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The entrepreneurial support and the performance of new venture creation: the mediation effect of the acquisition of skills and the learning of novice entrepreneurs

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ABSTRACT

This research endeavors to explore the impact of entrepreneurial coaching on the performance of start-ups. Employing a quantitative research methodology, data were gathered through a questionnaire-based survey. Analysis of the data was conducted using SmartPLS (Partial Least Squares) software, allowing for the assessment of discriminant validity and testing our conceptual model. The outcomes of this investigation present compelling evidence supporting the notion that entrepreneurial coaching significantly influences the performance of recently established businesses. Findings from this study contribute significantly to enhancing our comprehension of the intricate relationship between coaching, entrepreneurial support, and the outcomes of new business creation. The results reveal a substantive connection between the provision of entrepreneurial support and the positive performance outcomes of newly formed enterprises. These findings carry practical implications for various stakeholders invested in fostering the growth of start-ups. Entrepreneurs can gain valuable insights into the positive impact of receiving coaching, encouraging them to seek and leverage such support. Support organizations can use these findings to refine their strategies and tailor their coaching programs to optimize outcomes for new businesses. Policymakers can benefit from understanding the tangible benefits of entrepreneurial coaching, informing the development of policies that foster a conducive environment for start-up success.

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Introduction

The inception of new businesses is a catalyst for economic growth and innovation. However, despite dedicated efforts to support emerging entrepreneurs, many startups fail within their initial years. This raises the question of how entrepreneurial support, particularly through coaching, influences the performance of these ventures.

While the importance of coaching for novice entrepreneurs is widely acknowledged, the precise relationships and mechanisms through which coaching impacts startup performance remain unclear. This knowledge gap presents an opportunity for significant discoveries that could reshape our understanding of entrepreneurship.

This research aims to address the following fundamental question: How do coaching interventions shape the performance trajectories of newly established ventures?

The study has three objectives: the first is to investigate the impact of coaching on startup performance. The second is to identify the specific mechanisms through which coaching influences startup performance and the third objective is to determine the moderating role of entrepreneur characteristics and venture-specific factors in the coaching-performance relationship.

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This study is needed because it will provide new insights into the role of coaching in startup performance. This knowledge can be used to develop more effective and targeted support programs for novice entrepreneurs. This research endeavors to address a fundamental question: How do coaching interventions shape the performance trajectories of newly established ventures? To achieve this objective, we adopt a meticulous methodological approach, employing quantitative research methods and SmartPLS analysis on a respondent sample who completed a comprehensive questionnaire. Before delving into the aims and objectives of our study, the subsequent section reviews existing literature, offering a nuanced understanding of the roles these variables play in entrepreneurship. Subsequently, we define our research methodology, leading to the presentation of our results. We conclude by discussing the implications of our findings, underscoring their significance for practitioners and policymakers invested in nurturing the establishment and growth of startups.

Literature review

The entrepreneurship literature suggests that effective coaching has an impact on start-up performance (Bakkali et al., 2010; Berger-Douce, 2005; Berger-Douce & Valenciennes, 2006; Chabaud et al., 2010; Fitouri & Zouaoui, 2021; Messeghem et al., 2013, 2020). Wang, Chen, et al. (2022) explored how coaching could improve decision-making and risk management in technology-focused start-ups. Their study highlighted the positive impact of coaching in the context of technology entrepreneurship.

In addition, Jones et al. (2017) examined the role of coaching in enhancing entrepreneurial self-efficacy, which is crucial to an entrepreneur's confidence and therefore overall performance.

However, it is important to note that although the literature suggests a positive relationship between coaching and start-up performance, the empirical evidence supporting these claims is still limited (Mohamed & Zouaoui, 2021). Many of the aforementioned authors relied on descriptive statistical studies that demonstrate lower mortality rates among supported versus unsupported companies (Mohamed & Zouaoui, 2021). There are various research studies being done to measure and empirically support how coaching can actually improve the performance of new business creation.

