

## Analyzing the Mediating Role of Government Support using the Balanced Scorecard: Examining the Effect of Marketing and Technological Innovation on Firm Performance in Addis Ababa, Ethiopia

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### Abstract

*This study looks into how marketing and technology advancements affect SMEs' performance in Addis Ababa, Ethiopia, with an emphasis on how government support acts as a mediator. It attempts to fill in important knowledge gaps about the difficulties SMEs in developing nations face. Using a multi-stage cluster sampling technique for representativeness and a structured questionnaire to gather data from 431 SMEs, a quantitative approach was adopted. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) were used in the data analysis, and structural equation modeling (SEM) in AMOS was the next step. The findings indicate that both marketing and technology innovation ( $\beta = 0.180$  and  $0.285$ , respectively) greatly improve firm performance. Both innovations' effects are amplified by government backing, which acts as a partial mediator and has a high direct impact ( $\beta = 0.318$ ). In order to get the best results, SMEs in Addis Ababa should use government assistance programs, which offer crucial resources for firm expansion, in conjunction with technology and marketing innovations. The cross-sectional methodology of the study, which only uses data from owner-managers, restricts the ability to draw long-term causal conclusions. Employee participation in future studies may lessen bias and increase the validity of the results, giving them greater plausibility. Future research should expand to other regions and use longitudinal designs to investigate causal pathways for enhanced validity. Qualitative studies could clarify how government assistance fosters innovation and identifies obstacles for SMEs, while also exploring mediators like management skills and digital literacy.*

**Keywords: Marketing Innovations, Technological Innovations, Government Support, Firm Performance, SMEs, and BSC**

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## **Introduction**

In developing countries like Ethiopia, where they make up more than 90% of businesses and more than 50% of jobs, small and medium-sized firms (SMEs) are especially important because they spur innovation, job creation, and growth (Birhanu Tsegaye, 2024; Brada, 2023). Due to the particular difficulties faced by SMEs in places like Addis Ababa, competitiveness depends on implementing new technology and efficient marketing techniques (Ferejo et al., 2022). Despite the well-known advantages of innovation, little is known about how technology and marketing advancements particularly affect SMEs in underdeveloped nations (Martínez-Alonso et al., 2025). The majority of current research concentrates on developed economies, ignoring the particular challenges that SMEs in Addis Ababa face, such as a shortage of qualified workforce, insufficient infrastructure, and resource constraints (Alfadhli et al., 2025; Yadete et al., 2023). The purpose of this study is to investigate how government assistance, technological innovation, and marketing innovation relate to improving the performance of SMEs in Addis Ababa. The research aims to offer insights for practitioners and policymakers by examining how these characteristics impact business outcomes. It highlights the necessity of customized policies that tackle the unique obstacles encountered by SMEs in developing nations (Manafe et al., 2024).

## **Background of the Study**

In developing countries such as Ethiopia, market dynamics, economic conditions, and outside assistance all have an impact on the expansion of SMEs (Abate & Sheferaw, 2023; Abdissa et al., 2022). Due to their substantial GDP and employment-creating contributions, SMEs are vital to economic growth (Adula, 2022; Dawit Udessa Gede, 2024). However, they are unable to implement the required technological and marketing improvements due to obstacles such as inadequate infrastructure, a shortage of experienced labor, and restricted access to funding (Hapsari et al., 2024). Furthermore, new technologies have helped South African SMEs become more efficient, but Ethiopian SMEs face challenges such as unreliable internet connectivity and expensive automation expenses (Cordes & Marinova, 2023). The unique difficulties faced by Ethiopian SMEs are not well understood, despite the potential benefits of marketing and technical innovation (Tolossa et al., 2024). To guide future research and educate effective public policy for promoting innovation, this study would identify these barriers and analyze the function of government support (Nkomo et al., 2025).

## **Statement of the Problem**

Despite their crucial role in driving innovation and economic growth, small and medium-sized enterprises (SMEs) in Addis Ababa, Ethiopia, face significant challenges in leveraging technological advancements and marketing strategies to achieve optimal performance (Arjang et al., 2024; Sharabati et al., 2024). While some studies suggest a positive relationship between innovation and business growth, conflicting evidence, particularly in developing nations, highlights the need for localized research to understand these dynamics better (Malesu & Syrovátka, 2025). Furthermore, the effectiveness of government support in promoting innovation among SMEs remains ambiguous, with varying impacts depending on context (Lutfi et al., 2022; Omari et al., 2025). This inconsistency points to theoretical gaps in existing frameworks that fail to capture the complexities of the SME environment in emerging economies. Knowledge gaps persist regarding the specific challenges Ethiopian SMEs face in adopting innovative practices, compounded by limited access to capital, inadequate infrastructure, and a shortage of skilled labor (Mekonen & Eshetu, 2024). This study aims to investigate the effects of technology and marketing innovations on SME performance, focusing on the mediating role of government assistance, ultimately providing actionable insights for policymakers to enhance support initiatives tailored to SMEs' needs (Mncube, 2025).

## **Specific Objectives of the Study**

1. To investigate the effect of marketing and technological innovation on the firm performance of SMEs in Addis Ababa.
2. To study the mediating effect of Government Support on the relationships between marketing and technological innovation and the firm performance of SMEs in Addis Ababa.

