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Research Article

The colors of entrepreneurship in Brazil: Effects of ethnicity on income, from a behavioral perspective

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Abstract

Objective: To analyze whether the behavioral logic of decision-making could mitigate the effects of ethnic prejudice on the entrepreneur's income. **Method:** Based on the theme of entrepreneurship by necessity and the effectuation theory, we prepared a survey with 107 entrepreneurs in Brazil, considering different socioeconomic aspects capable of mitigating or accentuating such effects. We used correlation analysis and linear regression to examine the data collected, with socioeconomic variables considered control variables. **Originality/Relevance:** The study contemplates the predominant logic of entrepreneurial behavior and the necessity entrepreneurship in discussing the effects of ethnic prejudice on the income of those who undertake it. **Results:** The results corroborate the research developed by the Global Entrepreneurship Monitor, indicating that the ethnic condition has harmful effects on the entrepreneur's gain due to prejudice but indicates partial mitigation of such effects on the behavioral logic adopted by the entrepreneur. **Theoretical/methodological contributions:** This study points out how the interaction between ethnicity and entrepreneurial behavior can also cause positive results in the earnings of the entrepreneur, although the effects of prejudice are not fully mitigated, even if there is an effort in planning or using the knowledge, skills, and networking of the entrepreneur. **Social/managerial contributions:** Behavioral characteristics in decision-making (causation or effectuation) can mitigate the effects of ethnic prejudice on the entrepreneur's income. Although not statistically significant, these characteristics have the potential to provide information for the construction of affirmative public policies for insertion and entrepreneurial education.

Keywords: Entrepreneurship. Black entrepreneurship. Effectuation theory. Necessity entrepreneurship.

Resumo

Objetivo: Objetivo: Analisar se as lógicas comportamentais de tomada de decisão podem atenuar os efeitos do preconceito de etnia na renda do empreendedor. **Método**: A partir da temática do empreendedorismo por necessidade e da teoria *effectuation*, foi elaborada uma *survey* com 107 empreendedores no Brasil, levando em conta diferentes aspectos socioeconômicos capazes de atenuar ou de acentuar tais efeitos. Utilizou-se a análise de correlação e a regressão linear para examinar os dados coletados, sendo os socioeconômicos considerados como variáveis de controle. **Originalidade/Relevância**: O estudo contempla as lógicas predominantes do comportamento empreendedor e o empreendedorismo por necessidade na discussão sobre os efeitos do preconceito étnico na renda de quem empreende. Resultados: Os resultados corroboram as pesquisas desenvolvidas pelo *Global Entrepreneurship* Monitor, indicativas de que a condição étnica possui efeitos nefastos no ganho pessoal do empreendedor, devido ao preconceito, porém indicam haver mitigação parcial de tais efeitos a depender das lógicas comportamentais adotadas pelo empreendedor. **Contribuições teóricas/metodológicas**: Este estudo aponta como a interação entre a etnia e o comportamento empreendedor pode provocar também resultados positivos nos ganhos de quem empreende, apesar de os efeitos do preconceito não serem totalmente mitigados, mesmo que haja esforço no planejamento ou na utilização do conhecimento, de habilidades e da rede de relacionamentos do empreendedor. **Contribuições sociais/para a gestão**: As características comportamentais na tomada de decisão (*causation* ou *effectuation*) podem amenizar os efeitos do preconceito étnico sobre a renda obtida pelo empreendedor. Apesar de não serem estatisticamente significantes, tais características têm potencial, portanto, de oferecer subsídios para se estabelecer políticas públicas afirmativas de inserção e de educação empreendedora.

Palavras-chave: Empreendedorismo. Afroempreendedorismo. Teoria effectuation. Empreendedorismo por necessidade.

INTRODUCTION

Recently, a question in the article by Kopkin (2017), published in the journal "Applied Economics," had significant repercussions - Does racial prejudice affect the entrepreneurship of people of African descent? The question, now addressed and expanded, includes the predominant logic of entrepreneurial behavior and entrepreneurship by necessity in its equation since this study investigates whether this behavior can moderate the effects of ethnic prejudice on entrepreneurship in the context of the largest country of Afro-descendant population outside Africa, and the last to abolish slavery in the world - Brazil.

According to the Global Entrepreneurship Monitor 2017 (IBQP, 2018), of every 100 Brazilians, between 18 and 64 years old, 36 were conducting some entrepreneurial activity in 2017, either in the creation or maintenance of an already established business. This driving, however, is not done in the same way by everyone; therefore, its results vary considerably, especially in Brazil, where ethnic issues still stand out and feed structural racism ingrained in society (Almeida, 2020), as a sequel to the slavery period in 21st-century society.

