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Striving for a life out of shadows: informal entrepreneurial dynamics in time of crisis

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Abstract

Motivated by the unique opportunity that a crisis period provides for capturing and reassessing specific entrepreneurial behaviors, this paper takes on the debate about the entrepreneurial attributes of informal ventures “IVent” and their endeavor to formalize. In doing so, Cronbach’s alpha rationales and contingency analysis are applied to quantitative data from street vendors of the main markets of Cameroon to investigate informal entrepreneurial behavioral dynamics and their impact on a hypothetical willingness for change during the COVID-19 pandemic. It was uncovered that IVent have activated entrepreneurial attributes of resilience, intention and orientation. Also, specific composites or variables of entrepreneurial orientation and resilience have been found more supportive of IVent’s endeavor to formalize than others. The novelties in that regard are: (1) While most of the variables related to the composite of innovativeness reinforce the desire to formalize, the variable of “routine” plays a hindering role. (2) The composite of proactiveness is not significantly related to the willingness to formalize. (3) The composite of risk-taking has proven significant to IVent’s transformation aims. And (4) contrary to all other variables of the attribute of resilience and self-efficacy, the variable of behavior control appears to hamper the aim to move out of the shadows. It is argued that facilitating IVent’s dynamics and aspiration to formalize necessitates policymakers to advance policies that support the development of the uncovered determining composites. Furthermore, academia should undertake an extensive investigation into the role that the captured non-significant variables, attributes, and composites may play in fostering IVent’s shadowed business lifecycle.

Keywords Informal entrepreneurship, COVID-19, Entrepreneurial resilience, Entrepreneurial orientation, Entrepreneurial intention, Formalization

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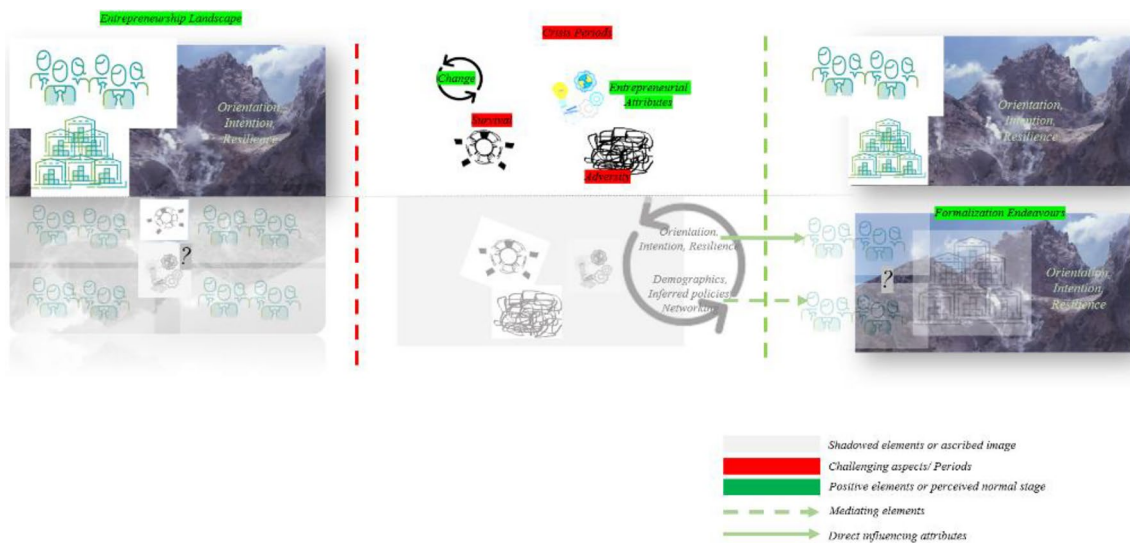
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Graphical abstract



Introduction

The debate on entrepreneurial attributes that informal ventures “IVent” may demonstrate has not found a consensus in the literature. Scholars contend that informal entrepreneurial behavior is mainly defined by survival and can, in some cases, be portrayed by an absence of entrepreneurial acumen and innovation [7, 58, 99]. This perception has led to question if IVent display any entrepreneurial attributes at all or if the lack thereof impedes a hypothetical move to formal structures. Remarkably, existing discussions appear to have not clearly pointed out which traits or skills IVent may rely upon to reach the status of formality later.

Academia argues that next to possible mediating elements such as demographics [85], networks [2], inferred policy [115], behavioral attributes such as entrepreneurial resilience “ER” [66], entrepreneurial intention “EI” [102], and entrepreneurial orientation “EO” [107] may play a significant role in IVent’s dynamics. Beyond the recurring image of survival that IVent may be ascribed, the dynamics that result from crisis periods are believed to foster change in both informal and formal entrepreneurial arrangements [17, 26, 91]. It is believed that the COVID-19 pandemic provides the opportunity to consider new avenues of investigation.

Interestingly, crisis periods provide the opportunity to access entrepreneurial phenomena based on common grounds which in the context of this paper are *business survival and the urgency for change*. Indeed, while economic crises threaten the business continuity, the

battle for overcoming adversity in times of global turmoil implies a timely shift of entrepreneurial settings independent of the sector in which the business operates. It appears that this occurred during the COVID-19 pandemic, which later transformed into an unparalleled economic crisis. Previous research on entrepreneurship in the context of crisis and the COVID-19 pandemic, in particular, have provided some insights on to formal ventures’ experiences of resilience and change [81, 83]. It is a well-known fact that IVent dynamics play a vital role in promoting sustainable economic growth [47]. However, it is not surprising that such dynamics have received limited attention. Salvi et al. [92] noted that the received attention has been unstructured or neglected altogether. There is nevertheless a need to build upon findings focusing on entrepreneurial settings during the COVID-19 pandemic.

