Cureus Journal of Business and Economics

Open Access Original Article

Individual Learning Behavior and Entrepreneurial Success: The Mediating Role of Entrepreneurial Bricolage among Micro-entrepreneurs in Uganda

Review began 12/20/2024
Review ended 01/16/2025
Published 01/24/2025

DOI: https://doi.org/10.7759/s44404-024-02697-x

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Abstract

Purpose: This study explores how individual learning behaviors and entrepreneurial success among micro-entrepreneurs in Uganda are mediated by entrepreneurial bricolage.

Design/methodology/approach: The study used a cross-sectional survey design and quantitative approach to collect data from 353 micro-entrepreneurs using a questionnaire. The respondents were owners of microenterprises in Kampala district. Data were analyzed using SPSS 23 and AMOS.

Findings: The results indicate that there is a positive and significant relationship between individual learning behavior, entrepreneurial bricolage, and entrepreneurial success. Entrepreneurial bricolage partially mediates the relationship between individual learning behavior and entrepreneurial success among micro-entrepreneurs. This means that entrepreneurial bricolage notably serves as a conduit in which individual learning behavior connects to entrepreneurial success.

Research limitations: The study focused on micro-entrepreneurs in Kampala district because it has the highest number of micro-entrepreneurs. Thus, the findings cannot be generalized to the whole country.

Practical implications: Entrepreneurial success is likely to be achieved when micro-entrepreneurs learn to combine the utilization of internal and external resources, such as previous life and work experiences, and networks to achieve business and personal objectives.

Originality/value: This study offers preliminary evidence of how entrepreneurial bricolage partially mediates the relationship between individual learning behavior and entrepreneurial success among micro-entrepreneurs in developing countries like Uganda. The study also provides evidence on how individual learning behavior affects the decision-making of combining scarce internal and external resources for micro-entrepreneurs to achieve their business and personal objectives.

Categories: SME Entrepreneurship, Entrepreneurship in developing nations, Sustainable entreprernurship
Keywords: individual learning behaviour, meaning-oriented learning, entrepreneurial bricolage, internal resources, external resources, entrepreneurial bricolage theory, entrepreneurial success, objective success, subjective success, microentrepreneurs

Introduction

Entrepreneurial success has been discussed in various literature using several terms such as business success, enterprise success, and venture performance [1,2]. In literature, the phrase “entrepreneurial success” appears in two distinct but connected contexts [3]. First, its utilized in research on the success of entrepreneurial business endeavors and related activities. Researchers use quantitative metrics and the business’ financial performance, including sales revenue, productivity, growth rate, profitability, employee growth, and return on assets, to characterize the success of an entrepreneurial venture [4].

Secondly, studies on the success of entrepreneurs themselves use the phrase “entrepreneurial success”. The objective dimension of success is not sufficiently represented by the same business criteria and success description in financial and economic terms, according to researchers who are interested in these studies [5]. Entrepreneurial success, however, is a multifaceted phenomenon that should incorporate additional subjective elements that reflect the perspectives of entrepreneurs regarding their own definition of success, such as personal fulfillment, independence, work-life balance, social and personal relationships, goal achievement, and personal satisfaction [5-7]. Subjective entrepreneurial success is understood and assessed through achievement criteria that are personally important to the micro-entrepreneur [8].

How to cite this article
IGA D, Mayanja S, Byarugaba J M (January 24, 2025) Individual Learning Behavior and Entrepreneurial Success: The Mediating Role of Entrepreneurial Bricolage among Micro-entrepreneurs in Uganda. Cureus J Bus Econ 2 : es44404-024-02697-x. DOI https://doi.org/10.7759/s44404-024-02697-x

In recent decades, both academics and policymakers have become interested in entrepreneurial success [9-11]. Entrepreneurial success is not only a national economic indication but also a driver of the individual entrepreneur's finances in the new era of business competitiveness. Microbusinesses are not an exception to this rule [9].

Microenterprises are businesses individually owned and managed with an annual sales of less than Uganda Shillings five million (US$1,365) per annum and having a number of employees ranging from 1 to 4 [12]. Microenterprises account for 50% to 60% of all businesses worldwide [13] and roughly 90% of all businesses in East Africa are microenterprises [14]. Microenterprises play a central role in many countries' economic development micro contributing to economic growth and job creation [15]. They are a major source of entrepreneurial skills, and innovation, representing 90% of businesses and more than 50% of employment [16]. However, despite the role played by microenterprises in poverty reduction, there are macroeconomic problems such as complex and costly legal and regulatory frameworks and they face serious constraints like inadequate markets, low productivity, and lack of access to capital limiting their growth and thus their contribution to poverty reduction [14,17].

Globally, five out of seven micro-businesses fail in the first year of starting up, which equates to 50% failure rate [18]. In East Africa, 70% of the microenterprises collapse within 24 months [19,20]. Microenterprises struggle to survive in developing economies, and there is always a high start-up rate associated with a high failure rate [21]. In Uganda, 30% of the microenterprises do not survive to celebrate their third anniversary [22]. This is attributed to personal factors like poor management skills, lack of entrepreneurial education, inadequate capital due to lack of collateral and associated strings attached in accessing loans, and reliance on unprofessional family labor [23,24]. There are also external factors like high costs of operation, high taxation, dwindling sales, low-profit margins, stagnant growth, and expansion [1].

Previous scholars studied entrepreneurial success differently; [25,26] used psychological capital in predict entrepreneurial success. A study by Fatoki [10] found a strong and favorable correlation between South African small and medium enterprises' financial success and resilience. Taneja et al. [27] used self-efficacy to predict entrepreneurial success. On close scrutiny, no research has been done to examine the mediating function of entrepreneurial bricolage in influencing the association between individual learning behavior and entrepreneurial success among micro-entrepreneurs in a developing economy. Consequently, this research adds to the corpus of knowledge that both entrepreneurial bricolage and individual learning behavior predict entrepreneurial success among micro-entrepreneurs in a developing country context.

