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**Impact of
Entrepreneurial
Typologies
on Enterprise
Performance with
Regard
to Hidden Cost
Approach**



RESEARCH PAPER

Impact of Entrepreneurial Typologies on Enterprise Performance with Regard to Hidden Cost Approach

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ABSTRACT

PURPOSE: This work aims to assess the impact of entrepreneurial typologies on enterprise performance in line with a hidden cost approach.

METHODOLOGY: To achieve this objective, a Multivariate General Linear Model (MGLM) was employed as it allowed the most impacting variables and modalities about the relationship between entrepreneurial typologies and enterprise performance to be highlighted.

FINDINGS: The findings show that the variables with significant impact on enterprise performance in terms of hidden costs are enterprise size (small business-large enterprise) and activity sector (manufacturing firm-service firm). The performance variables most impacted are reconciliations between social-economic, structures-behaviours and material-immaterial. As for the modalities with significant impact on enterprise performance in terms of hidden costs, they are small business, non-hybrid enterprise and a combination of small and manufacturing firms.

ORIGINALITY: The originality of this work lies in the fact that it is rarely discussed in social sciences, insofar as it deals with a topic establishing the relationship between entrepreneurship and hidden costs via an MGLM. This work is also original since it does not establish the typologies of entrepreneurship in terms of entrepreneurs as is the case with the majority of works on entrepreneurship, but presents them in terms of enterprise typologies.

KEYWORDS: *Entrepreneurial Typologies; Hidden Cost Approach; Variables and Modalities with significant Impact on Hidden Costs; Multivariate General Linear Model*

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INTRODUCTION

Entrepreneurship covers the creation phase, the start-up phase (Summut, 1996), the growth phase (Beckman *et al.*, 1982) and the takeover of an already existing enterprise: it is an activity and an attitude. As an activity, it is defined as a business project (Low and MacMillan, 1988), value creation, organisation and innovation (Fayolle, 2012) or employment (Blais and Toulouse, 1990). As an attitude, entrepreneurship involves determination, concentration, innovation and leadership (Pesqueux, 2011). Equally, despite the plural entrepreneurial differentiation (Lortie *et al.*, 2021) and entrepreneurial typologies (Woo, 1988, 1991; Tang *et al.*, 2008), these can be articulated around a mixture of economic and social dimensions (Savall *et al.*, 2017). It is interesting to associate entrepreneurial typologies with social and economic dimensions through the socio-economic approach, also called the hidden cost approach. In fact, these hidden costs are generated by the interaction between structures and behaviours (Savall and Zardet, 2020).

At this level, this research is based on the assumption that each entrepreneurial typology has an impact on several aspects of a company's performance in terms of hidden costs, which will also be expressed in the form of typologies. This work focuses palpably on the impact of entrepreneurial typologies on enterprise performance typologies in line with the hidden cost approach. The examination of the impact of entrepreneurial typology on enterprise performance in terms of hidden costs is critical, since it allows each enterprise to make adequate decisions according to its type insofar as each enterprise type has specific hidden costs that require specific solutions (Savall and Zardet, 2011). The assessment of this impact is important, because hidden costs are very common in the Moroccan context, affecting all dysfunctional themes of integral quality, such as work organisation, communication and time management (El Kadiri Boutchich and Gallouj, 2020).

The hidden cost approach was chosen to evaluate the above impact, because, by combining all the organisational and economic approaches in an improved and interactive configuration, it is exhaustive (El Kadiri Boutchich and Gallouj, 2020). Moreover, the approach of hidden costs tends to be universal through the principle of generic contingency; this shows that, in addition to the specificities of each enterprise type, there are hidden cost constants that have been identified in several companies, several sectors and in several countries for more than 40 years. This denotes its validity and its legitimate quest to be universal through the law of large numbers (Cappelletti *et al.*, 2018). Finally, the hidden costs approach not only seeks to improve the performance of a company in the short term, but above all it seeks to improve a company in a sustainable way through the creation of strategic potential (which is part of the hidden cost components) using longitudinal research based on three dimensions: political decisions, strategic tools, and a cyclical improvement process of the performance (Savall *et al.*, 2017).