Most work addressing IVent during the time of the COVID-19 pandemic have focused on the loss of income [40, 101], the lack of inferred policies in the context of subsistence [90] or policies implications on employment and the formalization [108]. It is observed that discussions about entrepreneurial attributes dynamics or their impacts on a hypothetical venture formalization appear to be missing. It is thought in the context of this paper that IVent may have activated all entrepreneurial attributes at their disposal to survive and steer change during the pandemic. Therefore, there is a need for academia to go beyond macroeconomic arguments to address entrepreneurial attributes that may have

contributed to IVent's maintenance and change. Hence, the paper questions *[which entrepreneurial behavioral dynamics supporting IVent's hypothetical aim to formalize may have been activated during the COVID-19 pandemic]*.

To achieve its goal, the paper examines the IVent literature and conducts empirical tests on certain assumptions. The results of the empirical tests will provide valuable insights into the discussed phenomena and enhance recommendations for policymakers and academia.

Literature review

Revisiting the concept of informal entrepreneurship

Although multiple researchers have investigated informal entrepreneurship [42, 92], this phenomenon still suffers from a mainstream ascribed image of subsistence [98] and criminality [22]. The discussion about the perceived criminality of the informal sector seems to attract academia more than IVent's contribution to economic growth and development [46]. However, Williams and Nadin [112: 363] argue that: "... the only illicit aspect of their [IVent] activity is that some or all of the monetary transactions they undertake are not declared to the authorities when they should be declared". It is assumed that only structures dealing with illicit goods and services are part of the informal criminal economy and, therefore, in the context of this paper, venturing within the informal sector is clearly disassociated [109] from the discussion around the criminal economy.

Williams [110] presumed four types of informal entrepreneurs with respect to their intention of formalizing. For the United Nations Development Programme "UNDP", three main categories of micro and informal businesses can be classified based on their turnover, number of employees, and grade of formalization: (1) Survivalist enterprise, (2) Informal business; and (3) Micro-enterprise [104: 21]. Three main arguments can be unearthed from Williams' and the UNDP's findings: (1) Informal entrepreneurship may be the result of a direct or indirect decision to cease to participate in formal structures. (2) Structural changes of IVent may indicate entrepreneurial attributes dynamics; and (3) the assumption of a IVent's lifecycle transformation and change can be advanced. The authors argue on the need to review if the arguments (2) and (3) above are supported in the literature in general and if they were part of academic discussions during the period of the COVID-19 pandemic in particular.

Entrepreneurial research during the COVID-19 pandemic

Multiple studies have captured and projected the impacts that the COVID-19 Pandemic have had on business administration [89], Foreign direct investments [114,

116], health-related expenditures [69], social responsibility and innovation [1], entrepreneurship [10, 86], family business [28, 30], income and gender [40] and informal businesses [31, 104]. A very high-level screening—based on the criteria: (1) Terminology of: "entrepreneurship"; (2) Language: "English"; and (3) Journals focusing on Business and Economics—of the articles published between 1st June 2020 and 25th September 2022 [94] within EBSCOhost/ Business source premier and EconLit, resulted into apparent ($N=11,049$) articles published in total. A similar screening was done with the terminology of "informal entrepreneurship" and resulted in a presumed number of ($N=85$) articles. The authors examine few articles from the above list to uncover the theoretical discourse around entrepreneurship during the COVID-19 pandemic.

Kuckertz and Brändle [55] remarked that research on entrepreneurship during the COVID-19 pandemic were marked by: "the uncertainty, resilience, and opportunity perspectives" (p. 281). Bartik et al. [12] and Otrachshenko et al. [78] found that entrepreneurs had to fold their businesses during the peak of the COVID-19 pandemic. As presented in Table 1 below, with respect to the categories of the business venture and sector, two main conclusions can be drawn from the reviewed work. In the formal sector, researchers went beyond inferred policies [16, 103] and survival perspectives [18, 82, 84] to address the dynamics of entrepreneurial attributes such as entrepreneurial resilience "ER" [103], entrepreneurial intention "EI" [106] and entrepreneurial orientation "EO" [67]. In the informal sector however, scholars have mostly discussed survival and macroeconomic impacts [14, 90, 100]. The paper posits that the lack of academic discussion on IVent's attributes during the crisis appears to be in line with the questionable perception that IVent are all about survival and maintenance. Hence the paper shall endeavor to revisit the accuracy of this perspective by investigating its first presumption (P1): *[Like formal entrepreneurs, informal entrepreneurs activate entrepreneurial attributes of "ER", "EI" and "EO" to overcome crisis situations]*. While P1 may be already proven by descriptive approaches, the paper shall endeavor to go beyond descriptive data to question if P2 *[All observed entrepreneurial attributes are linked to informality]*.