The individual learning behaviors of the micro-entrepreneurs help them to overcome the venture's lack of understanding and unclear initial value proposition [28]. Given the resource constraints, micro-entrepreneurs must constantly and swiftly learn in order to thrive in their competitive contexts. Successful application of individual learning behavior may help micro-entrepreneurs to overcome obstacles, better manage market volatility, and even expand despite resource limitations [29]. The knowledge produced through entrepreneurial bricolage reduces resource inertia and also nurtures business creativity and innovation [30]. Individual learning behavior provides necessary learning resources for pursuing new opportunities in the absence of severe resource and skill constraints [31].

Entrepreneurial bricolage is explained as "making do by applying combinations of available resources to novel opportunities and problems" [32]. The concept of entrepreneurial bricolage is explored to comprehend how people from different cultures put together aspects of preexisting resources to make new products with new purposes [33].

Vanevenhoven et al. [34] posit that entrepreneurs utilize internal resources (previous life and work experiences, technical knowledge and academic certifications, educational attainments, previous valueless materials/tools) and external resources (prior knowledge of markets, prior knowledge of customer problems, networks, finance, assets) to rethink, re-conceptualize, appropriate, reassemble, and rework resources; to share experiences about the entrepreneurial process; and to request for more contributions of resources that can help the business succeed.

Restricted and limited resources pose the importance of incorporating bricolage behavior in entrepreneurial endeavors [35]. Alva et al. [36] argued that micro-entrepreneurs that strategically navigate through resource limitations and exploit possibilities through effective resource utilization are more successful. Entrepreneurial bricolage enhances value generation and entrepreneurial endeavors, facilitates the development and exploitation of opportunities [37], and enhances creativity and innovativeness [29,38]. This study is guided by the following research questions:

RQ1: How do individual learning behaviors and entrepreneurial bricolage relate to entrepreneurial success?

RQ2: Do entrepreneurial bricolage mediate the relationship between individual learning behaviors and entrepreneurial success in a developing country context?

Thus, this work adds to the ongoing discussion about entrepreneurial success through the lenses of

entrepreneurial bricolage and individual learning behaviors, and extends its boundaries to micro-entrepreneurs in a developing economy. We examine the body of extant literature to develop hypotheses; then provide the study's methodology and findings, which serve as a foundation for the conversation. As a result, we make inferences from the study and offer theoretical, practical, and policy implications. Lastly, we highlight restrictions and potential study areas.

Theoretical underpinnings

This study is anchored on entrepreneurial bricolage theory advanced by Baker and Nelson [32]. The theory assumes that individuals with resource constraints can be able to create something from nothing by applying combinations of resources at hand to new problems and opportunities. Under resource-constrained environments, micro-entrepreneurs do not enact institutional limits and tend to defy regulatory environments, creating contexts of resource construction [39,40]. Such contexts are characterized by creativity, improvisation, tolerance for ambiguity, combinative capabilities, social skills, and networking [41].

Given the profound, limited resources, the theory has gained prominence in explaining entrepreneurship in resource-constrained environments [42]. Whereas the initial focus was on profit-motivated business start-ups, its application has been extended to social ventures, small businesses and in different sectors [39]. For microenterprises and individuals to be successful, they need to combine and utilize resources to solve new problems and exploit opportunities [41].

In this study, the theory explains how micro-entrepreneurs can generate, develop, exploit, and grow particular opportunities, and become successful in their businesses by combining and utilizing available scarce resources. The theory further addresses the research question of how entrepreneurs in microenterprises creatively use available resources to overcome challenges and seize opportunities. It explains how entrepreneurial bricolage mediates the relationship between learning behavior and entrepreneurial success by enabling entrepreneurs to apply acquired knowledge in resource-constrained environments, resulting in innovative solutions and growth [43].

Hypothesis development

Individual Learning Behavior and Entrepreneurial Success

Individual learning behavior is understood as a strategic approach individuals use to learn from specific experiences, to thrive and survive in a complex world [44]. These strategies include meaning-oriented learning, instruction-oriented learning, planned learning, and emergent learning [44]. The unique learning styles of business owners help bridge knowledge gaps within their enterprises [28], enabling entrepreneurs to identify and pursue market-related business opportunities [45]. Previous studies, such as those by [31,44,46,47], have established that planned learning behavior is linked to self-employment among youth in Uganda and is similarly relevant to small business starters in New Zealand for achieving goals and developing skills. Furthermore, learning behaviors have proven to be significant for MBAs in their early career stages in Amsterdam. These findings underscore the importance of individual learning behavior in the accomplishment of both personal and business objectives, including skill development.

This assertion is further supported by Cope and Watts [48], who argue that meaning-oriented learning behaviors assist in the skill development of business owners. Researchers also contend that the key to successful entrepreneurship lies in the ability of micro-entrepreneurs to learn from specific tasks while operating their businesses [49]. Bede et al. [50] supports this by highlighting that learning from past tasks not only impacts the business but also fosters knowledge and skill growth. A long-term study by Keith et al. [51], involving 132 small business owners in Germany, found that entrepreneurs who engaged in self-regulated and informal deliberate practice had higher success rates, suggesting that learning and developing capabilities outside of formal training plays a critical role. Similarly, a study by Katongole et al. [2], based on a sample of 303 micro and small businesswomen entrepreneurs from Uganda's tourism and hospitality industry, revealed the importance of informal entrepreneurial training in enhancing the outcomes of formal entrepreneurial education. Additionally, Gavigan et al. [52], in their study of 300 women business owners in rural Kiryandongo, Uganda, found that planned learning behavior-specifically entrepreneurship training in business competencies and knowledge-contributed to higher rates of self-employment and entrepreneurial success.

Micro-entrepreneurs often leverage real-life experiences, self-taught skills, and knowledge as critical resources to sustain their businesses and make better decisions [53]. While the studies mentioned focus largely on micro and small enterprises (MSEs), the present study specifically examines how micro-entrepreneurs understand and relate to success through the lens of individual learning behaviors. Therefore, we hypothesize that:

H1: Entrepreneurial success relies on individual learning behavior

Individual Learning Behavior and Entrepreneurial Bricolage

Entrepreneurial bricolage refers to the process by which entrepreneurs creatively and resourcefully leverage available resources to address challenges and capitalize on opportunities, particularly in environments marked by uncertainty and resource constraints. The concept, derived from the French word "bricolage" (meaning "tinkering" or "do-it-yourself"), emphasizes the notion of making do with what is at hand, rather than relying on formal, preexisting resources or structures [32]. In this context, individual learning emerges as a crucial informal resource for micro-entrepreneurs, enabling them to respond to environmental volatility [43].