## **Literature Review**

Small and medium-sized enterprises (SMEs) are vital for innovation and economic growth in emerging economies like Addis Ababa, Ethiopia. However, many SMEs struggle to achieve optimal performance through technological advancements and marketing strategies. Ideally, these businesses would leverage innovations to enhance competitiveness and contribute significantly to the economy, but in reality, many fail to adopt modern technologies and marketing methods (Arjang et al., 2024; Kurniasari et al., 2023). Literature reveals conflicting data on the impact of

innovation on business performance. While some studies indicate a positive relationship between technological and marketing innovations and business growth, others present contradictory findings, particularly in developing countries (Malesu & Syrovátka, 2025). This inconsistency raises questions about the generalizability of these results and underscores the need for more comprehensive research that considers local contexts and specific challenges.

Previous studies on the mediating role of government assistance in promoting innovation among SMEs yield ambiguous results (Jingwen et al., 2025; Omari et al., 2025). While some research suggests that government initiatives significantly enhance innovation adoption, others indicate that the impact varies widely based on different circumstances. This inconsistency points to theoretical gaps, suggesting that existing frameworks may not fully account for the complexities of the SME environment in emerging nations. Knowledge gaps persist regarding the specific challenges Ethiopian SMEs face in implementing marketing and technological advancements. Much of the existing literature focuses on industrialized economies, leaving a void in understanding the unique obstacles encountered by SMEs in Ethiopia (Mekonen & Eshetu, 2024). Local institutional, cultural, and economic factors significantly influence the adoption of innovative practices, further complicating the situation. SMEs struggle to fully embrace innovation due to real-world challenges like limited access to capital, poor infrastructure, and a shortage of skilled workers (Mncube, 2025). These obstacles hinder development and perpetuate a cycle of poor performance. This study aims to examine how technology and marketing innovations impact SME performance in Addis Ababa, focusing on the mediating role of government assistance (Shandler et al., 2023; Zhang & Ayele, 2022). By addressing existing discrepancies in the literature, the research seeks to provide valuable insights for policymakers to develop more effective support initiatives tailored to the needs of SMEs.

### **Definition of Selected Terms**

Marketing innovation is the goal of developing new or enhanced marketing strategies to increase market share and customer engagement by using creative advertising and inventive pricing (Utari et al., 2024). These tactics have been developed by companies since the early 20th century in order to better understand consumer preferences, reflecting continuous shifts in the marketing environment (e.g., Hopkins's 1923 cited in Pawiński, 2022).

Technological innovation includes implementing new technologies or greatly improving current ones in order to enhance goods, services, or procedures (Fei et al., 2025). This idea, which dates back to the industrial revolution, emphasizes the significance of digital technologies in contemporary company strategy.

Firm performance assesses an organization's performance using indicators like financial results, customer happiness, and operational effectiveness. Since balanced scorecards offer a more thorough perspective of accomplishment, it has grown in prominence and now incorporates non-financial variables (Madsen, 2025).

Government support refers to the assistance provided by governmental organizations to corporate operations and encourage economic growth (Katz, 2024). Financial subsidies, tax breaks, and training initiatives are examples of this, and they have been more significant after World War II as a way to promote economic recovery (Dent et al., 2024).

Balanced Scorecard (BSC) is a strategic management tool that translates an organization's vision into actionable goals across four perspectives: learning and growth, internal processes, customers, and finances (Eftimov et al., 2025). Introduced by Kaplan and Norton in the early 1990s, it aims to enhance performance measurement beyond traditional financial metrics (Hamied & Elbagoury, 2025).

### **Related Theories**

The Diffusion of Innovations (DOI) theory by Everett Rogers describes how new technologies proliferate, emphasizing elements such as trialability, simplicity, observability, compatibility, and perceived benefits; this makes it pertinent to SMEs (Purwati et al., 2023). The Resource-Based View (RBV) highlights the significance of intangible assets for SMEs and stresses that a company's distinct resources and abilities are essential for attaining competitive advantage and success (Kero & Bogale, 2023; Mohd Rasdi & Umar Baki, 2025). Institutional theory focuses on how external institutions, such as laws and policies, affect organizational behavior and how government support systems affect SMEs' adoption of innovation (Williams & Woodhouse, 2025). The Balanced Scorecard (BSC) framework, developed by Kaplan and Norton, helps businesses translate strategic goals into actionable objectives across various areas, enabling SMEs to align their innovations with broader strategies and assess their overall performance (Valduga et al., 2023).

## **Empirical Literature Review**

According to recent research, innovative practices—more especially, technological and marketing innovations—have a direct correlation with better performance in SMEs, increasing customer engagement, product quality, and operational efficiency (Tolossa et al., 2024). To promote innovation and assist SMEs in Addis Ababa in thriving in a competitive environment, government support is crucial in resolving the situation by offering resources, finance, and training (Sajjad & Zaman, 2020).

## **Marketing Innovation and Firm Performance**

According to Paiva (2025) Marketing innovation is essential for improving business success in SMEs, particularly in dynamic marketplaces. Adopting new tactics will help organizations stand out from the competition and better engage their target consumers, which will boost sales and profitability (Daffa et al., 2025). Although most research shows that marketing innovation and SME performance are positively correlated (Abdullah et al., 2024; Deku et al., 2024; Sutiksno et al., 2025). Some studies show that these relationships are weaker or negative (Alipour et al., 2022; Ayinaddis, 2023; Pu, 2023), underscoring the need for more research on these dynamics. Therefore, we suggest learning more about how marketing innovation affects the performance of SMEs.