Worsening the harmful effects of slavery, in socioeconomic situations of high unemployment, entrepreneurship may represent one of the only alternatives for work and income (Amorós, Fernández, & Tapia, 2012; Kopkin, 2017), which points to entrepreneurship by necessity, or that is, the entrepreneur is driven more by the need to supply their basic needs, related to the difficulty of entry and the lower remuneration in the job market, than by the glimpse of opportunities. In this case, the tendency is to start new businesses in less attractive niches and, therefore, with lower financial gains than those who start businesses by opportunity (Van der Zwan, Thurik, & Hessels, 2016).

As a result, the Brazilian context is an interesting field for entrepreneurial studies because, unlike developed countries, entrepreneurship by necessity represents more than a third of the businesses created (GEM, 2018).

The effects of the long period of slavery on the Afro-descendant population, only in recent years, began to receive the attention of the public authorities, for the implementation of affirmative actions, such as the Quota Law (Law 12.771/12, 2012), aimed at students of courses higher. However, it is foolhardy to claim that the isolated implementation of these policies can reverse the severe distortions installed in countries with a history of slavery, especially concerning entrepreneurship (Bradford, 2014).

In contrast to the dominant literature on the subject, which tends to treat the entrepreneur as an individual capable of being guided by opportunities (Amorós et al., 2012; Autio, 2005), the act of entrepreneurship out of necessity is understood as a condition of subsistence and attempt of individuals to find space in the economic scenario (Block & Sandner, 2009). Thus, in emerging countries and other economies that have not yet reached high levels of socioeconomic development, the decision to start a business is more commonly related to the difficulty of occupying prominent positions in organizations or even to subsistence (Obloj, Obloj, & Pratt, 2010).

Therefore, entrepreneurship by necessity is intrinsically associated with self-employment (Block & Sandner, 2009; Margolis, 2014) due to the high number of unemployed people in Brazil. According to the Brazilian Institute of Statistical Geography (IBGE, 2016), in the first quarter of 2018, 13.7 million people had no job, representing 13.7% of the country's active population.

In this scenario of lack of placement within existing companies, the individual makes a reading of who he/she is, what they know how to do, and who can help them, either with promises to purchase, supply, and share knowledge or in production. Such characteristics are aligned with the effectuation logic of entrepreneurial behavior (Saras D. Sarasvathy, 2001; Saras D Sarasvathy, 2008).

Given the above, the guiding research question of this investigation is: If the ethnic factor is decisive in the income of the Brazilian entrepreneur, what effects does the entrepreneur's behavior has on their income? Primary data were collected from 107 entrepreneurs from 14 Brazilian states, representing 80% of the country's population and GDP.

The results confirm a disparity in income between entrepreneurs due to ethnicity and that the practices of causation and effectuation can partially moderate this relationship. Thus, this study sheds light on a theme little explored in entrepreneurship studies, showing that, even in a highly miscegenated country, with the largest Afro-descendant population outside Africa, the effects of ethnicity continue to influence the results of those who start a business negatively.

Furthermore, in a complementary way, this study is a reference for creating public policies. It demonstrates that Brazil needs to advance in equalizing opportunities between ethnic groups, emphasizing that this does not depend exclusively on the entrepreneur but the whole of society.

THEORY AND HYPOTHESES

Entrepreneurship

Entrepreneurship is a field of research whose concept is constantly evolving (Lemos, 2016) and bifurcated, in its trajectory, in an economic order, and another, behavioral one, which seeks to clarify the nature of the decision-making process.

Concerning the economic current, according to Lemos (2016), studies on entrepreneurship are focused on decision making and the attempt to predict the future and look for opportunities in it. It encompasses, in this way, the unfolding of economic theory (such as consumption choices, without and with risk; statistical decision theory; and game theory, for example), considering that the individual must have as a purpose the intention of a better alternative than the east for opportunities, based on the development of specific characteristics (Lumpkin & Dess, 1996, 2001; McGrath & MacMillan, 2000).

The behavioral approach of entrepreneurship, on the other hand, involves the daily life of the organizational life and the individuals because they understand that decision-makers often have incomplete data, which leads them to choices based on maximizing the subjective reality (Gartner, 1988).