Among the various knowledge resources available to micro-entrepreneurs, individual learning encompasses unique mental endowments, life and work experiences, academic credentials, professional expertise, prior market knowledge, and educational attainments. These resources are not only idiosyncratic but also vital for forming legitimate combinations that fuel entrepreneurial success. By recombining and repurposing physical resources at their disposal, micro-entrepreneurs can transform seemingly "worthless" materials such as discarded, worn, or "single-use" items into valuable products with new functions [54]. In this process, micro-entrepreneurs creatively reinterpret and reorganize ideas based on their previous work experiences, thereby generating innovative solutions.

Successful micro-entrepreneurs harness their imagination, reflective thinking, and learning to discover new methods for utilizing existing networks-comprising customers, suppliers, friends, and competitors-to create novel market opportunities. Particularly noteworthy is their ability to turn non-business relationships into profitable business connections [32,55]. Given the constraints they face, micro-entrepreneurs must continuously and rapidly acquire new techniques to thrive in competitive markets.

Furthermore, the social context plays a pivotal role in the effectiveness of bricolage activities, as they often rely on collaborative rather than individual efforts. A firm's learning orientation can moderate the relationship between bricolage and opportunity identification, as evidenced in studies of incumbent firms in China [31]. When applied effectively, entrepreneurial bricolage enables micro-entrepreneurs to better manage market uncertainty, overcome obstacles, and expand despite resource limitations. The knowledge generated through bricolage not only reduces resource inertia but also nurtures creativity and innovation within firms, as seen in self-employment among youth in Uganda [30].

Although entrepreneurial bricolage has been widely studied in social enterprises, particularly in developed economies, this study seeks to contribute to the literature by examining the interplay between individual learning behavior and entrepreneurial bricolage within the context of micro-entrepreneurs in a developing economy. It is therefore hypothesized that:

H2: Entrepreneurial bricolage relies on individual learning behavior

Entrepreneurial Bricolage and Entrepreneurial Success

Entrepreneurial bricolage, characterized by the creative repurposing and recombination of available resources to address challenges and seize opportunities, is increasingly recognized as a key factor in entrepreneurial success, especially in resource-constrained environments. The concept of bricolage, rooted in the idea of "making do" with what is at hand, has been explored in various contexts, revealing its vital role in overcoming limitations and fostering growth. In particular, its relationship with entrepreneurial success has been examined through numerous studies conducted across different countries, highlighting the value of resourcefulness and creativity in driving business outcomes.

Research by Steffens et al. [35] emphasized that restricted and limited resources necessitate the incorporation of bricolage behaviors in entrepreneurial endeavors. Entrepreneurs who exhibit bricolage behavior, particularly micro-entrepreneurs, are able to successfully navigate resource constraints and transform potential obstacles into opportunities. A study conducted by Alva et al. [36] in India found that micro-entrepreneurs who effectively utilize available resources, often in an ad-hoc manner, perform better than those who rely on formal, preexisting structures. These entrepreneurs succeed by making strategic use of tangible and intangible resources, including financial capital, human capital, knowledge, and specialized skills, to enhance their performance and business viability.

The importance of resource leveraging for competitive advantage is underscored in findings from El Nemar et al. [56], who conducted research in South Africa, showing that entrepreneurs who bundle and utilize resources effectively can create a significant competitive edge in challenging market environments. In the same vein, Muneeb et al. [57] found in a study of small businesses in Brazil that entrepreneurial bricolage helps micro-entrepreneurs to bundle different types of capital (e.g., financial, social, human) to innovate and sustain their businesses, which is critical for long-term success.

Further studies have shown that entrepreneurial bricolage enhances both value generation and entrepreneurial growth. For instance, Bede et al. [50] found in a study in the United States that

entrepreneurial bricolage is positively correlated with increased creativity and innovation, both of which are fundamental to entrepreneurial success. By facilitating the creation of new combinations of existing resources, bricolage enables entrepreneurs to explore untapped opportunities and introduce innovative products [58]. Similarly, Yu et al. [30] conducted research in Uganda and found that bricolage significantly contributes to opportunity identification, product innovation, and strategic renewal, all of which are essential for entrepreneurial success. This study highlighted that, in the face of limited financial and material resources, micro-entrepreneurs in Uganda use bricolage to overcome challenges, generate innovative solutions, and sustain their businesses.

Additionally, research by Sakher [59], conducted in Kenya, suggests that entrepreneurial bricolage plays an important role in overcoming the liability of newness and smallness in microenterprises. This study indicated that entrepreneurial bricolage allows micro-entrepreneurs to explore new opportunities by utilizing whatever resources are available to them, providing them with a means of survival and growth despite resource constraints. Both internal resources (such as personal expertise) and external resources (such as networks and partnerships) were identified as integral to the success of bricolage efforts.

The role of social networks in entrepreneurial bricolage has also been examined. In a study in China, Mayanja et al. [60] found that social platforms comprising networks of customers, suppliers, peers, and mentors are crucial for micro-entrepreneurs. These platforms provide access to resources such as financial capital, specialized skills, and knowledge, which support entrepreneurs in their bricolage efforts and increase their chances of success. Furthermore, Oyeku et al. [61] conducted research in Nigeria and found that a broad and strong network significantly influences the perseverance and achievements of micro-entrepreneurs, with those who leverage their social capital being more likely to overcome obstacles and succeed.

A significant contribution to understanding the relationship between entrepreneurial bricolage and success comes from the study of Rahman et al. [62], which investigated micro-entrepreneurs in Argentina. The study demonstrated a positive connection between entrepreneurial bricolage and subjective entrepreneurial success, confirming that bricolage behavior contributes to perceived success by enabling entrepreneurs to adapt to challenges and utilize available resources effectively. While prior research on entrepreneurial success has focused on factors such as psychological capital, emotional intelligence, and managerial skills, the role of bricolage has often been overlooked. This study suggests that entrepreneurial bricolage is a vital and often underappreciated factor in achieving success.

