (SJR)</i>	57	2,039

identify credit and systemic risk in the domain of bank mergers. Credit risk was mentioned 1,634 times in the articles, with a total linkage strength of 3,591. This illustrates the heightened academic curiosity about credit risk in bank mergers, which promotes fresh investigation in the aforementioned area. Systemic risk emerged as the second most frequently encountered term, with a total link strength

Table 6. Highly Prominent Author's Keywords.

Keyword	Occurrences	Total Link Strength
Credit risk	1,634	3,591
Systemic risk	1,319	2,973
Financial crisis	244	637
Banks	230	625
Risk management	226	610
Financial stability	211	563
Contagion	168	464
Banking	158	426
Credit default swaps	134	308
Liquidity risk	116	332

of 2,973 and 1,319 occurrences. Followed by financial crises exhibiting a total link strength of 637 and 244 occurrences. Additional terms in the top 10 keywords list were 'banks', 'risk management', 'financial stability', 'contagion', 'banking', 'g21' and 'liquidity risk'.

Network Visualisation of M&A Literature

Document Co-citation Analysis

The initial co-citation analysis examined the cartel of documents related to the consolidation of banks. The utilisation of document co-citation analysis enables researchers to ascertain the underlying conceptual framework of multiple documents within a particular academic domain. Consequently, we will be able to figure out which documents characterise the conceptual framework of bank mergers. A total of 264,028 citations were generated, with 243 of them meeting the criteria of at least 20 quotations per work (Figure 2). Each of the nodes represented the number of citations per text as well as the scope of a single reference. This relationship was a co-citation. Similar-coloured nodes belonged to the same cluster. As is evident in Figure 2, the VOS viewer's algorithm identified six main clusters (red, green, yellow, blue, purple, and sky blue).

The red cluster represented significant publications about bank mergers. The majority of the discussion in these documents centred on constructing the concept of bank mergers. For instance, the work of Allen and Gale (2004), titled 'Competition and financial stability', which is part of the red cluster has investigated numerous kinds of competition and financial stability models, including 'general equilibrium models' of financial intermediaries and markets, 'agency models', 'spatial competition models', 'Schumpeter competition', and 'contagion'. Similarly, more studies such as 'Econometric measures of connectedness and systemic risk in the finance and insurance sectors' (Billio et al., 2012) and 'Systemic risk: a survey' (De Bandt & Hartmann, 2000) constituted the main part of the red cluster.

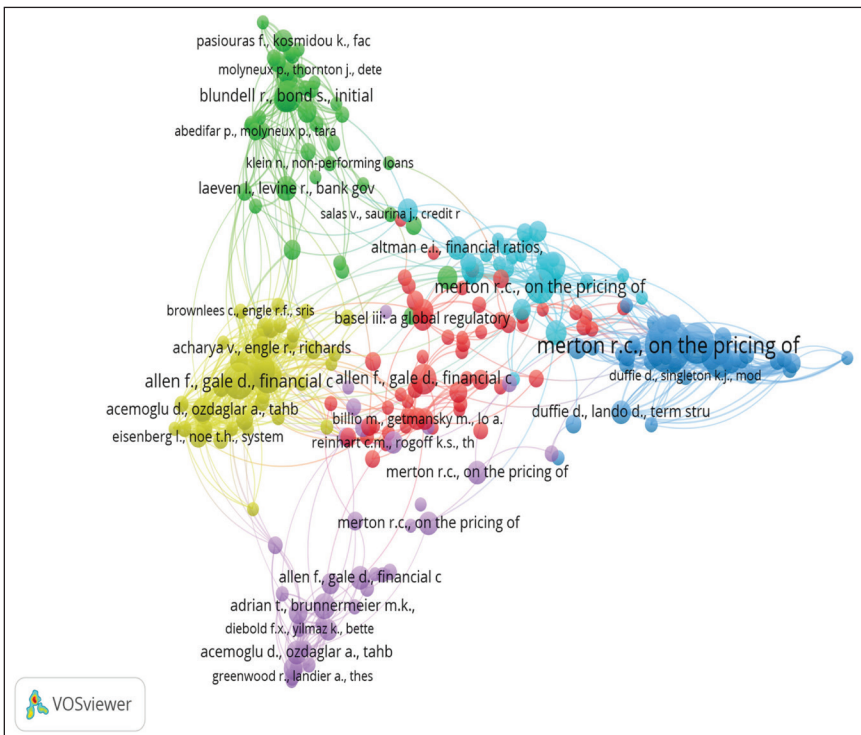


Figure 2. Document Co-citation Network of Bank Mergers.

The green cluster had 42 items. The critical studies that comprised the green cluster were ‘Bank governance, regulation, and risk-taking’ (Laeven & Levine, 2009), ‘Deregulation, market power and risk behaviour in Spanish banks’ (Salas & Saurina, 2003) and ‘Initial conditions and moment restrictions in dynamic panel data models’ (Blundell & Bond, 1998).

Third, the blue cluster contains 40 items ‘On the pricing of corporate debt: The risk structure of interest rates’ (Merton, 1974) and ‘Term structures of credit spreads with incomplete accounting information’ (Duffie & Lando, 2001).

The yellow cluster is the fourth cluster, which includes studies ‘Systemic risk in financial systems’ (Eisenberg & Noe, 2001), ‘Capital shortfall: A new approach to ranking and regulating systemic risks’ (Acharya et al., 2012) and many more. Fifth cluster is the purple cluster includes studies like ‘Systemic risk and stability in financial networks’ (Acemoglu et al., 2015), ‘Measuring systemic risk’ (Acharya et al., 2017), etc. and last cluster is sky-blue cluster which contains studies ‘The pricing of options and corporate liabilities’ (Black & Scholes, 1973), ‘Financial ratios, discriminant analysis and the prediction of corporate bankruptcy’ (Altman, 1968) and others.

Co-citation Analysis of Authors

The author's bank merger co-citation network was examined in the second co-citation analysis. In author co-citation analysis, the key decision is which authors should be tracked. As stated previously, co-citation analysis is used to map the conceptual framework of a subject or field. Author co-citation analysis is used to map/determine the conceptual framework of authors (major contributors who have published a number of papers related to the field) in the field of bank mergers. We compiled a sample of 133,967 authors after analysing the reference data extracted from our 7,715 papers. Following this, only authors with at least 20 citations were taken, resulting in a total of 5,349 authors. For each of the 5,349 authors, the cumulative co-citation link strength with other authors was computed. Following the selection of the writers who had the highest overall link strength, an analysis was carried out on these one thousand contributions. Figure 3 depicts the resulting network, which includes the formation of specific clusters.

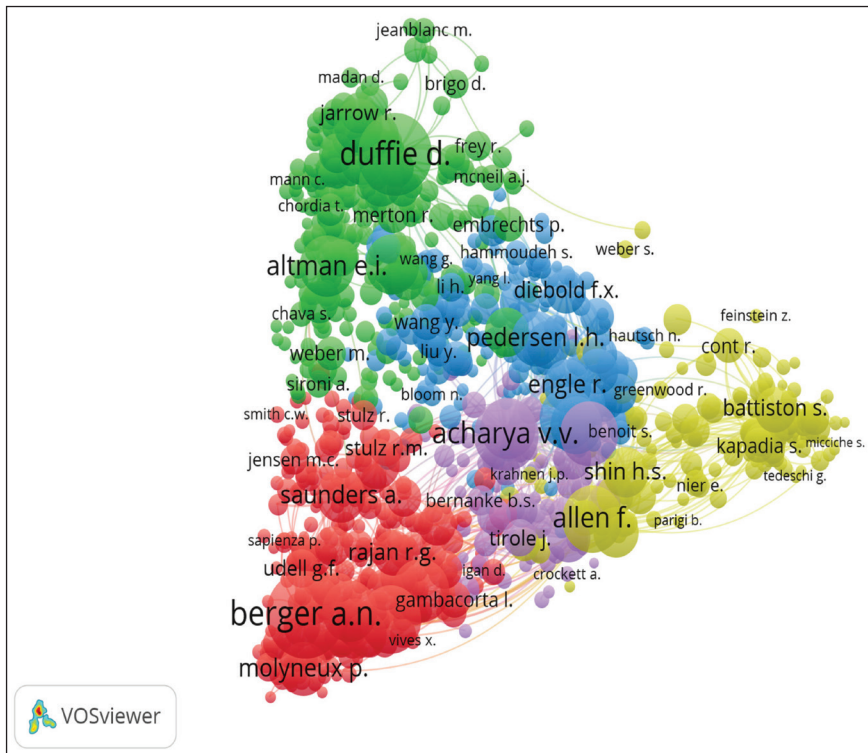


Figure 3. Co-citation Network of Authors of Bank Mergers.

A total of five clusters were identified through co-citation analysis. The red cluster is the first main cluster, revealing the writers who have contributed to the understanding and expansion of numerous bank merger dimensions (e.g., Berger A. N., Saunders A., Shleifer A., Rajan R. G., Laeven L.; Laeven & Valencia, 2013). For instance, Berger (2018). The benefits and costs of the TARP bailouts: A critical assessment. *Quarterly Journal of Finance*, 8(02), 1850011. The nodes of the same colour indicate how the work of other individuals within the same cluster is connected.

The green cluster identifies numerous authors who have contributed either directly or indirectly to the study to discover how bank mergers benefited the organisation and what their likely outcomes were. This includes the writings of authors like Duffie (2005), who found credit risk modelling with affine processes. On the other hand, Altman (2018) stated a 50-year retrospective on credit risk models, the Altman Z-score family of models, and their applications to financial markets and managerial strategies. Merton and Thakor (2019) discussed Customers and investors: a framework for understanding the evolution of financial institutions.