The European Commission's 2002 study revealed that start-ups have a much higher probability of survival when they receive support from organizations specializing in business creation (Chabaud et al., 2010). Meanwhile, recent research by Johnson et al. (2022) highlighted the role of coaching in improving the performance of new businesses. These researchers argued that coaching contributes not only to the survival of start-ups, but also to improving economic competitiveness and creating competitive advantages (Meliani, 2007).

Young entrepreneurs face intrinsic vulnerabilities and many internal obstacles, which makes the intervention of support organisations essential to meet the challenges of business creation. As a result, it is imperative to put in place a tailor-made support policy for this critical phase in the business life cycle. This approach equips entrepreneurs with the tools they need to carry out a rigorous analysis of their business and perform the essential functions efficiently. Furthermore, recent studies by Patel and Wolfe (2023) viewed coaching as a powerful tool for entrepreneurs to gain legitimacy in the start-up world, enhancing their skills and experience (Douba, 2005; Berger-Douce, 2006). Coaching therefore makes a significant contribution to improving performance.

Support services also have an impact on obtaining funding and protecting intellectual property (Nosella & Grimaldi, 2009). Al-Dajani et al. (2023), Fitouri (2023), and Patel and Wolfe (2023) emphasized that a lack of resources at the creation stage can lead to the failure of start-ups. Recent research by Smith et al. (2023) shows that support significantly improves the chances of survival of new businesses. However, it should be noted that the quality of advice received plays a central role in the success of startups (Aldrich & Baker, 2001; Zimmerman & Zeitz, 2002). The quality of advice depends on the nature of the business coaching relationship. Although few studies have directly established a link between the improved performance of new businesses and the quality and nature of this relationship, existing research shows a correlation between learning, skills transfer and the quality of supportive relationships (St-Jean, 2008, 2009). Findings by Lee and Clark (2023) and Wang, Mundorf, et al. (2022) also support Studdard's (2004) idea that the supportive relationship should have a positive impact on the coaching recipient's acquisition of knowledge, which in turn influences productivity and performance. Some researchers

argue that an entrepreneur's performance results from the interaction between the entrepreneur and the coach (Assoune, 2009; Fitouri & Zouaoui 2021), and a successful relationship is correlated with increased profits and turnover (St-Jean & Audet, 2009). Improved performance is therefore closely linked to the coaching relationship.

According to Minot (2016) and Boussaguet (2018), there is a high failure rate after business creation, which makes it necessary to conduct research into the determinants of the support relationship. Such studies could highlight unmet coaching needs (Schmitt & Grégoire, 2019). In addition, recent research by White et al. (2022) indicated that start-up projects receiving support have higher short- and medium-term survival rates. Many authors stress the importance of a co-constructed support relationship (Degeorge, 2017; Messeghem et al., 2013; Wolf & Cuenoud, 2017).

Bruyat (1993) examined the importance of the relational dimension in coaching, although research in this area remains limited. Studies on the determinants of the supportive relationship suggest that success factors are linked to involvement, honesty and trust (Couteret & Audet, 2006). In addition, Khan (2023) noted that the coach's expertise and availability are crucial to a successful coaching relationship (Deakins, 1998). The coach's empathy, listening skills and creativity are also essential (Gibb, 2000), and the coach's experience plays a key role in the success of the relationship (Allen & Eby, 2003; Fagenson-Eland et al., 1997).

For entrepreneurs to benefit from coaching, they must be open, committed and have confidence in their coach (Couteret & Audet, 2006; St-Jean, 2009). Commitment to the coaching process is particularly crucial, as it largely determines the success of the relationship (Audet & Couteret, 2005). Entrepreneurs are often reluctant to commit to coaching, and when they do, the difficulties encountered can hinder their progress (Couteret & Audet, 2006; Dyer, 2003). In this context, Valéau (2006, 2017) argued that entrepreneurs often face moments of doubt during the start-up process, making coaching essential to help them overcome these challenges.

