

Business innovation and high-growth entrepreneurship in small and growing businesses in Uganda: A developing country's perspective



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Orientation: Limited evidence exists on how business innovation influences high-growth entrepreneurship among small and growing businesses (SGBs) in developing economies such as Uganda.

Research purpose: This study examined the effect of business innovation on high-growth entrepreneurship in SGBs in Uganda.

Motivation for the study: Uganda's SGBs face stunted growth because of poor business innovation, compelling entrepreneurs and managers to make decisions that adversely affect business growth.

Research design, approach and method: Following a positivist research paradigm, a correlational research design and a quantitative research approach were employed. From a population of trade (388 179), manufacturing (30 568), service (232 981) and real estate (14 319) businesses, a sample of 376 respondents, constituting business owners (191), managers (91), owner managers (67), CEOs (19) and others (8) was drawn using simple random sampling technique. The data were collected using structured questionnaires, entered into Excel and analysed for descriptive, inferential statistics, correlation and regression using STATISTICA V12.

Main findings: Regression analysis results show that business innovation explained 16.3% of the variance in high-growth entrepreneurship, with product innovation ($\beta = 0.231$, $t = 4.200$, $p < 0.001$) and market innovation ($\beta = 0.211$, $t = 3.772$, $p < 0.001$) emerging as significant predictors, while process innovation ($\beta = 0.052$, $t = 0.962$, $p = 0.337$) had the weakest effect.

Practical/managerial implications: Businesses should explore new markets, improve processes and develop new products to drive growth.

Contribution/value-add: The study provides evidence on the influence of business innovation on high-growth entrepreneurship in SGBs, offering insights for entrepreneurs to enhance business growth.

Keywords: business innovation; high-growth entrepreneurship; market innovation; process innovation; product innovation; small and growing businesses.

Introduction

The world economy has experienced substantial changes in recent years fuelled by technological innovation, demographic changes and an increasing focus on inclusive growth. In developed countries such as United States, entrepreneurship especially high-growth entrepreneurship (HGE) represents only 4% of all businesses, but creates roughly half of all new job opportunities in economy (Kim et al. 2024). In emerging economies such as Brazil, HGE represents 0.6% of all companies in the economy but accounts for 172% increase in employment (Monteiro 2019). In developing countries such as Uganda, entrepreneurship plays a central role in addressing unemployment, poverty and economic inequality (Galindo-Martín, Castaño-Martínez & Méndez-Picazo 2021). Among the various forms of entrepreneurship, HGE has emerged as a particularly important driver of job creation, innovation and productivity enhancement (Kwilinski, Lyulyov & Pimonenko 2024). Although high-growth businesses typically represent less than 10% of all businesses, they contribute disproportionately to employment generation, accounting for over 70% of new jobs in many economies (Ahmetaj, Kruja & Hysa 2023). These businesses, often referred to as 'gazelles' are characterised by rapid expansion and the transformative impact on the economy.

In Uganda, small and growing businesses (SGBs) form part of the SMEs, which are the backbone of the private sector, accounting for over 90% of all businesses and employing the majority of the workforce. However, despite the high rate of entrepreneurial activity, only a small fraction of these businesses achieve sustained high-growth. Most remain micro or small in scale, with limited capacity to scale operations or penetrate regional and international markets (Lachlan & Smith 2024). This presents a critical challenge for Uganda's development agenda, particularly in the context of vision 2040, which emphasises industrialisation, innovation and private sector led growth. While policymakers have expressed interest in supporting entrepreneurship, few initiatives are specifically designed to identify and nurture high-growth ventures (Coco, Colapinto & Finotto 2024). As a result, the drivers of HGE in Uganda remain poorly understood, and the policy environment lacks the precision needed to support businesses with high-growth potential.

Research on HGE has identified a wide range of factors influencing the emergence and sustainability of high-growth businesses, including firm age, size, sector, founder characteristics and access to finance (Linardi & Costa 2022). Among these factors, innovation has consistently emerged as one of the most significant drivers of business growth. Innovation broadly refers to the introduction of new or significantly improved products, services, processes or business models that enhance a business' competitiveness and growth prospects (Onileowo et al. 2021). In entrepreneurial settings, innovation enables businesses to differentiate themselves in competitive markets, respond to changing customer needs and exploit emerging opportunities.

A substantial body of literature suggests that businesses that foster a culture of innovation are more likely to achieve accelerated growth (Aithal & Aithal 2023; Amoa-Gyarteng & Dhlwayo 2024; Sagar 2024). Mulyono and Rolando (2024) emphasise that organisations encouraging experimentation, creativity and systematic implementation of new ideas tend to experience stronger performance outcomes. These studies collectively highlight the role of innovation as a strategic capability that enables businesses to generate competitive advantages and sustain growth overtime. In this sense, innovation is not merely a technological activity, but a broader organisational process that shapes how businesses adapt to a dynamic market environment.

Empirical research examining the relationship between innovation and business growth further supports this perspective. Studies conducted in developed and emerging economies generally report a positive association between innovation activities and firm growth. For instance, Bianchini, Bottazzi and Tamagni (2017), in their study of businesses in Italy, Spain, France and the United Kingdom, found that innovation acts as a central mechanism through which firms achieve and sustain superior growth performance.