The blue cluster depicts the work of a highly prominent author named Brunnermeier and Cheridito (2019). Measuring and allocating systemic risk. Risk. with 111 citations.

Various authors, such as Pedersen L. H., Engle R., Zhou H., and the cluster, including a great deal of others. They are the ones who have strived to elucidate the subject more thoroughly. Two additional minor clusters (yellow and purple), in addition to the three clusters mentioned above, were found. These clusters comprised the research conducted by the authors, including Adrian T., J. Tirole, F. Allen and Shin H. S. represent the work of authors, such as Acharya et al. (2007) and Battiston et al. (2016), and a few others, whose studies were not specifically centred on bank mergers, were also included. Nevertheless, due to the similarity in their respective areas of study, specifically in the area of finance, the writers made reference to the scholarly contributions of other authors who also operated within this field, thereby illustrating the interconnectedness between them.

Cluster Analysis

Keyword Cluster Analysis

The researchers employed VOS viewer software to perform a keyword cluster analysis with the aim of identifying the predominant research streams. Figure 4 depicts the co-occurrence map. Bank mergers are typically associated with concepts such as credit risk, systemic risk, banks, financial stability, regulation, etc. Figure 4 displays a visual depiction of the keywords that have appeared, adhering to the criterion of a minimum of 10 occurrences. Through the utilisation of term repetition, the identification of eight prominent clusters (namely, red, green, yellow, blue, purple, orange, sky blue, and brown). The first red cluster ('banks' and 'bank mergers') included terms like 'banks', 'liquidity risk',

cluster. The sky-blue cluster, which comprises credit default swaps, structural models, counterparty credit risk, etc., is the sixth cluster. The seventh cluster, known as the orange cluster, is made up of the G11, G20, G31, capital regulation, and European banks. The final major cluster discovered using keyword occurrence mapping, the brown cluster (bank mergers and financial institutions), also contains India, regulatory capital, asset quality, etc.

Limitations of the Study

It is possible that the bibliometric citation analysis is one of the study's flaws. This study focused mostly on highly cited papers; hence, articles with citation counts below the threshold restrictions can be ignored. It is suggested that in the future, researchers should cover more recent publications by trying out the framework with new methods, software, and databases like the Web of Science, Google Scholar, JSTOR, and others. Second, there may be other factors at play besides bank mergers, bank credit, and systemic risk that make it difficult to establish a causal relationship among these outcomes. A strong causal link between bank mergers and their influence on bank credit and systemic risk can be hard to demonstrate, despite the fact that statistical approaches can help to control some of these issues.

Future Research Agenda

Based on the discovered gaps in the literature, this section suggests new lines of inquiry. First, according to our research, while affluent nations have already made significant progress in this area, greater attention should be directed toward emerging economies, where risk-return dynamics and regulatory changes remain underexplored. Second, the relationship between M&A activity and systemic risk warrants deeper investigation, particularly in light of post-crisis financial stability concerns. Third, methodological innovation is needed, with advanced techniques such as machine learning and network analysis offering new insights. Fourth, the frequency of cross-border bank mergers has increased in recent years, and the effect of these mergers on bank credit and systemic risk is an essential area for future study. Finally, the rise of fintech and digital banking presents opportunities to examine how technological disruption influences consolidation and systemic risk. This research could aid policymakers in gaining a better understanding of the potential advantages and disadvantages of cross-border bank mergers and in formulating policies to mitigate the potential risks.

Conclusion

This article aimed to investigate the bibliometric characteristics of the literature pertaining to M&A within the banking sector. The Scopus database was

chosen as a reliable source for conducting bibliometric analysis. A total of 14,886 research publications on bank mergers, specifically focusing on the period from 2000 to 2023, were identified. We found 7,734 papers from 1,099 publications, had 7,204 authors with 16,003 keywords, and represented 246 countries provide a comprehensive overview of the current state of the field and offering insights into potential avenues for future research. The utilisation of keyword co-occurrence analysis facilitated the exploration of novel themes in the field of research. This approach enabled us to establish connections between crucial research domains and clusters of disciplines. The identification of keywords through bibliometric analysis of the most recently cited works is believed to exert influence on the advancement of research in the field of bank mergers. The most influential identified terms were credit risk, systemic risk, financial crises, and banks. The United States, the United Kingdom, Germany, and China are the leading countries in terms of overall publications and specified citations. The key journals are the *Journal of Banking and Finance*, *Journal of Financial Economics*, and *Journal of Financial Stability*. Avramov D., Chordia T., Jostovag, Ozili P. K., and Sufian F. are the authors with the most citations. The authors' co-citation network demonstrated that the individuals who garnered the highest number of citations and possessed the greatest total link strength were also the most influential figures within their respective research domain. Specifically, the authors Berger A. N., Saunders A., Duffie D., and Acharya V. V. Authors such as Duffie (2005) discovered credit risk modelling with affine processes, Altman (2018) conducted a comprehensive analysis on credit risk models, the Altman Z-score family of models and their utilisation in financial markets and managerial contexts over a span of 50 years. The existing body of literature predominantly focuses on the economic outcomes, factors influencing them, and the interplay across national borders. These areas of study are primarily rooted in the disciplines of business finance, economics, management, and business. Bank mergers and credit risk are related, according to numerous studies by Knapp and Gart (2014) and Bonaccorsi di Patti and Gobbi (2003). The work of Weiß et al. (2014) has been crucial in the development of numerous systemic risk dimensions. Acharya et al. (2012) examine a novel methodology for assessing and overseeing systemic risks in the event of a deficit in capital. Billio et al. (2012) discussed econometric measures to assess connectedness and systemic risk within the finance and insurance sector. These discoveries have extensive implications for future academics and researchers, as M&A in the banking sector could promote interdisciplinary research. Academics from various fields, such as finance, economics, law, and management, can collaborate to investigate the complex issues related to M&A deals in the banking sector (Jallad et al., 2025). Connecting the numerous subfields identified in this study could aid them in evaluating the quality of 'bank merger research' and provide them with anticipated new avenues to pursue.

The stated objective has the potential to generate novel insights within the domain of bank mergers, a field that is undergoing continuous evolution and

is marked by the contributions of numerous researchers. This study is likely to be useful to both doctoral students (who seek a general comprehension of ‘bank mergers’ to guide their work) and seasoned academics (who seek out active research opportunities and publish authoritative literature opinions).

Declaration of Conflicting Interests

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Technology-enabled Gig Economy: Supporting and Challenging Entrepreneurial Ventures

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Abstract

The digital expansion and use of IOT have changed the dynamic of work culture. The traditional jobs are being replaced by flexible and temporary work arrangements. The purpose of this study is to explore the business model of platform-based gig economy and to study whether the gig economy promotes or restricts entrepreneurial activities. The present study is descriptive and explanatory in nature, based primarily on secondary data. This article is a review paper exploring the twin facets of the platform-based gig economy based on the research carried out in this regard. The business model of the platform-based gig economy has been studied, revealing that platforms, as intermediaries, consider gig workers to be self-employed, thereby claiming to foster entrepreneurial activities. However, some gig platforms regulate and control gig workers in a manner akin to that of employees. The type of job done on gig platforms decides if a worker is an employee or an entrepreneur. Platforms, gig workers, and end users can work together to strengthen their relationships, ensuring no adverse effects on either gig workers or platforms. Government authorities can also consider formalising these arrangements. This article is the authors' original work and adds to the existing literature.

Keywords

Technology-enabled gig economy, supporting and challenging entrepreneurial ventures entrepreneurship, gig platforms

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Introduction

Work arrangements are becoming increasingly unstable, with independent contracting and temporary jobs becoming more common. A more flexible and dynamic type of work has replaced steady, lifetime employment during the last 50 years. Mobility, remote work, flexible schedules, and frequent job changes are commonplace in today's industry (Griep et al., 2024). The rise of digital technologies has led to profound changes in employment dynamics, raising legal ambiguities concerning labour regulations in cyberspace (Cho & Cho, 2020). However, the impact is not limited to remote workers, as technological advancements are restructuring businesses, minimising reliance on conventional employees (Anwar, 2018). Digital transformation reached its pinnacle during the COVID era, revolutionising industries and redefining the way we work, connect, and innovate (Tomašević, 2023). Lockdown situation, which was never thought of even in dreams, was a reality in the year 2020 and can be there in future as well. Although this pandemic has brought several health hazards and economic collapse, leading to a disruptive economy but has also opened new roads for us. Every sector, be it industry, education, or technology, has learnt new ways to tackle the nasty consequences of COVID. During the lockdown, people showcased resilience by adapting and discovering new ways to engage in activities, preventing isolation from the outside world (Yıldırım & Solmaz, 2022). Some started making vlogs and posting those on their respective YouTube channels, some were busy making Instagram reels, and some were utilising time for their neglected hobbies. Somehow, people have prepared themselves to fight against the effects. But on the other hand, it is also posing a financial burden on businesses and many households, leading to a dreadful economic recession (Gopinath, 2020; Pandey, 2020). The employed were being paid less than their actual salaries (Ghosh, 2020), and the self-employed were forced to use their past savings, thereby leading to a financial crunch for almost everyone. All these changes have given people time to think of the earning avenues being provided by the gig economy.