*H1: Marketing innovation has a statistically significant relationship with firm performance.*

## **Marketing Innovation and Government Support**

When it comes to government support programs for SMEs, marketing innovation is essential since customized programs boost competitiveness by addressing particular issues like skill shortages and financial limitations (Purnomo & Purwandari, 2025; Thirtawati et al., 2025). According to empirical research, government assistance and marketing innovation are positively correlated, with grants and training helping SMEs embrace new strategies (Ostic et al., 2025; Quayson et al., 2024). Overly restrictive laws, however, can obstruct development, underscoring the significance of matching market dynamics with assistance. Consequently, we suggest that this association be further investigated.

*H2: Marketing innovation has a statistically significant relationship with government support.*

### **Technological Innovation and Firm Performance**

For SMEs to compete in the fast-paced market of today, technological innovation is essential for improving business performance (Alake et al., 2024). Businesses can greatly increase efficiency and effectiveness by implementing new technologies and streamlining procedures. Effective funding increases SMEs' ability to innovate, according to research showing a positive relationship between government support and technical innovation (Abbas et al., 2024; Badghish & Soomro, 2024; Shah et al., 2024). Nonetheless, some research indicates a negative correlation between technological innovation and company performance, citing issues including high expenses, employee resistance, and a lack of experience (Kayani et al., 2025; Ma et al., 2025; Nikmah & Hung, 2024). To optimize possible advantages, SMEs must carefully evaluate their innovation strategy.

*H3: Technological innovation has a statistically significant relationship with firm performance.*

### **Technological Innovation and Government Support**

Technological innovation and government assistance are intimately related since good policies and funding greatly increase SMEs' capacity to embrace new technology (Yadewani et al., 2024). Research indicates a significant association between government funding and favorable conditions, and the possibility of innovation in SMEs (Ding & Yang, 2025; Omonijo & Zhang, 2025). However, this link can be hampered by excessively restrictive laws, which would limit the innovative capacity of SMEs (Kim & Jun, 2022; Li et al., 2025; Shi et al., 2025). Therefore, promoting the growth of SMEs requires maximizing the relationship between government assistance and technological innovation.

*H4: Technological innovation has a statistically significant relationship with government support.*

### **Government Support and Firm Performance**

Government support is vital for improving firm performance in SMEs, particularly those facing resource constraints and market challenges (Mxunyelwa, 2020). Targeted assistance, such as financial aid and favorable legislation, is positively linked to enhanced competitiveness and innovation. However, it can also foster dependency and complacency due to bureaucratic

inefficiencies or misalignment with business needs (Jeong et al., 2021; Li et al., 2025). Thus, while government assistance promotes growth, it must effectively address the unique challenges SMEs encounter.

*H5: Government support has a statistically significant relationship with firm performance*

### **Government Support mediates the relationship between Marketing Innovation and firm performance**

This study theorizes that government funding modifies the relationship between marketing innovation and multi-dimensional firm performance under the Balanced Scorecard (BSC) framework. Even if marketing innovation has strategic potential, its actual outcomes are determined by external enablers from the viewpoints of learning and growth, internal processes, customers, and finance. Recent research indicates that formal institutional support provides necessary resources and lessens market uncertainty, which positively mediates the relationship between innovation and performance (Mahdad & Roshani, 2025; Poulis, 2024).. On the other hand, misaligned support could reduce marketing innovation's returns by limiting the agility required for it (Mahdad & Roshani, 2025; Poulis, 2024). Understanding the innovation-performance equation requires an understanding of this mediation route since it boosts positive results across BSC parameters.

*H6: Government support mediates the relationship between marketing innovation and firm performance.*

### **Government Support Mediates the Relationship between Technological Innovation and Firm Performance**

This study hypothesizes that the relationship between technological innovation and overall firm performance, as measured by the Balanced Scorecard (BSC) framework, is mediated by government support. The nature and effectiveness of institutional support determine how technological innovation is translated into concrete value across Financial, Customer, Internal Process, and Learning & Growth perspectives. Empirical studies suggest that targeted support, including R & D tax credits, can increase business growth by de-risking investments (Bu et al., 2025). In contrast, blanket support may distort market signals and limit innovation returns by encouraging rent-seeking behavior (Rocca et al., 2025). Thus, government support acts as a

conditional variable that influences the relationship between technological inputs and organizational outcomes.

*H7: Government Support mediates the relationship between technological innovation and firm performance.*

### Conceptual Framework

The study is guided by the conceptual framework, which outlines important ideas and their connections. It focuses on the connections between government support, firm performance, technological innovation, and marketing innovation (Serrano-Ruiz et al., 2025). Technological innovation increases quality and efficiency, while marketing innovation increases brand awareness. Government assistance acts as a mediator, giving SMEs incentives and resources that foster innovation and encourage competitiveness and sustainable growth (Pu et al., 2021).