Similarly, Nguyen et al. (2023) reported that innovative firms in Vietnam tend to grow faster than their non-innovative counterparts, highlighting the importance of innovation in enabling firms to scale and expand their market reach. At firm level, innovation-related investments such as research and development (R&D) have also been linked to enhanced organisational capabilities. Coad, Segarra and Teruel (2021) argue that firms investing in R&D often develop complementary capabilities, including employee motivation, shared organisational vision and continuous process improvement, which collectively contribute to improved performance and growth outcomes. Supporting this view, Capasso, Treibich and Verspagen (2015) found that R&D intensity positively influences medium-term firm growth, suggesting that sustained investment in innovation-related activities strengthens a firm's capacity to expand and compete.

Despite the predominance of positive findings, the relationship between innovation and business growth is not universally consistent. Some studies highlight more complex or even contradictory outcomes. For example, a study by Brouwer, Kleinknecht and Reijnen (1993), reported a negative correlation between innovation and business growth in certain contexts. This finding suggests that while R&D investment may increase the probability of exceptional performance, it also introduces uncertainty that may expose firms to the risk of poor outcomes. Similarly, Heimonen (2012) found that innovative firms were sometimes less successful than their non-innovative counterparts, indicating that innovation does not automatically translate into improved firm performance. These contradictory findings suggest that the impact of innovation on growth is contingent on a variety of contextual factors, such as market dynamics, institutional environments and firm-level capabilities. In particular, innovation may require complementary resources such as managerial expertise, financial capacity and supportive institutional frameworks in order to generate sustainable growth outcomes.

These contextual considerations are especially relevant in developing economies, where innovation ecosystems are often less mature. In Uganda, for example, the innovation ecosystem remains relatively underdeveloped. Although universities and research institutions are increasingly engaged in innovation-related activities, linkages between academia, industry and government remain weak. As a result, the diffusion and commercialisation of innovative ideas are limited. Moreover, many SGBs operate in low-technology sectors and face constraints related to finance, technical skills and access to innovation networks. The absence of well-developed innovation policies and a support mechanism further constrains the ability of businesses to experiment with new ideas, scale innovative solutions and compete in dynamic markets. Consequently, the potential of innovation to drive HGE in Uganda remains largely underdeveloped.

Given these contextual dynamics, there remains a notable gap in the literature regarding the relationship between business innovation and HGE in Ugandan SGBs. Existing studies in Uganda have largely focused on general entrepreneurship or have examined innovation and business growth as separate constructs, without exploring the dynamic relationship between them. This gap has important implications for both policy and practice. Without a deeper understanding of how innovation influences high-growth outcomes within the Ugandan context, policymakers lack the empirical evidence needed to design effective support mechanisms. Likewise, entrepreneurs and support organisations have limited guidance on how to prioritise innovation strategies that can unlock growth potential.

To address this gap, this study investigates the role of business innovation in promoting HGE among Uganda's SGBs. The study is grounded in the diffusion of innovation (DOI) theory, which emphasises how new ideas, technologies and practices spread within organisations and societies. The theory provides an understanding of how innovative practices can enable businesses to adapt to changing environments and achieve sustained growth. By examining the relationship between different forms of innovation and high-growth outcomes, this study seeks to contribute to the broader discourse on innovation and entrepreneurship in developing economies.

Aim of the study

The aim of the study was to examine the relationship between business innovation and HGE among SGBs in Uganda.

Literature review

Theoretical review: Diffusion of innovation theory

This study draws on Rogers' DOI theory to explain how different forms of business innovation translate into high-growth entrepreneurial outcomes. Diffusion of innovation theory conceptualises innovation not merely as the introduction of novelty, but as a social process in which new ideas and practices are communicated, evaluated, adopted and implemented within a social system over time (Howaldt, Kopp & Schwarz 2025). Adoption decisions are shaped by five perceived attributes: relative advantage, compatibility, complexity, trialability and observability which reduce uncertainty and influence the rate and breadth of diffusion (Al-kfairy & Alyafei 2025).

While DOI primarily explains adoption dynamics, its mechanisms provide a micro-foundation for business-level growth outcomes. Innovations that exhibit strong relative advantage and are compatible with existing routines diffuse more rapidly (Gondal 2023). Trialability and observability further accelerate diffusion by reducing perceived risk and enhancing legitimacy. As diffusion progresses from early adopters to broader constituencies, cumulative adoption generates increasing returns through expanded demand,

improved efficiency, and market growth can therefore be understood as a performance consequence of successful innovation diffusion (Mbatha 2024).

Product innovation refers to the introduction of new or significantly improved goods or services that enhance customer value (Shin et al. 2022). According to DOI, product innovations that demonstrate clear relative advantage such as superior functionality or cost-effectiveness are more readily adopted by early adopters and opinion leaders (Overbye-Thompson & Hamilton 2025). Observability and trialability facilitate market acceptance by allowing potential users to evaluate performance before full commitment. As diffusion spreads across customer networks, demand accumulates and market penetration increases.

From a growth perspective, cumulative adoption translates into measurable performance expansion. In order to achieve an increase in demand, this requires deliberate actions such as expanded production and distribution capacity, often resulting in workforce growth. Moreover, as an adoption extends beyond early segments to the early majority, sales volumes increase. Finally, widespread diffusion may reshape competitive boundaries by attracting new customer segments, thereby expanding the overall market served by the businesses.

Thus, this study hypothesised (H1) that:

H1: There is a positive and significant relationship between product innovation and HGE.