Entrepreneurial bricolage plays a crucial role in helping micro-entrepreneurs overcome resource limitations and achieve entrepreneurial success. The studies conducted across countries such as India, South Africa, Uganda, Kenya, Brazil, and China reveal that bricolage behavior by leveraging both internal and external resources facilitates innovation, opportunity identification, and strategic renewal. While previous studies have focused on factors such as psychological capital and emotional intelligence, the findings of this study propose that entrepreneurial bricolage is a fundamental determinant of success, particularly for micro-entrepreneurs operating in developing economies. It is therefore, hypothesized that:

H3: Entrepreneurial bricolage relates to entrepreneurial success

Individual Learning Behavior, Entrepreneurial Bricolage and Entrepreneurial Success

Several studies (e.g., [27, 63]) highlight that both internal and external resource bricolage can generate entrepreneurial opportunities, including financial and technological support, as well as access to valuable societal linkages. In a similar vein, Katongole et al. [2] argue that informal and formal entrepreneurial training serve as intrapersonal resources that strongly predict entrepreneurial success. These training programs focus on cultivating specific abilities and principles that help micro-entrepreneurs sustain their operations. Additionally, entrepreneurial experience provides critical insights that enable entrepreneurs to identify and capitalize on business opportunities, thus contributing to entrepreneurial success [5].

Moreover, individual learning behaviors play a pivotal role in acquiring necessary resources for pursuing new opportunities, particularly when faced with severe resource and skill constraints [31]. The micro-entrepreneur's professional background, past personal successes, and accumulated experiences further reinforce the learning process. Over time, this accumulation of knowledge and skills fosters entrepreneurial success [64], as suggested by previous studies.

Supportive network ties with business owners, customers, and suppliers also contribute significantly to micro-entrepreneurs' learning behaviors. These networks provide opportunities for entrepreneurs to reflect on their past decisions and apply the lessons learned to different resource constraints [65,66]. Furthermore, the micro-entrepreneur's network plays a crucial role in shaping individual learning behaviors. By creating an enabling environment, these networks offer valuable resources, insights, and opportunities for learning new practices related to resource access, goal-setting, and achieving business success [61,67].

While previous research has predominantly examined individual learning behavior, entrepreneurial

bricolage, and entrepreneurial success within MSEs in developed economies, this study seeks to extend these findings by investigating how individual learning behaviors and entrepreneurial success among micro-entrepreneurs in developing economies are mediated by entrepreneurial bricolage. It is therefore hypothesized that;

H4: Entrepreneurial bricolage positively and significantly mediates the relationship between individual learning behavior and entrepreneurial success.

Figure *1* depicts a conceptual model showcasing the linkages between individual learning behavior, entrepreneurial success and entrepreneurial bricolage.

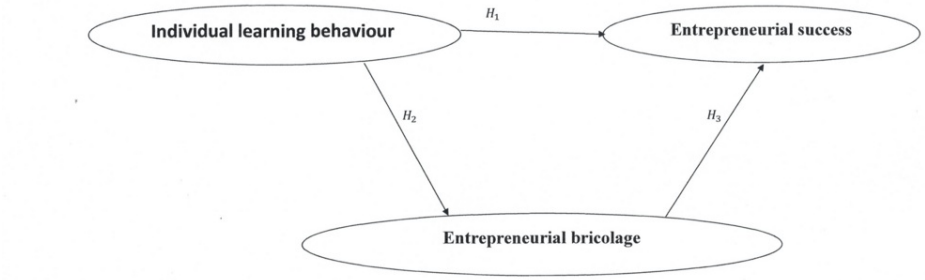

FIGURE 1: Conceptual model

Research Method

A cross-sectional research design was employed in this study. This enables the researcher to gather a lot of data in a comparatively short amount of time.

The research focused on a population of 75,935 microenterprises that have existed for more than one year with an annual turnover of less than Uganda Shillings five million (US$1,365) per annum and having 1-4 employees from the five divisions of Kampala district in Uganda [12]. The research focused on three sectors: trade, service, and manufacturing. These sectors are the major contributors to GDP, accounting for 22.5% out of the entire country's GDP of 27.75 billion USD [12].

Microenterprises were the unit of analysis while micro-entrepreneurs were the unit of inquiry. Out of the targeted sample of 382 micro-entrepreneurs generated using the sample selection approach of Krejcie and Morgan [68], Table, 353 respondents were acquired, which were found usable. This was justified by response rate of 92.4% [69]. In the five divisions of the Kampala district, purposive sampling was employed to select micro-entrepreneurs' levels of trade, services, and manufacturing. The kth number (199) was ascertained using the systematic sampling procedure using the list of micro-entrepreneurs [12].

Entrepreneurial success was measured using two indicators: objective measures (profitability, sales, product/service growth, employee growth, customer growth, assets growth) and subjective measures (personal fulfilment, personal financial rewards, community impact, business survival) with 25 items, whose sample items included: "My business made more profits than its average competitors over the previous 12 months", "I find time that I can spend with my family and friends besides running my business", "I have realized growth in personal income as a result of operating my business", "Business opportunities have been created as a result of my business for instance the suppliers", and "The continuity of my business is

guaranteed for the next three years" adapted from the studies of [6-8,64,70].

Individual learning behavior had four indicators: emergent learning, planned learning, instruction-oriented learning, and meaning-oriented learning measured using 30 items whose sample items included: "I consider my personal experiences in the business", "I prefer to hear suggestions on how to make my business better", "I use set goals regularly to check on the progress of my business", and "As I run the business, I am receptive to new experiences" adapted from the studies of [31,44,46].

Entrepreneurial bricolage was evaluated using two indicators: internal resources (previous life and work experiences, technical knowledge and academic certifications, educational attainments, previous valueless materials/tools) and external resources (prior knowledge of markets, prior knowledge of customer problems, networks, finance, assets) with 18 items whose sample items included "By pooling my internal resources, I can tackle a wide range of new challenges", "I use outside resources in combination to tackle new tasks that these resources weren't designed to do" as adapted from the studies of [42,54].