Based on cross-regional data from Vietnamese non-farm firms, McCaig and Pavcnik [68: 540] contended: "First, we find that informal businesses exhibit rates of entry and exit around 14–18% annually". In times of uncertainty, the possibility of accessing financing affects venture survival [9]. Thukral [103] and Omri [77] argue that policymakers should support ventures' survival efforts by advancing inclusive economic and financial policies. Since IVent appear to have not received financial

Table 1 Discussions on entrepreneurial attributes during the COVID-19 pandemic

Entrepreneurial categories	Discussions on entrepreneurial resilience “ER”, orientation “EO” and intention “EI”	Supportive and inferred policy	Impacts on entrepreneurial lifecycles “EL”	Other research
SMEs and large	<p>(EO): “The results of this study indicate that SMEs hit by the pandemic should avoid retrenchment strategies. They might have better chances of success if they embrace their vulnerability and take risks to foster growth.” [67, p. 1369]</p> <p>(ER): “It is because of resilience that they can see an opportunity in chaos and survive uncertain times” [103, p. 153]</p> <p>(EI): “In the interviews, the managers of micro-sized enterprises reported that the pandemic had increased their workload and forced them to mobilize strategies for enterprise survival” [106], p. 1)</p> <p>“There are considerable short- and long-term implications of the pandemic for informal employment and the informal economy. ... Government policies supporting work safety, income security, moves to formalization of employment and fairness for informal employees are particularly important.” [108, p. 1005]</p>	<p>“...policy interventions that aim to improve economic recovery could pay special attention to the needs of women enterprises, just as other economic policies emphasize the needs of small and medium enterprises” [16, p. 1393]</p> <p>“The short-term measures of the governments have succeeded in relieving the pressure on entrepreneurs to some degree.” [103, p. 156]</p> <p>“Although our suggested policy recommendations may not be sufficient to help MSMEs go through the ongoing crisis, these measures will help them weather the storm.” [95], p. 1)</p> <p>“Our findings suggest that COVID-19 has led to a loss of income for sex workers, leading to a worsening of social and health conditions for sex workers. A lack of access to government relief among sex workers exacerbated such conditions.” [101, p. A22]</p>	<p>“SMEs are found to navigate survival, continuity and growth by drawing from their resourcefulness and firm-level strategies to cope with the new opportunities and constraints.” [82, p. 497]</p> <p>“Results from fsOCA with the same data set show that firms’ business agility and OIC are necessary conditions for SMEs’ survival strategies.” [84, p. 1]</p> <p>“... the proposed theoretical framework provides a roadmap and guide to examine, understand and assimilate the entrepreneurial journey through a devastating event.” [18], p. 799)</p> <p>“For the measures of physical distancing to take effect, it is necessary to implement public policies that provide subsistence conditions for individuals who are below the poverty line, i.e., those mostly working in the informal sector.” [90, p. 89]</p>	<p>Foss [36], González-Tejero et al. [41], Klein and Todesco [53], Eggers [32]</p> <p>Fairlie [34], Kraus et al. [54], Dettori and Floris [30]</p> <p>UNDP [104]</p> <p>Belitski et al. [14], Laing et al. [56], Narula [75], Hossain [44], Swarna et al. [100], Durst et al. [31], ILO [48]</p>
Small and family business				
Micro-enterprise				
Survivalist enterprise; informal businesses; and micro-enterprise				

Source: The authors

support, a stable rate of entry or exit may indicate that they have either shown solid resilience, or a “deformalization” process may have taken place [72, 115]. Ratten [86] went beyond the need for business survival, to stress on the change of “entrepreneurial mindset”. It is perceived that this scholar may have therefore indirectly asserted that entrepreneurial attributes dynamics play a role in IVent’s change. Indeed, Ratten claimed: “...there is a need for businesses to survive in the short-term by utilizing an entrepreneurial mindset by committing to change that incorporates innovation.” [86, pp. 92–93]. The discussion around an “entrepreneurial mindset” in the context of change supports the idea that entrepreneurial attributes dynamics foster venture adaptation and development, which in the context of IVent can be associated with survival and formalization. Hence, with regard to the conclusion of Ratten [86], the authors presume (P3) [*Entrepreneurial attributes’ dynamics assist IVent’s change; and therefore, a hypothetical endeavor to formalize*].

It is believed that by empirically verifying and answering to the above presumptions, the paper shall contribute to the body of knowledge on IVent and propose policy inferences supporting IVent’s maintenance and change through formalization.

Data and methodology

This paper endeavors to examine which entrepreneurial behavioral dynamics supporting IVent’s hypothetical aim to formalize may have been activated during the COVID-19 pandemic. The literature review have provided insights into the role that the entrepreneurial attributes of ER, EI, EO may play in triggering venture change. However, most related research have focused on formal structures. Hence, for answering to its defined question best, the paper shall (1) verifies if IVent has activated the above attributes during the COVID-19 pandemic; (2) which of the activated ones are linked to informality; (3) if these attributes may influence a hypothetical formalization process. The empirical testing of the above presumptions are presented in this section.

Measuring entrepreneurial attributes dynamism

The attempt to investigate entrepreneurial attributes implies the examination of entrepreneurial attributes and the perceived experiences that entrepreneurial subjects may have had toward single composites of the defined attributes. The authors strived to achieve this endeavor by adjusting existing questionnaires throughout the application of the hedonic scale [79]. Though, the authors adjusted the nine-point scales to a five-point scale with respect to the findings of Cardello and Jaeger [21], the conclusions of Kimmel et al. [52] and the proposal of

Popper and Kroll [80]. The authors also consider entrepreneurs’ educational level [50], age, gender [65] and prior experiences [58] to argue on specific issues.