The advent of the pandemic and technological advancements accelerated the growth of the gig economy in developing countries like India. Independent work, flexibility (Manyika et al., 2016) and autonomy (Manyika et al., 2016; Shapiro, 2018) are the pillars of the gig economy, alluring many to be part of it. The temporary, casual, flexible and endless job opportunities being created by gig platforms led to the economic transformation where the participants enjoy their independence and freedom of working along with adequate earnings. The gig workers may undertake more than one job at a time, thereby augmenting their earnings (Sujoy, 2019). The independence and flexibility have made the gig a much-favoured platform for the youth, women and the retired persons. The job opportunities provided by gig are growing at an exponential pace. Heeks (2017) in his study concluded that more than 70 million of world's population are got their job through the gig economy platforms. The global gig economy is rapidly growing, with a rising number of workers embracing it as their primary source of employment (Bates et al., 2021). In the future, gig workers and the gig economy will be a common phrase used in the business world. The growing gig economy is increasingly

acknowledged as a driver for entrepreneurship, providing accessible chances for diverse populations to participate in revenue production and innovation (Raimi, 2025). The gig economy plays a fundamental role in promoting entrepreneurship by offering a flexible and accessible platform for individuals to explore and develop business ideas. It allows aspiring entrepreneurs to test their concepts with minimal financial risk, as they can earn income through gig work while refining their business models.

Need for the Study

Despite its quick expansion and seeming possibilities for entrepreneurship, the gig economy poses difficult problems that are still poorly understood, thus posing an earnest desire for more in-depth academic research. Research has shown that entrepreneurs who use digital platforms are frequently very dependent on platform rules, fee structures, and legislative changes; nevertheless, the impact of this dependence on their strategic autonomy and long-term venture sustainability has not been sufficiently explored (Cutolo & Kenney, 2021; Parker et al., 2016; Rahman, Karunakaran, & Cameron, 2024). Limited evidence is available in academic literature showing how algorithmic management controls work distribution, visibility, and ratings and how these affect entrepreneurial decision-making, revenue stability, or development prospects (Benlian et al., 2022; Kordzadeh & Ghasemaghaei, 2022; Rosenblat & Stark, 2016; Jarrahi et al., 2021; Liu, 2024). Although precarity of income is still a defining feature of gig work, little is known about how it affects firm expansion and entrepreneurial investments (Hsieh & Wu, 2019; Kost et al., 2020; Idowu & Elbanna, 2022; Mady et al., 2025). Policy ambiguity over job classification, taxation, and social protection further constrains entrepreneurial changes; nevertheless, studies rarely examine the impact of such regulatory uncertainty on venture stability in developing economies (Corporaal & Lehdonvirta, 2025; Gillespie, 2017; Maccarrone & Tassinari, 2023; Martin, 2023; Prassl & Risak, 2015; De Stefano, 2016; Srnicek, 2017). These issues collectively emphasise that while the gig economy offers prospects for entrepreneurial expansion, the mechanisms by which platform architectures, governance frameworks, and technological elements facilitate or hinder entrepreneurship are still disjoint. This necessitates extensive research into the structural, technological, and regulatory factors influencing gig-based entrepreneurship, especially in emerging nations.

Different Facets of Gig Economy

The work culture has undergone a major upheaval because of industrialisation and digitisation across the globe. It has tremendously transformed the landscape of employment and hiring labour of different skill sets. The independent contractor was approached to hire casual workers earlier, and now the same work is outsourced through digital platforms. The presence of digital platforms in connecting the demand and supply sides is the distinguishing feature of the gig economy. With easy access to the internet and smartphones, the employment levels have also been upgraded. The gig economy operates via three forms: capital platform work, crowdwork and app-work (Duggan et al., 2020).

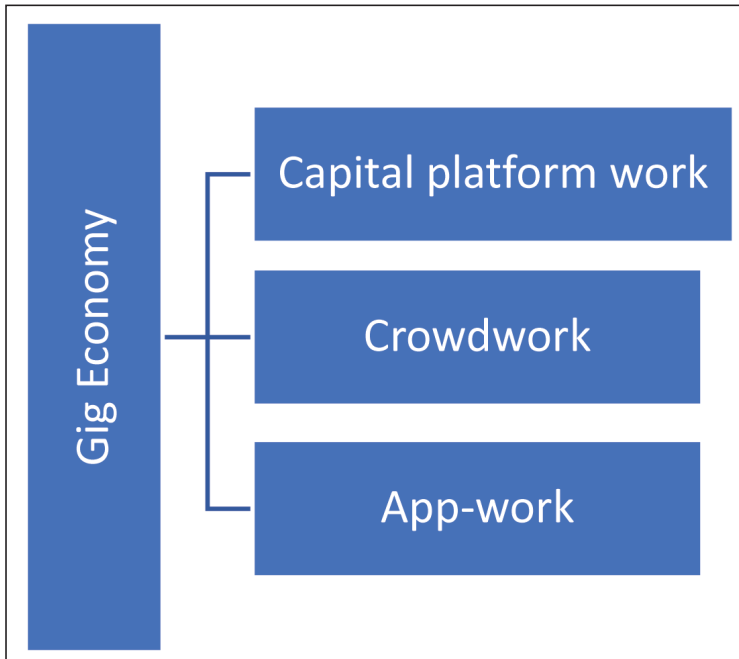


Figure 1. Forms of Gig Economy.

Source: Duggan et al. (2020).

Platform-based Work

The sellers use digital platforms to sell their products in this type of gig economy (Figure 1). The digital platforms are the intermediaries connecting the buyer and the seller in exchange for some financial gain (Duggan et al., 2020).

Crowdwork

The technological innovations with augmented internet access led to the emergence of crowdwork—the digital labour platforms, thereby connecting the worker with the employer. These platforms provide access to workers of different skill sets performing clerical tasks to software development to web-based companies, facilitating flexibility and remote work (Berg, 2015).

App-work

The digital platforms mediate the service provider and the service recipient in exchange for commission (De Stefano, 2016; Duggan et al., 2020). The digital intermediaries create software or applications through which the service providers

are connected to the service recipients. This form of gig work is very popular these days, and ride-hailing, food delivery, and accommodation services are being mediated through app-based digital platforms.

The common thread among these three different platforms is the digital intermediary, either connecting buyer with seller, worker with employer or service provider with service recipient. As these digital platforms are merely intermediaries, the gig workers are classified as independent workers or freelancers rather than employees. They are often categorised as self-employed, thus enhancing the entrepreneurial pursuits. The contradicting view is that platforms being the intermediaries regulate and control the gig workers, thereby making them mere employees, but with no specific labour regulation (Goods et al., 2019). The present study will be exploring the facts whether the gig economy operating via digital platforms promotes entrepreneurial activities or it is merely a myth that gig workers are not employees, but rather they are self-employed people.

Theoretical Background

Gig work is made possible by platforms' digital networks, which are supported by matching technology and frequently employ algorithmic management (Rosenblat, 2018; Vallas & Schor, 2020) to exert varying degrees of control over performance and task distribution. Undoubtedly, gig work is a new form of non-standardised work, characterised by temporary contracts facilitated by intermediaries (Manyika et al., 2016).

Platforms frequently play an active role in forming economic landscapes and the social relations that exist within them, despite their self-presentation as passive middlemen between labour, end users, and other parties (Rosenblat, 2018). Thus, an attempt is made to review the existing literature to explore the business model used in the gig economy and how it is promoting entrepreneurial activities.

Business Model for Gig Economy

The extant literature suggests that there is no single business model that regulates gig work. The basic model is that the digital platforms act as an intermediary connecting the demand and supply sides (Donovan et al., 2016). But the actual business model depends upon the digital platform, the types of services they are providing as an intermediary, and their associated brands. Some platforms have control over the pricing decisions and kind of assignment to be offered, while others leave it to the choice of the service provider (Einav et al., 2016). Many gig companies operate on licensor-licensee relationships, thereby claiming exemption from providing employee benefits to gig workers (Kurin, 2016). Platform companies operating via apps connect the demand and the supply side, labelling gig workers as freelancers and independent contractors. Three party model is used in such companies where the intermediary is the central link between the customers and the service providers (Healy et al., 2017). This model offers immediate and

flexible income opportunities for those who may not be considered for employment, including students, part-time workers, and individuals in transitional phases of their careers (Chappa et al., 2017).

The digital platforms facilitate a marketplace where skills and services can be exchanged efficiently, breaking down geographical barriers and opening up global opportunities. However, this transformation comes with challenges like ensuring fair compensation, job security, and access to benefits typically provided by traditional employment (Ahsan, 2020). The triangular relationship exists between the worker, the intermediary, and the end user. Intermediary, the digital platform has a contract with the worker regulating his pay, working conditions and also has control over the quality of services being rendered by the worker using these digital platforms. Second, these digital platforms establish contracts with end users that outline the terms of app usage, thereby limiting the liability of the digital platforms (Stewart & Stanford, 2017). Aldrich and Ruef (2006) identified that digital gigs can be categorised into four platforms dealing with crowdwork, transportation, delivery/home task, and online freelancing. The digital platforms in gig economy are somehow performing the staffing function by providing the appropriate workforce on a temporary basis by mediating the product and labour markets through the apps created by these digital intermediaries (Peck et al., 2005). The gig economy has largely operated through independent contractors and licensing agreements. Exploring a franchise model could provide gig companies with a strategic pathway to achieve scalability, standardisation, and stronger market presence. Currently, many gig economy platforms like Uber, TaskRabbit, etc., operate on a licensing or independent contractor basis, where individuals work under the platform's brand and guidelines but maintain a high degree of autonomy over their work schedules and methods (Carnahan, 2016). In India, we also have Uber, driver in, Zomato, Swiggy, Blinkit, Urban Company and others operating on similar lines.