From an economic or behavioral perspective, anyone can own their own business, as long as they have a purpose and conditions to put it into operation (Wang, Hermens, Huang, & Chelliah, 2015). In addition, according to the criterion of equal opportunities, all individuals start their businesses from a

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common point, obtaining success on their own merits (Krueger, Reilly, & Carsrud, 2000). However, in societies that protect historical inheritances from overcoming one group over the other, the concepts of equality and meritocracy are opposed (Lawton, 2000), which makes the study of Afro-entrepreneurship relevant, for example, since it is a way to understand the entrepreneurial process from the perspective of individuals segregated in society.

Afro-entrepreneurship

Unlike populations originating in other parts of the world, who sought migration as a chance to escape from an unwanted environment or even to glimpse the opportunity of success on distant lands, the vast majority of the Afro-descendant population was forced for several centuries to migrate from inhumane forms (Russell-Wood, 1978).

The look on the ethnic aspects of entrepreneurship, however, is not recent nor restricted to Brazil. In the United States, longer-lived affirmative policies have had moderate effects on Afro-entrepreneurship (Boston, 1998), following the warning given by Green and Pryde (1989), that the African American population, in addition to suffering from socioeconomic and historical conditions, responsible for keeping their income below that of the white people, facing the highest unemployment rates, having more difficulty in obtaining resources to invest and, consequently, reaching levels of well-being perpetuated at levels below the average of the American population.

The act of entrepreneurship has always been present in the daily lives of Brazilian Afro-descendants for reasons of survival and necessity (Ribeiro, 2018). According to Paixão (2015), there are numerous studies on ethnic discrimination present in the labor market and access to public services. Such studies, together with human capital theory, offer interpretations of the factors considered to be the main determining factors for social or wage inequality (Śliwa, 2007). The possession of personal social capital, such as schooling or length of experience in the profession, also influences the determinants of the occupational and remuneration trajectories of individuals, linked to their collectivities, usually discriminated as: women, blacks, indigenous people, and other ethnic groups (Paixão, 2015).

Recently, Afro-entrepreneurship has gained theoretical notoriety due to publications in journals of great repercussion in the economy (Kopkin, 2017), and for representing a legitimate socioeconomic demand, spearheaded by the "Black Money" movement (Berth, 2018), whose central proposal is to make money circulate among the Afro-descendant population, establishing a strategic reversal of the meaning of power, based mainly on strengthening the entire community and the black population. Thus, both the product (since its planning) and the advertising are aimed at black audiences, who cannot identify with what is offered to them.

Responses to this movement seek to lead non-white characters, or outside the dominant aesthetic standards, in the advertising of companies. An example of this is in the "Black Lives Matter" movement and how it has affected the media in the United States and, consequently, worldwide, exploring the image of hip-hop artists (Harlow & Benbrook, 2019), among others.

Thus, in conjunction with other actions, Afro-entrepreneurship enables the rise of people of African descent as a consumer, capable of contributing to the success of affirmative social inclusion policies in Brazil, such as the Quota Law (Law 12.771/12, 2012).

It is worth mentioning that Afro-entrepreneurship exists long before its concept (Ribeiro, 2018). Today, it surpasses the frontiers of subsistence because of the search for improving skills and competencies related to the entrepreneurial attitude. As a result, people of African descent are betting on creating, opening, and managing their businesses, facing prejudices in different places on the planet (Kopkin, 2017).

Given the disastrous legacies of discrimination, this population tends to have less economic power, being socially segregated and dependent on public policies that establish equal opportunities in the economy (Guimarães, 2004). As a result, the non-white entrepreneur tends to start a new business more out of necessity than through opportunities (Bosma & Kelley, 2019). In this sense, it is argued that, while opportunity entrepreneurship is based on meritocracy, the necessity is based on the inequality of the initial conditions (Lawton, 2000).

Suppose the social conditions, inherited by historical factors such as slavery, affect the act of undertaking (Kopkin, 2017). In that case, the Afro-entrepreneur is expected to be less subject to the detection of opportunities, reflected in income. In this way, entrepreneurship by necessity, aligned with lower conditions of employability, denotes more a state of self-employment than the choice of a potentially profitable business alternative (Margolis, 2014). In this sense, Hypothesis 1 is proposed to test whether ethnic condition determines the entrepreneur's income.

H1: *The entrepreneur's ethnicity influences income; thus, the income of white entrepreneurs is higher than that of non-whites.*

In this article, we tried to identify ways to be chosen by entrepreneurs characterized as non-white to mitigate the situation, based on their behavior, being relevant, in this context, using the effectuation theory.