In addition, since the paper analyzes entrepreneurial behavioral change during the COVID-19 pandemic, its survey goes beyond the investigation of possible entrepreneurial attributes to include specific questions related to the impact of the COVID-19 pandemic on entrepreneurial dealings. These questions ($N=9$) are believed to help verify the paper’s presumptions and linkages toward the entrepreneurial attributes. The definition of these questions, their classification, and theoretical justifications are presented the “Appendix A”. As far as the investigation of entrepreneurial attributes is concerned, the paper puts an emphasis on the composites of ER and EO. ER and EO composites were measured through the combination of diverse existing questionnaires applied in past research. For example, ER was measured by aggregating the questionnaires of Renko et al. [87]. Meanwhile, EO was measured based on the conclusions of Covin et al. [24]. There was no particular reason for selecting a specific questionnaire except the fact that it should have been used by peers to capture the related attributes in another sector.

Sample and data collection

The research utilized the survey method while applying quantitative methodologies to capture entrepreneurial attributes within IVent. The survey method is believed to fit better research examining experiences and relationships between phenomena [23, 74]. Additionally, the authors used self-administered questionnaires to reduce the influence of social bias in the data collection [37]. Therefore, the research aggregated three questionnaires for a quantitative goal-directed and purposive diversified sampling survey while collecting data from April 2022 to October 2022. This approach is a nonprobability sampling technique that assists the selection of participants concerning specific characteristics, traits, or attributes [37]—in this case, ($N=307$) street vendors [33] in primary markets of the political and economic capital of Cameroon. Street vendors were selected as they appear to represent informal entrepreneurs in such markets best [46]. The authors targeted 300 usable questionnaires and collected data until the related volume of useful questionnaires was reached. Table 2 provides an overview of the sample statistics.

Data analysis approach

Due to the aggregated questionnaires and defined presumptions, the paper relies on multiple analyses and approaches to describe data, verify the internal consistency and reliability of the questionnaire and test the

Table 2 Background characteristics of the respondents

Demographics	Variables	Informal entrepreneurs	
		Count	% of Total
Gender	Female	117	38.11
	Male	188	61.24
	Others	2	0.65
Age	All	307	100
	> 50	12	3.91
	≤ 18	22	7.17
	19–25	53	17.26
	26–30	69	22.48
	31–35	73	23.78
	36–40	58	18.89
	41–50	20	6.51
Education level	Elementary	15	4.89
	None	8	2.61
	Secondary	162	52.77
	University	122	39.74
	All	307	100

Source: The authors

linkages between the defined variables. The data analysis approach is presented in this sub-section.

Variables analysis and reliability

As argued above, entrepreneurial attributes’ composites were captured by aggregating multiple existing questionnaires, whose internal consistency and reliability needed to be verified [11]. Due to the explorative approach of this research, presumption’s (P1) verification and the reliability of the questionnaire were performed through correlations analysis. Next to basic descriptive statistics, the

authors applied Cronbach’s alpha rationales [25] for consistency and reliability analysis.

Applied techniques

Beyond descriptive statistics, the paper uses the technique of contingency analysis. The contingency analysis is a statistical method used to study the relationship between two categorical variables. It is applied to determine whether the observed frequencies of the different categories of variables are independent or whether there is a significant association between them. The contingency analysis is based on the calculation of a statistical test known as the chi-square test. This test compares the observed frequencies with those expected if the variables were independent. There is a relationship between the variables if the chi-square test reveals a significant association.

Results

The paper explores which entrepreneurial attributes are activated by IVENT while battling for survival during global crises. The hope is to assist in capturing the dynamics of IVENT’s entrepreneurial attributes supporting a hypothetical formalization process. The paper relies on statistical approaches to achieve its aim.

Descriptive statistics

With respect to its endeavor of capturing IVENT behavior dynamics during crisis, the paper presents descriptive statistics related to the questions [N=9] focusing on entrepreneurial experiences of the COVID-19 pandemic. As displayed in Table 3 below, it is informed that: (1) Concerning the composites defined to capture ER during the pandemic, the majority of respondents [66%] believed in their capacity to overcome the adversity caused by the pandemic and approx. [66%] confirmed that they had

Table 3 Descriptive statistics on perceived entrepreneurial attributes dynamism during COVID-19

Encoded questions	Recorded modalities’ values				
	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
COVID-19 Overcome- ER	0.65	4.89	28.01	54.07	12.38
COVID-19 Similar- ER	26.06	44.63	16.94	10.75	1.63
COVID impact- EL	3.58	9.77	12.05	18.57	56.03
COVID Gov- EL	81.11	7.17	8.47	2.28	0.98
COVID-19 Fam- EL	8.47	20.85	12.70	44.30	13.68
COVID-19 Emplo- EI	8.47	20.85	12.70	44.30	13.68
COVID-19 Opport- EI	29.32	24.43	25.73	13.03	7.49
COVID-19 Best Career- EO	1.63	12.70	33.88	40.07	11.73
COVID-19 Change- EO	4.23	13.68	10.42	56.68	14.98

Source: The authors

never faced similar challenges. (2) Regarding the change in the venture lifecycle, approx. [75%] of the respondents confirmed that the pandemic impacted their business; [83,11%] of respondents confirmed that they had not received governmental support, while approx. [58%] stated that they received some family support. (3) Concerning EI, for approx. [58%] of respondents, alternative employment offers would have been chosen instead of pursuing IVent. A few [approx. 20%] perceived COVID-19 pandemic as an opportunity for their businesses. And (4) concerning EO, independent of its composites, over [50%] confirmed that venturing is the best career orientation they have chosen, and they have reoriented their businesses due to COVID-19 pandemic. Further insights into the results are discussed in the next sub-section.