Gig Economy and Entrepreneurial Activities

Gig platforms empower individuals to monetise their skills, assets, and time by effectively connecting them with customers seeking these services. The presence of digital platforms as intermediaries created a term called independent workers, self-employed, freelancers, micro-entrepreneurs, gig workers and the like (Kuhn & Maleki, 2017). Jost (2011) established that if an employer hires a person having specialised, unique skills that the employer does not possess, such a hired one is called an independent contractor, whereas if the workers' activities are controlled, then they are termed as an employee. The employer-employee relationship does not exist in the platform-based gig economy. Considering the case of Uber, the gig workers are classified as independent contractors, thereby paving the way for entrepreneurship. The Uber drivers are termed as entrepreneurs as the Uber company projects itself as an intermediary facilitating drivers to work more freely than commercial vehicle owners, thereby promoting entrepreneurial activities and uplifting the society (Edelman, 2017).

Unemployment and underemployment have become important factors affecting gig economy participation. Many people resort to gig work as a type of necessity-driven entrepreneurship since they have limited access to official, steady employment (Agrawal & Bellos, 2017). In the context of unstable job markets, gig platforms are a feasible choice for generating revenue because of their flexible nature and low entry hurdles, which enable people to monetise their time and abilities (Burtch et al., 2016). The study conducted by Mouazen and Hernández (2023), emphasised how women turned to gig work and entrepreneurship as adaptive survival strategies as a result of the COVID-19 pandemic and economic instability. It shows that women's entrepreneurial endeavours are greatly aided by both the gig economy and the entrepreneurial ecosystem, with ecosystem components having a greater impact. As a result, the gig economy offers a different route to entrepreneurship as well as a coping strategy for financial difficulties. There are two viewpoints that suggest the gig economy platforms could encourage local entrepreneurship. First, these platforms free up 'slack resources' like time by offering flexible schedules and a steady income, enabling future business owners to pursue their ideas (Richner et al., 2014). Second, people can try out new prospects on the assurance of income from gig platforms, which promotes innovation and entrepreneurial exploration (Agrawal et al., 2015; Burtch et al., 2016; Greve, 2007).

Numerous operational and customer service requirements imposed by gig companies, such as using customer rankings to determine disciplinary actions and mandating the provision of on-demand services, have been interpreted by courts as evidence that the entrepreneur is, in fact, an employee rather than an independent contractor (Kurin, 2016). Limited research has concluded that digital gigs support entrepreneurial activities; however, a contradictory view exists, with some scholars considering gig workers as employees and advocating their recognition in official labour statistics (Manyika et al., 2016). The apps controlling the work allocation, price of the services rendered, and even controlling the performance of gig workers cannot entitle them as entrepreneurs; they are merely employees who are controlled by their virtual employer. Consequently, the demand for amending the labour laws to ensure the well-being and safety of the gig workers is rising (Wood et al., 2019). Gig workers usually operate under the terms set by the platforms, and these platforms manage many aspects of the transaction. This arrangement offers flexibility and immediate income opportunities but lacks the autonomy and long-term growth potential associated with traditional entrepreneurship. Some of the research indicates that gig workers are less likely to identify as entrepreneurs, reflecting the fundamental differences in their work and their roles within the economic landscape (Carnahan, 2016).

Whereas Rosenblat and Stark (2016) claimed that app-based platforms offer freedom to work and flexibility in accepting or rejecting work offers, thus entailing entrepreneurship (Table 1). This view is supported by Uber as they offer flexibility, freedom and autonomy to their drivers and assert that the drivers are the owners (Ahsan, 2020). In developing countries, the gig economy helps in empowering female entrepreneurs because of the flexibility of work (Mouazen & Hernández, 2023). By lowering the barriers to entry and offering a supportive environment, the gig economy encourages more people to pursue their entrepreneurial ambitions (Anwar & Graham, 2021).

Table I. Research Gap.

Research Gap	Description	References
Platform's role ambiguity (intermediary vs. employer vs. regulator)	Some uncertainty persists over whether platforms are neutral middlemen or active market organisers that shape the rules of the market and the way people work.	Prassl & Risak (2015); De Stefano (2016); Srnicek (2017); Gillespie (2017); Martin-Caballero (2023); Maccarrone & Tassinari (2023); Corporaal & Lehdonvirta (2025)
Platform dependence and power asymmetries	Many entrepreneurs who start businesses on or through platforms (such as app developers, sellers, and micro-entrepreneurs) are reliant on platform rules, pricing structures, and policy changes. This dependence limits strategic choices and long-term viability.	Parker et al. (2016); Khan (2017); Cutolo & Kenney (2021); Rahman, Karunakaran, & Cameron (2024)
Algorithmic management effects on entrepreneurial agency	Algorithms dictate matching, visibility, and ranking; entrepreneurs' access to clientele and revenue may fluctuate unexpectedly, jeopardising strategic planning and investment choices.	Rosenblat & Stark (2016); Jarrahi et al. (2021); Kordzadeh & Ghasemaghaei (2022); Benlian et al. (2022); Liu (2024)
Ambiguous employment status affecting legal frameworks	Conflicting classifications (employee vs. contractor) cause legal confusion, limiting access to benefits, financing, and company formalisation.	Pinsol (2015); Kurin (2016); Lobel (2016); Pichault & McKeown (2019); Halliday (2021); Corporaal & Lehdonvirta (2025)
Limited career progression & skill development pathways	Platforms frequently provide transactional labour with little structured training, and entrepreneurs find it difficult to turn platform success into long-lasting businesses or higher-value endeavours.	Hsieh & Wu (2019); Kost et al. (2020); Idowu & Elbanna (2022); Mady et al. (2025).
Platform governance, contestation & transparency	Platform governance decisions (rules, fees, deactivation) are unclear, and enterprises are not well represented or have access to dispute resolution procedures and dispute/redress mechanisms	Rosenblat & Stark (2016); Khan (2017); Gamito (2016); Gorwa (2019); Frenken et al. (2020); Newlands (2021); Maccarrone & Tassinari (2023)

Methodology

Based mostly on secondary sources, the study is descriptive in character. The methodology does not adhere to the established methods of a systematic review. Rather, it builds an integrative knowledge of how the gig economy affects entrepreneurial activity and outcomes by drawing on a wide range of research work. Depending on the topic's scope, both descriptive and explanatory content are reviewed (Matthews & Ross, 2014). The research papers, reports and articles with the keywords like digital platforms, platform economy, gig economy, on-demand market, entrepreneurship, and entrepreneurial activities were searched from two of the popular search engines, namely Google Scholar and EBSCO. Eighty-seven research papers were reviewed with an aim to conduct a comprehensive study to explore the business model of gig economy and to explore the relationship between entrepreneurship and gig economy. The initial search identified 134 papers; 47 papers were dropped from the study after preliminary abstract screening, as they did not fit into the scope of the current paper. These papers were from the timeframe ranging from 2011 to 2025.

Research Questions

Globally, a new economic revolution is being ushered in by the gig economy's explosive growth. According to the NITI Aayog report from 2021, by 2029–2030, the gig economy is predicted to employ 2.35 crore (23.5 million) people. This demonstrates how the gig economy would grow at an exponential rate. Therefore, the gig economy must have something unique to draw the attention of so many people. In addition to creating innumerable job possibilities, it can boost a nation's GDP as well. This served as the impetus for carrying out research in this area. The following research questions need to be addressed:

- RQ 1: To examine the core elements of the gig economy's business model and evaluate their impact on its quick growth and changing labour standards.
- RQ 2: To explore whether the gig economy creates meaningful opportunities for individuals to engage in entrepreneurial activities, or whether its structure places constraints on their entrepreneurial potential.

Observations and Discussion

Utilising technology-driven efficiencies is another crucial component bolstering the gig economy's business model. Digital transformation is the foundation of the gig economy, where independent contractors are becoming more and more important participants. The capacity of digital platforms to link gig workers with a worldwide marketplace is a distinguishing characteristic of this business model. People can now make money from their abilities, time, or even underutilised assets, like a car, a house, or a specific service, rather than being constrained by geographical location or traditional organisational structures (Sundararajan, 2016; Tan et al., 2021).

Digitalisation and job growth are fuelled by industries including tourism, social media, entertainment, retail, and demand for professional services. It is also important to note that the gig economy was born out of an entrepreneurial vision propelled by digitalised company models and platforms, in which freelancers and freelancing activities played a crucial part (Silva & Moreira, 2022). A wide range of services, including freelancing, transportation, home chores, cleaning, food delivery, and many others, are being provided through the gig platforms. These digital platforms create an application (app) or software which connects the work and the end user in exchange for some monetary gain. This is the homogenous model for any gig platform offering any kind of services (Aldrich & Ruef, 2006; Scheiber, 2017). These platforms use algorithms or software to match the demand and supply side through software, so these platforms cannot be termed as employers as they are not into direct selling or providing services; rather, they are a link between the producer or service provider and the customer. In this new landscape, individuals offer their labour through digital platforms that connect them directly with consumers and/or businesses in need of their services. These individuals are commonly referred to as 'freelancers' who work as per their own will and may be termed as entrepreneurs (Ahsan, 2020). The gig economy operates on three party model comprising the gig worker, the digital platform and the consumer. Gig workers and digital platforms do not have a conventional employer-employee relationship. In a similar vein, gig workers and consumers cannot be included in this paradigm. The gig economy's ability to foster innovation by allowing people to participate in cutting-edge forms of entrepreneurship and work arrangements is a crucial factor contributing to its success (Donovan et al., 2016; Kumar & Aithal, 2024). The core of the model lies in algorithmic management, which regulates price, work distribution, and performance monitoring. Platforms can limit employees' capacity to develop autonomous clientele by centralising customer acquisition and payment processing, thereby concentrating platform control (Cornelissen & Cholakova, 2021; Iancu, 2022; Singh & Kaunert, 2025). Rather, there is an unclear and changing interplay between customers, digital platforms, and gig workers (Lobel, 2016). The gig is operating mainly through four platforms, namely crowdwork platforms, online freelance platforms, transportation platforms, and delivery/home task platforms. The freelancers possessed certain skills, enjoy higher autonomy and can negotiate on pricing decisions, whereas gig workers engaged in crowdwork, transportation and delivery have relatively less autonomy and lower wages (Kalleberg & Dunn, 2016). Malin(2018) proclaimed that the platform's relation with the gig workers is akin to a franchise model, wherein the franchisor (the platform) transfers the inherent business risks to the franchisee (the gig worker). With this plea, the platforms termed the gig workers as independent contractors, not employees. These independent contractors take platforms as a launchpad for their micro businesses as they use platforms' client base to grow and expand their business (Pinsof, 2015). Hurst and Pugsley (2011) put forward a view that gig workers label themselves as their own boss as they enjoy the flexibility and autonomy in fixing the schedule and amount of work they prefer to do, as is done by a micro entrepreneur (Figure 2). A similar view is endorsed by Zervas