According to Wang, Chen, et al. (2022), openness to feedback, sincerity about one's needs and weaknesses, clear identification of problems, frequent communication with the coach and a willingness to discuss both failures and successes are crucial to a successful relationship. It is important to recognize the importance of mutual respect, trust and openness, as well as a willingness to take appropriate action to develop a successful relationship. However, it should be noted that an entrepreneur's overconfidence may hinder their acceptance of coaching (O'Dwyer & Ryan, 2000).

In conclusion, Anderson et al. (2023) observed that trust, commitment and psychological contract all play an important role in the entrepreneurial coaching process (Assoune, 2009). Valéau (2006, 2017) emphasized that coaching should not only be a professional commitment but should also offer psychological support during the difficult times entrepreneurs face. This growing body of recent research continues to shed light on these dynamics, highlighting the importance of the coaching relationship in entrepreneurial success. From the foregoing, the following hypotheses are developed:

H_1: The trust in the coach positively influences the success of the relationship entrepreneur coach.

H_2: The commitment in the coach positively influences the success of relationship entrepreneur-coach.

H_3: The existence of the psychological contract positively influences the success of the relationship entrepreneur-coach.

H_4: The success of the entrepreneur-coach relationship has a positive influence on the performance of new venture creation.

H_5: The success of the coaching relationship positively influences the learning of the entrepreneur.

H_6: The entrepreneur's learning positively influences the acquisition of competences.

H_7: The entrepreneur's learning has a positive impact on the performance of the new venture creation.

H_8: The success of the coaching relationship has a positive impact on the competences of entrepreneurs.

H_9: Entrepreneurial skills have a positive impact on the performance of new venture creation.

Methodology

This research is based on a quantitative methodology, selected to examine the relationships between the variables studied. The main objective of this method is to understand how coaching influences the performance of new businesses. The choice of a quantitative methodology stems from our desire to quantify the relationships between the key variables in our conceptual model. This approach allows for rigorous statistical analysis, which is essential for establishing strong causal links and providing convincing empirical evidence. To ensure the validity and reliability of our study, we followed several key procedures:

- Questionnaire design: Our questionnaire was carefully designed on the basis of existing literature (Chandler, 1992; Fitouri & Zouaoui, 2021; Mohamed & Zouaoui, 2021). The items selected were chosen for their relevance in measuring the key variables of our model research.
- Sample size: We administered the questionnaire to a sample of 350 novice entrepreneurs, which represents a considerable sample size, thus reinforcing the robustness of our results.
- Data Analysis: We used Structural Equation Modelling (SEM) with Partial Least Squares (PLS) regression to analyze the data collected. This method is widely recognized for its ability to handle complex models and to assess relationships between variables accurately.

This rigorous methodological approach enabled us to obtain reliable and significant results concerning the impact of the entrepreneurial support relationship on the performance of new business creation.

Results

From the analysis of Table 1, it appears that our indicators have a very high level of internal consistency. Reliability composites (RC) vary between 0.848 and 0.993. The Cronbach's alpha values of our constructs are very satisfactory and are above 0.9 (Bagozzi & Yi, 2012).

Two other indicators were used to complete the verification of the convergent validity. The first is that we will clean the variables, keeping only the indicators with a correlation threshold > 0.7 (Fernandes, 2012). The second is that we will examine the average shared variance (AVE) which must be > 0.5. To achieve this, we only need to calculate the PLS algorithms that generate the following results: See Table 2

The convergent validity is ensured since all the items have a correlation threshold > 0.7 (the loadings vary between 0.76 and 0.97) and an average shared variance value (AVE) higher than 0.5 (they vary from 0.71 to 0.97).

To verify the discriminant validity, the correlation of the constructs must be compared to the square roots of the AVE. To ensure the discriminant validity under the SmartPLS software, it is sufficient to use the cross-loading technique of the constructs.

Research results for (R^2), show that all the variables introduced in our conceptual model globally explain the coaching relationship and the performance of the newly created company respectively by (R^2 = 48.2%); (R^2 = 39.8%). These values indicate that our model is significant. The examination of the Q^2 coefficient allows us to evaluate the quality of each block of variables in our conceptual model. Thus, using the Blindfolding, the results inform us that the Q^2 indices are different from zero and positive for the support relationship and the performance of the newly created company. We will use the GOF index to assess the quality of our structural model.

