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Do academic courses relate to entrepreneurship influence career choices in the Democratic Republic of the Congo.

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Abstract

This research examines the impact of entrepreneurship training courses on employees' willingness to become entrepreneurs and the time required to implement a business idea in the context of the Democratic Republic of Congo. The study analyzes survey data from 2005 and 2012, utilizing Heckman's selection model for econometric estimation. The results indicate that entrepreneurship training not only motivates employees to pursue entrepreneurial endeavors but also reduces the time needed to bring their business ideas to fruition. These findings are consistent with the 2012 data, reinforcing the link between entrepreneurship training and broader reforms aimed at enhancing the business environment.

Keywords: willingness to undertake, training courses related to entrepreneurship, Heckman model

African Scientific Journal
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1. Introduction

Entrepreneurship in the Democratic Republic of Congo (DRC) is vital, particularly considering the country's alarming unemployment levels. Kibala-Kuma (2020), referencing Ngoga (2015), highlights that the average unemployment rate from 2010 to 2014 was 47%, significantly higher than the International Labour Office's (ILO) benchmark for natural unemployment, which is below 10%. This places the DRC among the nations with the highest unemployment rates globally. According to data from the 1-2-3 survey, a key source of labor market information in the DRC, the unemployment rate was reported at 6% in 2012 (INS, 2012). However, the latest ILO report shows that this rate surged from 20.3% in 2013 to 21.4% in 2022. It is important to note that these statistics do not include the large number of individuals employed in the informal sector who have not officially registered as unemployed with the National Employment Office (ONEM).

Currently, entrepreneurship is regarded as a fundamental driver of economic growth. Small and medium-sized enterprises (SMEs) are particularly significant in measuring entrepreneurial dynamism, as they employ over 90% of the Congolese workforce (Kaghoma, 2014). The recognized socio-economic role of entrepreneurship contrasts sharply with the unfavorable business climate in the DRC. In the most recent Doing Business report, the World Bank (2020) ranked the DRC 183rd out of 190 countries. This poor performance in improving the business climate implies a high risk, negatively impacting individuals' willingness to initiate business projects.

The question regarding entrepreneurship has been extensively analyzed concerning young people and the unemployed (Kouagou, 2022; Laghzaoui et al., 2020; Mongane and Kadusi, 2017; Neneh, 2014). Many governments, particularly in Africa, view entrepreneurship as a strategy for reducing youth unemployment. However, entrepreneurship is just as much an instrument in the fight against poverty and underemployment (Dzingirai, 2021; Shepherd et al., 2020).

Entrepreneurship can also attract non-unemployed individuals, whether or not they are still in the job market. There is significant literature on entrepreneurship among older people, assessing their potential to re-enter the labor market after retirement and contribute their accumulated human capital to the economy through the creation of wealth or jobs (Fachinger, 2019).

African Scientific Journal
ISSN : 2658-9311
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Research works on hybrid entrepreneurship are increasing in economics and management sciences, indicating a general trend among workers, particularly the most educated, to initiate business projects either individually or collaboratively, optimizing their participation in economic development and self-realization (Kritskaya et al., 2017; Solesvik, 2017).

In economic terms, the concept of hybrid entrepreneurship is part of the old debate on occupational choice. Sorgner and Fritsch (2013) emphasize that a person usually becomes an entrepreneur after a period of salaried employment, accumulating experience and a certain level of wealth that relaxes financial constraints. Evans et al. (1989) earlier modeled employees' occupational choices based on financial constraints, where employees have the choice between staying in the statu quo and becoming entrepreneurs.

Regarding entrepreneurial intention, studies like Paray et al. (2020), Oosterbek et al. (2010), and Cera et al. (2020) assess the importance of entrepreneurial education in cultivating the willingness to become an entrepreneur for individuals of different profiles. However, the results are inconclusive. For instance, Paray et al. show that entrepreneurial education matters for students in fields other than business administration in fostering entrepreneurial attitudes and skills, while Oosterbek et al. found the opposite effect. Abubakars et al. (2021) note that the impact of entrepreneurial education on willingness to undertake entrepreneurial endeavors is relatively modest, suggesting that push factors such as poverty, unemployment, and job insecurity might be more influential.

In the context of the DRC, low salaries and lackluster retirement pensions are significant incentives for workers to engage in multiple activities and for retirees to reintegrate professionally through entrepreneurship. Living conditions, exacerbated by inflation due to crises such as those in Ukraine and the COVID-19 pandemic, further encourage entrepreneurship out of necessity.

Despite existing research, there are limitations, such as selection biases and small sample sizes. This study aims to fill this gap by exploring the influence of university training courses on the willingness of non-unemployed individuals to choose entrepreneurship as a career. It hypothesizes that individuals with careers close to entrepreneurship are more likely to create

African Scientific Journal
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their own businesses than to seek employment. There for, it is assessed if "**Training related to entrepreneurship affect the choice of occupation in the Democratic Republic of Congo"**

- **Objective of the study**:

The objective is to verify whether training courses with entrepreneurial elements can influence the inclination to become entrepreneurs among Congolese workers and to identify factors influencing the time it takes for the transition to entrepreneurial action. The sectors with entrepreneurial elements in this research encompass all training sectors containing business-related notions likely to inspire learners toward business or commerce practices.