Additionally, statistics related to entrepreneurial experience ante-venturing and the attitude toward venture formalization are also worth presenting. As displayed in Table 4, over [approx. 91%] of the respondents replied that they use to had entrepreneurship experience through their network, family or educational institutions before moving to business ventures. Despite a lack of clarity concerning the sector wherein such experiences may have been collected, the observed very high level of exposure to entrepreneurial experiences emphasizes the impact that entrepreneurial experiences and acumen may have had on participants' career orientation.

Over 91.7% of respondents who strived for formality possess at least a secondary school degree, 33.8% hold a degree from a university. Next to that, only approx. 10% of respondents posited to have had ante-venturing experiences through educational institutions. A few interesting descriptive data are noted on respondents answering to their willingness to move out of informality and transforming the activity to a formal structure. While [43.3%] of respondents are aiming for a hypothetical formalization, [35%] still do not foresee such moves. Noteworthy is

also that over [36%] of the respondents were already venturing within the formal structures or doing business in both sectors. There will be a need to discuss this specific phenomenon.

Cronbach test for variables analysis and reliability

Table 5 below shows the Cronbach alpha test on the overall survey, and the description of therein variables is enclosed in “Appendix B”. Since the test scale of the questionnaire is above the rationale of alpha required for validating exploratory research [76]—this means in the context of this paper: $\alpha < 0.6 \leq 0.7 = 0.81$ —and most of the variable-test correlation are of a positive (+) sign, it can be contended that: (1) the integrative questionnaire is internally consistent and valid; (2) the selected attributes and their composites are evidenced; and (3) there appear to be existing correlations between different variables of the composites of these attributes.

Contingency analysis on entrepreneurial attributes dynamics

Table 6 presents the dependency between entrepreneurial attributes of ER, EO, the informality and the desire to formalize. Concerning the composite of innovation of the attribute of EO, the results indicate that the variable of “inov_prob” [0.001; 0.023] and “inov_solvin” [0.000; 0.000] are significantly associated with formalization and are not independent. There are insufficient evidences that “inov_rotin” [0.298; 0.480] is related to the desire to formalize. Concerning the entrepreneurial attributes of proactiveness [all > 0.1], there are insufficient evidences of a significant association to the formalization. Regarding the entrepreneurial attribute of risk, all its composites are related to the desire to formalize [all < 0.01]. Concerning the entrepreneurial composites of resilience and self-efficacy, all its variables are linked to the desire to formalize with the exception of “r_sleffi_2” [0.122; 0.000]. There is a need to discuss why among other ER variables, the

Table 4 Descriptive statistics on perceived experience and formalization

Encoded questions	Other elements	Rows in %
I have already experienced entrepreneurship	Closed family	46.91
	Educational institution	9.45
	None	9.12
	Other acquaintances	34.53
I am striving to develop my business from informal to formal	N.A	21.5
	No	35.18
	Yes	43.32
I have developed my business from informal to formal	N.A	28.34
	No	35.18
	Yes	36.48

Source: The authors

Table 5 Cronbach test

Variables	Obs	Sign	Variables-test correlation	Variables-rest correlation	Average inter variable correlation	Alpha
demo_agee	307	+	0.2500	0.1744	0.1175	0.8146
demo_sex	307	–	0.2007	0.1238	0.1187	0.8163
demo_Educ	307	+	0.1771	0.0998	0.1193	0.8172
hve_experience	307	–	0.0747	–0.0038	0.1218	0.8206
h_striv_de~s	307	+	0.4310	0.3639	0.1131	0.8081
striv_devbus	307	+	0.4975	0.4350	0.1115	0.8056
Inov_prob	307	+	0.4828	0.4192	0.1119	0.8061
Inov_Rotin	307	+	0.5527	0.4946	0.1102	0.8034
Inov_solvin	307	+	0.4592	0.3940	0.1125	0.8070
Risk_plan	307	+	0.4918	0.4288	0.1117	0.8058
Risk_can	307	+	0.3418	0.2698	0.1153	0.8114
Risk_pro	307	+	0.4157	0.3477	0.1135	0.8086
Pro_way	307	+	0.3957	0.3265	0.1140	0.8094
Pro_activ	307	+	0.3320	0.2596	0.1155	0.8117
Pro_constan	307	+	0.3392	0.2671	0.1154	0.8114
Strbus	307	+	0.4564	0.3909	0.1125	0.8071
h_strbus	307	+	0.3935	0.3242	0.1141	0.8095
inov_prob	307	+	0.4828	0.4192	0.1119	0.8061
inov_Rotin	307	+	0.5527	0.4946	0.1102	0.8034
inov_solvin	307	+	0.4592	0.3940	0.1125	0.8070
pro_way	307	+	0.3957	0.3265	0.1140	0.8094
pro_activ	307	+	0.3320	0.2596	0.1155	0.8117
pro_constan	307	+	0.3392	0.2671	0.1154	0.8114
r_sleffi_1	307	+	0.5499	0.4915	0.1103	0.8035
r_sleffi_2	307	+	0.3398	0.2677	0.1154	0.8114
r_sleffi_3	307	+	0.4230	0.3554	0.1133	0.8084
r_sleffi_4	307	+	0.5155	0.4544	0.1111	0.8049
Test scale					0.1145	0.81

Source: The authors

“r_sleffi_2” appears not to be significantly associated with the desire to formalize.