This work is also legitimised, since such work is rarely treated in social sciences, insofar as it deals with a topic establishing the relationship between entrepreneurship and hidden costs via

the Multivariate General Linear Model (MGLM). In this way, this work is likely to contribute to encourage debate about the relationship between entrepreneurship and hidden costs and to enhance knowledge in social sciences in this area.

Moreover, this work is interesting because it does not study the typologies of entrepreneurship in terms of entrepreneurs, as is the case with the majority of works on entrepreneurship (Cannatelli *et al.*, 2019), but rather in terms of enterprise typologies.

The paper is structured as follows. The next section is devoted to the conceptual review about entrepreneurial typologies and performance with regard to the hidden cost approach. This is followed by the methodology, then a section dedicated to the results and their interpretations. The penultimate section is the discussion, followed by the conclusions section, including the response to the research question and the implications of the present work.

CONCEPTUAL REVIEW

The conceptual review discusses the entrepreneurial typologies and performance in line with the hidden cost approach.

ENTREPRENEURIAL TYPOLOGIES

Enterprise can be defined as a set of behaviours, attitudes and structures (Savall and Zardet, 2011), while topology is the categorisation of types for a better evaluation process, which can take place in space or time (Grover and Copping, 2018). Entrepreneurial typology is the category in which the types of enterprises are positioned in relation to each other (Miller, 1996). This positioning can consist of bringing the types together or juxtaposing them (El Kadiri Boutchich, 2020a). To summarise, it is possible to assert that an entrepreneurial typology includes types of enterprises that can be apprehended via the same specific criterion. For example, manufacturing firms and service firms are regrouped in the same typology since they can be appreciated by the same criterion, the activity sector.

Regarding the typologies related to enterprises, Morris *et al.* (2018) differentiate entrepreneurial ventures and small business, while Miller (1983) allows distinguishing entrepreneurial firms from non-entrepreneurial firms by their enrolment in product markets, their innovation and proactivity. However, an entrepreneurial firm is not a synonym of a large firm insofar as entrepreneurial firms can be a small firm; it is therefore necessary to differentiate between a large and small company.

At first, the financial management of small businesses is intrinsically different in several respects from that of large companies (Walker and Pretty, 1978). At the same time, the financial structure of large firms is characterised by much higher indebtedness than in small businesses (Norton, 1990). In addition, large companies and small businesses differ in levels of life satisfaction, time pressures and emotional well-being (Fors Connolly *et al.*, 2021).

An additional important typology consists of distinguishing between enterprises with an economic vocation whose primordial objective is to make profits, the so-called hybrid enterprises that reconcile between economic imperatives and social objectives, and enterprises with an exclusive social orientation (Nissim, 2013; UK Government, 2017). Regarding the last two types of companies, it is possible to cite as examples Social Purpose Company, Community Interest Company and Low-Profit Limited Liability Company which were implemented respectively by Belgium in 1995, United Kingdom in 2004 and the USA in 2008.

Another typology compares ordinary enterprises to heterodox or non-ordinary ones. In particular, the latter comprises Islamic enterprises based on relative property rights (Mulyaningsih and Ramadani, 2017), disguised enterprises (practiced by institutions that apparently do not have company status), and diversity/gender-oriented enterprises supported by women's movements (Haugh and Talwar, 2016).

In addition, there is an entrepreneurial typology that differentiates manufacturing companies and service companies in terms of the tangibility of their output, production on demand or for inventory, customer-specific production, labour-intensive or automated operations, and the need for a physical production location (Linton, 2019).

Recently, several other typologies have been envisaged, such as conventional funding-based enterprises/crowd-based enterprises, which use sharing and pooling of resources (Belleflamme *et al.*, 2014), and enterprises with either an internal (Savall *et al.*, 2017) or external (Hoogendoorn *et al.*, 2019) environmental orientation.

Performance with Regard to the Hidden Cost Approach

The hidden cost approach was conceived and implemented by Savall and his research team at the Institute of Socioeconomics of Enterprises and Organizations (ISEOR) in 1973 (Savall, 1975). It is also called the socio-economic approach, since it seeks a perfect balance between economic and social performance (Savall and Zardet, 2020). The hidden cost approach stipulates that an inadequate interaction between structures and behaviours, as well as an inappropriate dosage of social/economic and material/immaterial diptychs, generates dysfunctions in the company that require regulation. These cause over-costs or opportunity-costs, which are assessed qualitatively or in a qualimetric manner. The over-costs are evaluated at the actual value, while the opportunity costs (overtime and non-production) are assessed at the hourly contribution to the added value (Savall and Zardet, 2020).