- **Epistemological Position**

This study adopts a positive epistemological stance, which asserts that knowledge is derived from observable and measurable phenomena. By applying quantitative methods, such as the Heckman model, the research aims to uncover objective truths about the factors influencing entrepreneurial decisions and their implementation timelines. The positivist approach is suitable for this study as it allows for the identification of causal relationships and generalizable patterns within the context of the Democratic Republic of Congo (DRC).

- **Motivation for Method Choice**

The choice of the Heckman model is motivated by the dual-stage nature of the research question, which involves both the decision to engage in entrepreneurship and the subsequent time frame for implementing entrepreneurial projects. The Heckman model is particularly well-suited for this analysis because it addresses issues of sample selection bias. In the context of the DRC, where entrepreneurship may be influenced by various socio-economic factors, not all individuals who are willing to undertake entrepreneurial activities may succeed in initiating them. The model corrects for this potential bias by jointly estimating the probability of choosing entrepreneurship and the duration of project implementation, providing a more accurate and nuanced understanding of the determinants at play. Furthermore, the Heckman model's ability to handle censored data where some respondents may have entrepreneurial intentions but have not yet implemented their ideas ensures that the analysis remains robust and reflective of the reality in the DRC. This methodological choice is critical for deriving meaningful insights that can inform policy and support structures for potential

African Scientific Journal
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Vol : 03, Numéro 25, Août 2024

❖ **Structure of the work**

The rest of this paper is organized as follow. The second section is dedicaded to the literature review. The methodology is developed in the third section. The results are presented and discussed in the fourth section. The fith section concludes the paper.

2. Literature review

This study is based on the model of occupational choice between entrepreneurship and employment. This model currently remains valued in studies relating to the labour market given the conflict of choices characteristic of individuals between salaried activities and non-salaried activities, taken as a source of income and therefore as a factor in optimising their employment utility functions. Indeed, the worker's utility function suggests a double trade-off. The first, apparent, is achieved between the consumption of leisure goods and other goods; the second, not very apparent, is to be made between salary income and non-salary income, both of which can participate in financing the acquisition of one or the other type of property. As one or another income category varies, the behaviour of the demand function for leisure and other consumer goods changes, all else remaining equal. What the authors never explicitly say at this level is that non-salary income can be part of an entrepreneurial activity, seen as an alternative to other sources[1]. Furthermore, very generally, in the event of an economic crisis that reinforces the situation of unemployment and precariousness, the problem of division between salaried employment and entrepreneurship remains strong, whether in speeches or in certain work practices (Bohas et al., 2018)[2]. In this regard, an abundant literature on occupation choice exists, as reported by Parker (2009) and Menad et al. (2018).

From this perspective, Lucas (1978) develops a model that presents a relative aspect of the choice of an occupation and assumes that the work force can be split into two categories: the first category is made up of employees who constitute a homogeneous group in terms of their productivity; and the second category is made up of entrepreneurs, often hypothetically heterogeneous depending on their characteristics. These constitute a heterogeneous group in terms of their aptitude. In this model, employees have an identical level of productivity and enjoy the same salary rate as those offered by the market, while entrepreneurs offer themselves

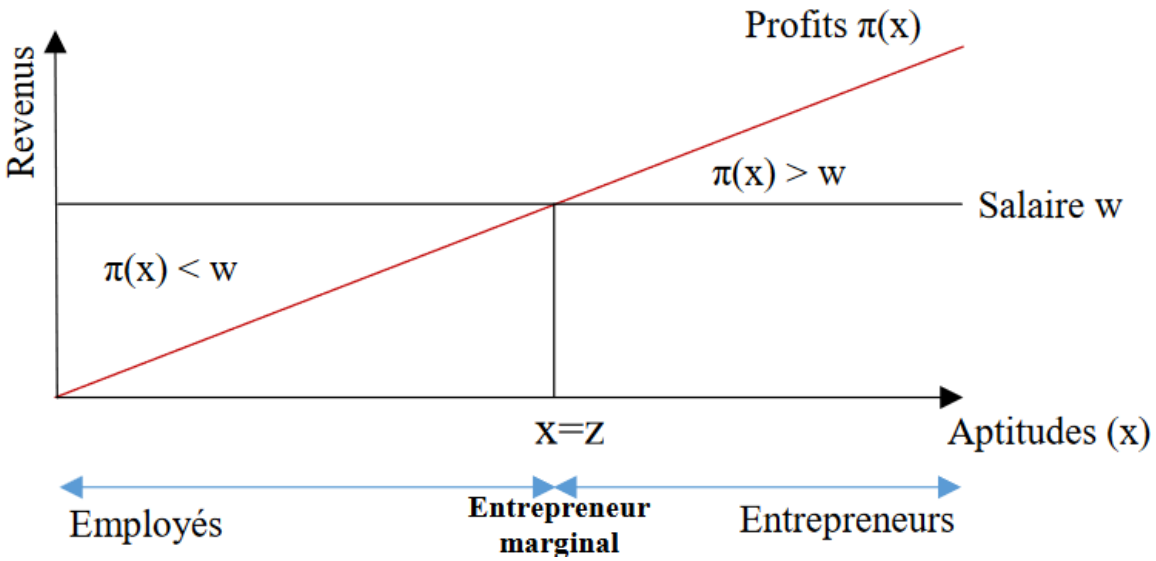
[1] An interesting discussion of comparative static analysis of an individual's utility function on the labour market is notably offered by Borjas (2016, pp. 35–40).