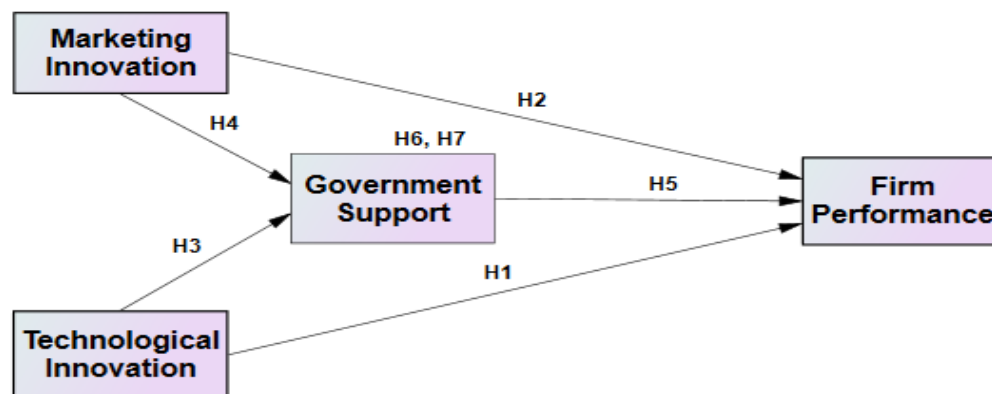


Fig. 1 Source: Developed by researchers using AMOS Software, 2023

### Research Methodology

The study investigated the connections between government funding, technological innovation, marketing innovation, and business performance using a quantitative technique on a sample of 431 respondents from SMEs (Pu et al., 2021; Wasudawan et al., 2025). Validity and reliability were guaranteed by using a structured questionnaire based on pre-established scales to collect data. Exploratory factor analysis (EFA) was used to modify the scales after the Kaiser-Meyer-Olkin (KMO) measure verified the suitability for factor analysis (Liu et al., 2023). In AMOS, the

correlations were analyzed using Structural Equation Modeling (SEM), which demonstrated the direct and mediating effects of government support on the relationship between innovations and firm performance. Pilot testing was used to validate the measurement scales that evaluated aspects like financial aid and marketing strategies (Govindasamy et al., 2024).

### Research Design and Approaches

This study uses a cross-sectional survey design and incorporates quantitative methods to investigate the connections between technological and product innovation practices, government support programs, and firm performance among Ethiopian SMEs (Dinku et al., 2024). In order to ensure accurate and quantifiable insights, the quantitative component places a strong emphasis on numerical data analysis and statistical testing of hypotheses.

### Target Population, Sampling Technique, and Sample Size

The study sample is drawn from the entire group of 4,130 small and medium-sized businesses (SMEs) that are registered with the Addis Ababa City Government, which is the target population. To assure representativeness and account for expected low response rates, a multi-stage cluster sampling approach that combined convenience, purposive, and systematic random techniques was used to choose a sample of 431 SMEs, which was determined using Yamane's formula. Validated scales for measuring the main constructs were included in a structured questionnaire used to gather data.

In order to maximize the generalizability of the results and offset the anticipated low response rate of 15 to 20 percent, a large sample size was chosen for this study (Amentie Kero & Sogbossi, 2019; Walusinski, 2018). Yamane's (1967) formula for determining sample size is used to get the representative sample size, which is as follows: where  $n$  is the desired sample size,  $N$  is the population, and  $e$  is the sampling error margin at 5% (recommended value at a 95% confidence level). The following formula was used to calculate the sample size:

The formula is:  $n = \frac{N}{1+N(e^2)}$  ----- Equation (1) ---(Yamane's (1967) formula)

$$n = \frac{4130}{1+4130(0.05^2)}, n = \frac{4130}{11} = 375 \dots\dots n=375, 375 +15\% \text{ of } 375 = 431$$

Therefore, the sample size is  $n=431$

## **Methods of Data Analysis**

After the KMO measure showed sufficient sample adequacy, the exploratory factor analysis (EFA) verified factors in line with the theoretical framework. Gaspar Pacheco et al. (2024) adapted items for technological and product innovation, Partouvi & Najafi (2024) adapted business performance from the Balanced Scorecard framework, and Fainshtein et al. (2024) adapted items for government support. Using AMOS, structural equation modeling (SEM) examined the connections between the constructs and demonstrated how government funding mediates the impact of innovation on performance. The model fit was good.

## **Data Analysis and Interpretation**

### **Descriptive results**

With a nearly equal distribution of 50.1% of medium-sized enterprises (216 firms) and 49.9% small businesses (215 firms), the study polled 431 small and medium-sized businesses. According to gender data, about 24 % of owners were men and 76% of owners were women. The majority of owners were between the ages of 31 and 40 (46.6%), while the respondents with the age of 41 and 50 represent about (37%). About 31% of them had completed secondary education and about 49% had college degrees. A concentration of larger businesses in the sample was also indicated by the fact that 50.1% of firms employed more than 30 people, and 81.9% had 11–20 years of experience.

### **Techniques for conducting data analysis**

The data analysis process included essential steps to ensure reliability, beginning with descriptive statistics to summarize SMEs' demographics. Exploratory Factor Analysis (EFA) identified structures for marketing innovation, technological innovation, government support, and firm performance, followed by Confirmatory Factor Analysis (CFA) to validate these scales. Finally, Structural Equation Modeling (SEM) revealed significant relationships between firm performance and both types of innovation, with government support serving as a crucial mediator.

Table 1. KMO and Bartlett's Test

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		0.824
<b>Bartlett's Test of Sphericity</b>	Approx. Chi-Square	6726.08
	Df	136
	Sig.	0

Source: SPSS result, 2024

The data analysis procedure used exploratory factor analysis (EFA) to find structures for technological innovation, marketing innovation, government support, and firm performance after ensuring reliability through descriptive statistics for SME demographics. These measures were confirmed by Confirmatory Factor Analysis (CFA), and Government support was found to be a key mediator in the substantial correlations between company performance and both forms of innovation using Structural Equation Modeling (SEM).

Table 2: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.943	40.842	40.842	6.943	40.842	40.842	4.864	28.614	28.614
2	3.956	23.269	64.111	3.956	23.269	64.111	3.993	23.489	52.103
3	1.327	7.807	71.919	1.327	7.807	71.919	3.369	19.816	71.919
4	0.956	5.624	77.543						
5	0.834	4.904	82.448						
6	0.627	3.686	86.134						

Extraction Method: Principal Component Analysis.