Thus, the GOF index is calculated by:

GOF = $\sqrt{}$ communality × R^2

Table 1. The reliability of the constructs.

Construct	(CR)	Alpha de Cronbach
Skill acquisition	0.951378	0.943123
Learning	0.957954	0.945354
Psychologica Contrat	0.848858	0.845301
Commitment	0.937544	0.927006
Performance	0.945504	0.931978
Entrepreneur/Accompanist relationship	0.973685	0.969400
Trust	0.942116	0.907687

Table 2. Convergent validity of constructs.

Construct	Items	Loadings	AVE	Composite reliability
LEARNING	app1	0.897665	0.820925	0.958136
	APP2	0.948405		
	APP3	0.939386		
	APP4	0.852678		
	APP5	0.888733		
Acquisition of entrepreneurial skills	COMPENT1	0.937331	0.940460	0.984413
	COMPENT2	0.972326		
	COMPENT3	0.984303		
	COMPENT4	0.984367		
Acquisition of managérial skills	COMPMNG1	0.8803	0.855005	0.972491
	COMPMNG2	0.926948		
	COMPMNG3	0.942744		
	COMPMNG4	0.944523		
	COMPMNG5	0.95253		
	COMPMNG6	0.898701		
Acquisition of Technical Skills	COMPTECH1	0.954881	0.863936	0.974378
	COMPTECH2	0.954633		
	COMPTECH3	0.845242		
	COMPTECH4	0.917709		
	COMPTECH5	0.949412		
	COMPTECH6	0.949994		
Trust	CONF1	0.891067	0.844506	0.942116
	CONF2	0.904235		
	CONF3	0.960143		
Psychological contract	CONTRPSY1	0.839379	0.737502	0.848858
	CONTRPSY2	0.877751		
Affective commitment	ENGA1	0.964293	0.901053	0.973234
	ENGA2	0.974851		
	ENGA3	0.974851		
	ENGA4	0.879591		
Commitment calculated	ENGC1	0.958843	0.973701	0.993291
	ENGC2	0.995895		
	ENGC3	0.995895		
	ENGC4	0.995895		
Normative commitment	ENGN1	0.942347	0.924292	0.979918
	ENGN2	0.987506		
	ENGN3	0.926722		
	ENN4	0.987506		
Performance	PERF1	0.892345	0.713507	0.945503
	PERF2	0.901496		
	PERF3	0.88383		
	PERF4	0.8919		
	PERF5	0.766365		
	PERF6	0.764162		
	PERF7	0.798545		
Entrepreneur/Accompanist relationship	REACC1	0.802931	0.804659	0.973686
	REACC2	0.909251		
	REACC3	0.913278		
	REACC4	0.915418		
	REACC5	0.907314		
	REACC6	0.933339		
	REACC7	0.927569		
	REACC8	0.903458		
	REACC9	0.852916		

$$GOF = \sqrt{(0.7590865) * (0.4402675)} = 0.5036.$$

This value is satisfactory according to previous studies (Vinzi et al., 2010; Wetzels et al., 2009).

The use of the bootstrap procedure by saturating our model allowed us to test the significance of the structural relationships in our model, the results obtained are presented in Table 3.

The Bootstrap results show to confirm the hypotheses of our research model as shown in Table 3

We have two mediating variables: learning and skill acquisition by the entrepreneur. To test the effect of these mediating variables, the procedure considered five important steps in the PLS framework (Nitzl, 2018). Computational results obtained by going through the five steps advocated by Nitzl (2018) and (Richter et al., 2016) are presented in Table 4.

The following main results are summarized in Table 5.

Table 3. Significance of structural relationships.