A 6-point Likert scale, with 1 denoting "strongly disagree" to 6 denoting "strongly agree", was used to gauge participant responses. This was done to avoid a middle point and keep items simple while restricting replies to one best response about the study variables, and to increase reliability and validity.

In this cross-sectional research, common method bias (CMB) can lead to type I and II errors, consequently endangering the reliability of study results [71]. To reduce CMB in this investigation, we followed the guidelines of Hair et al. [72]. In terms of procedure, the survey tools were made to be straightforward, brief, and unambiguous, eliminating complicated and unclear questions. To reduce misunderstandings and confusion among responders, the questionnaire's design had to be clear. SMART PLS was used to test the "inner variance inflation factor (VIF) values" statistically. There was no CMB in the data since all of the recorded inner VIF values were below the 3.300 threshold [71].

Non-response bias is a crucial problem in survey-based research since it may jeopardize the sample's representativeness [72]. In this study on micro-entrepreneurs in Uganda, to address and reduce non-response bias, we performed the following actions: first, we used available demographic and institutional data to compare the characteristics of respondents and non-respondents to help determine the degree of non-response bias. This comparison made it easier to spot any notable variations that would point to bias. Secondly, while maintaining secrecy, we put strategies into place to reduce non-response. To help promote truthful and comprehensive answers, respondent's confidentially was rigorously upheld throughout the questionnaire's implementation. Thirdly, the survey procedure was made simpler to encourage more responses by making it less onerous for respondents. We accept the non-response constraints and the potential effects they could have on the study's conclusions.

Validity and reliability: A structured questionnaire was used to gather data for this study to evaluate three important variables: individual learning behavior indicators, entrepreneurial bricolage, and entrepreneurial success. The questionnaire was first put through a pilot test to eliminate questions that were unclear, poorly phrased, and complicated. The survey findings showed that the Cronbach's alpha coefficients were reliable and valid for individual learning behavior indicators; meaning-oriented learning at 0.816, instruction-oriented learning at 0.790, planned learning at 0.798, and emergent learning behavior at 0.793, entrepreneurial bricolage indicators; external resources at 0.779 and internal resources at 0.790, and entrepreneurial success indicators; objective measures at 0.778 and subjective measure at 0.783. According to these findings, the instrument was able to gather precise data on the constructs, which increased the possibility that the relationships and patterns found in the data were not the result of measurement errors. This, in turn, increased the possibility that the findings could be applied to a larger population phenomenon. Instrument validity was measured with Content Validity Index (CVI). For explanatory studies like this one, CVI ⩾ 0.5 was usable for data collection. Each variable showed excellent levels of validity and reliability, as shown by the statistical results in Table *1*.

All constructs of individual learning behavior, entrepreneurial bricolage, and entrepreneurial success demonstrated high levels of internal consistency and reliability, with Cronbach's alpha values of 0.790 and higher and composite reliability scores exceeding 0.850. All of the average variance extracted values were over 0.5, the Variance Inflation Factors (VIFs) were below 3, and the robust CVI was above 0.5, indicating strong discriminant and convergent validity free from multicollinearity issues.

These results meant that the scale items in the instrument were both reliable and valid for data collection using the instrument, as indicated in Table *1*.

Attributes	Cronbach's alpha	CR	AVE	VIF	CVI
Entrepreneurial success					
Objective measures	0.778	0.851	0.538	1.792	0.833
Subjective measures	0.783	0.852	0.536	1.699	0.737
Individual learning behavior					
Meaning-oriented learning	0.816	0.869	0.529	1.664	0.875
Instruction-oriented learning	0.790	0.864	0.615	1.626	0.833
Planned learning	0.798	0.861	0.555	1.752	0.778
Emergent learning	0.793	0.859	0.554	1.946	0.767
Entrepreneurial bricolage					
External resources	0.779	0.851	0.536	1.739	0.778
Internal Resources	0.790	0.857	0.547	1.783	0.889

TABLE 1: Reliability and validity

**p < 0.001, bootstrap with 5000 samples (2-tailed test at 5% level of sig)

CR, composite reliability; AVE, average variance extracted; VIF, variance inflation factor; CVI, content validity index

Source(s): Primary data

Principal component analysis was performed using the varimax rotation approach to extract the principal components for the independent and dependent variables. To prevent retrieving factors with weak loadings, factor loadings below 0.5 coefficients were omitted (see Table *2* below).

Item	Entrepreneurial bricolage-external resources
EBEX 2	0.603
EBEX 3	0.747
EBEX 4	0.683
EBEX 5	0.593
EBEX 6	0.554
Item	**Entrepreneurial bricolage-internal resources**
EBIN 4	0.58
EBIN 5	0.593
EBIN 6	0.698
EBIN 7	0.666
EBIN 8	0.688
Item	**Entrepreneurial success-objective measures**
ESOM 1	0.538
ESOM 2	0.599
ESOM 3	0.693
ESOM 4	0.68

ESOM 5	0.574
Item	**Entrepreneurial success-subjective measures**
ESSU 2	0.609
ESSU 3	0.646
ESSU 4	0.611
ESSU 5	0.64
Item	**Emergent learning**
ILEM 1	0.571
ILEM 2	0.62
ILEM 3	0.586
ILEM 4	0.457
ILEM 5	0.433
Item	**Meaning-oriented learning**
ILMO 1	0.572
ILMO 3	0.605
ILMO 4	0.733
ILMO 5	0.698
ILMO 6	0.614
ILMO 7	0.502
Item	**Instruction-oriented learning**
ILOL 1	0.469
ILOL 2	0.513
ILOL 3	0.56
ILOL 4	0.504
ILPL 2	0.498
Item	**Planned learning**
ILPL 3	0.553
ILPL 4	0.559
ILPL 5	0.544
ILPL 6	0.646

TABLE 2: Results of the retained items making up the dimensions

ESOM, entrepreneurial success-objective measures; ESSU, entrepreneurial success-subjective measures; EBIN, entrepreneurial bricolage-internal resources; EBEX, entrepreneurial bricolage-external resources; ILB, individual learning behavior; ILMO, meaning-oriented learning; ILOL, instruction-oriented learning; ILPL, planned learning; ILEM, emergent learning

Source(s): Primary data

Analysis and management of data was done through screening to check for instrument usability, after which data were entered in SPSS 23 and AMOS for analysis. In this instance, we used descriptive statistical analysis to assess the degree and pattern of missingness [72]. The research looked at the missingness pattern to see if the data were absent entirely and at random. The statistical results of the Little Missing Completely at Random (MCAR) test are as follows: $\chi^2 = 18063.886$, df = 15152, Sig. = 0.062. The MCAR test significance

value fell below the permissible range for corrective action because it was less than $p < 0.05$. They were replaced using imputation methods including series means, regression, and expectation maximization as recommended by Hair et al. [71]. Additionally, we verified that the data met the requirements for the parametric tests of data independence, homogeneity of variance, linearity, and normality [71]. The research used composite-based partial least squares SEM (CB-PLSSEM) to tackle the sample size's adequacy [72]. Small to medium sample sizes and complex models are especially well-suited for CB-PLSSEM, which provides reliable results even at lower sample thresholds [71].