Process innovation involves the implementation of new or significantly improved production or operational methods. Unlike product innovation, diffusion of process innovation primarily occurs within organisations. Diffusion of Innovation emphasises compatibility and complexity as critical determinants in such contexts. It is imperative that process innovations align with existing routines and strategic priorities.

Successful diffusion of process innovation enhances efficiency, reduces costs and improves quality consistency. These performance gains strengthen competitive positioning and enable businesses to scale operations. As output expands to meet increasing demand, complementary employment growth may follow. Improved efficiency also supports higher sales volumes by allowing businesses to compete on price or responsiveness. Furthermore, routinised and scalable processes enable businesses to serve broader geographic or segmental markets, thereby contributing to market growth.

Therefore, this study hypothesised (H2) that:

H2: There is a positive and significant relationship between process innovation and HGE.

Market innovation encompasses new marketing approaches, distribution channels or business models that redefine how businesses engage customers. In DOI terms, such innovations

diffuse largely through inter-organisational networks, where observability and social influence are particularly salient. Visible success enhances legitimacy, encouraging imitation and accelerating diffusion across competitive environments. As new market approaches reduce access barriers and expand customer reach, cumulative adoption increases demand. The expansion of distribution networks or the introduction of novel positioning strategies may open previously untapped segments, generating sales growth. Sustained expansion in outreach and customer acquisition frequently necessitates additional organisational capacity, including employment growth. Moreover, as market innovations diffuse broadly, they can redefine industry structures and stimulate overall market expansion.

Thus, this study hypothesised (H3) that:

H3: There is a positive and significant relationship between market innovation and HGE.

In conclusion, DOI suggests that growth outcomes emerge not simply from the existence of innovation, but from the effectiveness of its diffusion. Product, process and market innovations that exhibit favourable perceived attributes and successfully progress through the stages of knowledge, persuasion, decision, implementation and confirmation are more likely to achieve widespread adoption. Cumulative adoption generates expanding demand, operational scalability and competitive repositioning, which manifest as job creation, sales growth and market growth. By disaggregating both innovation and HGE into their constituent dimensions, the present study provides a theoretically grounded and analytically precise examination of how innovation diffusion drives entrepreneurial growth.

High-growth entrepreneurship

Keeping the business venture growing from small-scale operations to a large and thriving business is always at the mind of entrepreneurs, which is the basic tenet of HGE. High-growth entrepreneurship is widely used in studies of entrepreneurship, describing activities of starting and operating business ventures, with average annualised growth greater than 20% per annum, over a 3-year period, and with 10 or more employees at the beginning of the observation period (Kim et al. 2024). High-growth business ventures are of high economic importance because they generate a significantly higher share of employment and are associated with poverty reduction, especially in developing countries.

A study by Kim et al. (2024) in the United States revealed that 4% of high-growth businesses create roughly half of all new job opportunities in an economy. Business ventures classified under HGE are also referred to as high-growth firms (HGF), gazelles, rapid-growth firms, fast growing firms, high potential firms and high-growth companies, among other names. High-growth entrepreneurship has gained increasing amounts of attention from diverse

academic fields especially in economics and political economy as an important stimulus to national economies and increasingly relevant to policymakers (Felzensztein et al. 2022). Understanding the determinants of successful business ventures and the traits of successful founders is a pressing concern (Azoulay et al. 2020). Both public and private investors struggle to identify high-growth potential in new ventures. Governments frequently promote new businesses with potential, seeking to create jobs and strengthen the economy, which can result in the evolution of existing economic structures into transformation of economies (Bilan et al. 2019).

High-growth entrepreneurship can be further conceptualised through job creation, market growth and sales growth. Such dimensions reflect a core aspect of what distinguishes high-growth businesses from average businesses. Job creation is a defining dimension of HGE and is defined as the process by which the number of employment opportunities with an enterprise or an economy increases over a specific period (Hussein et al. 2023). It involves generating new positions of paid work that contribute to reducing unemployment, enhancing income levels and supporting economic development. Job creation is widely acknowledged as a fundamental pillar of economic development, contributing directly to GDP growth by increasing aggregate demand and enabling the productive use of human capital (Xiong 2024). Particularly in formal sectors, it fosters social stability and reduces inequalities (Doerr, Drechsel & Lee 2024).

Another crucial indicator of HGE is the expansion of market reach and value over time. This growth often reflects rising sales, increased customer bases and broader geographic penetration (Jansen et al. 2023). It indicates expanding demand for products or services and is often used as a key indicator of market opportunity and economic vitality. It is a critical external environmental factor that influences business strategy, entrepreneurial decision making and businesses performance (Ebabu Engidaw 2021). The third dimension of HGE is sales growth, which refers to the increase in a company's revenue generated from the sale of goods or services over a specific period (Islami, Rahyuni & Rukayyah 2024). It is a key indicator of business performance, reflecting the business' ability to increase demand for its offerings and expand its market presence. Tudose, Rusu and Avasilcai (2022) identify sales growth as a key measure of business success that provides early evidence of market acceptance and product market fit.