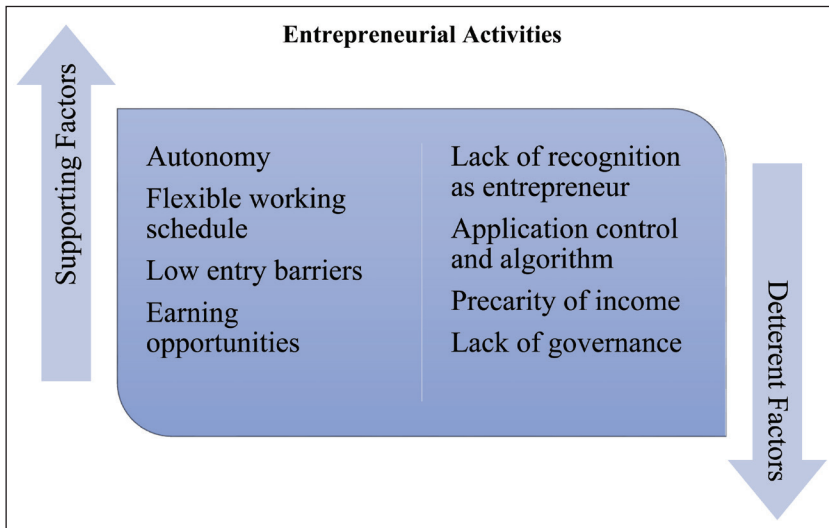


Figure 2. Factors Promoting and Restricting Entrepreneurial Activities.

et al. (2017) who concluded that gig workers uphold the characteristics of an entrepreneur rather than of an employee. Though they have little influence in the gig economy, freelancers are frequently seen as entrepreneurs because they are skilled gig workers (Cook, 2015). There are a few platforms that provide control to freelancers in gig economy in selecting their jobs, the working hours and the related aspects. Such workers can be correlated with entrepreneurs (Donovan et al., 2016). It is argued that platforms grant the phony term of independent contractors so as to avoid legal requirements for various labour laws. The platforms, by controlling the performance and pricing decisions, are actually treating gig workers as employees and, on the same hand, they mask them as entrepreneurs (Bornstein, 2015). Even Kurin (2016) revealed that despite several arguments, some sort of employment relationship prevails and regulates the gig economy. This relationship cannot be purely termed as employer-employee, but the platforms cannot deny their responsibility towards gig workers. The gig workers are working with distinctive motives and view the gig platform as the primary source of their income, or just to supplement their existing income base, and may find it challenging to improve the working conditions (Manyika et al., 2016). It is the kind of job that is being performed via gig platforms that determines whether the gig worker can be termed as an employee or an entrepreneur. The gig economy has less of an impact on the entrepreneurial ecosystem, notwithstanding its beneficial effects. It supports those operating unproductive enterprises and acts as a safety net for prospective business owners. The digital platforms offer accessible and adaptable ways to generate income, especially for vulnerable populations. The results are in congruence, showing how gig work and ecosystem support and complement each other in promoting women's entrepreneurship in developing nations

(Mouazen & Hernández, 2023). Another aspect that emerges from extant literature is that because of the flexibility and scheduling of their activities, people can pursue other entrepreneurial ventures with some certainty of income from gig platforms. They have surplus time and resources to invest in entrepreneurial activities (Burtch et al., 2016; Richner et al., 2014). A study on gig micro-entrepreneurs revealed that short-term contracts increasingly serve as a type of entrepreneurial agency, assisting people in maintaining their social and financial livelihoods (Peterson & Crittenden, 2024). In this way, it can be concluded that gig platforms promote as well, but sometimes these do not uphold entrepreneurial activities.

Implications

Theoretical Implications

The gig economy's reliance on digital platforms and technology has revolutionised how individuals engage in work, offering flexibility and autonomy but also raising significant questions about labour rights and job security. Examining these dynamics involves assessing how gig platforms disrupt traditional employment structures, often classifying workers as independent contractors rather than employees, thereby affecting access to benefits and legal protections. Gig economy is flourishing at an exponential pace, thereby contributing to the development of the economy. It has the capacity to generate millions of jobs (Standing, 2016). By expanding our knowledge of the relationship between participation in the gig and sharing economies and entrepreneurial intention, this study makes numerous significant theoretical advances. This is an upcoming area of research for many. The current paper will be a contribution to the existing literature base. The current paper contributes to the existing literature by addressing the ambiguous relationship between gig workers and the platforms they engage with. This research highlights the complexities and dynamics of this relationship, encouraging scholars to delve deeper into the subject. The findings could pave the way for the development of new theoretical frameworks, enriching our understanding of labour markets in the digital age. It suggests that platform-mediated workplaces could function as early-stage entrepreneurial learning environments where people acquire exposure, confidence, and low-risk experience that influence their future entrepreneurial decisions. The current paper proposes that gig participation is not just a labour market alternative but rather is embedded within broader entrepreneurial trajectories shaped by past experience and social networks. The study reinforces theoretical connections between entrepreneurial ecosystems and platform-based labour markets.

Managerial Implications

The platforms, the gig workers and the end users can work together to strengthen their relationship so that neither the workers nor the platforms face any

detrimental impact. Government authorities might bring more structural changes for the gig workers by introducing laws that protect them. Recognising them as either workers or entrepreneurs, policymakers can ensure that their rights and well-being are not overlooked. The platform owners can also consider this research and develop a business model that focuses on profitability but without compromising the well-being of gig workers. Platforms can devise certain mentorship or training for gig workers to enhance their ability to work and earn more. The research indicates that people are inclined to gig platforms mainly because of ample opportunities, so the platforms can give a clear message indicating the benefits to emphasise how gig work can be a source of income and a launching pad for future entrepreneurs. Entrepreneurship agencies may acknowledge gig workers as an expanding pool of potential entrepreneurs and may arrange focused entrepreneurial programmes or micro-venture support for the gig workers. Additionally, policymakers ought to think about developing frameworks that facilitate gig workers' transition into long-term business endeavours. Policymakers or the government might guarantee that gig workers receive fair treatment and social rights while yet allowing platforms to develop and grow. The policies should also look into ways to both protect and promote gig work.

Conclusion

Gig economy is usually considered a platform for supplementing earnings, but it also upholds entrepreneurial pursuits. Broadening the meaning of entrepreneurship from making or inventing a new product to having charge of one's own resources, time, money and one's own skills. Gig economy makes gig workers their own bosses while learning business principles by exploring flexibility and resourcefulness while earning a good amount of money for their livelihood. Features like flexible time, low entry barriers, no age bars, and low educational background made the gig economy very promising for the developing nations, where unemployment levels are usually high (Manyika et al., 2016). Gig economy is flourishing and creating millions of job opportunities and also fostering entrepreneurship in platforms requiring specialised and skilled services, and the platforms regulating gig workers are not truly promoting entrepreneurial activities, but rather providing flexibility and partial autonomy. However, while these platforms are instrumental in providing flexibility and partial autonomy, they do not fully promote entrepreneurial activities in the traditional sense. Instead of enabling gig workers to build and scale independent businesses, many platforms regulate the terms of engagement, limiting the potential for true entrepreneurial freedom. This regulatory environment often restricts gig workers' ability to fully control their work conditions, pricing, and client relationships. Consequently, while the gig economy opens doors to new forms of work and income generation, it also imposes constraints that prevent gig workers from realising the full spectrum of entrepreneurial opportunities.

Future Research and Limitations

The major research is carried out keeping in mind the business model of app-based digital platforms. It cannot be generalised based on a single forum of gig platforms to conclude whether the gig workers are employees or entrepreneurs. The untapped zones of the veiled employment relationship need to be explored further so that the state of gig workers can be improved. Undoubtedly, gig has the potential to create millions of job avenues on the one hand, and it should also ensure the decent state of its participants as well. Future research and policy interventions should address these limitations to better support the entrepreneurial aspirations of gig workers. The ride-hailing platforms like Uber have been researched so far in this regard; other platforms, like offering transportation, home services or delivery platforms, need to be examined to check whether they are promoting or repressing entrepreneurship.

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Interplay of Digitalisation, Financial Shock, Knowledge and Inclusion: Proposing a Conceptual Framework of Financial Well-being Based on Information–Motivation–Behavioural Skills Model

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Abstract

Purpose: This study introduces an integrated conceptual framework elucidating the interconnections between excessive use of social networking sites (SNSs), financial shock (FS), and digital financial services usage behaviour (DFSUB) in relation to individual financial well-being (FWB). Furthermore, it examines the roles of financial knowledge (FK) and financial inclusion (FI) as mediating mechanisms within these relationships.

Design/methodology: The manuscript employs a scoping review of peer-reviewed literature concerning FWB and its antecedents. It utilises the information–motivation–behavioural skills (IMB) model to organise existing evidence and to develop six propositions that link excessive use of SNSs, FS, DFSUB, FK, FI and FWB.