Results

Descriptive statistics: The descriptive statistics revealed that 353 micro-entrepreneurs responded to the questionnaires. In all, 184 (52.1%) were male and 169 (47.9%) were female, as in Table *3* below. The majority of enterprises were in the trade sector, 204 (57.8%), followed by services, 122 (34.6%) and manufacturing, 27 (7.6%). One explanation for this could be that it is simpler to go into the trade of buying and selling than into services and manufacturing that require sophisticated skills. The results further revealed that most micro-entrepreneurs were aged 31 to 35 years (25.2%) and 26 to 30 years (20.7%). This could be partly explained by the fact that these are in the working age group but had no chance to get formal employment; others have acquired experience and saved capital from their previous jobs, while others, their expectations were not met from their previous jobs, and they therefore decided to become micro-entrepreneurs so as to fulfil family commitments. The age bracket of 18 to 25 years accounted for 18.1%, as these are mostly necessity-driven. The majority of the micro-entrepreneurs (228) had less than less three employees, accounting for 64.4%, as this type of business is normally operated by the micro-entrepreneur himself/herself as the owner/manager and a close relative when he/she is away. A university degree accounted for 27.2% of the micro-entrepreneurs' highest level of education, followed by an advanced-level certificate at 22.7%. This can be partly explained by the fact that these graduates have acquired basic knowledge in numeracy and trade to enable them to start microbusinesses. This indicates that the respondents understood extensively about individual learning behavior, entrepreneurial bricolage, and entrepreneurial success among Ugandan micro-entrepreneurs.

Gender	Count	Percent	Cumulative percent
Male	184	52.1	52.1
Female	169	47.9	100.0
Age bracket	**Count**	**Percent**	**Cumulative percent**
18-25	64	18.1	18.1
26-30	73	20.7	38.8
31-35	89	25.2	64.0
36-40	57	16.1	80.1
41-45	32	9.1	89.2
46-50	17	4.8	94
Above 51	21	6.0	100.0
Highest level of education	**Count**	**Percent**	**Cumulative percent**
None	4	1.1	1.1
Primary	9	2.6	3.7
O'Level	50	14.2	17.9
A'Level	80	22.7	40.6
Tertiary certificate	43	12.2	52.8
Tertiary diploma	64	18.1	70.9
Degree	96	27.2	98.1
Masters	5	1.4	99.5
PhD	2	0.6	100.0
Nature of business/sector	**Count**	**Percent**	**Cumulative percent**
Trade	204	57.8	57.8
Service	122	34.6	92.4
Manufacturing	27	7.6	100
Numbers of employees	**Count**	**Percent**	**Cumulative percent**
Less than 3	228	64.6	64.6
3-5	92	26.1	90.7
6-8	33	9.3	100.0

TABLE 3: Descriptive characteristics, Total N = 353 micro-entrepreneurs

Source(s): Primary data

Pearson (r) correlations: The following were the study variables' means (M) and standard deviations (SD): individual learning behavior (M = 5.098, SD = 0.700); entrepreneurial bricolage (M = 5.006, SD = 0.595); entrepreneurial success (M = 4.923, SD = 0.551).

To determine whether there are correlations between the study variables at the 0.01 level, as suggested by the literature review, the Pearson correlation coefficient was employed in the post-pilot research. Individual learning behavior and entrepreneurial success have a significant positive link (r = 0.636**), according to the correlation data (Table *4* below). The implication is that micro-entrepreneurs' entrepreneurial success increases when their individual learning habits improve. The findings also show a strong positive correlation (r = 0.683**) between individual learning behavior and entrepreneurial bricolage. This suggests that when

learning behavior improves on an individual basis, micro-entrepreneurs' entrepreneurial bricolage also improves. Lastly, the findings indicate a strong positive correlation between entrepreneurial bricolage success and entrepreneurial success (r = 0.695**). This suggests that a favorable shift in entrepreneurial bricolage causes micro-entrepreneurs' entrepreneurial success to improve as well.

Study variables	M	SD	1	2	3
Individual learning behavior-1	5.098	0.700	1.000		
Entrepreneurial bricolage-2	5.006	0.595	0.683**	1.000	
Entrepreneurial success-3	4.923	0.551	0.636**	0.695**	1.000

TABLE 4: Pearson (r) correlations results

**Correlation is significant at the 0.01 level (2-tailed)

M, mean; SD, standard deviation

Source(s): Primary data

Inferential results: The direct effect findings are presented and explained in Table 5 as below: There exists a strong and favorable correlation between individual learning behavior and entrepreneurial success (β = 0.374, t = 5.358, p < 0.05). In addition, individual learning behavior and entrepreneurial bricolage are positively and significantly related (β = 0.715, t = 19.739, p < 0.05). Similarly, entrepreneurial bricolage and entrepreneurial success are positively and significantly related (β = 0.409, t = 6.541, p < 0.05). Therefore, results reveal that all three direct hypotheses (H1, H2, and H3) were accepted. However, for the indirect hypotheses H4, entrepreneurial bricolage slightly mediates the association between individual learning behaviors and entrepreneurial success (β = 0.292, t = 6.251, p < 0.05). This means that individual learning behavior was found to be a greater influencer of entrepreneurial success than entrepreneurial bricolage.