Hypotheses	Standard correlation coefficients (β)	Value (*t*)	Decision
H1	0.169620	2.708321	Confirmed
H_2	0.121486	2.318925	Confirmed
H3:	0.527407	8.821461	Confirmed
H4:	0.376892	7.818269	Confirmed
H5:	0.319351	5.302402	Confirmed
H6	0.402033	6.887496	Confirmed
H7:	0.170505	2.636837	Confirmed
H8:	0.247451	4.120115	Confirmed
H9:	0.292456	4.974955	Confirmed

The starting point for determining and testing the mediation effect is the evaluation of the significance of the indirect effect. According to the results obtained the two mediating variables learning and skill acquisition by the entrepreneur are significant (0.0633 < 0.05; 0.0790 < 0.05) Table 5 Case1. Once the indirect effect of two variables is supported, we can affirm the acceptance of the mediating relationships: case 2 (The relationship between the entrepreneur-mentor relationship and the performance is mediated by learning) AND case 3 the relationship between the entrepreneur-mentor relationship and the performance is mediated by skill acquisition.

Furthermore, we find that the third indirect effect is also significant (0.0272 < 0.05) and sustained. Hence, we can affirm the acceptance of the third relationship: case 4 (The relationship between the entrepreneur-accompanist relationship and the performance of ENC is sequentially and positively mediated by learning and skill acquisition).

Similarly, the direct effect between the entrepreneur-mentor relationship and the performance of the newly created firm is significant (0.0402) and Case 1 is validated.

Once we have determined the significance of the mediation effects. We can proceed to the second step to determine the type of mediation and its magnitude. Table 5 shows the estimate of the direct effect (c '), indirect effects (a1 × b1, a2 × b2, a1 ×a3 × b2), and total indirect effect ((a1 × b1) + (a2 × b2) + (a1 ×a 3 × b2)). Since this is significant (0.0402) and the indirect and total effects are also significant (0.0633; 0.0790; 0.0272; 0.1696), respectively, partial mediation can be defended. In addition, we can calculate the VAF to assess the magnitude of each mediation. Since the VAF does not exceed 80% (Nitzl, 2016) (29.64%), this implies an additional argument for partial mediation.

According to the literature, there are two types of partial mediation, complementary and competitive partial mediation. Referring to the results obtained, we postulate that we are in a complementary partial mediation, given that the direct effect (c ') and the indirect effects (a1 × b1) (a2 × b2) and (a1 ×a 3 × b2) go in the same direction (positive in our case) (Baron & Kenny, 1986). We observe that ((a1 × b1) (a2 × b2) (a1 ×a 3 × b2)) and (c') is significant and that ((a1 × b1) + (a2 × b2)+(a1 ×a 3 × b2)× c') is positive, indicating that part of the effect of the entrepreneur-coach relationship on the performance of the newly created firm is mediated by learning (M1) and skill acquisition (M2), and their sequential relationship while the entrepreneur-coach relationship still explains part of the performance of the newly created firm that is independent of learning (M1) AND skill acquisition (M2) and their sequential relationship. This complementary mediation hypothesis suggests that the intervening variables eventually explain the relationships between the independent and dependent variables. PLS is typically applied in complex models. Often there are multiple relationships between one or more independent variables, one or more mediator variables, or one or more dependent variables. When evaluating a multi-mediator model, we can go further by comparing the different mediator effects in our example, we want to test whether learning (M1) has a stronger mediator effect than the skill acquisition variable (M2). For this purpose, we will evaluate the potential statistical difference between a1 × b1 and a2 × b2 following the recommendations of Chin et al., (2013) and (Richter et al., 2016).

The test result obtained (Table 6) shows that there is no differential impact between M1, and M2 since both ICs contain the value zero. Therefore, we cannot say that learning (M1) has a stronger mediating effect than skill acquisition (M2), and vice versa.