Discussion

Debating on a theoretical novel

Over 71.1% of respondents for this research claimed that they changed their way of doing business due to the COVID-19 pandemic. More than 25.5% perceived the COVID-19 pandemic as an opportunity, and over 74.5% confirmed that the pandemic impacted their businesses. These results validate within the informal sector the assumptions of Belitski et al. [14] that the COVID-19 pandemic contributes to entrepreneurial attributes changing because of the entrepreneurial need to adapt to new market realities. In the same thoughts, Musara and Nieuwenhuize [73, p. 203] observed that: “Herman Mashaba’s risk-taking propensity when he decided to resign from his job demonstrates IEO...”. It is argued that these results support the perceived change

of EO’s composites within IVent. Additionally, over 66.4% of respondents believed their businesses would overcome the pandemic. At the same time, more than 71.1% of respondents said that they have changed their way of doing business due to the COVID–19 pandemic. Next to the above descriptive data evidencing entrepreneurial attributes within IVent, their transformation process and, therefore, attributes dynamics already implied by Williams’ [110] and the UNDP’s [104] were confirmed by the Cronbach alpha of the analyzed composites of ER and EO. It can therefore be posited that the paper’s presumptions (P1) and (P2) are empirically validated. While this conclusion partially refutes the argument of Armansyah et al. [7], Ligthelm [58], Sowatey et al. [98], who defended a lack of entrepreneurial attributes and acumen within IVent in developing countries, there is still a need to question which specific composites allowed to “partially” coitize the existing body of knowledge.

Table 6 Analysis of independence (contingency) between categorical variables

Variables	I am striving to develop my business from an informal to a formal status...	I have developed my business from an informal (no fiscal declaration) stage to a formal stage...
<i>Pearson chi(2) probability</i>		
EO composites of innovativeness		
inov_prob	0.001	0.023
inov_Rotin	0.298	0.480
inov_solvin	0.000	0.000
EO composites of proactiveness		
pro_way	0.350	0.330
pro_activ	0.687	0.926
pro_constan	0.144	0.121
EO composites of risk-taking		
risk_plan	0.000	0.000
risk_can	0.000	0.000
risk_pro	0.013	0.005
ER composites of resilience and self-efficacy		
r_sleffi_1	0.000	0.000
r_sleffi_2	0.122	0.000
r_sleffi_3	0.000	0.000
r_sleffi_4	0.000	0.000

Source: The authors

Is there an association between informality and entrepreneurial attributes?

As presented above, some scholars argue that IVent lack entrepreneurial attributes. However, based on the paper's findings and with respect to specific behavior observed by other publications such as Dana [27] on the entrepreneurial decision to remain in the informal sector (1), Yana Mbena et al. [115] on the “renegare” or the deliberate decision of venturing in the informal sector and the “deformalization” or the decision leave formal structures to join the informality (2)-, it is argued that the discussion should be oriented on the traits or skills linked to variables, composites or attributes that are not associated to the desire to formalize. Indeed, the paper's empirical evidence presented above shows that while some respondents were already doing business in both sectors, some are willing to move out of informality. Few prefer to remain in the shadows. These contrasting results assert the need to go beyond descriptive results to discuss single composites of the exanimated attributes.

Innovativeness: Innovation is argued to be an important composite of EO and a determinant of survival, transformation and success for formal structures [24]. While scholars argue on the negative impacts that the experience of informality appears to have on ventures' innovativeness as a whole [8, 19], this paper found that except for the innovativeness variable of routine [*inov_rotin-I quickly master new routines, procedures*

and new ways of working], all remaining variables are significantly associated with the formalization and are not independent. Concerning the findings of Morris et al. [70], it can be argued that perhaps routines within IVent are a habit that hinder innovation even when the venture is formalized. It is believed that only innovative informal entrepreneurs who master new ways of working out of non-productive routines may develop a need to formalize their business ventures.

Proactiveness: Proactive business ventures are more likely to be successful. Indeed, entrepreneurs of such structures appear to be forward thinkers as they try to anticipate challenges and plan for the future [105]. The paper found a lack of evidence of a significant association between the entrepreneurial attributes of proactiveness and a desire to formalize. This result is very surprising, especially since in the context of formal structures [117] or business transformation of star-ups [38], researchers observed contrary settings and outcomes. There will be a need to investigate these results further.

Risk-taking: While calculated and manageable risk-taking is an essential variable of EO [29], it is argued that formal entrepreneurs appear to be risk-friendlier than the other [61]. It is, therefore, not surprising that all variables of this particular composite of the EO have proven to be related to the desire to formalize. In other words, it is believed that only risk-taking IVent will be willing to

“take the risk” linked to a hypothetical transformational journey out of the shadows.

Resilience and Self-Efficacy: Independent of the sector the venture develops, resilience and self-efficacy are important composites of entrepreneurial settings. It is therefore, understandable that most of their variables have been found to be significantly associated with informal entrepreneurs’ desire to formalize. The result, however, informed that the variable “r_sleffi_2” [Regardless of what happens to me, I believe I can control my reaction to it.] appears not to be significantly associated with the desire to formalize. It is presumed that persistence in survival combined with the perceived benefits of informality may hinder the endeavor to formalize. In other words, the more IVent can control their reaction toward adversity and continue to perceive a profit in informality, the more likely they will not be willing to formalize. As comparative results cannot be found in the literature, this particular finding will need to be investigated further.