[2] Many authors, including Borjas, do not focus on the origin of non-wage income. Some think of donations, the wife's income, etc., but never of income from an entrepreneurial activity (rent, interest, profit) of the household or its head.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

different levels of profit depending on their skills or managerial capacities. For this author, the entrepreneur creates a business instead of becoming an employee because he is endowed with a talent or an innate or acquired aptitude due to the accumulation of human capital, which allows him to be in control of the company instead of being dependent on another person. The following figure 1 summarises the essential lessons of the Lucas model (Parker, 2009).

Figure 1. Occupational choice and entrepreneurial aptitude



Source: Parker, P. (2009)

According to Parker (2009) and Menad et al. (2018), there is a wealth of literature on occupation choice in this regard. This model indicates that there is a threshold level of X=Z value for entrepreneurial aptitude that leaves an individual indifferent between becoming an entrepreneur or an employee. This is the behaviour of the marginal entrepreneur. Beyond this value, the expected profit exceeds the wage rate ($\pi(X)>w$), encouraging individuals to become entrepreneurs. Below this threshold, individuals tend to choose employee status.

Kihlstrom and Laffont (1979) will present a model that, unlike Lucas, explains the notion of occupational choice based on the degree of risk aversion and uncertainty. But also, this model considers initial wealth in the decision to join entrepreneurship. Furthermore, these authors integrate the notion of occupational choice into the general equilibrium model. In this model, they identify the marginal entrepreneur by a certain level of risk aversion. This level of aversion corresponds to the equilibrium wage and, therefore, leaves the agent indifferent between salaried employment and entrepreneurship. Therefore, the least risk-averse individuals become entrepreneurs, and the size of their firm is all the larger as they are less risk-averse. The most

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

risk-averse become employees and earn a certain salary, while entrepreneurs receive an uncertain profit.

From a static equilibrium perspective, Evans et al. (1989) propose a model in which occupational choice is studied, considering the financing constraint. They start from the hypothesis that all individuals are initially employees, and at the beginning of the period, each of them chooses between remaining an employee or becoming an entrepreneur. As in the Lucas (1978) model, everyone knows their degree of entrepreneurial aptitude and will decide to become an entrepreneur if their anticipated net income exceeds their salary level as an employee. However, this decision can only be made if it does not face the financing constraint: individuals with an initial endowment are willing to opt for entrepreneurship, unlike those who do not.

From this point of view, entrepreneurship is seen as a matter for rich workers, not because they have more aptitude than the poor, but because the latter suffer from credit constraints that prevent them from launching their business projects. business (Menad et al., 2018). The credit constraint prevents all those who claim to be entrepreneurial from implementing their projects, and for those who can, the size of their business could remain small for a long time. Another implication of this constraint is the exclusion of young people from entrepreneurial adventures. An individual can first remain employed and possibly build up savings to finance a business project directly or through bank credit. For this reason, the authors conclude that there is a poor allocation of talent and, therefore, a low level of social benefit linked to entrepreneurship.

Regarding talent allocation, the model of Murphy et al. (1991) seems more explicit and richer. These authors propose a model aimed at determining how individual talent is affected by the three occupational choices, namely: productive entrepreneurship, rent-seeking, and salaried employment. Indeed, this occupational choice is guided by the fact that an individual is attracted by the following three elements (Menad et Djenane, 2018):

- The individual is attracted to activities that maximally reward his talent; this is what Murphy et al. (1991) call a “compensation contract.”
- The individual is attracted to activities whose returns to scale are increasing or, at least, do not decrease rapidly.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

- The individual is attracted to large markets; being a leader in a large market is much more profitable than being a leader in a small market.