Table 4. The computational results.

	c′	a1	a2	a3	b1	b2	a1*b1	a2*b2	a1*a3*b2	(a1*b1)+(a2*b2)+(a1*a3*b2)	M1-M2
Sample 0	0.523296	0.390395	0.382062	0.2061	0.198578	0.269047	0.077523858	0.102792635	0.021647632	0.201964125	−0.025268777
Sample 1	0.61842	0.390445	0.43127	0.184335	0.186851	0.249206	0.072955039	0.107475072	0.017936023	0.198366134	−0.034520033
Sample 2	0.529781	0.328022	0.249154	0.209731	0.20717	0.217249	0.067956318	0.054128457	0.014945945	0.13703072	0.01382786
Sample 3	0.488618	0.237098	0.301612	0.352916	0.296456	0.304687	0.070289125	0.091897255	0.025494891	0.187681271	−0.021608131
Sample 4	0.550371	0.389717	0.425349	0.258237	0.348529	0.207176	0.135827676	0.088122104	0.020850058	0.244799838	0.047705572
	c′	a1	a2	a3	b1	b2	a1*b1	a2*b2	a1*a3*b2	(a1*b1)+(a2*b2)+(a1*a3*b2)	M1-M2
ORIGINAL(O)	0.402967	0.375634	0.209213	0.292456	0.168617	0.247701	0.063338278	0.07905868	0.027211544	0.169608503	−0.015720402
MEAN (M)	0.402595	0.377725	0.212472	0.288976	0.172847	0.247493	0.065288633	0.08025248	0.027014717	0.17255583	−0.014963847
Bias (0-M)	0.000372	−0.002091	−0.003259	0.00348	−0.00423	0.000208	−0.001950355	−0.0011938	0.000196827	−0.002947328	−0.000756555
SE	0.0568	0.0452	0.0563	0.056055	0.0673	0.0574	0.00304196	0.00323162	0.000145434	0.006419014	−0.00018966
PERCENTILE 5% LOWER	0.291639	0.287042	0.098865	0.1825882	0.036709	0.135197	0.057376037	0.072724705	0.026926495	0.157027236	−0.015348668
PERCENTICLE 95% UPPER	0.514295	0.464226	0.319561	0.4023238	0.300525	0.360205	0.06930052	0.085392655	0.027496594	0.182189769	−0.016092135

BC: P Lower (5%)+Bias 0.292011 0.284951 0.095606 0.1860682 0.032479 0.135405 0.055425682 0.071530905 0.027123322 0.154079908 − 0.016105223. BC: P Upper (95%)+bias 0.514667 0.462135 0.316302 0.4058038 0.296295 0.360413 0.067350165 0.084198855 0.027693421 0.179242441 − 0.01443085.

Table 5. Summary of the main results of the effects of mediations.

Coefficient			Bootstrap 95 % CI		
			Percentile	BC	
Effects directs					
Cas1: c'	**0,402sig**				
0,2916 0,5142					
	0,2920				
0,5146					
a1	**0,375sig**				
0,2870 0,4642					
0,2849					
0,4621					
a2					
0,209sig0,0988	**0,3195** 0,0956 0,3163				
a3	**0,292 sig**		**0,1825** **0,4023**		
0,1860 0,4058					
b1	**,1705sig0,0367**				
0,3005					
				0,0324 0,2962	
b2	**0,2476sig**				
0,05737 0,3602					
				0,1354 0,3604	
			BC		
Indirect effectsestimationpoints Percentile					
Cas 2 :a1×b1	**0,0633sig**		**0,05737** **0, 0693**		
0,05542					
0,6735					
Cas 3 : a2×b2	**0,0790sig**		**0,07272** **0, 08539**		
0,07153					
0,08419					
Cas 4 : a1 ×a 3 ×b2	**0,0272 sig**		**0,02692** **0,02749**		
					0,02712
0,02769					
					TOTAUX indirect effect
			0,1696 sig	**0,15702**	**0, 18218** 0,15407
0,17924					

VAF: variance accounted for		**VAF**	
=	a × b / total indirect effects + c′	**Cas2 : a1×b1**	**11,07%**
		Cas 3 : a2×b2	**13,82% Cas**
		5: a1 ×a 3 ×b2	**4,758%**
		TOTALS indirecteffects	**29,64 %**

Notes: sig: Significant. nsig : NON significant. BC: bias corrected.

Table 6. Calculation of differential impact between M1 and M2.