Policy and practical implications

Mukorera [72] noted an increase of IVent during crises. Since, the formalization appears to be the main reason behind academia works and policymakers actionism in the informal sector [119], it is important also to investigate these phenomena in such a situation. Vinberg and Danielsson [106: 9] remarked that: “One important study result is that managers of both micro and small enterprises report low scores for the perception of financial support including questions about whether the government support was easy to access, fair and reached those who needed it most.” Over 81% of respondents strongly disagree with the statement: [I received governmental support to address business challenges due to COVID-19]. These findings are in line with the reports of the IMF [49] and the conclusions of Tan et al. [101] and lead to question if the lack of inferred policy inclusion of informal entrepreneurs may not limit their willingness to formalize.

The survey shows that more than 35% of research participants favor an informal business life. For Akuoko et al. [5: 3]: “The informal economic sector needs to be better integrated and managed into the urban economy rather than efforts to reform it”. According to Thapa Karki et al. [102: 700]: “the deferral of decision-making highlights the pragmatic nature of sensemakingThe issue centers less on ‘what is right?’ and more on ‘what is right now?’” Despite Laing et al. [56] and Dana [27] insisting on the determination of some informal entrepreneurs not to formalize their business the paper asserts the need for policymakers to understand the reasons behind informal entrepreneurs’ delays or unwillingness to formalize their activities at all.

Inferring on policies supporting entrepreneurial acumen and formalization

Entrepreneurial acumen [58] is credited with enhancing the formalization process. Indeed, it is claimed that it influences both exogenous factors [environmental support] and endogenous factors [entrepreneurial attributes dynamics and the construction of entrepreneurial traits]. Over 91.7% of respondents who strived to formalize their business possess at least a secondary school degree, and 33.8% hold a degree from a university. Also, only approx. 10% of respondents posited to have had ante-venturing experiences through educational institutions. Since entrepreneurial skills per se can be learned, the authors presume that next to policies supporting financial inclusion and easing the formalization process, inferring on policy enhancing entrepreneurial acumen may add a substantial value. It is believed that next to legal frameworks aiming to promote better inclusion [35] or easing financial inclusion and registration procedures [113], policymakers should introduce subtle-fiscal-driven formalization requirements [51]. Since the variable of self-control appears not to relate to the desire to formalize, lawmakers may infer policies enforcing more control of informal structures [111]. For all attributes, composites and variables that have proven determinants for venture formalization, policymakers should support the development of related entrepreneurial skills through incubator programs for informal entrepreneurs.

Another perspective, implied that policies are perceived as fair on governance [77], social justice [4, 59, 88], and if well-designed [13] may have positive impacts on entrepreneurship. It is observed that 38.1% of respondents are women. Due to the important role that women informal entrepreneurs play in supporting social structures, economic growth and development [71] and their perceived vulnerability [39], policymakers should develop specific frameworks addressing women informal ventures development. Also, the statistics related to entrepreneurial experience ante-venturing and the perception of venture formalization are also worth some specific analysis. As displayed is Table 4 above, over [approx. 91%] of the respondents replied that they had to have some entrepreneurship experience through their network, family or educational institutions before moving into business. Despite a lack of clarity concerning the sector wherein such experiences may have been collected, the observed very high level of exposure to entrepreneurial experiences emphasizes the impact that entrepreneurial experiences may have had on participants’ career orientation. In addition, and in line with the opinion of Haneberg [43], entrepreneurial networking appears to play an essential role in assisting venture resilience and survival. This is confirmed by our empirical findings wherein more

than 58% of respondents recognized receiving support from families and acquaintances while facing the economic consequences of the pandemic. Future research will need to question the influence and rationales of this support on IVent's transformation at large.

Conclusion

The purpose of the paper was to analyze the entrepreneurial behavioral dynamics that supported IVent's hypothetical aim to formalize and whether they were activated during the COVID-19 pandemic. To achieve this, the authors used an existing survey on entrepreneurial settings that included specific questions related to the pandemic and the attempt to formalize. They conducted the survey on 307 street vendors in Cameroon. The survey revealed that entrepreneurial attributes of EI, EO, and ER were activated during the pandemic, leading to a perceived dynamics that supported venture survival, maintenance, and the desire to formalize. The investigation also uncovered a few theoretical novelties that can strengthen the discussion on IVent change. However, the paper may suffer from a few limitations that may be addressed in future discussions on informal entrepreneurial attributes and change.

It was discovered that the variables of routine within the composite of innovativeness, the composite of proactiveness, and the variable of behavior control within the attribute of resilience and self-efficacy are either non-significant or may hamper IVent's willingness to formalize or their aim to move out of the shadows.

Research limitations

The limits that this research suffers from are primarily associated with its constraints in resources that have reduced its scope as far as the data collection and analysis are concerned. Regarding the collection of data, the survey was primarily conducted within the informal sector of Cameroon. However, the diversity of this sector in terms of population, macroeconomics, culture and policies may not have been fully captured. Also, due to the reduced scope, the paper could not comprehensively investigate all composites of IVent's entrepreneurial attributes, e.g., EI. While the authors consider this paper as an initial attempt to capture which entrepreneurial

attributes are activated during crises, its authors advocate for specific future research on IVent's phenomena.

Future theoretical venues

The paper argues that academia, though education and research play a critical role in venture development [64]. Concerning informal entrepreneurial research, although Salvi et al. [92] acknowledged growing academic interest in IVent phenomena, this phenomenon is still believed not to have gotten the academic attention it deserves. Scholars' contributions are particularly relevant of this research as the paper's empirical findings confirmed that the participants' level of education influenced their venture lifecycle [63].