This model is therefore divided into three others: the first relates entrepreneurship and economic growth to a single sector; the second does the same analysis as the first but with two sectors; and the third analyses the behaviour of entrepreneurship in a relationship between rent-seeking and economic growth. Regarding this last model, three categories of entrepreneurs are identified according to their level of talent. If the production function is less elastic in the quest for rent, the most talented will be entrepreneurs; those at mid-level will be rent seekers, and the less talented will be workers. On the other hand, if the production function is very elastic to rent seeking, then the most able will be rent seekers, the intermediately talented individuals will be entrepreneurs, and the least talented will be workers. Banerjee and Newman (1993) managed to propose a dynamic model of institutional change based on a proven evolution of occupational situations. For these authors, occupational choice has an impact on the process of economic development in the sense that it affects the distribution of income and wealth, which in turn will affect savings, investment, attitude towards risk, etc. This model based on initial wealth gives four occupational choice options: entrepreneurship, self-employment, salaried employment, and subsistence work (Banerjee et Newman,, 1993). In this model, entrepreneurship and self-employment are two different occupational situations because the entrepreneur is an employer while the self-employed person is content to create his own job. However, the richest become great entrepreneurs.

In the same vein, the model of Sanders and Weitzel (2010) is also based on people with talent in the context of the existence of financial constraints. Like Murphy et al. (1991), three possibilities emerge, all things remaining equal. First, the higher the salary offered on the labour market, the more the individual will allocate his talent to salaried work. Then, an individual can opt to invest their initial wealth in a productive activity. He can finally choose to be unproductive by devoting himself to the quest for rent, to theft, or better yet, by granting himself the assets of productive companies. The prosperity of the latter is considered a crucial determinant of unproductive entrepreneurship. These authors arrive at a conclusion according to which the talented individual chooses between different occupational options depending on whether the option taken allows him to maximise his ex-ante utility.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

In their attempt to have an empirical application of occupational choice models, Douglas and Shepherd (2002) find, using the utility function approach, that the choice of an entrepreneurial career depends on the individual's tolerance for risk, the need for autonomy in decision-making, and income. Furthermore, they find that an individual is more willing to become self-employed if he or she is tolerant of effort at work. The high tolerance for effort at work means that any increase in income due to the switch between employment and entrepreneurship will generate a high utility gain for the less-work-averse individual compared to the more-work-averse individual, all other things remaining equal. This utility gain will be higher for a person whose marginal rate of substitution between income and work is low in absolute terms, all other things remaining equal. The results obtained, based on data collected from former business students of an Italian university, by these authors argue for the generalization of educational processes likely to develop more positive attitudes towards entrepreneurial risk and autonomy in decision-making.

Bohas et al (2018) are interested in new work practices, particularly those that mix employment and entrepreneurship. Through an exploratory and descriptive approach, they find a growing presence of polyreactive" or “slashers”, that is, individuals who “hold several salaried jobs with different employers” or who combine salaried activity with entrepreneurship. Thus, a new professional trajectory is organised around cycles of entrepreneurship and employment, allowing a person to acquire new and complementary skills to evolve and flourish professionally.

Lassassi et al. (2014) analyses, for the case of Algeria, participation in the labour market in a context where the determinants of individuals' occupational choice remain poorly known in this country. The results show that the level of education has a greater effect on the choice of self-employed status for women than for men. But the fact remains that, as Menad et al. (2018) point out, Algerians' preference remains salaried employment, undoubtedly because of the guaranteed income offered by jobs in sectors where one can have a stable career, such as the civil service. In this type of country, and this is generally the case for developing countries, the opportunity cost of entrepreneurship is very high following the generally unfavorable business climate.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

3. Methodology

3.1. Data

Secondary data from the 1-2-3 survey of 2012 and 2005 are used in this study to estimate the associated factors. has the willingness to undertake as well as the time it may take. The 1-2-3 survey is based on the methodology developed in the early 1990s by DIAL[3]. It was carried out in three phases. The first phase of this survey is a survey on employment, unemployment, and household activity conditions (phase 1: employment survey). The second phase consists of carrying out a specific survey among the heads of informal production units (UPI) on their conditions of activity, their economic performance, the mode of integration into the productive fabric, and their prospects (phase 2: survey on the informal sector). Finally, the third phase is a survey on household consumption. It aims to estimate the standard of living of households, measure the weight of the formal and informal sectors in their consumption, and analyse the determinants of the choice of different places of purchase (phase 3: survey on consumption, places of purchase, and poverty).

The sampling units in this study comprise workers who responded to the question of whether they were willing to start a business. Those who answered positively to this initial question were also asked to estimate the time they anticipated it would take to translate their entrepreneurial intention into action. The 2005 survey encompassed a total of 72,685 individuals, and the 2012 survey included 111,679 respondents. Due to non-responses to specific questions, both datasets contain missing values. Considering the targeted individuals' profiles, the dataset cleaning process resulted in a maximum sample size of 557 individuals for the 2005 dataset and 1,893 for the 2012 dataset. This study focuses on phases I and II. Analyzing these two datasets is justified by the institutional and political-security transformations observed in the DR Congo between the two periods. The 2005 data were collected before the first democratic elections in the DRC, while the 2012 data were collected after two waves of elections: those of 2006 and those of 2011. Consequently, these two election cycles led to various reforms aimed at enhancing the investment climate in the country.