Source: SPSS output, 2024

According to Table 2's Principal Component Analysis (PCA) results, the first component has a considerable contribution, accounting for 40.8% of the variance with an eigenvalue of 6.9. With eigenvalues of 3.9 and 1.3, respectively, the second and third components show 23.3% and 7.8% of the variance. The total variation may be explained by these three components together to 72%. The other components show declining returns, accounting for 5.6% and 4.9% of the total variance, respectively.

### Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) confirmed the structure of the factor suggested in the theoretical framework by validating the connections between observable variables and their latent constructs. The study analyzed correlations between observed variables, as illustrated in Figure 2, and the results in Table 3 evaluated the fit of the measurement model, guaranteeing that it was in line with theoretical ideas and proving the validity and reliability of the constructs.

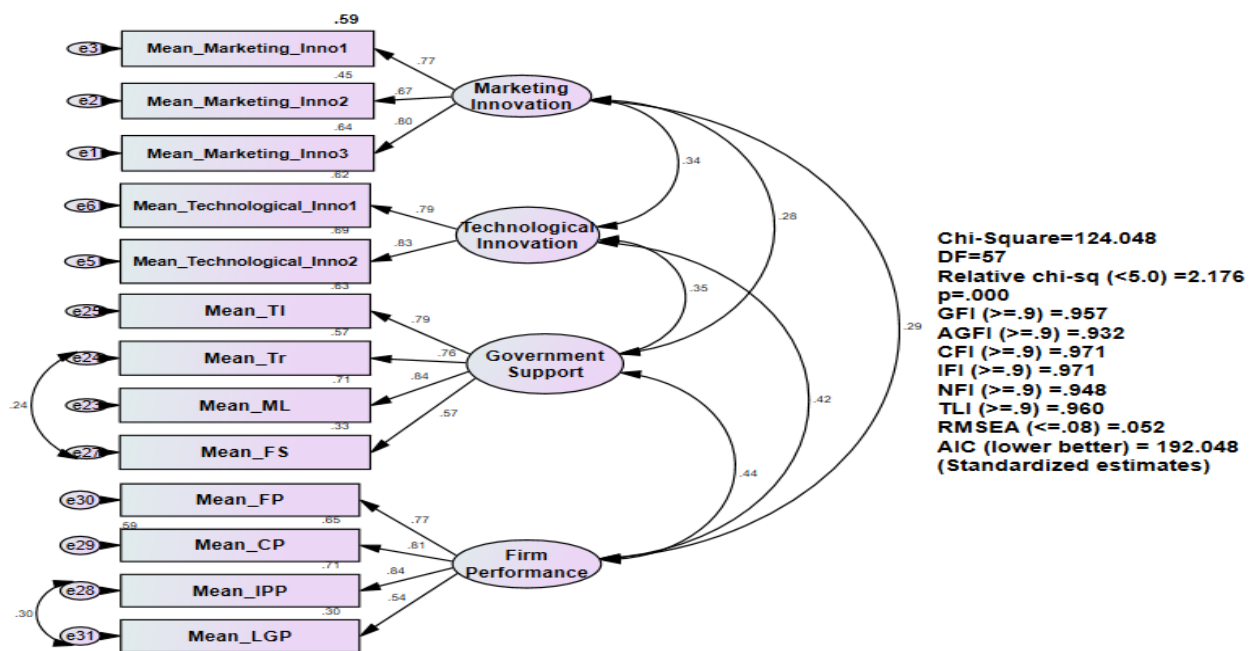


Fig2. Measurement Model

**Note:** TI: Tax Incentive, Tr: Training, ML: Marketing Linkage, FS: Financial Support, FP: Financial Perspective, CP: Customer Perspective, IPP: Internal Process Perspective, LGP: Learning Growth Perspective

Table 3 shows that corporate performance in SMEs is significantly correlated with government backing, technological innovation, and marketing innovation. Technological innovation (0.082, C.R. = 5.064,  $p < 0.001$ ), government assistance (0.064, C.R. = 4.327), and business performance (0.072, C.R. = 4.637) are all significantly positively correlated with marketing innovation. Even larger connections are seen with technological innovation, with company success at 0.164 (C.R. = 6.396) and government support at 0.118 (C.R. = 5.023). Furthermore, there is a substantial correlation between government support and business performance (0.155, C.R. = 6.459),

suggesting that successful government programs improve technology and marketing, which in turn improves SME performance.

Table 3: Covariances

Covariances		Estimate	S.E.	C.R.	P
Marketing Innovation	<- Technological -> Innovation	0.082	0.016	5.064	***
Marketing Innovation	<- Government Support ->	0.064	0.015	4.327	***
Marketing Innovation	<- Firm Performance ->	0.072	0.016	4.637	***
Technological Innovation	<- Government Support ->	0.118	0.023	5.023	***
Technological Innovation	<- Firm Performance ->	0.164	0.026	6.396	***
Government Support	<- Firm Performance ->	0.155	0.024	6.459	***

Source: AMOS output, 2024

Marketing Innovation (MI), Technological Innovation (TI), Government Support (GS), and Firm Performance (FP) all have Composite Reliability (CR) ratings of 0.880, 0.791, and 0.835, respectively, which demonstrate satisfactory reliability and verify discriminant validity. The range of 0.559 to 0.656 for the Average Variance Extracted (AVE) values indicates excellent convergent validity. The validity and reliability of the measurement model as a whole are further supported by the square root of AVE for each construct exceeding the correlations with other components, indicating minimal Maximum Shared Variance (MSV) and modest discriminant validity concerns.