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Findings: The proposed framework posits that excessive engagement with SNSs and FS is negatively related to FWB. Conversely, the behaviour associated with the use of digital financial services (DFS) is positively related to FWB. Furthermore, the framework advances the propositions that FK serves as a mediator in the relationship between excessive use of SNSs and FWB, and that FI mediates the relationships between FS, DFSUB and FWB.

Practical implications: The conceptual model illustrates that policymakers and practitioners have the capacity to formulate strategies that enhance financial literacy, increase inclusive access to formal financial services and foster the responsible and effective use of DFS. These strategies aim to equip individuals with the necessary skills to navigate the impacts of social media and financial disruptions, ultimately contributing to improved FWB.

Originality/value: This study expands the IMB model into the realm of FWB by conceptualising excessive SNSs usage, FS, DFS usage, FK and FI as an integrated framework. It further articulates theoretically grounded propositions that can be empirically tested in future research across diverse populations and contexts.

Keywords

Financial well-being, financial shock, social networking sites, digital financial service usage behaviour, financial knowledge, financial inclusion

Introduction

With the global increase in poverty and inequality (Bashir & Qureshi, 2023), financial well-being (FWB) has emerged as a key topic of interest (Brüggen et al., 2017; Riitsalu et al., 2024). FWB is described as a facet of well-being that includes feelings of financial satisfaction and security (Vlaev & Elliott, 2014). Regardless of one's level of interest in financial issues, FWB is essential in our lives, both presently and in the future. Attaining FWB enables individuals to concentrate on their financial objectives, alleviate ongoing financial stress and look forward to a prosperous future (García-Mata et al., 2022; García-Mata & Zerón-Félix, 2022). This underscores the importance of achieving and sustaining FWB for individuals and families, as it affects their overall well-being by providing a foundation for fulfilling basic needs, pursuing personal financial goals and managing unforeseen expenses or emergencies (Dare et al., 2023; Fatma et al., 2022; Kumar et al., 2023). Furthermore, Vlaev and Elliott (2014) suggest that FWB is not solely reliant on the amount of money one has, but rather on the ability to manage financial resources effectively. As a result, FWB is considered a vital link to several key Sustainable Development Goals (Fu, 2020).

Moreover, due to technological advancements, the financial sector has transformed from traditional banking to customer-centric digital solutions, including digital financial services (DFS) (Hussain et al., 2025b). This shift is exemplified by the emergence of fintech, which is revolutionising the way

consumers manage payments, savings, investments and bank accounts (Zhang & Fan, 2024). DFS refers to a group of diverse financial services that can be accessed and delivered through various digital channels (Hussain et al., 2025a). It has the potential to increase financial inclusion (FI) by giving marginalised people more inexpensive, quick and secure access to financial services (Hasan et al., 2022), and leading to positive FWB (Bhatia & Dawar, 2023).

Furthermore, the significant growth of digitalisation has enabled individuals to become more socially active via the internet, which offers a multitude of ways to access and share information (Fu et al., 2020). Social networking services (SNSs) are widely utilised today (Fioravanti et al., 2021), providing people with digital platforms for interaction and information collection (She et al., 2023). However, excessive SNSs usage encourages spending through users' extravagant lifestyles and targeted marketing while adversely affecting behaviours such as online shopping, credit misuse, materialism and conspicuous consumption, consequently impacting FWB (Chatterjee et al., 2019; She et al., 2021; Wilcox & Stephen, 2013). Nevertheless, if an SNSs user possesses financial knowledge (FK), materialistic tendencies can be reduced (Gutter & Copur, 2011).

Likewise, in an increasingly volatile global economy, unforeseen financial shocks (FS) such as sudden income loss or unexpected large expenditures represent a major external threat that can rapidly undermine individuals' financial stability and overall well-being (Bufe et al., 2022). However, if a person is financially included, then they can have access to various banking services such as insurance services, savings, borrowing and investing, which provides safety, security and transaction transparency and may build financial stability, which will increase their well-being (Belayeth Hussain et al., 2019; Kass-Hanna et al., 2022).

This study is important as researchers contend that achieving FWB requires easy access to suitable financial services and the FK to achieve financial objectives, highlighting the important role of FK and FI (Riitsalu & Murakas, 2019). Therefore, on the basis of an extensive review of FWB literature, our study fills the gap on how SNSs, DFSUB and FS impact FWB, with FK and FI acting as mediators between excessive use of SNSs and FWB and between FS, and DFS usage behaviour and FWB using the information–motivation–behavioural (IMB) skill model, which has not been widely utilised in FWB studies. Consequently, this research proposes an integrated conceptual framework for FWB, incorporating FK and FI as mediators between excessive SNSs usage and FWB, DFSUB, FS and FWB. In addressing this research issue, the study raises the following questions:

1. Does excessive use of SNSs, DFSUB and FS influence FWB?
2. Do FK and FI mediate the relationship between SNSs and FWB, DFSUB, FS and FWB?

This study aims to offer readers and marketers a fresh perspective on FWB and encourage them to explore new ideas by understanding the impact of excessive SNSs usage, FS and DFSUB on FWB and the mediating role of FK and FI between excessive use of SNSs and FWB and between FS, DFSUB and FWB

using the IMB model of an individual. The significant outcome of this study is the proposition of a conceptual framework that paves the way for researchers in the future to test the model and reach generalisable results empirically. This study adopts a scoping review of the literature approach in identifying the gaps in the research continuum. On the basis of the reviewed literature, an integrated conceptual framework is developed based on the propositions posited in this study. Hence, assisting the policymakers and practitioners in devising strategies to increase FK and FI to improve FWB.

The structure of the article is as follows. We start with an introduction where we define the concept of FWB and outline the research issues. Following this, the second section details the research methodology. The review of literature and propositions are presented in the third section. In the fourth section, we introduce our proposed conceptual framework. The fifth and sixth sections cover the implications and conclusion, respectively. The final section addresses the limitations and offers suggestions for future research.

Research Methodology

This research undertook an exploratory investigation by examining a broad spectrum of academic literature concerning FWB and its precursors, drawing on previously published works from academic journals, magazines and periodicals. The objectives of this study necessitated a descriptive research approach. It predominantly uses secondary data. The aim was to pinpoint various determinants of FWB and to investigate the mediating influence of FK and FI on the connection between excessive use of SNSs and FWB, as well as between FS, DFSUB and FWB.

This study reviews existing literature and utilises a well-established methodology introduced by Jabareen (2009) to elucidate the review process. This method has been instrumental in developing theoretical frameworks across various interdisciplinary research (Basu et al., 2019; Gupta et al., 2024; Ringelstein & Patel, 2023), making it a suitable option. The methodology comprises several phases that are tailored to align with the specific requirements of the current study. The distinct methodological phases are delineated as follows:

Phase 1: Data Collection

The data collection process began with identifying and retrieving literature relevant to FWB. A structured keyword search strategy was used, with similar terms mentioned in Table 1. These combinations ensured comprehensive coverage of FWB constructs. The search was conducted in leading databases, including Scopus, Web of Science and Google Scholar.

The articles were identified through initial research from Scopus, Web of Science and Google Scholar. Following title, abstract screening, duplicate removal and full-text eligibility assessment for theoretical relevance to FWB antecedents, articles published between 2014 and 2025 were selected to construct the conceptual

Table 1. Structured Keywords to Search Relevant Literature.

Constructs	Keywords
Social networking sites	('social networking sites' OR 'excessive usage of social networking sites' OR 'social network sites' OR 'social media platform' OR 'social media usage' OR 'social network' OR 'social media engagement')
Financial knowledge	('financial literacy' OR 'financial education' OR 'financial capability' OR 'financial numeracy')
Financial shock	('financial shock' OR 'income shock' OR 'financial hardship' OR 'financial setback')
Digital financial services	('digital financial services' OR 'mobile banking' OR 'digital banking' OR 'internet banking' OR 'electronic banking' OR 'fintech services' OR 'mobile money')
Financial inclusion	('financial inclusion' OR 'inclusive finance' OR 'banking inclusion' OR 'financial access' OR 'digital financial inclusion')
Financial well-being	('financial well-being' OR 'subjective financial well-being' OR 'financial satisfaction' OR 'financial wellness' OR 'economic well-being')

framework and six propositions. This timeframe was selected to capture the strong, escalating trend in FWB research since 2014 (Kaur et al., 2021).

Phase 2: Screening and Shortlisting

Once data were collected from the selected databases, several reading sessions were organised to refine the selection process. Initially, the titles and abstracts of all extracted articles were screened to assess their alignment with the research objectives. To ensure quality, only peer-reviewed articles published in journals indexed in Scopus and listed in the Australian Business Deans Council (ABDC) were considered for further evaluation. The full texts of these selected articles were then carefully analysed to determine their theoretical and methodological compatibility with research questions and objectives. Ultimately, 27 studies were included, which significantly contributed to the development of the conceptual framework and six propositions.

Phase 3: Analysis and Synthesis

The shortlisted articles were then analysed based on the research objectives. The authors here adopted a deductive approach to conduct the review. As a result, the review attributed to the synthesis of the proposed conceptual framework based on how each construct influences or contributes to FWB.

Phase 4: Reporting of Review Outcomes

The final step was to report the results in different sections based on the study's research objectives.