Hypothesis	Direct effects	β	STDEV	T statistics	p values	95% bias corrected CI
	BS ⟶ ES	014	0.034	0.398	0.690	[−0.079, 0.052]
	Location ⟶ ES	0.032	0.045	0.728	0.467	[−0.115, 0.055]
H_3	EB⟶ ES	0.409	0.063	6.541	0.000	[0.282, 0.528]
H_2	ILB⟶ EB	0.715	0.036	19.739	0.000	[0.629, 0.775]
H_1	ILB⟶ ES	0.374	0.070	5.358	0.000	[0.227, 0.500]
	Indirect effects					
H_4	ILB ⟶ EB ⟶ ES	0.292	0.047	6.251	0.000	[0.203, 0.387]
	Total effects					
	BS ⟶ ES	014	0.034	0.398	0.690	[−0.079, 0.052]
	Location ⟶ ES	0.032	0.045	0.728	0.467	[−0.115, 0.055]
H_3	EB ⟶ ES	0.409	0.063	6.541	0.000	[0.282, 0.528]
H_2	ILB ⟶ EB	0.715	0.036	19.739	0.000	[0.629, 0.775]
H_1	ILB ⟶ ES	0.666	0.045	14.873	0.000	[0.569, 0.743]

TABLE 5: Results of the structural equations model

ES, entrepreneurial success; EB, entrepreneurial bricolage; ILB, individual learning behavior; BS, business specialization

Source(s): Primary data

After the measurement model had been developed, the suggested links between the constructs were illustrated using structural equation modeling (SEM). A complete bootstrapping method with 353 samples, a significance threshold set at 5% (β = 0.05), and a two-tailed test were employed to assess the significance level through t-statistics for all paths and indirect impacts within the SEM framework [71]. To understand the variation across all variables, the R^2 values for endogenous latent components were calculated. According to Hair et al. [72], depending on the research context, R^2 values of 0.26, 0.13, and 0.09 indicate significant, moderate, and low variability, respectively. The direct effect of the model in the present study indicated that entrepreneurial bricolage had an R^2 value of 0.511, implying that 51.1% of the change in entrepreneurial bricolage was explained by individual learning behavior dimensions. Similarly, entrepreneurial success had an R^2 value of 0.550, implying that 55.0% of the change in entrepreneurial success was explained by individual learning behavior dimensions of entrepreneurial bricolage indicators. Therefore, we can suggest that the model exhibited moderate predictive accuracy, as illustrated in Figure *2*.

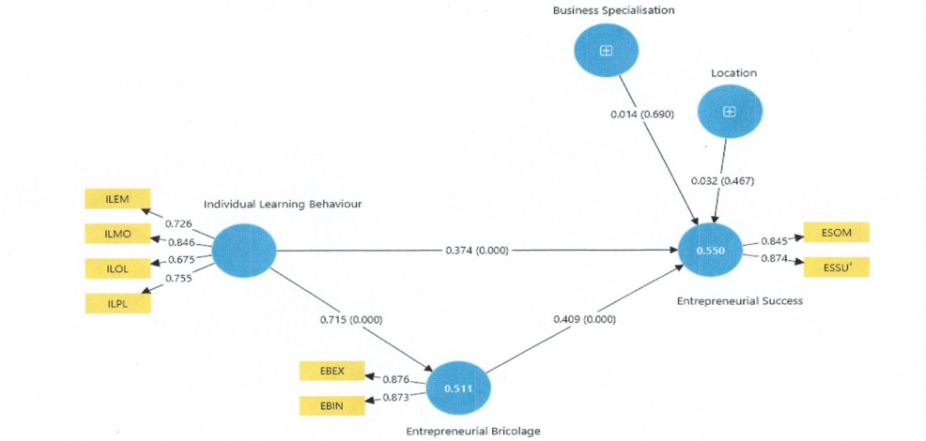

FIGURE 2: Path analysis

ESOM, entrepreneurial success-objective measures; ESSU, entrepreneurial success-subjective measures; EBIN, entrepreneurial bricolage-internal resources; EBEX, entrepreneurial bricolage-external resources; ILMO, meaning-oriented learning; ILOL, instruction-oriented learning; ILPL, planned learning; ILEM, emergent learning

Discussion

The relationships between: individual learning behavior and entrepreneurial success; individual learning behavior and entrepreneurial bricolage; and entrepreneurial bricolage and entrepreneurial success indicate that they were all positively and significantly related; hence further expounded below:

H1: Supported-The results show that a substantial and favorable link exists between individual learning behavior and entrepreneurial success. This implies that a micro-entrepreneur who reflects on his/her own experiences and work performance when making business decisions, he/she is likely to realize growth in; the number of products/services, sales, and profits. Relatedly, a micro-entrepreneur who takes time to figure out and outline areas aimed at preparing learning plans on how various aspects of opportunities and challenges link together aimed at improving his/her business, he/she is likely to realize growth in; the number of assets and personal income as a result of growth in the number of customers than his/her counterparts. The results are in line with the works of Keith et al. and Gavigan et al. [51,52] who assert that micro-entrepreneurs who practiced self-control and deliberate informality had higher levels of business success thereby learning and developing their capabilities outside systematic training. Such micro-entrepreneurs are able to assemble and employ real-life experiences, self-taught skills, and knowledge as a gateway to access more resources required to sustain their businesses and better decision-making [53].

H2: Supported-The results indicate that considerable and favorable connection exists between individual learning and entrepreneurial bricolage. This suggests that a micro-entrepreneur who frequently reflects upon what happens in his/her business and is open to new experiences as he/she operates the business, learns from interactions with others and adjusts to trends on the markets. He/she is likely to find workable solutions to broad variety of new opportunities and difficulties by utilizing a mix of the limited internal resources that are currently available (previous life and work experiences, technical knowledge and academic certifications, educational attainments, previous valueless materials/tools) and external resources (prior knowledge of markets, prior knowledge of customer problems, networks, finance, assets) inexpensively available. In this study, Baker and Nelson and Tasavori et al. [32,55] support that successful micro-entrepreneurs are constantly looking for new ways to use their current networks (customers, friends, suppliers, and competitors) to create new markets particularly by turning non-business connections into business ones. The learning behavior of the micro-entrepreneurs helps them to overcome the venture's lack of understanding and unclear initial value supply [31] .