Entrepreneur behaviour

The effectuation theory, proposed by Sarasvathy's (2001) thesis, guided by Herbert Simon, was based on: (a) Knight's contributions (1921) on the entrepreneur's role for the company's profit, in times of uncertainty; and (b) by Weick (1979), about the central role of the entrepreneur in the process of evolution of the organization; as well as (c) in the argument of Cyert and March (1963), that it does not make sense to make a decision today, in objective terms, because the results are known only in the future, being, therefore, subject to oscillations resulting from the uncertainties ; (d) in the trade-off between the exploration and the extraction of knowledge (March, 1991); and by the reasoning of Mintzberg (2000), that strategy does not necessarily mean strategic planning.

Thus, Sarasvathy (2001) proposed that most businesses do not originate from pre-established plans, but from the entrepreneur's cognitive reactions, before and during the process of developing their business, molded between their intuition and their ability to assess risks and uncertainties.

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According to the effectuation theory (Sarasvathy, 2001), two logics are predominant in the entrepreneur's behavior: (1) causation, based on the prediction of a specific effect, and on the selection among the personal means (resources and skills) to create it; and (2) effectuation, centered on a set of means and the choice between its possible effects, created from what entrepreneurs are, know and how their contacts can contribute to the business.

As much as they differ from each other, these logics do not represent two opposites of the same line, given their orthogonal characteristics, which allow the combination of more rational elements (causation) with more intuitive ones (effectuation) (Matzler, Uzelac, & Bauer, 2014). In addition, causation can address the orientation towards opportunities within the effectuation theory, recognizing the path of entrepreneurship studies constituted until the turn of the millennium.

However, more recent research indicates that these logics are not limited to new businesses but also occur in situations of uncertainty (Yang & Gabrielsson, 2017). Even when entrepreneurs cannot design scenarios, they can establish plans to minimize the effects of what they cannot control. In this sense, the effectuation theory gains space not only in the discussion of how business emerges (small companies or multinationals) (Dash & Ranjan, 2019) but in how they are consolidated in complex scenarios (Johansson & McKelvie, 2012).

In this way, the entrepreneur who elaborates adequate planning and has a clear objective to be reached will obtain better returns to their business according to the logic of causation. In doing so, a future to be pursued is envisioned (Heracleous & Jacobs, 2011; Sarasvathy, 2001), regardless of the size of the business (Shi, Takala, Chen, Muhos, & Poikkimaki, 2013).

So, even if the development of a plan does not guarantee success, in terms of the ability to assess the perception of risk (Frishammar & Andersson, 2008), the entrepreneurs who best define the horizon to minimize uncertainty (Welter & Kim, 2018), will tend to achieve more satisfactory financial results.

In addition, the causation logic can have different effects on performance, depending on the level of technological intensity of the business (Kristinsson, Candi, & Sæmundsson, 2016). Thus, entrepreneurs with more characteristics of causation behavior tend to achieve higher performance because they plan better. Better planning, in turn, allows the entrepreneur to seek previously crucial resources, knowledge, and partnerships to assist in the performance of the business. Therefore, it is expected that causation behavior will have a positive effect on the entrepreneur's income. Based on this reasoning, Hypothesis 2 was formulated.

H2: *The entrepreneur's causation behavior has a positive effect on income, regardless of socioeconomic condition*

Even though the definition of plans and goals collaborates to develop more successful strategies, what often brings success is the ability to change plans (Einhorn & Hogarth, 1987). In addition, most micro and small entrepreneurs, especially those who start a business out of necessity, rarely plan their actions (Block & Sandner, 2009). According to Chandler, DeTienne, McKelvie, & Mumford (2011) and de Vasconcellos, Garrido, & Parente (2019), in the effectuation logic, opportunities do not pre-exist; they arise from the knowledge built along the entrepreneur's trajectory and need to be constantly changed, to innovate, including the business model (Snihur & Tarzijan, 2017).

Thus, opportunities are developed in an intense communication and negotiation process between those involved, in the internal or external environment, to practice concrete aspirations, values, products, services, and institutions, resulting from interpersonal connections built over time (Peng & Luo, 2000).

It is understood, then, that the effectuation logic is established in the changes that occur outside the traditional and rational model and is defined by the search for the effect, not dependent on the cause (Sarasvathy & Dew, 2005), based on how much the entrepreneur is willing to risk this change of path (Kalinic, Sarasvathy, & Forza, 2014) and the perception they have about how much they are capable of assuming as a loss.

According to Faia, Rosa, and Machado (2014), the effectuation logic is related to the exploration of opportunities in new markets with a high degree of uncertainty, favoring an experimental process and interactive learning, which allow the entrepreneur to discover information about the future, considering the environment as dynamic, non-linear. As the future is intrinsically immeasurable and liable to transformation, its design becomes unnecessary (Sarasvathy, 2001).