3.2. Heckman's model

This study employs the Heckman model to identify factors explaining both the willingness to undertake entrepreneurship and the duration required for the implementation of the respondent's potential project idea. Ami et al. (2000) and Terra (2005) describe the contingent method used

[3] Development, Institutions, and Long-Term Analysis

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

in this model, highlighting that it considers the value a person assigns to the phenomenon under study (in this case, entrepreneurship) resulting from two potentially linked random events: the person assigns a value to the phenomenon from a choice model and decides whether to reveal this value, meaning their reservation price. In this study, this value is inversely linked to the duration the individual plans to observe to convert their entrepreneurial intention into action. Therefore, the shorter the duration, the higher the value conferred on entrepreneurship, and vice versa. Bousmah (2021) applied the Heckman model in a study of entrepreneurship in rural Canada.

The Heckman model was chosen for this study because, in addition to correcting for endogeneity between factors, its Mill ratio also addresses the censoring bias affecting the dependent variable. The Heckman model involves two steps (Dubin and Rivers, 1989; Ami et al., 2000; Terra, 2005): the first step, based on the selection equation, calculates the inverse of the Mills ratio for each observation using a dichotomous model. The second step estimates the actual time required to undertake entrepreneurship, focusing on respondents who answered positively to the question about their willingness to undertake. The model generates a variable called Mill Ratio to correct this selection bias, which is also linked to the model's restriction. This ratio serves as both a bias corrector and an instrumental variable, addressing suspicions of endogeneity between the variable of interest and the dependent variable. Typically, this model is estimated using the Maximum Likelihood Method (MLM). Heckman's approach provides an approximation of the results obtained by the Maximum Likelihood Method.

Theoretically, Heckman's model is presented as follows (Dubin and Rivers, 1989; Ami et al.,, 2000; Terra, 2005): We note, the dichotomous variable (0 or 1) which indicates whether the individual grants of value to entrepreneurship by being willing to get started. This is the participation equation Y_i

$$Y_i^* = \beta' X_i + \varepsilon_i \quad (1)$$

$Y_i^*$is only observable if individual i satisfies certain criteria; and is the set of variables likely to explain the decision to reveal the duration to be agreed to make the disposition to undertake effective.X_i

We define a variable whose variations can be explained by variables other than those explaining the variations of or not.$Z_i^* Y_i^*$

$$Z_i^* = \gamma' W_i + u_i \quad (2)$$

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

$Y_i^*$is only observable if it takes certain values. The observed values are therefore with a selection bias. Therefore, it is appropriate to write:Z_i^* Y_i^*

$Y_i = Y_i^*$ si $Z_i^* > 0$

$Y_i = 0$ si $Z_i^* \leq 0$

As only the sign of is likely to be observed, a binary variable is defined such that:$Z_i^* Z_i$

Z_i=1 if$Z_i^* = \gamma' W_i + u_i > 0$

Z_i= 0 if$Z_i^* = \gamma' W_i + u_i \leq 0$

The joint distribution of (is assumed to follow a bivariate normal distribution with zero mean, unit variance and correlation. When is zero, the two decisions are independent and the parameters of the two equations can be estimated separately$\varepsilon_i, u_i)\rho\rho$

It should be mentioned that:

$\boldsymbol{E}(Y_i / Z_i = 1) = \beta' X_i + \rho\sigma\lambda(\gamma' W_i)$ (3) ,

We must then estimate the following model:

$Y_i = \beta' X_i + \rho\sigma\lambda(\gamma' W_i) + v_i$ (4) ,

In this relation (4), is observed only if Y_i $Z_i = 1$

The estimation of the model is carried out in two stages (Dubin and Rivers, 1989; Ami et al., 2000; Terra, 2005):

The first consists of estimating the participation equation, using a discrete choice model[4], to determine an estimate of the parameters, on the one hand, and that of the inverse of the Mills ration, by : $\gamma\lambda$

$$\hat{\lambda} = \frac{\phi(\widehat{\gamma'}, w_i)}{1 - \Phi(\widehat{\gamma'}, w_i)} \quad (5)$$

where is the density function of the normal law and the cumulative distribution function of the normal law.$\phi(\widehat{\gamma'}, w_i)\Phi(\widehat{\gamma'}, w_i)$

The second consists of a regression, by ordinary least squares, of the duration on and the estimated values of. These are equal to as can be read in equation 4. $Z_i W_i$ $\lambda\rho\sigma$

[4]Although Heckman (1974) recommends the use of the probit model given the assumption of normality of the distribution of errors, subsequent enrichments of the model consider this assumption to be non-essential, which legitimizes the use of other models. choice, notably the logit (see: Dubin and Rivers, 1989).