Etymologically, the hidden cost approach borrows its principles from the Spanish economist and physicist Germà Bernàcer, in particular the principle of the value entropy and economic equilibrium; this is only made when the constructive forces are equal to destructive forces in the market. This led Savall and his team to identify the mysterious content of the residual factor of the production function, and to look for cost and performance factors not identified by private or

national accounting information systems. These factors, which constitute destructive forces and entropy of the value, have been called hidden costs (Savall, 2012).

To carry out the MGLM, it is necessary to build performance typologies related to the hidden cost approach. At this level, the main typologies are social/economic, qualitative/qualimetric, structures/behaviours, material/immaterial, and over-costs/opportunity-costs (El Kadiri Boutchich and Gallouj, 2020). The first typology studies the hidden cost approach using social (absenteeism, work accidents and turnover) and economic indicators (non-quality and under-productivity) to assess these hidden costs (Savall, 1978).

The second typology qualitatively evaluates dysfunctions via key-ideas identified through semi-structured interviews, while qualimetrics combines qualitative and quantitative evaluations. The latter is performed first in a physical manner in terms of the time spent on regulating dysfunctions. Then, the physical evaluation is monetised, giving rise to the monetary evaluation (Savall and Zardet, 2011).

In the third typology, behaviours are classified according to individual, activity group, affinity group and collective logic, while structures are classified into five categories: physical, technological, organisational, demographic and mental. The interaction between inadequate behaviours and structures causes dysfunctions whose regulation gives rise to the hidden costs. However, this interaction is asymmetric, since the structures act more significantly on the behaviours and make manifest the latent heterodox behaviours of the enterprises' actors, which induce hidden costs within them (Savall and Zardet, 2020).

Regarding the fourth typology, the hidden costs related to material aspects are working conditions, while those linked to immaterial aspects are work organisation, communication-coordination-conciliation, time management, integrated training and strategic implementation (Savall *et al.*, 2017).

For the fifth typology, the hidden costs are divided into over-costs, such as over-consumption, overtime and over-wages, and opportunity costs corresponding to the non-production and the non-creation of strategic potential (Cappelletti *et al.*, 2018).

METHODOLOGY

The methodology includes the triptych problematic-epistemological stance - approach, the variables, and the data analysis method employed to carry out this study.

PROBLEMATIC-EPISTEMOLOGICAL STANCE—APPROACH

Dysfunctions that generate hidden costs are widespread in all companies regardless of their characteristics, in several countries and several sectors (Savall and Zardet, 2011; Savall *et al.*, 2017; Cappelletti *et al.*, 2018). Likewise, the dysfunctions causing hidden costs are numerous in the Moroccan context (El Kadiri Boutchich and Gallouj, 2020). Given this situation, it is interesting

to respond to the following research question: what are the independent variables with significant impact on enterprise performance with regard to the hidden cost approach? The research question induces another question: what are the modalities that significantly impact hidden costs?

The epistemological stance adopted is positivist by using a logical-deductive reasoning, therefore avoiding the formulation of hypotheses and the need for their confirmation or invalidation (El Kadiri Boutchich, 2020b). It is characterised by objectivity and exogeneity reflected by the distantiation from the object of the study. A questionnaire was administered to 70 enterprises in 2019/20; 63 were completed. The structure of the sample was chosen according to the enterprise type. The questionnaire was composed of closed questions with a single response, where the respondent checked only the box that corresponds to the situation of his enterprise. The questionnaires were completed by managers or heads of departments of the surveyed enterprises.

THE METHOD USED

In this paper, the MGLM was used, allowing us to obtain the values of multiple dependent scale variables, in line with their relationships to categorical variables. The MGLM considers independent variables as factors and covariates in relation to the dependent variables, which have to be quantitative. It determines the effects of independent variables on the dependent variables in terms of principal effects or principal effects with interactions between independent variables. For the statistical tests, and in addition to the homogeneity of variances test, the MGLM was subject to the tests of Pillai's trace, Wilks' Lambda, Hotelling's trace and Roy's largest root. It should be noted here that these tests were cross-checked with the value of Partial Eta Squared. For the impact of an independent variable to be significant, three conditions are necessary: (1) Partial Eta Squared is close to 1, (2) the value of Hotelling's trace is much greater than the value of Pillai's trace, and (3) the p-values of all tests are less than 5%. Also, when the test results do not go in the same direction, it is necessary to privilege Partial Eta Squared and Pillai's trace (Olson, 1974).