Business innovation

Business innovation has evolved into a multidimensional concept that is beyond mere technological advances to encompass organisational, strategic and cultural transformations. Innovation is a process involving a dynamic and non-linear activity that involves introducing new or significantly improved products, services, operational methods and business models (Chaniago 2021). This process is inherently uncertain and complex, driven by both internal

capabilities and external pressures (Ahsan 2025). Businesses that actively pursue innovation strategies tend to outperform their peers in various domains, demonstrating higher levels of adaptability, market responsiveness and long-term resilience. Innovation stems from multiple organisational systems including strategic intent, structural design, cultural openness, human capital capabilities and robust R&D functions (Distanont & Khongmalai 2020). Moreover, it is enabled by digital tools, open innovation platforms and cross-functional collaboration. Innovation acts as a catalyst for competitive advantage, enabling companies to differentiate themselves and respond swiftly to dynamic market conditions (Taherdoost 2024).

According to Hanaysha, Al-Shaikh, Joghee and Alzoubi (2022) business innovation encompasses product innovation, process innovation and market innovation. Product innovation entails launching new or significantly improved goods or services that cater for the needs of the market (Espeche, Sacristán-Navarro, Zúñiga-Vicente & Crespo 2023). It involves creating unique products and services with notably enhanced features, functionality or user experience (El Sawy, Kræmmergaard, Amsinck & Vinther 2020). Furthermore, it encompasses improvements in technical specifications, components, materials and software, among other characteristics (Nandal, Nandal & Aarushi 2020).

Process innovation on the other hand, is considered as an internal capability that enables business to optimise resources and achieve competitive advantage and sustainable growth (Ghobakhloo et al. 2021). It involves the adoption of new or improved ways of producing or delivering products and services (Kafetzopoulos, Psomas & Skalkos 2020). This includes upgrading techniques, equipment, software, technology, automation or sensors aimed at improving processes and product development.

Market innovation is the art of developing unique marketing strategies that creatively cause modifications in product packaging, design, promotion, placement and pricing (Nkegbe & Abor 2023). It focuses on customer satisfaction and tapping into new niche markets, including substantial modifications to designs (Ibidunni, Olokundun, Ibidunni & Abiodun 2019). The main objective of marketing innovation is to enhance customer engagement, tap into new markets or re-position the business' products on the market to increase sales (Molina-Castillo, Lopez-Nicolas & De Reuver 2020).

Research methods and design

The study adopted a deductive reasoning approach grounded in a positivist philosophy, which supports the use of quantitative methods to test hypotheses and identify predictive relationships through statistical analysis (Ghanad 2023). A quantitative methodology was applied by integrating correlational and survey research designs. The quantitative design enabled the findings to be generalised while the correlational design allowed for

examining predictive relationships among the study's key constructs. The survey strategy facilitated data collection from respondents using a structured questionnaire (Flynn, Pagell & Fugate 2018).

Sampling

Structured questionnaires were distributed to a sample of 384 respondents who included business owners, CEOs and owner managers in SGBs from selected districts of central Uganda including Kampala, Wakiso and Mukono. The sample was drawn from a population that consisted of businesses in four major sectors: the trade sector (388 179 businesses), the manufacturing sector (30 568 businesses), the service sector (232 981 businesses) and the real estate sector (14 319 businesses) (Uganda Bureau of Statistics 2025). The SGBs that participated in this study were extracted from Uganda Manufacturers Association (UMA) data base. Uganda Manufacturers Association works as an umbrella body and among its responsibilities is to connect the manufacturers to the buyers. This association hosts a database of both manufacturers and buyers. From the sample, 376 questionnaires were completed, which amounts to a response rate of 98%; this is considered acceptable.

The 376 respondents included 191 business owners, 91 Managers, 67 owner managers, 19 chief executive officers and eight others who were selected because they possess valuable knowledge of entrepreneurship as well operating and managing SGBs. They also hold strategic influence over decision-making. To ensure equal representation across all selected districts, a simple random sampling was employed where every member of the target population had an equal and independent chance of being selected. A complete sampling frame that listed all eligible respondents was developed and each individual in the sampling frame was assigned a unique identifier, after which participants were selected using a random number generator to eliminate selection bias. This approach enhanced the representativeness of the sample and strengthened the validity of the study's findings by reducing systematic error and ensuring that the results could be generalised to the broader population.

Research instrument

A structured questionnaire with closed items was used to collect data for this study because it allows for the researcher to capture the responses of a large number of respondents regarding the elements of this study with minimal researcher involvement. The researchers adapted items for the variables in this study from previous research. For instance, the business innovation constructs which are product innovation (8 items), process innovation (9 items) and market innovation (9 items) were adapted from Chummee (2022), Wang et al. (2021) and Tang, Zhang and Peng (2021), respectively. Notably, this is in line with the DOI theory which explains how innovations spread

among customers (product innovation), through businesses (process innovation) and in networks that exist in markets (market innovation). High-growth entrepreneurship is measured using three constructs: job creation (4 items), sales growth (8 items) and market growth (6 items), as adapted from Sulich and Sołoducho-Pelc (2022), Baehre et al. (2022) and Zakhidov (2024). These instruments were originally developed and tested in national contexts; therefore, careful consideration was given to their applicability to the Ugandan SGBs environment.

To enhance contextual relevance, the wording of several items was reviewed and slightly modified to ensure clarity and appropriateness for Ugandan business owners and managers. The process of adapting focused primarily on simplifying terminology and aligning items with the operational realities of SGBs in Uganda while retaining the original conceptual meaning of the constructs. In addition, a pilot study was conducted with a small sample of SGBs owners, managers and CEOs to assess the clarity, relevance and comprehensibility of the survey items. Feedback from the pilot participants was used to refine the item wording where necessary. The reliability and internal consistency of the adapted scales were subsequently evaluated using Cronbach's alpha coefficients, and all constructs demonstrated acceptable reliability levels above the recommended threshold of 0.70, indicating the measurement instruments were suitable for the Ugandan context.