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

3.3. Description of variables

Table 1: variables of the study

	Variables	Measure
	Dependent variable	
1	Readiness to undertake	Binary variable with value 1 = disposition and 0 = no disposition
2	Time before entrepreneurship	Number of months a worker estimates he will observe before starting his business
	Independent variable	
1	Sex of worker	Binary variable with the value 1= if male and 0= female
2	Age of worker	Numbers of years
3	fear of age	Quadratic for age
4	Religion	Qualitative variable with 1=Protestant, 2=Muslim, 3=Other Christian, 4=No religion
5	Studies with an entrepreneurial connotation	Binary variable with the value 1 = other sectors and 0 = sectors with entrepreneurial connotations
6	Tax collection as a constraint	Binary variable with the value 1= if yes and 0= no
7	access to financing	Credit access: 1= yes and 0= no
8	Share capital	Family help: 1= if yes and 0= no

Source: Author design based on the literature

4. Results

Table 2 below presents the two samples from the two respective bases of 2005 and 2012, according to the variables retained and by separating individuals willing to undertake them from those who are not.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

Table no.2: *Characteristics of the respondents according to variables*

	2005				2012			
Sex	Willing N=428	not willing N=129	Total N=557	Chi2-test	Willing N=246	not willing N=1,647	Total N=1,893	Chi2-test
Man	60.28	39.53	55.48	17.2 ***	39.02	59.50	56.84	36.58***
Women	39.72	60.47	44.52		60.98	40.50	43.16	
Religion								
Catholic	34.81	40.31	36.09	9.06	28.46	23.86	24.46	5.1142
Protestant	23.83	30.23	25.31		21.54	22.28	22.19	
Muslim	2.10	2.33	2.15		0.81	1.58	1.48	
Without religion	7.94	9.30	8.26		1.22	2.91	2.69	
Other Christians	31.31	17.83	28.19		47.97	49.36	49.18	
Entrepreneurial studies								
Yes	98.83	98.45	98.74	**0.116**	100.00	35.34	43.74	363.6***
No	1.17	1.55	1.26			64.66	56.26	
Access to credit								
Yes	67.99	46.51	63.02	19,6***	0.41	0.79	0.74	0.4273
No	32.01	53.49	36.98		99.59	99.21	99.26	
Tax constraint								
Yes	100	100	100		13.82	6.7	18.07	3.44**
No					86.18	81.30	81.93	

****p<0.01, **p<0.05, *p<0.1*

Source: Stata17 output, using 1-2-3 database.

In the 2005 wave, a large majority of sampled individuals expressed willingness to undertake entrepreneurial ventures. In contrast, for the 2012 base, the situation was reversed. Specifically, 428 workers in 2005 compared to 129 in 2012 were prepared to embark on entrepreneurial endeavors. Most workers identified as Christians in both waves, with Catholics and Protestants representing more than half of the sample in 2005. However, this proportion dropped to less

African Scientific Journal
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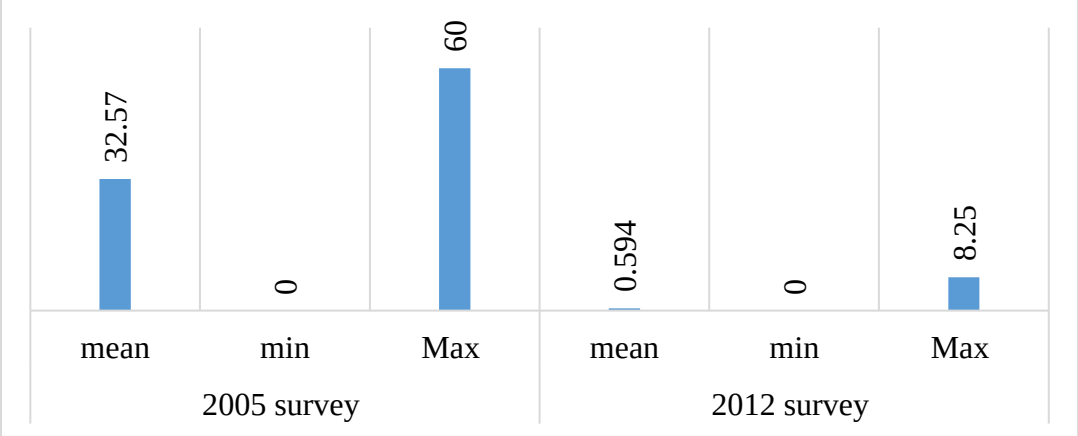
Vol : 03, Numéro 25, Août 2024