VARIABLES

The variables used in this work are extracted from the conceptual review and presented with their modalities in Table 1. As the MGLM requires that dependent variables to be quantitative, their modalities are scored. A score of 2 is attributed to the modality, which is more adequate and more exhaustive, otherwise, a score of 1 is allocated to the juxtaposed modality. For example, a score of 2 is given to the modality "Socio-Economic", which reconciles between social and economic modalities, while social or economic modality has a score of 1 because it is uniquely a part of the socio-economic modality. The same reasoning is adopted for all the other modalities of independent variables. In the same vein, the independent variables, which are categorical, are coded 1 and 2 respectively within each variable.

Table 1: Variables

Dependent Variables	Modalities	Independent Variables	Modalities
Social-Economic	Social or Economic	Enterprise Size (X1)	Small Business
	Socio-Economic		Large Enterprise
Quantification level	Qualitative	Entrepreneurial attitude (X2)	Entrepreneurial Firm
	Qualimetric		Non-Entrepreneurial Firm
Structures-Behaviours	Structures or Behaviours	Hybridisation level (X3)	Non-Hybrid Enterprise
	Structuro-Behaviourist		Hybrid Enterprise
Material-Immaterial	Material or Immaterial	Activity Sector (X4)	Manufacturing
	Integral Quality		Service Firm
Over costs-Opportunity Costs	Over or Opportunity Costs	Ordinariness level (X5)	Ordinary
	Global Costs		Non-Ordinary

Source: Constructed by author

RESULTS

Since the dependent variables are non-continuous, it is more plausible to perform the homogeneity of variance tests on the medians in relation to the enterprise size (small business versus large enterprise), which has the greatest impact on the dependent variables. These tests confirmed the homogeneity of the variances within all the dependent variables with p-values greater than 5%. In same vein, by applying the tests previously mentioned above, all non-significant independent variables are removed, while those that are significant are retained and presented in Table 2. In addition to Table 2, which comprises the tests of between-subjects effects of the variables, Table 3 presents the parameter estimates for the modalities with significant impact on hidden costs.

Table 2: Tests of Between-Subjects Effects

Source		Sum of Squares	df	Mean Square	F	Sig.
X1	Social or Economic/Socio-economic	1.010	1	1.010	10.693	0.002
	Qualitative/Qualimetric	2.968	1	2.968	17.734	0.000
	Structures or Behaviours/ Structuro-Behaviourist	4.234	1	4.234	42.344	0.000
	Material-Immaterial/Integral Quality	2.061	1	2.061	45.661	0.000
	Over or Opportunity Costs/Global costs	5.276	1	5.276	46.329	0.000

(continued)

Table 2: Tests of Between-Subjects Effects (continued)

Source		Sum of Squares	df	Mean Square	F	Sig.
X3	Social or Economic/Socio-economic	1.091	1	1.091	11.551	0.001
	Qualitative/Qualimetric	0.153	1	0.153	0.917	0.343
	Structures or Behaviours/ Structuro-Behaviourist	1.091	1	1.091	10.909	0.002
	Material-Immaterial/Integral Quality	0.153	1	0.153	3.399	0.071
	Over or Opportunity Costs/Global costs	0.614	1	0.614	5.388	0.024
X4	Social or Economic/Socio-economic	0.810	1	0.810	8.579	0.005
	Qualitative/Qualimetric	0.011	1	0.011	0.067	0.797
	Structures or Behaviours/ Structuro-Behaviourist	0.003	1	0.003	0.028	0.868
	Material-Immaterial/Integral Quality	2.523	1	2.523	55.902	0.000
	Over or Opportunity Costs/Global costs	0.045	1	0.045	0.394	0.533
X1*X2	Social or Economic/Socio-economic	0.013	1	0.013	0.138	0.712
	Qualitative/Qualimetric	0.209	1	0.209	1.247	0.269
	Structures or Behaviours/ Structuro-Behaviourist	0.639	1	0.639	6.391	0.014
	Material-Immaterial/Integral Quality	0.000	1	0.000	0.000	1.000
	Over or Opportunity Costs/Global costs	0.052	1	0.052	0.458	0.501
X1*X4	Social or Economic/Socioeconomic	1.105	1	1.105	11.695	0.001
	Qualitative/Qualimetric	0.014	1	0.014	0.081	0.776
	Structures or Behaviours/ Structuro-Behaviourist	0.668	1	0.668	6.682	0.012
	Material-Immaterial/Integral Quality	1.364	1	1.364	30.210	0.000
	Over or Opportunity Costs/Global costs	0.055	1	0.055	0.479	0.492