Table 4: Discriminant Validity Concern

Constructs	CR	AVE	MSV	MaxR(H)	√AVE	GS	MI	TI	FP
<b>GS</b>	0.880	0.600	0.162	0.901	0.774	<b>0.774</b>			
<b>MI</b>	0.791	0.559	0.116	0.800	0.748	0.265	<b>0.748</b>		
<b>TI</b>	0.792	0.656	0.180	0.796	0.810	0.311	0.341	<b>0.810</b>	
<b>FP</b>	0.835	0.564	0.180	0.862	0.751	0.403	0.293	0.424	<b>0.751</b>

Note: MIP=Marketing Innovation Practices; Technological Innovation practices; GS=Government Support; FP= Firm Performance

Source: AMOS output, 2024

**Mediating Role Examination**

The way that government aid affects the relationship between company performance and marketing and technological innovation strategies demonstrates its mediation function. A substantial decrease in the direct effect is proof of this mediation effect, which is supported by statistical techniques such as bootstrapping, regression analysis, and structural equation modeling (SEM). This highlights the mediator's critical function in improving business performance.

**Variable Measurement**

To assess goodness of fit, a number of metrics need to be computed; Table 5 outlines acceptable criteria. The specified thresholds are suggestive rather than absolute because sample size and the number of variables in the model are inversely correlated with goodness of fit (Vishwakarma,2024); Hair et al., 2010; Hu & Bentler, 1999) for contextualized thresholds.

Table 5: Tools for Variable Measurement

Measure	Threshold
Chi-square/df (cmin/df)	<3 good;<5 sometime permissible
P-value for the model	> 0.05
CFI	> 0.95 great; > 90 traditional; 0.80 sometime permissible
GFI	> 0.95
AGFI	>0.80
SRMR	<0.09
RMSEA	<0.05 good; 0.05-0.10 moderate and >0.10 bad
IFI	>0.90
NFI	>0.90
TLI	>0.90

Source: Vishwakarma (2024)

Table 6: indices for Model Fit

Sig.	Chi-Sq	$\chi^2/df$	RMR	Fitness Goodness	Fitness Confirmatory	TLI	RMSEA
0.004	124.048	2.176	0.046	0.957	0.971	0.960	0.052

Source: AMOS result, 2024

Table 6 presents the model fit indices, indicating a significant fit of the proposed structural model at a significance level of 0.004. The actual and expected covariance matrices align well, reflected in a Root Mean Square Residual (RMR) of 0.0463 a Chi-Squared score of 124.048 and Relative Chi-Squared score of 2.176. A Confirmatory Fitness Index of 0.912 and a Fitness Goodness Index of 0.957 further affirm the strong model fit. Additionally, the model's fit is validated by a Root Mean Square Error of Approximation (RMSEA) of 0.052 and a Tucker-Lewis Index (TLI) of 0.960.

**Table 7: Path Coefficient (Direct Effect)**

Hypothesis		B	Beta	S.E.	C.R.	P	Ass.	Decision	
Government_Support	<---	Technological_Innovation	0.289	0.288	0.065	4.461	***	H4	Accepted
Government_Support	<---	Marketing_Innovation	0.277	0.177	0.097	2.853	0.004	H2	Accepted
Firm_Performance	<---	Technological_Innovation	0.285	0.278	0.065	4.392	***	H3	Accepted
Firm_Performance	<---	Marketing_Innovation	0.180	0.113	0.093	1.935	0.005	H1	Accepted
Firm_Performance	<---	Government_Support_Programs	0.318	0.311	0.060	5.294	***	H5	Accepted

Source: *AMOS result, 2024*

According to Table 7, government funding is greatly increased by marketing innovation ( $B = 0.277$ ), which in turn fosters technical innovation ( $B = 0.289$ ). While marketing ( $B = 0.180$ ) and technological innovation ( $B = 0.285$ ) both have a beneficial impact on business success, government support is essential for performance ( $B = 0.318$ ). The fact that every hypothesis was confirmed emphasizes how important government assistance and creativity are to the success of businesses.

### Mediating Role

Table 8 demonstrates how marketing and technology advancements impact business performance both directly and indirectly, with government assistance acting as a moderator. The total impact of technological innovation is 0.37 (0.28 direct, 0.090 indirect), but the overall impact of marketing innovation is 0.17 (0.11 direct, 0.060 indirect). The significance of government support in optimizing the advantages of these technologies for SMEs in Addis Ababa, Ethiopia, is underscored by these findings.