Coefficients		Bootstrap 95%CI	
Percentile BC			
Differntiel effet			
M1-M2= (a1×b1) − (a2×b2)	−0,015720402−0,01534	−0,01609−0,01610	−0,01443

Discussion of results

This study had two main objectives: firstly, to demonstrate that coaching is a determinant of the performance of newly created organizations by analyzing its impact on novice entrepreneurs, who often lack skills and experience. Secondly, to propose determinants of the success of the coaching relationship. The empirical results of our model show that the coaching relationship is positively influenced by the existence of the psychological contract, trust and commitment of the entrepreneur, in this order of influence (β 0.527; β 0.170; β 0.121). These results are all the more interesting in that there is little research on this subject. Furthermore, the relationship between the entrepreneur and the mentor has a strong influence on the performance of the new business created, the entrepreneur's learning and the acquisition of skills, in this order of effect (β 0.403; β 0.376; β 0.209). Similarly, entrepreneurial learning positively influences skill acquisition (β 0.292), but also the performance of the newly created firm (β 0.169). Ultimately, we find that skill acquisition has a positive impact on the performance of the new venture created (β 0.248). The results highlight the importance of the entrepreneur's trust in his coach, which appears to be a significant determinant of the entrepreneur-coach relationship. This result is consistent with the work of several researchers (Mohamed et al., 2021.).

The theoretical advances on the existence of a link between commitment and the coaching relationship are confirmed by the empirical results of this study. We maintain that the more committed entrepreneurs are, the more the benefits of the relationship are guaranteed and obtained. In sum, these results offer a response to theoretical advances that have paved the way for such a possibility (Valéau, 2017).

The results also highlight the important role of the psychological contract in the success of the coaching relationship. This finding confirms the results of previous theoretical studies on this topic. Although we did not find any empirical studies demonstrating the effect of the psychological contract on the coaching relationship, our results validate the theoretical advances of other researchers (Couteret & Audet, 2006; St-Jean & Mathieu, 2011) who have emphasized that the existence and fulfilment of promises is a primordial factor in the success of the coaching relationship. The validation of these first three hypotheses is of great importance because this relationship had never been tested before.Our theoretical and empirical results show that coaching entrepreneurs has an impact on learning. The coach must transform the problems encountered by the entrepreneur into lessons and experiences that improve the entrepreneur's ability to learn. These results are in line with the work of St-Jean and Mathieu (2011).

We also found that coaching entrepreneurs influence the acquisition of skills by the entrepreneur, in line with previous studies by Chabaud et al. (2010) which state that support structures put in place mechanisms that enable entrepreneurs to acquire and develop their skills.

Similarly, our results confirm that the coaching relationship theoretically influences and improves the acquisition of skills by the novice entrepreneur. The existence of a coach seems to be essential to the construction of experience and the recognition of the entrepreneur's abilities. In this way, the entrepreneur develops socially recognized skills thanks to his knowledge and experience. We also found that the success of the entrepreneur-mentor relationship has a positive impact on the performance of the newly created firm, which is consistent with existing theoretical advances (Mohamed & Zouaoui, 2021).

Our results highlight the mediating role of two variables: the novice entrepreneur's learning and the novice entrepreneur's skills acquisition. The model attempts to explain how the relationships between the independent (the entrepreneur-coach relationship) and dependent (the performance of the newly created business) variables actually exist. The indirect effect is mediated by the mediating variable (learning and skill acquisition), while the direct effect is the residual of the entrepreneur-mentor coaching relationship once the indirect effect is controlled for.

We have shown that the entrepreneur-mentor coaching relationship influences the performance of the new business created and that this relationship is mediated by learning and the acquisition of skills, in a sequential and positive manner. To our knowledge, no study had previously tested these relationships. Our analyses confirm that the effect of the entrepreneur-coach relationship on performance is

mediated by learning, thus linking the work that argues that the entrepreneur-mentor relationship fosters entrepreneurial learning with that which suggests a relationship between learning and the performance of new ventures. Similarly, the mediating effect of skills acquisition between the entrepreneur-mentor relationship and new business performance is validated. Coaching improves the skills of novice entrepreneurs, which is in line with other studies that have shown a relationship between entrepreneurial skills and the performance of new businesses. Furthermore, our results show that part of the effect of the entrepreneur-coach relationship on the performance of the new business is direct, indicating that learning and skills acquisition have only a partial and complementary mediating effect. Our results do not allow us to affirm that learning has a stronger mediating effect than skills acquisition on the entrepreneur-coach relationship and the performance of the new company, and vice versa.