Source: Constructed by author from research results

As stated in Table 2, the variable that has the greatest impact on all the dependent variables is X1 (enterprise size). Moreover, X3 (Hybridisation level) also has a significant impact on reconciliation between social and economic, structures and behaviours as well as between over-costs and opportunity-costs. Also, the activity sector (X4) has a significant effect on reconciliation between social-economic and material-immaterial diptychs. Finally, the combination of enterprise size and entrepreneurial attitude (X1*X2) has a significant impact on the structures and behaviours diptych, while the combination of enterprise size and activity sector (X1*X4) has a significant effect on social-economic, structures-behaviours and material-immaterial diptychs.

As indicated previously, the parameter estimates are presented in Table 3. These parameter estimates are the modalities with significant impact ($p\text{-value} < 5\%$) on the hidden costs.

Table 3: Parameter Estimates

Dependent Variable	Modality	B	Std. Error	t	Sig.
Social-Economic/Socioeconomic	[X1=1]	1.000	0.217	4.602	0.000
	[X3=1]	0.500	0.147	3.399	0.001
	[X4=1]	0.400	0.148	2.695	0.009
	[X1=1]*[X4=1]	-0.900	0.263	-3.420	0.001
Structures or Behaviours/ Structuro-Behaviourist	[X1=1]	-1.000	0.224	-4.472	0.000
	[X3=1]	0.500	0.151	3.303	0.002
	[X5=1]	0.500	0.224	2.236	0.030
	[X1=1]*[X2=1]	-0.700	0.277	-2.528	0.014
	[X1=1]*[X4=1]	0.700	0.271	2.585	0.012
Material-Immaterial/Integral Quality	[X1=1]*[X4=1]	1.000	0.182	5.496	0.000
Over-Costs-Opportunity-Costs/Global costs	[X1=1]	-1.000	0.239	-4.191	0.000
	[X3=1]	-0.375	0.162	-2.321	0.024
	[X5=1]	1.000	0.239	4.191	0.000

Source: Constructed by author from research results

First, modalities with a significant impact on the reconciliation between social and economic are small business (X1=1), non-hybrid enterprise (X3=1), manufacturing enterprise (X4=1), and a combination of small business and manufacturing enterprise ([X1=1]*[X4=1]). Second, the reconciliation between structures and behaviours is significantly impacted by small business (X1=1), non-hybrid enterprise (X3=1), ordinary enterprise (X5=1), and a combination, on one hand, of small businesses and entrepreneurial firms and, on the other hand, of small businesses and manufacturing enterprises. Third, the components of integral quality (material or immaterial) are significantly impacted by the combination of small businesses and manufacturing enterprises. Finally, the modalities that significantly impact the consideration of global costs or uniquely a part of these (over-costs or opportunity-costs) are small businesses, non-hybrid enterprises and ordinary firms.

DISCUSSION

With regard to enterprise size, hidden costs are evaluated exhaustively, taking into account the reconciliations of all the elements of the hidden cost diptychs in large firms. Also, the evaluation of hidden costs in large firms is done in a fragmented way, by minor units of analysis that are subsequently assembled, while the evaluation of small businesses is made in a concentrated, approximate and partial manner (Martinez Vazquez, 2005).

The activity sector impacts hidden costs in terms of reconciliations between social-economic and material-immaterial diptychs. In fact, social aspects have more importance in manufacturing firms than in service firms, due in particular to the frequent work place accidents in the manufacturing sector. In service firms the hidden costs from immaterial aspects are higher than

those in the industrial sector; this is because of the predominance of immaterial transactions in this sector (Azebaze Kenfack and Takoudjou Nimpa, 2021; El Kadiri Boutchich and Gallouj, 2020).