The questionnaire was structured to include three sections: Section A focused on the bio data of respondents. The information solicited included gender, age, education level, number of employees, age of the business, years of experience, position held, business sector, annual sales, rate of business growth and district of location. Section B measured the perceptions of respondents on the constructs of the independent variable (business innovation), which are product innovation, process innovation and market innovation. Section C measured the perceptions of respondents on the constructs of the dependent variable (HGE) which are job creation, sales growth and market growth. The responses in Section B and Section C were based on the 5-likert scale that ranged from strongly disagree (1) to strongly agree (5).

This scale was employed to measure the constructs of business innovation and HGE. Spearman's rank correlation was used during the preliminary analysis to examine the associations among variables. However, for the regression analysis, composite scores were computed by averaging multiple Likert items representing each construct. All constructs demonstrated acceptable reliability levels based on Cronbach's alpha coefficients exceeding the recommended threshold of 0.70. Consequently, the composite scores were considered suitable for parametric analyses including linear regression.

Demographics analysis

Table 1 presents the breakdown of the demographic profile of the study respondents. Among the respondents, 60.4% were male. In terms of age, most respondents (47.9%) were aged between 31 years and 40 years. Most of the respondents (38.3%) possessed a bachelor's degree. The majority (43.1%) of the businesses fell within the category that employed 1–5 employees. In addition, most businesses (90.1%) had operated for 1–10 years. In terms of years of experience, the majority of respondents (85.1%) fell within the 1 year – 10 years range. Regarding the annual revenue, the majority of businesses (59.8%) fell within the range of 300–350 million Uganda shillings. The annual growth distribution mainly comprised of 53.9% businesses that registered 20% growth. In terms of location, most businesses (58.8%) were located in Kampala.

Factor loadings, Kaiser–Meyer–Olkin (KMO) test and Bartlett's test of the study are presented in Table 2.

As shown in Table 2, the KMO values were 0.904 for business innovation and 0.879 for HGE, both exceeding the recommended threshold of 0.60 and indicating excellent sampling adequacy. Bartlett's Test of sphericity was significant for both constructs (business innovation: $\chi^2 (325) = 3633.369$, $p < 0.001$; HGE: $\chi^2 (153) = 2959.964$, $p < 0.001$), confirming that the correlation matrices were suitable for factor analysis.

The extracted communalities for all items were above minimum acceptable threshold of 0.50, indicating that each variable shared sufficient variance with the retained factors. This suggests that the factor solution adequately explained the variance of the observed indicators and supports the retention of all items in the final analysis. Given that the objective of this analysis was to identify underlying latent constructs rather merely reduce data, principal axis factoring (PAF) was employed. The PAF is appropriate in theory-driven research where constructs such as product, process and market innovation, as well as job creation, sales growth and market growth, are assumed to represent latent dimensions reflected by observed variables.

An oblique rotation method was applied because the dimensions of business innovation and HGE are theoretically expected to be correlated. Oblique rotation provides a more realistic representation of relationships between constructs and enhances interpretability when factors are conceptually related. Thus, the EFA results support the multidimensional structure of business innovation and HGE and justify proceeding with subsequent reliability and validity assessments.

Validity and reliability of the scales

In this study, reliability refers to the extent to which the measuring instrument produces consistent results when presented to the same group of respondents repeatedly

TABLE 1: Demographic composition of respondents in small and growing businesses in Uganda ($N = 376$).

Demographic variable	Frequency	Percentage
Gender		
Male	227	60.4
Female	149	39.6
Age group (years)		
18–30	87	23.1
31–40	180	47.9
41–50	76	20.2
Above 50	33	8.8
Level of education		
PhD or doctoral degree	28	7.4
Master's degree	45	12.0
Postgraduate diploma	26	6.9
Undergraduate or bachelor's degree	144	38.3
Diploma	83	22.1
Certificate	38	10.1
No formal education	9	2.4
Other	3	0.8
Number of employees		
1–5	162	43.1
6–10	105	27.9
11–15	52	13.8
16–20	30	8.0
Above 20	27	7.2
Age of the business		
1–3 years	114	30.3
4–6 years	132	35.1
7–10 years	93	24.7
Above 10 years	37	9.8
Years of experience in the business		
1–5 years	178	47.3
6–10 years	142	37.8
Above 11 years	56	14.9
Position held in the business		
Business owner	191	50.8
Manager	91	24.2
Owner manager	67	17.8
Chief Executive Officer (CEO)	19	5.1
Others	8	2.1
Sector in which the business belongs		
Trade	237	63.0
Manufacturing	58	15.4
Real estate	32	8.5
Service	49	13.1
Annual revenue in Uganda Shillings		
100–150 million	51	13.6
200–250 million	54	14.4
300–350 million	225	59.8
Above 400 million	46	12.2
Business growth rate per annum		
20%	203	53.99
30%	83	22.07
40%	60	15.96
50%	21	5.59
Above 50%	9	2.39
District in which the business is located		
Kampala	221	58.8
Wakiso	114	30.3
Mukono	41	10.9

(Hayes & Coutts 2020). In the same vein, for the purpose of this study, validity refers to the extent to which the measuring instrument measures what it is intended to measure (Atzeni, Del Chiappa & Mei Pung 2022). The validity and reliability of the scale items in the study were assessed using the STATISTICA (version 12) software. Exploratory factor analysis was the statistical method used to validate the construct, revealing underlying factors and relationships between business innovation and HGE. Items with factor loadings that exceeded 0.50, were accepted, while those that were less than 0.50 were excluded as they were considered to be weak (Fadele & Rocha 2025). In addition, Cronbach's alpha coefficient was utilised to test the reliability of the scale and scales that had values greater than 0.7 indicated acceptable reliability (Sürücü & Maslakci 2020).