Review of Literature and Propositions

Information–Motivational–Behavioural Skill (IMB) Model

The IMB model, initially developed by Fisher and Fisher to forecast health behaviour, has been proven effective in predicting and altering various behaviours (Fisher, 1992). This model consists of three fundamental elements: information, motivation and behavioural skills. ‘Information’ encompasses facts, heuristics and implicit theories, while ‘motivation’ includes both personal and social aspects. In contrast, ‘behavioural skills’ refer to the abilities and self-efficacy required to apply these skills in different contexts (Fisher, 1992). This model has been used to predict a number of behaviours, including HIV medication adherence, voting behaviour, financial behaviour, recycling behaviour, use of smokeless tobacco (Amico et al., 2009; Glasford, 2008; Limbu, 2017; Seacat & Northrup, 2010; Shell et al., 2011). In this study, to understand how individuals achieve and maintain FWB amid digitalisation and financial uncertainty, the IMB model is employed as its primary theoretical framework. Where SNSs and FK are regarded as sources of information (Lusardi, 2012; Teo et al., 2019; Tsai & Men, 2017). However, excessive use of SNSs can lead to impulsive consumption behaviours in individuals (She et al., 2021; Thoumrungroje, 2018). Conversely, FK offers pertinent information that can mitigate the negative effects (specifically associated with the overuse of SNSs) (Santini et al., 2019).

Furthermore, FS and FI act as motivational forces. While FS is an external occurrence, it serves as a catalyst that spurs individuals to pursue financial security by taking protective measures such as saving, purchasing insurance and utilising formal financial services (Bufe et al., 2022; Kulshreshtha et al., 2023). Meanwhile, FI encourages individuals to utilise all banking services available to address uncertainties (Bhatia & Dawar, 2023; Nandru et al., 2021). Moreover, in the context of the IMB framework, DFSUB is identified as a behavioural-skill competency (i.e., practical skills) essential for the effective use of DFS to improve FWB (Kumar et al., 2023; Rahman et al., 2020; Zhang & Fan, 2024). Additionally, FI offers the motivational and structural resources (such as institutional access and affordability) needed to transform these skills into better financial outcomes (Yang & Zhang, 2022). Based on the IMB model, this research introduces a conceptual framework that includes excessive use of SNSs, FS, DFSUB and FWB. It suggests that FK acts as a mediator in the link between excessive SNSs usage and FWB, while FI serves as a mediator in the relationship connecting FS, DFSUB and FWB.

FWB

In light of contemporary global economic challenges and uncertainties, FWB has assumed increased importance across all stages of life. Research characterises FWB as an individual’s confidence in their financial circumstances, encompassing their capacity to pay bills, fulfil financial obligations and maintain surplus funds for both current and future needs (Salignac et al., 2020). An individual’s ability to

meet financial responsibilities, both presently and in the future, alongside their perception of financial independence, constitutes their FWB (Mahendru et al., 2022). This concept is bifurcated into two components: the stress associated with managing current finances and the anticipation of future financial security (Netemeyer et al., 2018). Importantly, the impact of FWB extends beyond economic factors, influencing overall health and mental well-being (Shim et al., 2009). Brüggen et al. (2017) delineate three categories of FWB definitions or measures: (a) those combining objective and subjective methods, (b) those employing solely objective methods and (c) those utilising solely subjective methods. The first category describes FWB as a composite concept that affects financial assessment (Shim et al., 2009). The second category utilises various financial condition indicators, such as financial ratios (Greninger et al., 1996) and objective financial status (Hira & Mugenda, 1998), to evaluate FWB, whereas the third focuses on subjective financial satisfaction (Xiao et al., 2014). The current emphasis on financial stability underscores the complexity of FWB, which involves achieving goals, managing the present, preparing for the future, and fully enjoying life. This interconnectedness underscores the profound effects of financial health on both economic and overall life (Netemeyer et al., 2018; Shim et al., 2009). In this study, Table 2 represents the reviewed literature on the antecedents of FWB.

Excessive Usage of SNSs and FWB

SNSs are now commonplace communication tools used by people, businesses and organisations to boost online social interaction (Fu et al., 2020). These platforms foster a lively setting for the spread and reception of information by offering multiple methods to access and distribute content, while also providing users with

Table 2. Reviewed Literature on the Antecedents of FWB.

Antecedents of FWB	Sources
Excessive usage of SNSs	Faturohman et al. (2024); Laila et al. (2025); Miranda et al. (2023); She et al. (2021, 2023); Thoumrungroje (2018)
Financial shock (FS)	Bufe et al. (2022); Kulshreshtha et al. (2023); Sun et al. (2022)
Digital financial services usage behaviour (DFSUB)	Chen et al. (2023); Gafoor and Amilan (2024); Lyons and Kass-Hanna (2021); Rahman et al. (2020); Sonali et al. (2025); Zhang and Fan (2024)
Financial knowledge (FK)	Fan and Henager (2025); Gafoor and Amilan (2024); Gafoor et al. (2025); Parayil Iqbal et al. (2023); Kim and Lee (2024); Lone and Bhat (2024); She et al. (2021); Riitsalu and Murakas (2019); Xiao et al. (2014)
Financial inclusion (FI)	Bhatia and Dawar (2023); Kamble et al. (2024); Kulshreshtha et al. (2023); Kumar and Ahuja (2024); Tulcanaza-Prieto et al. (2025); Vishwakarma (2024)

entertainment, opportunities for social engagement and means for retrieving information (Teo et al., 2019; Tsai & Men, 2017). These benefits ensure its popularity among users and significantly influence their lives and behaviours (Ketelaar et al., 2016; Liu et al., 2019; Shang et al., 2017). In recent years, scholars have increasingly raised concerns about the addictive nature of SNSs usage, particularly among young working adults who are allocating more time to these platforms and frequently depending on them as their primary source of information (Dwivedi & Lewis, 2021; Grau et al., 2019).

Research has shown that excessive use of SNSs can have negative consequences for users (Fatuohman et al., 2024; Miranda et al., 2023). Studies by Thoumrungroje (2018), Kelly et al. (2018), Thorisdottir et al. (2019) and She et al. (2023) emphasise the harmful effects of excessive use of SNSs on personal well-being, including encouraging materialism, leading to overspending, promoting credit misuse and increasing conspicuous consumption. Consequently, our study proposes a negative relationship between excessive SNSs usage and FWB.

Proposition 1: There is a negative relationship between the excessive usage of SNSs and FWB.

FK Mediates the Relationship Between Excessive Usage of SNSs and FWB

FK denotes ‘the understanding of fundamental financial investment principles such as inflation and risk diversification, along with the ability to perform calculations related to interest rates’ (Lusardi, 2012). Enhanced FK contributes to anticipated future financial stability and alleviates current financial management stress (Netemeyer et al., 2018). Research indicates that FK enhances financial behaviour, such as reducing credit card misuse and materialism, which positively affects FWB and financial satisfaction (Fan & Henager, 2025; Gafoor et al., 2025; Gutter & Copur, 2011; Xiao et al., 2014). Individuals with higher levels of financial literacy demonstrate a heightened ability to detect financial fraud and exhibit a greater propensity to seek professional financial advice or counselling compared to those with lower literacy levels, ultimately enhancing their FWB and mitigating adverse repayment scenarios (Engels et al., 2021; Hwang & Park, 2023). Consequently, our study posits that FK serves as a mediator in the relationship between excessive SNSs usage and FWB.

Proposition 2: FK mediates the relationship between excessive SNSs usage and FWB.

FS and FWB

FS can arise from a decrease in income, such as losing a job or having reduced work hours, or from increased expenses, such as costly repairs, medical emergencies or legal fees related to divorce or other matters (Bufe et al., 2022). These unforeseen

events present external challenges to individuals or families, necessitating adjustments and causing stress, which influences the overall financial health and underscores the importance of resilience and adaptive strategies in overcoming these challenges (Bufe et al., 2022; Kulshreshtha et al., 2023; Sun et al., 2022). Therefore, our study suggests a negative relationship between FS and FWB.

Proposition 3: There is a negative relationship between FS and FWB.

DFSUB and FWB

DFS includes a diverse range of services offered and accessed via digital platforms, such as credit, payments, savings and insurance (Nizam & Rashidi, 2025). These services are facilitated by a range of devices, including electronic cards, chips, tablets, phablets, biometric devices and other electronic systems (Hasan et al., 2022; Rana et al., 2020). While technology assists users by removing geographical and temporal limitations and enhancing convenience (Yang & Zhang, 2022). The previous literature suggests that DFS usage behaviour positively influences FWB (Chen et al., 2023; French et al., 2020; Rahman et al., 2020; Sonali et al., 2025). Consequently, this study posits a positive relationship between DFSUB and FWB.

Proposition 4: There is a positive relationship between DFSUB and FWB.

FI Mediates the Relationship Between FS and FWB

FI involves the effort to provide financial education, access, availability, affordability and the use of essential financial services to underprivileged groups in society, particularly focusing on marginalised street vendors, to improve their FWB (Nandru et al., 2021). As Mpofo and Mhlanga (2022) and Nandru et al. (2021) point out, the expansion of mobile money banking services has been crucial in providing financial access to millions of previously unreached individuals. This makes financial transactions more accessible, trustworthy and safe. According to Bhatia and Dawar (2023) and Vishwakarma (2024), a FI strategy helps people deal with FS and improves their overall FWB. In conclusion, FI is critical because it increases access to financial services while also building financial stability. This enables people to better manage financial setbacks and enhances their overall FWB. Consequently, this study proposes a mediating role of FI between FS and FWB.

Proposition 5: FI mediates the relationship between FS and FWB.