than half in 2012. Notably, the proportion of other Christian denominations increased from 28% in 2005 to almost 50% in 2012, indicating the growing influence of evangelical movements in the DRC, particularly due to their theology of prosperity. The type of education received by individuals is crucial in analyzing entrepreneurial intention. In 2005, most workers in the DRC pursued university education with entrepreneurial orientations. The percentage of workers who had taken at least one entrepreneurial-oriented course was nearly 100% in 2005, which decreased to 44% in 2012. However, all workers willing to undertake entrepreneurial ventures in 2012 had completed at least one course with an entrepreneurial focus, a significant improvement compared to 2005. This shift can be attributed to the period between 2006 and 2012, during which entrepreneurship courses were integrated into various faculties as part of higher education reforms in the DRC. Regarding gender representation, male workers constituted over 50% of the overall sample in both survey waves. However, in the sub-sample of workers willing to become entrepreneurs, the proportion of women was greater in 2012 than in 2005. This change can be attributed to post-2005 election initiatives aimed at promoting entrepreneurship and women's autonomy, including the introduction of the entrepreneurship charter in 2009 and the establishment of a one-stop shop for business creation. The weight of the tax burden has been a pertinent concern for entrepreneurship. While the entire 2005 sample believed that high taxes hindered business, this proportion significantly decreased to nearly 14% in 2012, likely due to reforms undertaken in the country under the leadership of Prime Minister Matata. Access to external financing, typically from banks, has been a significant challenge for aspiring entrepreneurs. More than half of the 2005 sample estimated having access to external credit, but this trend reversed in the 2012 wave, possibly reflecting the impact of the 2008 financial crisis and the widespread bankruptcy of microfinance institutions observed in the country between 2011 and 2013. This analysis provides insights into the sample based on the willingness of individuals to undertake entrepreneurship. Considering that those willing to undertake ventures differ in their timeframes, it is prudent to analyze this sub-sample concerning the duration everyone intends to wait until the realization of their business project. Graph 1 below visualizes this sub-sample in relation to the waiting time.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

***Chart1**: Analysis of waiting time for the implementation of business projects.*



Source: Stata17 output, using 1-2-3 database.

he average duration for implementing a business project was approximately 3 years for the 2005 wave and slightly over 15 days for the 2012 wave. The maximum duration was 5 years for the 2005 wave, whereas it was less than a year for the 2012 wave. This significant reduction in the waiting time for realizing business projects can be attributed to the outcomes of efforts aimed at improving the business climate. While not dramatic, the reforms initiated to enhance the business environment led to a notable reduction in waiting times. It is essential to emphasize that these reforms resulted in a gain of 6 points for the DRC in 2010. It's crucial to note that these reforms also played a vital role in the DRC achieving the point of completion under the debt reduction program for heavily indebted poor countries.

Table 3. Estimation results using the Heckman model.

	Wave 2005		**Wave 2012**	
	Robust		Robust	
VARIABLES	Waiting time	Readiness to undertake	Waiting time	Readiness to undertake
sex				
Female	5.353	0.390***	0.0552	-0.188**
	(6.108)	(0.116)	(1.05)	(1.99)
Age	1,551***	-0.00940	0.025***	0.011**
	(0.457)	(0.00852)	(8.09)	(2.08)
religion Catholic	-3.133	0.0842		
	(7,868)	(0.153)		
Protestant	-0.849	-0.0626	0.098	0.069
	(19.89)	(0.442)	(1.25)	(0.52)

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

Islam	5,554	0.0729	-0.097	0.338
	(13.88)	(0.221)	(1.11)	(0.73)
Other Christians	-5.583	-0.295*	0.020	0.084
	(9.336)	(0.159)	(0.35)	(0.76)
Without religion			-0.091	0.55
			(1.13)	(1.61)
Entrepreneurial training		(16.63)	(0.325)	
No	8,085	-0.740**	0.149**	-5.30
	(16.63)	(0.325)	(2.66)	(81.49) **
Tax constraint perception				
Yes	-0.32	-2.61*	-0.173***	-0.137
	(85.74)	(0.777)	(2.48)	(1.16)
Funding				
Access to credit				
No	-10.11	-0.353***	0.041	0.519*
	(6,869)	(0.126)	(0.27)	(1.79)
Social capital				
(Family support)	-3.769	-0.0685	0.068	-0.108
	(12.22)	(0.198)	(1.38)	(1.06)
Ath rho	-0.115		-0.023	
	(0.986)		(1.19)	
Lambda	3,619***		0.015	
	(0.105)		(0.18)	
Wald test	6.83(0.08)		1.42(0.23)	
N	557		1,893	

*Standard errors in parentheses, ***p<0.01, **p<0.05, *p<0.1*

Source: Stata17 output, using 1-2-3 database.

The results presented in Table 3 above make it possible to isolate the effect of the variables on the willingness to undertake as a decision (selection equation) and on the waiting time it takes for a worker to undertake (result equation). Technically, the results obtained on the two waves of data reveal the overall significance of the factors. In 2005, three key factors significantly influenced the delay in implementing a business idea. Firstly, age had a positive correlation with the willingness to embark on entrepreneurship. However, this factor lost its significance in 2012. Surprisingly, female workers exhibited higher willingness to start businesses than their male counterparts in 2005, but this trend reversed in the 2012 data. Nevertheless, being a woman increased the waiting time for business implementation in both waves, although the

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

effect was not statistically significant in either case. This shift in gender-related trends between the two periods can be attributed to the comprehensive reforms undertaken in the DRC between 2006 and 2012, aimed at improving the country's business environment (cf. Minyangu et al., 2021; Brännback et al., 2007).