H3: Supported-The results show that a constructive and noteworthy relationship between entrepreneurial bricolage and entrepreneurial success. This indicates that a micro-entrepreneur who usually finds practical

answers to novel problems and opportunities by utilizing internal resources (previous life and work experiences, technical knowledge and academic certifications, educational attainments, previous valueless materials/tools) and external resources (prior knowledge of markets, prior knowledge of customer problems, networks, finance, assets) inexpensively available will realize growth in; the number of products/services, sales, profits, assets and personal income as a result of growth in the number of customers than his/her counterparts. The results are in line with the works of Mayanja et al. [60] who suggest that social networks provide a number of critical resources including financial resources, specialized skills, and knowledge the help micro-entrepreneurs to survive and succeed in a complex environment than their counterparts.

H4: Supported-The findings indicate that the association between individual learning behaviors and entrepreneurial success is moderately mediated by entrepreneurial bricolage.

This means that a micro-entrepreneur who sets objectives for personal learning to improve as a business person in terms of finding practical answers to unique problems and opportunities by making use of limited resources, both internal and external, for little or no expense, he/she is likely to realize growth in; the number of products/services, sales, profits, assets and personal income as a result of growth in the number of customers than his/her counterparts. The results are justified by Tasavori et al. [55] who suggest that the micro-entrepreneur's professional background, past personal success and past experiences reinforces learning, and the entrepreneur can accumulate new knowledge and skills that results in entrepreneurial success. Supportive network ties with business owners, customers, and suppliers provide micro-entrepreneurs with learning behaviors and opportunities to make meaning of their own experiences and past decisions which may apply to different resource constraints [65,66]. Individual learning behaviors provides necessary learning resources for pursuing new opportunities in the absence of severe resources and skills constraints resulting into entrepreneurial success [31].

Conclusions

All the direct relationships were found to be significant among micro-entrepreneurs in Uganda. The relationship between individual learning behavior and entrepreneurial success continues to be important when mediated by entrepreneurial bricolage. Given the resource-constrained environment within which micro-entrepreneurs operate, the study positions entrepreneurial bricolage and individual learning behavior as promising premises for advancing their entrepreneurial success. The model confirms the strength of entrepreneurial bricolage as slight link between individual learning behavior and micro-entrepreneurs' success in Uganda.

Theoretical implications: This research employs the theoretical frameworks of entrepreneurial bricolage theory to explore the mechanisms by which individual learning behavior dimensions influence the attainment of entrepreneurial bricolage and entrepreneurial success among micro-entrepreneurs.

The theory is used to explain the role of individual learning behavior resources like planned learning, emergent learning, instruction-oriented learning, and meaning-oriented learning in achieving entrepreneurial bricolage using scarce resources to attain entrepreneurial success in a turbulent environment, thus contributing to the current corpus of knowledge on individual learning behavior, entrepreneurial bricolage, and entrepreneurial success within the realm of entrepreneurship.

Practical implications: Micro-entrepreneurs should invest in individual learning behavior to access internal resources (previous life and work experiences, technical knowledge and academic certifications, educational attainments, previous valueless materials/tools) and external resources (prior knowledge of markets, prior knowledge of customer problems, networks, finance, assets), which creates enabling environment to exploit opportunities as a way of sustaining successful microenterprises.

Parents should embrace the role of informal family learning that influences business behavior and self-discovery among children to help them improve on their learning styles and experiences by individually learning to combine the utilization of use external and internal resources to accomplish the business and personal objectives because these are the future "would be" micro-entrepreneurs.

Micro-entrepreneurs through their regulatory bodies should develop a comprehensive program necessarily aimed at enhancing entrepreneurial success through integrating entrepreneurial bricolage and individual learning behavior as a complementary business management skill.

Policy implications: To gain access to resources for their entrepreneurial success, micro-entrepreneurs should create adaptable policies that let them communicate, create flat organizational structures, and determine their networking preferences.

To obtain the resources necessary for their success as entrepreneurs, the government should provide microloan schemes at affordable interests and offer favorable tax incentives to micro-entrepreneurs to address the problem of resource constraints.

Governments should invest in entrepreneurial bricolage training programs both on-the-job and in schools/tertiary institutions to enable self-discovery and learning of individuals on behaviors and practical skills that are applicable to micro-entrepreneurs' success. In cases where such skills are non-explicit, the government through the local authorities may provide workshops on the job to microenterprise business owners to enable them appreciate such skills. Such skills amplify entrepreneurial bricolage and individual learning behavior for the survival and growth of microenterprises.

Limitations: This study focused on micro-entrepreneurs within Kampala district, Uganda, as we used a cross-sectional survey where cause-and-effect linkages cannot be determined, and longitudinal changes in entrepreneurial success as a result of internal and external resources may provide different outcomes due to cultural and regional differences. Therefore, caution should be taken while applying the study's findings, particularly in light of regional comparisons.

Future research: This study's cross-sectional survey methodology has been criticized, making claims about the causality's direction speculative. It is important to carry out longitudinal research to determine how micro-entrepreneurs add significance to entrepreneurial bricolage in relationship to individual learning behavior and entrepreneurial success to access their effects over a period of time.

Secondly, researchers and practitioners need to be careful to avoid speaking of individual learning behavior as a broad construct in comparison to entrepreneurial bricolage entrepreneurial and rather use each dimension independently to determine its effect.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: David IGA, Samuel Mayanja, Jotham M. Byarugaba

Acquisition, analysis, or interpretation of data: David IGA, Samuel Mayanja, Jotham M. Byarugaba

Critical review of the manuscript for important intellectual content: David IGA, Samuel Mayanja, Jotham M. Byarugaba

Supervision: David IGA, Samuel Mayanja, Jotham M. Byarugaba

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. Uganda National Council for Science and Technology (UNCST) issued approval SS2258ES. The Uganda National Council for Science and Technology (UNCST) has approved the referenced research project "Entrepreneurial Success Among Micro Entrepreneurs in Uganda" under research registration number SS2258ES. Please cite this number in all your future correspondences with UNCST in respect of the above research project. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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