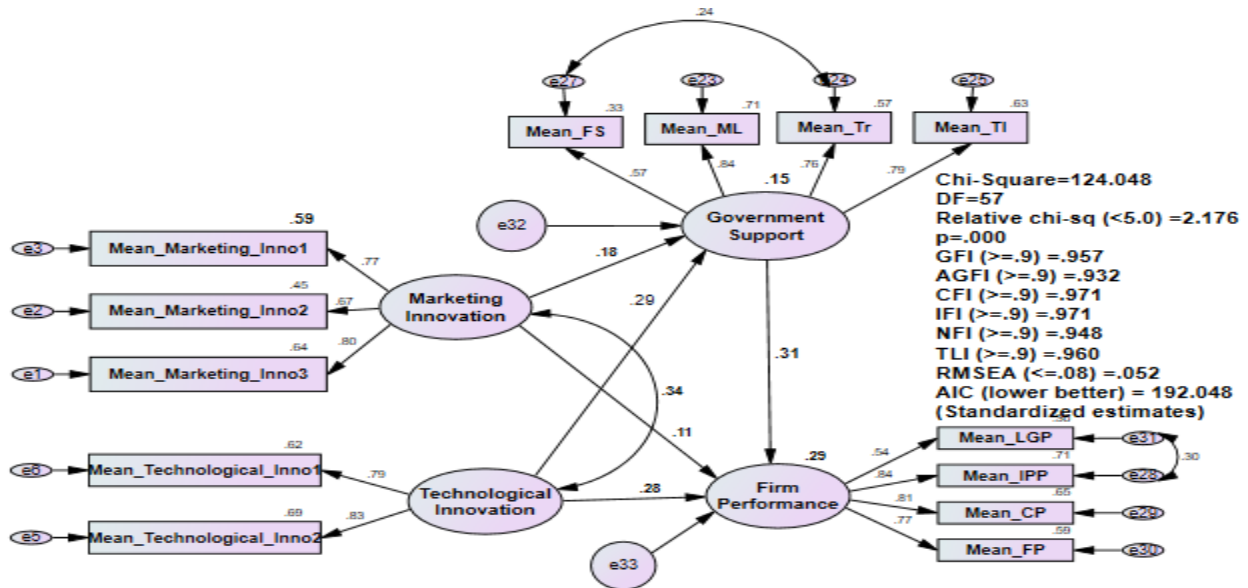


Fig. 3 SEM (Mediation Model) Source: AMOS output, 2024

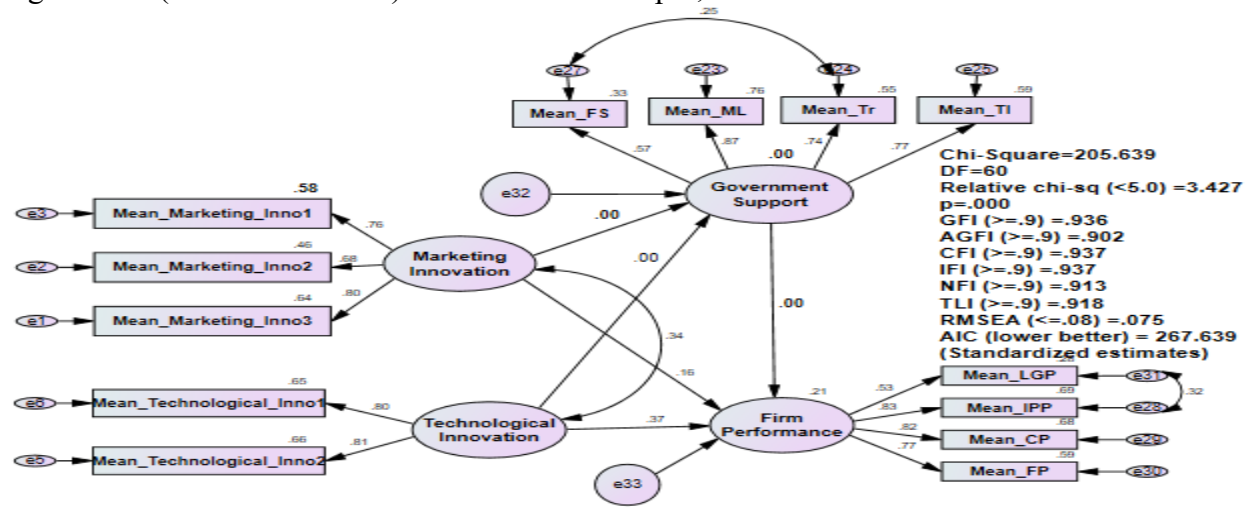


Fig. 4 SEM (Direct Model) Source: AMOS output, 2024

Table 8. Mediating role Effect

Relationship	Influence	worth	Path Influence
Marketing innovation à firm performance	Direct Influence	0.110	Direct influence stated
Marketing innovation à government support firm performance	Indirect Influence	.18*.31=.060	Indirect Influence Ensued
	Whole influence	0.170	Partial mediation
Technological innovationà firm performance	Direct Influence	0.280	Direct influence stated

Technological innovation practices → government support - firm performance	Indirect Influence	.29* .31=.090	Indirect Influence Ensued
	Whole influence	0.370	Partial mediation

Source: AMOS output 2024

### Discussion

The aim of the research was to investigate the direct and indirect connections among government support, innovation, and the business success of small and medium-sized enterprises in Addis Ababa, Ethiopia. To accomplish this, the data gathered from 431 SMEs' owner-managers was analyzed using descriptive statistics and SEM.

The relationship between innovation and performance is heavily mediated by government funding, which has emerged as a crucial enabler. According to the analysis, marketing innovation has a significant indirect effect (0.060) by increasing government support ( $\beta = 0.277$ ), which in turn improves business performance ( $\beta = 0.318$ ). Likewise, the influence of government funding for technical innovation ( $\beta = 0.289$ ) had an indirect effect on performance of 0.090. By reducing obstacles like high costs, a lack of skilled labor, and infrastructural gaps, certain government interventions—including financial aid, training, and regulatory frameworks—amplify the immediate benefits of breakthroughs. These findings are consistent with institutional theory, which emphasizes the importance of outside support networks in creating an atmosphere that encourages innovation in developing nations.