During this period, it appears that men were increasingly attracted to the idea of starting their own businesses. This trend might have been influenced by changing economic conditions or opportunities that appealed to men more than before. In contrast, prior to 2005, when the country was in a multifaceted crisis, women might have turned to entrepreneurship out of necessity, possibly to fill the gaps left by men. This observation is in line with the findings of Bousmah (2021), who discovered in rural Canada that men, especially those with at least secondary education, are more inclined towards entrepreneurial endeavors, particularly when driven by opportunities rather than necessity.

In terms of religion, the significant factor was the category of "no religion." Workers without a religious affiliation were notably less inclined to undertake entrepreneurial ventures compared to Catholic Christians. This finding could be explained by the social capital inherent within religious communities. Catholic Christians often benefit from organized structures and social networks that can encourage and support entrepreneurship. In contrast, those without a religious affiliation might lack such communal encouragement, leading to a comparatively lower entrepreneurial inclination among this group in the Congolese context.

Regarding the field of training, the data from both the 2005 and 2012 waves exhibit consistent trends. In 2005, although the result was not statistically significant, it was evident that workers who hadn't completed training in an entrepreneurial domain were not only less inclined to start their businesses but also experienced prolonged delays in implementing their business ideas, demonstrating a noteworthy effect. These findings align with the results obtained by Cera et al. (2020) in their study on Balkan countries, indicating a similar pattern in different contexts. Howerver, this result contract with Israr, M., & Saleem, M. (2018)’s found in the case of Italy.

In the 2012 wave, the trend persisted. Workers who hadn't pursued training in entrepreneurship demonstrated a negative and significant effect on their willingness to undertake entrepreneurial ventures. Moreover, this lack of entrepreneurial training increased the waiting time for their

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

business projects to materialize. This consistency across both waves reinforces the importance of educational background, specifically related to entrepreneurship, in influencing individuals' entrepreneurial aspirations and actions.

This outcome aligns with the ongoing reforms implemented in the DRC since the 2010s, aimed at fostering entrepreneurship nationwide. As these reforms become more pervasive and their benefits are perceived universally, regardless of individuals' educational backgrounds, the specific relevance of entrepreneurship-related training diminishes. Moreover, it's plausible that the entrepreneurship training component is already integrated into the broader reforms in the DRC. Consequently, isolating the effect of entrepreneurship training may no longer be pertinent.

Research findings by Weiss et al. (2019) in a study encompassing students from seven European countries support this perspective. Their study reveals that entrepreneurial education alone does not significantly influence the translation of intention into entrepreneurial behavior. Instead, factors such as social capital and the prevailing institutional context play pivotal role in this transformative process (Meoli et al., 2020; Weiss et al., 2019). Therefore, the focus might need to shift from singular entrepreneurship training to a holistic approach that encompasses social connections and the overall institutional framework to truly empower aspiring entrepreneurs in the DRC.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

5. Conclusion

Salaries and retirement pensions in the Democratic Republic of the Congo are generally meager, prompting workers and their families to engage in multiple activities. One common approach involves combining formal employment with entrepreneurial ventures. This study aims to explore the impact of training programs on encouraging employees to pursue entrepreneurship and whether such programs can expedite the transition from entrepreneurial intent to action. Utilizing data from 1-2-3 surveys conducted in 2012 and 2005, and employing the Heckman selection model, the research reveals that entrepreneurship training courses influence individuals' inclination to initiate their own businesses. Particularly in adverse business climates, these courses can significantly reduce the time individuals wait before venturing into entrepreneurship. However, their effectiveness diminishes when institutional changes enhance the overall business environment. Consequently, the study advocates for the continuity of these reforms and underscores the importance of entrepreneurial education within this reformative framework.

While the findings are valuable, there are avenues for improvement in this research. Considering variables such as parents' professional status, home ownership, and years of job experience could enhance the results, offering valuable insights for shaping relevant public policies. Another area for exploration involves examining whether these outcomes vary based on whether the worker resides in rural or urban areas and whether they are a public sector employee or engaged in the private sector. Additionally, exploring the impact of training programs across different education levels, including secondary and post-university education, would provide a comprehensive understanding of their effects on various segments of the population.

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 25, Août 2024

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7. Declaration of interest statement

No potential conflict of interest was reported by the authors.

8. Abbreviation

DIAL: Development, Institutions, and Long-Term Analysis

DRC: Democratic Republic of Congo

ILO: International Labour Office

INS: National institute of Statistics

MLM: Maximum Likelihood Method

ONME: National Employment Office y

SMEs: Small and medium-sized enterprises COVID-19

UPI: Informal production units

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