For the other cases, to establish the association between enterprise types and hidden cost evaluation types, a contingency table was built and an optimal scaling analysis (OSA) was carried out. Therefore, the hybrid firm, which naturally utilises the socio-economic evaluation, takes into account the structuro-behaviourist dimension and the global costs for the hidden cost assessment, according to the OSA. These results are confirmed by Savall (1978).

With regards to the combination X1*X2, the contingency table shows that large firms are entrepreneurial firms, while small businesses are non-entrepreneurial firms. Therefore, large firms must retain a structuro-behaviourist dimension for hidden cost evaluation, while small firms choose either structures or behaviours for the hidden cost evaluation, with regard to OSA. *Apropos* of the combination X1*X4, in line with the contingency table and OSA, large firms operating in the manufacturing sector have to make exhaustive evaluations by retaining socio-economic, structuro-behaviourist and integral quality dimensions for the hidden cost assessment. Conversely, a partial evaluation is adopted by small firms operating in the service sector. Indeed, the manufacturing sector requires exhaustive evaluation because hidden costs are much higher than in the service sector (ISEOR, 2021).

With regard to most impacting modalities, the evaluation of hidden costs in non-hybrid small and ordinary firms is often partial and standard (Martinez Vazquez, 2005). On the other hand, the entrepreneurial firm is a source of growth, innovation and productivity (Li *et al.*, 2020; McCaffrey, 2018). Therefore, the hidden costs management in this enterprise type must be made carefully.

CONCLUSIONS

The conclusions section comprises the response to the research question and implications of the present work. As a response to the research question, the variable with the greatest significant impact on enterprise performance in terms of hidden costs is enterprise size, to which it is advisable to add or associate the activity sector, hybridisation level and entrepreneurial attitude. Related to the modalities with significant impact on enterprise performance in terms of hidden costs, they are the small, non-hybrid, manufacturing and ordinary firms, as well as the combination of small and manufacturing firms on one hand, and the combination between small and entrepreneurial firms on the other. The adequate management of the aforementioned variables and modalities are likely to conduct the enterprise towards social and economic welfare (Neumann, 2021).

This work has both research and practical implications. Concerning research implications, this work is likely to encourage the heterodox, behavioural and experimental economics of which the hidden costs approach is a part. Indeed, the latter experiments with the atypical behaviours of actors within enterprises via the alternation of research *in vivo* (within companies) and *in vitro* based on laboratory work (Savall and Fièrè, 2014).

The hidden costs approach for practical implications must establish more correspondence between enterprise types and hidden cost evaluation types, because typologies highlight the

complexity of entrepreneurial phenomena and improve their understanding (Grandclaude and Nobre, 2018). They also produce a mirror-effect for entrepreneurs to better recognise themselves and make adequate decisions (Savall *et al.*, 2017). This correspondence is important in order to adequately manage them, in particular for the enterprise size that has the greatest impact on hidden costs (Drempetic, 2020; Fors Connolly *et al.*, 2021).

Following the impacting modalities, the evaluation and management of hidden costs in non-hybrid and small enterprises must be performed meticulously (Savall, 1978). In fact, this meticulousness must be further increased for small businesses, which are entrepreneurial enterprises, since its innovativeness can have a dark side with negative effects on it in terms of hidden costs (Meijer and Thaens, 2021).

Regarding in particular the social-economic diptych, it is necessary to adequately define the social enterprise at the organisational and institutional levels (Saebi *et al.*, 2019) and to move away from the political vision of the social enterprise, which can lead to the lack of social resilience (Vizcaíno *et al.*, 2021). At the economic level, it is advisable to avoid the entrepreneurial vision of normative economics; this stipulates that the social dimension is naturally integrated into the economic process (Wight, 2017). Social or economic enterprises accumulate hidden costs that will affect their performance and sustainability (Cappelletti *et al.*, 2018).

Finally, in terms of public policy, a similar study to the present one, but focusing on a larger sample, could improve the efficiency and sustainability of entrepreneurship by adopting an entrepreneurial policy based on entrepreneurial typologies (Fredström *et al.*, 2021).

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