Excellent fit was shown by the structural model (CFI = 0.957, RMSEA = 0.052), and reliability metrics (CR values 0.791–0.880) validated the structures' resilience. With the square root of AVEs surpassing inter-construct correlations, discriminant validity was demonstrated, guaranteeing that each variable makes a unique contribution to the framework. Supported by bootstrapping in SEM, the mediation analysis made it clear that government assistance not only makes it easier for innovations to be adopted but also improves their conversion into measurable business results. For example, technical innovation's overall impact on performance (0.370) was significantly greater than its direct impact (0.280), highlighting the significance of synergistic support systems.

Finally, this study effectively fills a significant knowledge gap by providing empirical evidence of the potent combination of government assistance and innovation in improving the performance of SMEs in Addis Ababa. The practical implication is the pressing need for a cooperative

ecosystem in which SMEs perceive government assistance as a critical growth enabler and government policies are specifically adapted to their needs. This study offers a more sophisticated and practical framework for all stakeholders—policymakers, SME owners, and academics—to cultivate a more resilient, inventive, and competitive SME sector that can fully realize its potential as an engine of economic development in Ethiopia by transcending a direct-effect-only model.

### **Conclusion**

In summary, this study effectively accomplishes its main goals by offering factual data from the Addis Ababa, Ethiopia, environment. It proves that marketing and technology advancements are important factors influencing SME performance. More significantly, it makes clear the previously unclear function of government assistance, recognizing it as an essential mediating mechanism that enhances the impact of innovation rather than just a facilitator. According to the study's findings, SMEs in developing nations need to work together to overcome growth obstacles. Government assistance and innovation are closely related and cannot be solved separately. Ethiopian SMEs' own adoption of innovative methods paves the way for increased competitiveness and sustainable economic contribution, which is further made possible and expedited by focused, efficient government assistance.

### **Recommendation**

The following suggestions are made for policymakers considering the findings:

*Create Integrated Support Programs:* Government programs must be carefully planned to directly encourage marketing and technology innovation. This involves offering grants or subsidies for the purchase of technology (such as digital tools and automation software) and money for marketing initiatives (such as market research and training in digital marketing).

*Boost Capacity Building:* Policy should prioritize the development of human capital in addition to financial aid. In order to overcome the skilled labor shortage, this entails setting up focused training programs, particularly in the areas of digital literacy, contemporary marketing strategies, and new technology management.

*Enhance Enabling Infrastructure:* According to the study background, the government needs to make investments to address fundamental problems like erratic internet connectivity and inadequate physical infrastructure, which are major obstacles to the adoption of new technologies.

*Simplify Regulatory Frameworks:* Make sure that support systems are available and unhindered by

ineffective bureaucracy, which can counteract their benefits and encourage dependency rather than development.

### **Managerial Implication**

This research emphasizes a crucial strategic need for Addis Ababa's SME managers and owners. Managers must actively seek out and incorporate marketing and technology advances into their business models in order to boost performance. They ought to see government assistance programs as strategic assets to be used, not as freebies. To reduce the risk associated with their innovation investments, managers are encouraged to actively interact with government organizations, apply for appropriate training and funding opportunities, and make use of these resources. Budgeting for ongoing education and technological advancements has to be viewed as an essential company strategy rather than an elective.

### **Theoretical Implication**

This research adds a great deal to theoretical discussion. The Resource-Based View (RBV), Institutional Theory, and Diffusion of Innovations (DOI) are three theories that are successfully combined into a single model to explain the performance of SMEs in emerging economies. The study adds to current theoretical frameworks that frequently consider internal capacities and external institutions independently by providing empirical evidence of the partial mediation effect of government support. A significant gap in the research that has traditionally concentrated on rich countries is filled by it, as it offers a verified conceptual model that can be used and evaluated in comparable emerging economies. By measuring multifaceted corporate performance using the Balanced Scorecard, the theoretical application is enhanced beyond just financial measures.

### **Practical Implication**

From a practical standpoint, this study offers stakeholders a clear and doable road map. It confirms to SME owners that their investments and efforts in innovation pay off, particularly when they are in line with the government's existing initiatives. It provides policymakers and government organizations in Ethiopia and other comparable nations with evidence-based support for expanding

and improving assistance to the SME sector. To maximize their impact on local economic growth and job creation, development partners and non-governmental organizations can utilize these insights to create more successful intervention programs that target innovation potential and access to support resources at the same time.

### **Limitations and Future Research Directions**

This work has various limitations despite its contributions. First off, relationships are captured in a snapshot by their cross-sectional nature, which does not show how they change over time. Second, although justified, the findings' applicability to all SMEs in Ethiopia's rural and diverse regions—which can encounter even more formidable obstacles—is limited by the concentration on Addis Ababa. Thirdly, despite its strength, a quantitative survey might not fully capture the "how" and "why" of the connections, including the qualitative subtleties of managers' perceptions and uses of government assistance. Future research should focus on industry comparisons, new technologies like digital platforms, and the long-term effects of marketing and technology. Research with a longitudinal design to see the causal links and the long-term effects of innovation and government assistance on the sustainability of SMEs, and conduct long-term studies. Examine in deeper detail the effects of particular technological innovations (such as AI and e-commerce platforms) and digital marketing techniques (such as social media marketing). Priority should be given to government initiatives that promote networking and research and development, and staff members should receive training on how to foster an innovative culture. Successful initiatives that assist SMEs in developing growth and resilience plans in a changing environment can be identified by evaluating government assistance programs.

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