FI Mediates the Relationship Between DFSUB and FWB

FI involves the effort to provide financial education, access, availability, affordability and use of essential financial services to underprivileged groups in

society to improve their FWB (Nandru et al., 2021). Buckley and Malady (2009) highlight the crucial role of DFS as an essential financial solution in promoting FI to achieve comprehensive FWB (Gafoor & Amilan, 2024; Nandru et al., 2021). DFS leverages digital technology to enhance the financial landscape for various stakeholders, increasing access and serving as a key tool to bolster FI (Yang & Zhang, 2022). This illustrates the transformative impact of DFS in addressing the challenges of FI and paving the way for enhanced FWB for individuals and businesses. Therefore, our study suggests that FI mediates the relationship between DFSUB and FWB scores.

Proposition 6: FI mediates the relationship between DFSUB and FWB.

Proposed Conceptual Framework

The present study has identified several informational, motivational and behavioural-skill factors that potentially influence individuals' FWB. The informational factors include excessive use of SNSs and FK. While SNSs create a dynamic environment for exchanging information, excessive use of these platforms exposes individuals to impulsive, materialistic cues that may negatively affect their FWB. Nevertheless, adequate FK can equip individuals to make informed financial decisions and thereby influence their FWB positively. Thus, based on the existing literature, it is expected that excessive use of SNSs negatively impacts FWB, whereas FK positively mediates the relationship between excessive SNSs usage and FWB. Furthermore, the motivational factors include FS and FI. When individuals experience sudden losses such as income disruptions, health emergencies or property damage, these shocks negatively affect their FWB; however, such experiences and FI motivate them to avail financial protection through insurance, savings and retirement products offered by the financial sector. Accordingly, FI is expected to positively mediate the relationship between FS and FWB. In addition, DFSUB represents the behavioural-skill factor, referring to individuals' ability to confidently use DFS, such as mobile banking for managing their finances effectively, which in turn enhances their FWB as mobile banking reduces financial inequalities in accessing financial services (such as insurance, savings and budgeting) without time and physical constraints. Thus, these accessibilities improve the FWB of an individual. Hence, it is expected that DFSUB positively impacts FWB and FI positively mediates the relationship between DFSUB and FWB. These informational, motivational and behavioural-skill factors are conceptualised as potential antecedents of the FWB construct, expected to exert a significant influence on individuals' FWB.

As mentioned in the previous section, the propositions from Proposition 1 to Proposition 6 reflect this core ideation. Accordingly, the proposed conceptual framework has been developed to depict the relationships among these factors as antecedents of individuals' FWB (Figure 1).

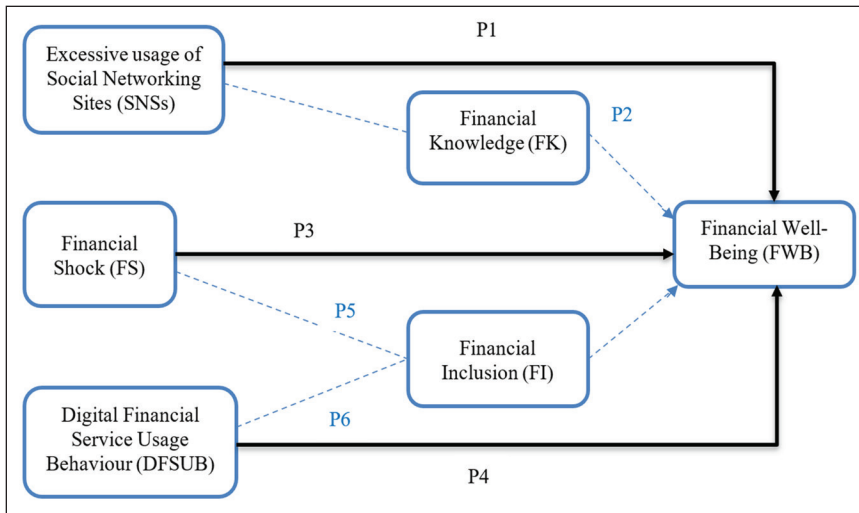


Figure 1. Conceptual Framework.

Source: Authors' own conceptualisation by compiling IMB skill model and the relevant existing literature.

Implications of the Study

The proposed conceptual framework outlines several clear implications by systematically aligning each proposition with the IMB model:

Theoretical Contribution

The model expands the IMB model in the domain of FWB by explicitly linking excessive use of SNSs and FK to the information component, FS and FI to motivational aspects and DFSUB to behavioural skills. This systematic arrangement clarifies how informational, motivational and skill-based elements collectively shape financial outcomes in a digital environment, offering a fresh perspective on how to recover from shock in the digital age.

Second, the study proposes that FK acts as an intermediary between excessive SNSs usage and FWB, while FI serves as a mediator between both FS and DFSUB and FWB. This establishes specific pathways through which digital and shock-related experiences influence financial outcomes. This approach goes beyond direct-effect models by emphasising how knowledge and access serve as protective mechanisms that can mitigate or direct the effects of risky informational environments (excessive SNSs usage) and adverse events (FS). These mediating roles encourage future theoretical development on when and how informational and institutional resources transform potentially harmful exposures into adaptive financial behaviours.

Third, the framework reimagines the precursors of FWB as an interconnected system rather than as separate factors: excessive SNSs usage is viewed as a harmful informational setting which can have a negative impact on FWB, FS as a destabilising motivational catalyst impacts FWB negatively, DFS usage as a skill enhances FWB, and FI acts as a supportive structural context. This holistic perspective implies that FWB theories should consider digital behaviours, shock exposure and institutional access simultaneously, rather than treating them as distinct elements. It also creates opportunities for cross-cultural and longitudinal exploration of how shifts in digital ecosystems, inclusion policies and household shocks alter the equilibrium among information, motivation and behavioural skills over time.

Policy Implication

This study provides various implications for policymakers. For policymakers, this involves developing targeted programmes to enhance financial literacy by leveraging peer-to-peer networks to facilitate knowledge transfer from those with expertise to those with less understanding. This also includes improving access to inclusive financial systems and ensuring that DFS are both secure and affordable. Additionally, policymakers can identify and empower ‘local champions’—such as leaders in cooperatives, Anganwadi workers, members of self-help groups, small business owners and school teachers—to provide focused financial education on topics like saving, investing, budgeting, retirement planning and accessing banking services through both online and offline platforms, thereby building resilience against uncertainties. These champions should also educate communities about the pitfalls of excessive use of SNSs like impulsive buying and materialistic behaviour, encouraging informed decision-making to enhance FWB.

Managerial Implications

This research offers practical guidance for financial advisers, emphasising that excessive use of SNSs and FS can adversely affect FWB. Based on these findings, financial advisers/planners can suggest several strategies to their clients. First, they should recommend setting up a monthly budget to track income against both fixed and variable costs. Second, automating savings transfers to cover 3–6 months of emergency expenses is advisable. Third, reducing time spent on social media can help lessen materialistic influences and control impulsive spending. Fourth, clients can benefit from free apps or online courses that teach budgeting and investment basics to improve their FK. Financial advisers can identify customers with gaps in FK and tailor sessions to teach practical skills, such as using budgeting apps and distinguishing between needs and wants influenced by SNSs.

Conclusion

This article introduces a detailed conceptual framework grounded in the IMB model to elucidate how digitalisation and FS collectively influence FWB.

The primary theoretical contribution is the expansion of the IMB model into the FWB domain by identifying specific mediating pathways through which DFSUB and FS impact FWB. Specifically, FK mediates the relationship between excessive SNSs usage and FWB, while FI mediates the connections between FS, DFSUB and FWB. This structured pathway model advances beyond prevalent direct-effect models in the existing literature, offering a more nuanced understanding of the interconnections among digital behaviours, financial disruptions and individual well-being outcomes.

The proposed framework provides a foundation for future empirical research, including cross-cultural and longitudinal studies, to validate and extend the identified mediating pathways across diverse populations and contexts. By organising these relationships in a structured format, the study facilitates hypothesis testing and contributes to building a more comprehensive theoretical understanding of FWB in digitally disrupted environments.

From a practical and policy standpoint, the framework highlights that enhancing FWB in a digitally driven, shock-prone economy necessitates coordinated efforts in three areas: bolstering FK, broadening FI and encouraging effective DFS usage. Policymakers can leverage these insights to craft targeted literacy programmes, improve inclusive financial infrastructure and regulate DFS in ways that support vulnerable groups. Meanwhile, managers and financial advisers can apply the model to create interventions that assist individuals in managing social media influences, preparing for shocks and using digital tools responsibly. Overall, this study offers a structured, IMB-based conceptual guide for understanding and enhancing FWB, and it calls for empirical research to validate and expand the proposed mediating pathways across various populations and contexts.

Limitations and Future Research Gap

While this study offers a comprehensive conceptual framework exploring the relationships among excessive use of SNSs, DFSUB, FS and FWB, it has several limitations that must be considered. First, the research relies solely on secondary data and insights from existing literature, which, although rich in context, lack empirical validation. The absence of primary data collection or statistical analysis restricts the ability to generalise the results or establish causality between the proposed constructs. Second, the model focuses mainly on specific mediators, FK and FI, potentially overlooking other important variables such as financial attitudes, digital literacy, or socio-cultural factors that could further enrich the framework. Moreover, the conceptual nature of the study limits its applicability to specific demographics or regions without empirical testing, and it may not account for cultural differences in financial behaviour. Lastly, the limitation is the study's keyword selection strategy, which uses predetermined Boolean combinations of keywords related to the constructs of this study, potentially excluding relevant literature that uses synonymous or alternative terminology.

The suggested future research paths for FWB cover a broad spectrum of topics. This involves empirically validating the conceptual model with a particular focus on the mediating roles of financial knowledge and inclusion, as well as

investigating other potential mediating or moderating factors. Longitudinal studies can evaluate how these relationships evolve over time, whereas cross-cultural studies might uncover variations in how factors influence FWB in different regions. Additional research should concentrate on examining the possible cultural differences in the impact of the proposed factors on FWB across various countries or regions.

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