The literature review informed on an existing perception that IVent are solely driven by survival and lack entrepreneurial attributes. This paper contradicts these beliefs as its empirical findings uncovered that IVent have activated EI, EO, and ER attributes during the crisis of COVID-19. The paper, however, only focused on EO and ER composites while analyzing IVent's dynamics and transformational endeavors. There will be a need to explore the impact of EI composites on IVent's willingness for change. The paper also uncovered that while some attributes, composites and variables of EO and ER were significantly related to the desire to formalize, the "routine" variable within the composite of innovativeness, the composite of proactiveness or the "behavior control" of the composite of risk were not significantly linked to the desire to formalize. There will be a need to deepen the investigations on their influence on the entrepreneurial lifecycle as a whole. One avenue in that regard maybe the impact that these variables may have on the desire to "deformalize".

The paper also discussed the lack of inferred policy in favor of financial inclusion and the need for policy-makers to support the development of specific entrepreneurial skills through incubator programs in favor of IVent. There will be a need to evaluate and examine if and how such approaches can support the formalization of IVent best or limit a hypothetical deformalization process.

Appendices

Appendix A: Overall explanatory, classifications and justification of the questions

Dimensions/ question	Hedonic five- point scale	Attributes	Theoretical justifications	Notes
COVID-19 impacted my business	(1) Strongly disagree	EL	Lichtenstein and Lyons [57], Cantner et al. [20]	The entrepreneurial ecosystem is dynamic and impacted by its environment
I received governmental support to address business challenges due to COVID-19	(2) Disagree	EL	Thukral [103]	"Governments recognize that SMEs will be a vital engine for the post-crisis economic recovery." [103, p. 156]
I received family support to face business challenges due to COVID-19	(3) Less agree	EL	Zhu et al. [118]	"...family support is an important social resource to reduce perceived hindrance and to motivate entrepreneurs to stay with their venture" [118, p. 29]
Due to business challenges from COVID-19, I started thinking about becoming an employee if I had the possibility	(4) Agree	EI	Liñán and Chen [60, pp. 612–613], Shapero and Sokol [96], Ajzen [3], Bird [15]	Inverted <i>Personal Attitude</i> reasoning. A born entrepreneur would rather be an entrepreneur among various options

Dimensions/ question	Hedonic five- point scale	Attributes	Theoretical justifications	Notes
COVID-19 is the proof that entrepreneurship is the best career orientation for me	(5) Strongly agree	EO	Covin et al. [24, p. 10], Lumpkin and Dess [62], Şeşen and Pruett [93], Hughes and Morgan [45], Al Mamun et al. [6]	<i>Risk-taking:</i> To value new plans and ideas, even if one feels that they could fail in practice
I changed my way of doing business due to COVID-19		EO	Covin et al. [24], Lumpkin and Dess [62], Şeşen and Pruett [93], Hughes and Morgan [45], Al Mamun et al. [6]	<i>Innovativeness:</i> To have very little problems with change and quickly master new routines, procedures, and new ways of working
I believe that my business will overcome the pandemic		ER	Renko et al. [87], Shockley et al. [97]	Belief in grow in positive ways. <i>The Culture of Success and Optimism</i>
COVID-19 challenges are similar to the ante-COVID challenges		ER	Renko et al. [87], Shockley et al. [97]	Looking for creative ways to alter difficult situations. <i>The Culture of Success and Optimism</i>
COVID is an opportunity for my business		EI	Liñán and Chen [60], Shapero and Sokol [96], Ajzen [3] and Bird [15]	<i>Perceived Behavioral Control</i> If trying to start a business, one perceives a high probability of succeeding

Source: The authors Appendix B: Description of the study variables

Variable	Label
striv_devbus	I have developed my business from an informal (no fiscal declaration) stage to a formal one (fiscal declaration):
h_striv_devbus	I am striving to develop my business from an informal to a formal status:
inov_prob	Innovativeness variables. [I have very little problems with renewal and change]
inov_Rotin	Innovativeness variables. [I quickly master new routines, procedures and new ways of working.]

Variable	Label
inov_solvin	Innovativeness variables. [When it comes to problem solving, I always search for creative solutions instead of familiar ones]
pro_way	Proactiveness variables [I always try to find if (internal) clients have wishes or desires that they are not consciously aware of]
pro_activ	Proactiveness variables [I always actively help internal clients, and not only when I am asked or approached to do so]
pro_constan	Proactiveness variables [I am constantly looking for new ways to improve my performance at the job]
risk_plan	Risk-taking variables. [I value new plans and ideas, even if I feel that they could fail in practice]
risk_can	Risk-taking variables. [One can sometimes provide assistance to internal clients without first discussing this with the management]
risk_pro	Risk-taking variables. [In order to be more productive, one should sometimes act without the permission of others.]
demo_agee	Demographics-Age
hve_experi~e	I have already experienced entrepreneurial settings through:
r_sleffi_1	On Resilience and Self-Efficacy [I look for creative ways to alter difficult situations]
r_sleffi_2	On Resilience and Self-Efficacy [Regardless of what happens to me, I believe I can control my reaction to it.]
r_sleffi_3	On Resilience and Self-Efficacy [I believe I can grow in positive ways by dealing with difficult situations]
r_sleffi_4	On Resilience and Self-Efficacy [I actively look for ways to replace the losses I encounter in life]

Source: Adapted from Renko et al. [87] and Covin et al. [24]

Abbreviations

EI	Entrepreneurial intention
EL	Entrepreneurial lifecycles
EO	Entrepreneurial orientation
ER	Entrepreneurial resilience
IE	Informal entrepreneurship
ILO	International Labor Organization
Ivent	Informal ventures
UNDP	United Nations Development Programme

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