Conclusion

In conclusion, this study sought to shed light on the crucial role played by the coaching relationship in resolving the performance challenges faced by young start-ups. Our results, based on a rigorous analysis, help to enrich the conclusions of previous research on the performance of new business start-ups.

Research results clearly indicate that the success of the coaching relationship has a positive influence on the performance of the newly created start-up. This occurs through the learning and acquisition of skills by the entrepreneur. What is new in our research is the evidence of a sequential relationship between the success of the coaching relationship, learning and the performance of the start-up. In other words, the link between the entrepreneur-coach relationship and performance is mediated by learning, as well as by the acquisition of skills by the entrepreneur. importantly, this relationship is sequentially and positively mediated by learning and skill acquisition. Furthermore, our results confirm the existence of direct effects between our dependent and independent variables, whereas in our research the media effects are partial and complementary. Finally, this study shows that the delayed mediation effect between learning and skills acquisition is zero.

However, it is important to recognize the limitations of our study. These limitations include the limited sample size, data collection constraints and research design limitations. These elements may affect the generalizability of our results. In addition, other contextual factors may also influence the results but were beyond the scope of this study.

Recommendations

To improve the performance of start-ups through coaching:

- Identify the specific needs of start-ups in terms of coaching. This can be done by conducting interviews with start-up founders, investors, and coaches.
- Develop coaching programs tailored to the needs of start-ups. These programs should be designed to help start-up founders overcome the specific challenges they face, such as fundraising, product development, and team management.
- Train coaches to work with start-ups. Coaches should have a good understanding of the challenges faced by start-up founders, as well as specific skills to help them overcome these challenges.
- Put in place monitoring and evaluation systems to measure the impact of coaching on start-up performance. This will help to determine whether coaching is effective and to make improvements to coaching programs if necessary.

For future directions, we suggest some promising avenues of research. It would be interesting to explore the long-term effects of coaching relationships on start-up performance, to look at differences in coaching relationships according to entrepreneurial diversity, and to carry out comparative studies between different sectors to identify specific coaching needs. The integration of technology into coaching relationships, cross-cultural research, in-depth qualitative analysis and targeted coaching interventions are all areas that deserve further attention.

Disclosure statement

No potential conflict of interest was reported by the author(s).

About the author

Mohamed Fitouri is a distinguished scholar in the field of management, serving as a faculty member at the Department of Management, Faculty of Economic Sciences and Management of Tunis. With a rich academic background and extensive research experience, He has made significant contributions to the field of management studies. He obtained his Ph.D. in Management from the Faculty of Economic Sciences and Management of Tunis. His doctoral research focused on the complex dynamics of the entrepreneur-coach relationship and its impact on the performance of newly created start-ups. Prior to his doctoral studies, he earned a Diploma of Advanced Studies (Master) in Management from the same institution. Throughout his academic career, he has been an active member of the LISEFE laboratory at the Faculty of Economic Sciences and Management of Tunis, where he has engaged in groundbreaking research projects and scholarly activities. His research interests span various domains within management, including entrepreneurial support relationships, psychological determinants of entrepreneurial success, and the performance of newly created firms. He has published extensively in reputable scientific journals, such as the *Journal of Business and Entrepreneurship*, *International Review of Management Sciences*, *Revue Pub Administration Manag* and *Cogent Business & Management*, among others. In addition to his research contributions, he actively participates in and organizes international conferences, where he collaborates with fellow scholars and practitioners to advance knowledge in the field of management and innovation. His dedication to academic excellence and his commitment to advancing knowledge in management studies underscore his status as a respected scholar and mentor in his field. His research endeavors continue to shape the discourse and inspire future generations of researchers and practitioners in the field of management.

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