The results highlighted in Table 2 show that factors that loaded onto constructs had values that ranged from 0.53 to 0.86. A total of six constructs were considered for further analysis after one construct emerged as latent variable, market expansion. Items with factor loadings below the recommended threshold of 0.50 or exhibiting cross-loading were removed to improve construct clarity.

Specifically, items M11 and M12 (market innovation), JC1 (Job Creation) and SG5 (Sales Growth) were excluded from the final analysis because their loadings were below 0.50 or demonstrated cross-loading concerns. After item purification, all retained items loaded above 0.53, exceeding the minimum acceptable threshold and supporting convergent validity. The final factor structure yielded three dimensions for business innovation (product, process and market innovation) explaining 54.3% of the total variance (Eigenvalue = 13.9), and three dimensions for HGE (job creation, sales growth and market growth) explaining 55.4% of the total variance (Eigenvalue = 9.9). These values exceed the commonly accepted 50% benchmark for social science research. In addition, the reliability was assessed using Cronbach's alpha at both construct and sub-construct levels. While the overall scales demonstrated acceptable reliability (business innovation $\alpha = 0.79$; HGE $\alpha = 0.82$), reliability was also examined for each dimension: (product innovation $\alpha = 0.87$, process innovation $\alpha = 0.92$, market innovation $\alpha = 0.86$, job creation $\alpha = 0.77$, sales growth $\alpha = 0.83$, market growth $\alpha = 0.80$), all sub-construct alphas exceeded the recommended 0.70 threshold, confirming internal consistency reliability.

Ethical considerations

Ethical clearance to conduct this study was obtained from the Research Ethics Review Committee of the University of South Africa (reference no.: 2024/CRERC/2403).

Results

The relationship between business innovation (as measured by product innovation, process innovation and market innovation) and HGE (job creation, sales growth and market growth) was tested using Spearman Correlation coefficient.

TABLE 2: Kaiser–Meyer–Olkin and factor loadings results.

Questionnaire items	Indicators	Loadings	KMO	Bartlett's χ^2	df	Eigen values	Total variance (%)	Number of items	Cronbach's alpha
Business innovation	-	-	0.904	3633.369	325	13.9	54.3	24	0.79
Product innovation	PRI1	0.639920	-	-	-	-	-	-	-
	PRI2	0.662519	-	-	-	-	-	-	-
	PRI3	0.680211	-	-	-	-	-	-	-
	PRI4	0.728835	-	-	-	-	-	-	-
	PRI5	0.658294	-	-	-	-	-	-	-
	PRI6	0.684391	-	-	-	-	-	-	-
	PRI7	0.652940	-	-	-	-	-	-	-
	PRI8	0.636452	-	-	-	-	-	-	-
Process innovation	PI1	0.742764	-	-	-	-	-	-	-
	PI2	0.786503	-	-	-	-	-	-	-
	PI3	0.776180	-	-	-	-	-	-	-
	PI4	0.754846	-	-	-	-	-	-	-
	PI5	0.684978	-	-	-	-	-	-	-
	PI6	0.673542	-	-	-	-	-	-	-
	PI7	0.698227	-	-	-	-	-	-	-
	PI8	0.703087	-	-	-	-	-	-	-
	PI9	0.679391	-	-	-	-	-	-	-
Market innovation	MI3	0.687856	-	-	-	-	-	-	-
	MI4	0.747892	-	-	-	-	-	-	-
	MI5	0.691621	-	-	-	-	-	-	-
	MI6	0.665740	-	-	-	-	-	-	-
	MI7	0.668892	-	-	-	-	-	-	-
	MI8	0.670909	-	-	-	-	-	-	-
	MI9	0.674500	-	-	-	-	-	-	-
High-growth entrepreneurship	-	-	0.879	2979.964	153	9.9	55.4	16	0.82
Job creation	JC2	0.861990	-	-	-	-	-	-	-
	JC3	0.843924	-	-	-	-	-	-	-
	JC4	0.838295	-	-	-	-	-	-	-
Sales growth	SG1	0.840937	-	-	-	-	-	-	-
	SG2	0.802254	-	-	-	-	-	-	-
	SG3	0.784358	-	-	-	-	-	-	-
	SG4	0.628430	-	-	-	-	-	-	-
Market expansion	SG6	0.686265	-	-	-	-	-	-	-
	SG7	0.695215	-	-	-	-	-	-	-
	SG8	0.557333	-	-	-	-	-	-	-
	MG1	0.557122	-	-	-	-	-	-	-
	MG2	0.674003	-	-	-	-	-	-	-
	MG3	0.730933	-	-	-	-	-	-	-
	MG4	0.642907	-	-	-	-	-	-	-
	MG5	0.690125	-	-	-	-	-	-	-
	MG6	0.530909	-	-	-	-	-	-	-

KMO, Kaiser–Meyer–Olkin; df, degrees of freedom.

A Spearman rank order correlation analysis was conducted to examine the association between business innovation and HGE. The results revealed a moderate and positive relationship between the two variables ($r = 0.510$, $p < 0.001$) indicating that higher levels of business innovation are associated with higher levels of HGE among the surveyed businesses. However, the magnitude of the relationship suggests moderate rather than strong explanatory power. The coefficient implies that approximately 26% ($r^2 = 0.26$) of the variance in HGE is explained by business innovation. While statistically significant, this suggests that other factors beyond business innovation explain the remaining 74% of variance. Prior research indicates that other factors such as access to finance, individual entrepreneurial characteristics, firm strategic resources, institutional support and market conditions also play important roles in shaping

business growth. This implies that future research should incorporate these factors to develop more comprehensive explanatory models of HGE.

It is important to observe that having established the existence of a moderate and positive relationship between business innovation and HGE through correlation analysis, further analysis was carried out using multiple regression analysis to assess the strength and direction of the established relationship. However, prior to the regression analysis, diagnostic tests were conducted to assess the assumptions of multiple regression. The normality of residuals was evaluated using histograms and normal probability plots, which indicated an approximately normal distribution. Homoscedasticity and linearity were assessed using scatterplots of standardised residuals against predicted values, which showed no

systematic patterns. Multicollinearity was examined using variance inflation factor (VIF) and tolerance statistics, and all values fell within acceptable thresholds (VIF < 10; tolerance > 0.10), indicating no multicollinearity among the predictors. After regression diagnostic tests proved normal, regression analysis proceeded as laid out in Table 3.

Multiple regression analysis was conducted to examine the effect of product, process and market innovation on HGE measured by job creation, sales growth and market growth. The results indicate that the overall model was statistically significant ($R = 0.404$, $R^2 = 0.163$, Adjusted $R^2 = 0.156$, $F [3,372] = 24.191$, $p < 0.001$). This implies that the innovation variables jointly explain 16.3% of the variance in HGE outcomes.

Product innovation ($\beta = 0.231$, $t = 4.200$, $p < 0.001$) and market innovation ($\beta = 0.211$, $t = 3.772$, $p < 0.001$) had positive and statistically significant effects on HGE. However, process innovation ($\beta = 0.052$, $t = 0.962$, $p = 0.337$) was not statistically significant. These findings suggest that businesses emphasising product and market innovation are more likely to experience levels of job creation, sales growth and market growth.

These findings provide a clear evidence that business innovation is a driver of entrepreneurial growth in the Ugandan context and supports the theoretical expectation that innovative practices enhance the capacity of SGBs to achieve HGE. The results of the regression analysis indicate that the model was statistically significant, suggesting that business innovation plays an important role in explaining variations in HGE among businesses. Specifically, the business innovation variables jointly explained 16.3% of the variance in HGE outcomes. Although the explanatory power of the model is moderate, the findings indicate that innovation remains an important factor influencing business growth, while other contextual, organisational and environmental factors may also contribute to HGE.

The results show that product innovation has a positive and statistically significant effect on HGE, thereby supporting H1 of the study. This finding suggests that businesses that develop new or significantly improved products are more likely to experience higher levels of job creation, sales growth and market expansion. Product innovation enables businesses to respond to changing customer needs. Differentiate themselves from competitors and create new market

opportunities. As a result, businesses that consistently introduce innovative products are better positioned to achieve sustained growth. This finding is consistent with the literature on innovation and entrepreneurship, which suggests that product innovation is a key driver of business growth and competitiveness (El Sawy et al. 2020; Espeche et al. 2023; Hanaysha et al. 2022).

Similarly, market innovation was found to have a positive and statistically significant effect on HGE, supporting H3 of the study. The finding implies that businesses that adopt innovative marketing strategies, explore new markets or develop new ways of delivering value to customers are more likely to achieve higher growth outcomes. Market innovation enhances businesses' ability to identify and exploit market opportunities, improve customer engagement and expand their market reach. Consequently, businesses that actively pursue innovative marketing approaches may experience higher sales growth and market expansion, which ultimately contribute to job creation and overall business growth. According to Abdulsalam and Abdullahi (2024), companies that prioritise market-focused strategies are more likely to achieve increased market share. Relatedly, Onileowo et al. (2021) assert that entrepreneurs who can adapt and innovate in response to changing market conditions are more likely to grow their market share and eventually achieve success.

On the other hand, process innovation was found to have a positive, but statistically insignificant effect on HGE, leading to the rejection of H2 of the study. This suggests that improvements in production processes, operational methods or internal efficiency alone may not directly translate into measurable growth outcomes such as job creation, sales growth and market expansion. One possible explanation is that process innovation primarily focuses on improving efficiency, reducing costs and enhancing operational performance rather than directly generating new revenue streams or expanding markets. As a result, while process innovation may strengthen internal capabilities and long-term competitiveness, its direct impact on HGE may be less pronounced compared to product and market innovation.

The findings of this study are broadly consistent with the propositions of DOI theory. Diffusion of Innovation posits that innovations spread through social and organisational systems as potential adopters evaluate their relative advantage, compatibility, complexity and observability. As innovations diffuse and adoption increases, businesses are able to realise performance benefits that translate into growth outcomes.

The findings of this study highlight the importance of innovation, particularly product and market innovation, in driving HGE. Businesses that prioritise the development of innovative products and adopt market-oriented innovation strategies are more likely to achieve significant growth outcomes. These results underscore the need for entrepreneurs

TABLE 3: Multiple regression results for innovation dimensions predicting high-growth entrepreneurship ($N = 376$).

Dimensions	β	SE of β	b	SE of b	$t(372)$	p -value
Intercept	-	-	2.220	0.240	9.266	0.000*
Product innovation	0.231	0.055	0.194	0.046	4.200	0.000*
Process innovation	0.052	0.054	0.047	0.049	0.962	0.337
Market innovation	0.211	0.056	0.234	0.062	3.772	0.000*

Note: Regression summary for dependent variable: HGE (job creation, sales growth and market growth) $R = 0.404$, $R^2 = 0.163$, Adjusted $R^2 = 0.156$, $F(3,372) = 24.191$, $p < 0.000$, SE of estimate: 0.655.

SE, standard error; β , standardised coefficient.

*, $p < 0.001$.

and managers to invest in innovation activities that directly enhance customer value and market competitiveness. At the same time, the findings suggest that process innovation, although beneficial for operational efficiency, may need to be complemented by product and market innovation in order to generate substantial growth outcomes.

Discussion

Study implications

Methodological implications

This study makes a methodological contribution to the entrepreneurship and innovation literature by applying a quantitative research approach to examine the relationship between business innovation and HGE among SGBs in Uganda. While previous studies in this area have largely relied on qualitative approaches such as case studies and in-depth interviews, which provide rich contextual insights but are often limited in generalisability, this study employs a structured survey and statistical analysis to empirically test the relationship between innovation dimensions and entrepreneurial growth outcomes.

By utilising quantitative techniques such as correlation and multiple regression analysis, the study provides statistically grounded evidence on how innovation dimensions influence job creation, sales growth and market growth among Ugandan businesses. The use of a relatively large sample size ($N = 376$) enhances the reliability and generalisability of the findings within the context of SGBs. The study therefore demonstrates the value of integrating quantitative methods into innovation and entrepreneurship research in developing economies, where empirical evidence on the drivers of HGE remains limited. Furthermore, the study shows how validated measurement scales can be adapted and tested within an emerging economy context, contributing to the methodological advancement of innovation research in sub-Saharan Africa.

Practical implications

The findings of this study provide several practical implications for entrepreneurs, policymakers and support organisations seeking to stimulate HGE in Uganda.

Firstly, the results demonstrate that business innovation plays a significant role in explaining variations in entrepreneurial growth outcomes, particularly in terms of market expansion, sales growth and job creation. This suggests that entrepreneurs should prioritise innovation-driven strategies, including the development of new products, improvements in production processes and exploration of new market opportunities in order to enhance business growth.

Secondly, policymakers and enterprise development agencies should design programmes that actively support innovation within SGBs. This may include facilitating access to innovation financing and providing technical training for

product and process development. Such interventions could enable SGBs to implement innovation strategies more effectively and improve their growth potential.

Thirdly, institutions supporting entrepreneurship, including business development service providers and innovation hubs, can use the study's findings to design targeted capacity-building initiatives that help entrepreneurs to develop innovation capabilities. Training programmes that focus on production development, process optimisation and market exploration could significantly enhance the competitiveness and growth prospects of SGBs. In conclusion, the study highlights the importance of fostering an innovation-oriented business environment as a strategy for promoting HGE, job creation and economic development in Uganda.

Limitations and future research

Limitations: Like any other research study, this study was not without limitations. Despite a high response rate of 98%, some potential respondents did not participate. Moreover, the study's focus on SGBs in only four districts of central Uganda may limit the generalisation of the findings to other regions. Thus, future research could benefit from a broader geographic scope. Though many studies have employed qualitative research approach, incorporating a quantitative approach could provide a deeper insight into business innovation among SGBs. Mixed-methods research could help clarify the role of contextual factors in business innovation and inform strategies for improving SGBs operations. Furthermore, combining DOI theory with other frameworks could lead to a more comprehensive model for measuring HGE.

Areas for future research

Based on the results of this study, there are certain areas that warrant further research. For instance, this study examined the relationship between business innovation and HGE in SGBs in Uganda. The findings revealed that business innovation account for only 26% of variance in HGE. Further research could explore other contextual factors that could influence HGE such as regulatory environments, strategic firm resources, finance, individual entrepreneurial characteristics and cultural attitudes, among others. Also, this study utilised a cross-sectional approach, which limits the ability to observe changes over time. Further research could explore longitudinal studies that could track the associations between business innovation, and HGE over extended periods. Future research could benefit from comparative analyses between Uganda and other developing countries, identifying best practices and contextual lessons that could inform HGE strategies.

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Competing interests

The authors; Hussein Ssebana and Gwendoline V. Nani; declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

CRedit authorship contribution

Hussein Ssebana: Conceptualisation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Writing – original draft, Writing – review & editing. Gwendoline V. Nani: Supervision. All authors reviewed the article, contributed to the discussion of results, approved the final version for submission and publication, and take responsibility for the integrity of its findings.

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Data availability

The data that support the findings of this study are not openly available and are available from the corresponding author, Hussein Ssebana, upon reasonable request.

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