The effectuation theory (Sarasvathy, 2001, 2008) assumes that entrepreneurs start their businesses based on the science of three premises: who they are, what they know, and whom they know to enhance their business. So, their traits, tastes, and skills; their knowledge bases; and the social networks of which they are part support the possibility of entrepreneurship (Sarasvathy, Simon, & Lave, 1998; Venkataraman, Sarasvathy, Dew, & Foster, 2012).

In contrast to the logic hitherto prevalent in studies on entrepreneurship, in effectuation, entrepreneurs: (a) stipulate an acceptable loss amount, determined by the limitation of resources; (b) seek to experiment with other strategies, considered feasible; and (c) seek to build strategic alliances, formal or informal, through their networks of contacts, to improve their performance in the market. Thus, difficulties and limitations are transformed into opportunities (Kalinic et al., 2014; Sarasvathy, 2001) and, little by little, as they start a business, they build their future, shaping, during their entrepreneurial action, the strategies emerging (Heracleous & Jacobs, 2011; Mintzberg, 1987).

As the effectuation theory matured, it was noticed that the logic, first aligned with the new businesses, also made sense for long-standing ventures, gaining greater attention from researchers, for agreeing with the perception that the future is built daily (Perry, Chandler, & Markova, 2012). As a result, it started to be equally used in cases in which there were: (a) difficulty in identifying how to deal with marketing actions (Yang & Gabrielsson, 2017); (b) internationalization in little-known markets (Galkina & Chetty, 2015); (c) situations of uncertainty, experienced by multinationals (Dash & Ranjan, 2019); and, mainly, (d) scenarios where competition is not due to the size of the company, but through the ability to respond, in environments of uncertainty, which require intuition (Brettel, Mauer, Engelen, & Küpper, 2012), in particular, when entrepreneurial effectuation

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attitudes are combined with causation management (Berends, Jelinek, Reymen, & Stultiëns, 2014).

In this sense, responses aligned with the effectuation behavior usually bring better results in stagnant or low profitability industrial sectors. In contrast, in the most robust and stable earnings sectors, causation logic tends to maximize earnings (Futterer, Schmidt, & Heidenreich, 2017).

In societies where race segregation was an element in building their economies (Lawton, 2000), the least favored developed specific skills, such as experimentation, flexibility (Pacho & Mushi, 2020), and the establishment of relationship networks based on sympathy (Miura, Pilati, Milfont, Ferreira, & Fischer, 2019). These individuals tended to survive in better conditions than those who resigned themselves to political and socially imposed differences due to the skills to deal with uncertainties inherent to the business and to provide answers and better performance in an unstable environment when using the effectuation behavior.

Taking into account that the entrepreneurial behavior, based on the logic of causation (H2) and effectuation, are orthogonal, being able to coexist and bring different benefits to the business (Matzler et al., 2014), it is assumed that the effectuation behavior leads to gains in the income of the entrepreneur, overcoming the socioeconomic conditions that affect it negatively. Given this, Hypothesis 3 is proposed, as follows:

H3: *The effectuation behavior of the entrepreneur has a positive effect on income, regardless of socioeconomic condition.*

Although the literature on entrepreneurship oscillates between an orientation towards opportunity (Faia et al., 2014; Kropp, Lindsay, & Shoham, 2006; Pittaway & Cope, 2007) or as an effect of necessity (Margolis, 2014), it is considered, in this article, that there are socioeconomic factors that determine the act of entrepreneurship. Furthermore, based on the principle of the individual's self-determination (Krueger et al., 2000), it is argued that certain entrepreneurial behaviors can mitigate the harmful effects of ethnic prejudice, imposed on almost half of the population, both in Brazil and in Brazil. in different places in the world (Santos, 2005).

Although the literature ensures that the best financial performance is associated with the entrepreneur's behavior, empirical studies indicate that, in entrepreneurship, the ethnicity factor greatly influences income (Bosma & Kelley, 2019; GEM, 2018). So, considering that some characteristics of entrepreneurial behavior can reflect on the business's success, the assumption of certain decision-making logic can mitigate the effects of ethnicity on the income of entrepreneurs, thus moderating the relationship between variables ethnicity and behavior of the entrepreneur.

Previous studies have shown that individuals with management skills related to planning and creating more reliable scenarios tend to have a higher income (Faia et al., 2014; Tasic & Andreassi, 2008). The entrepreneurial behavior based on causation logic, in this sense, offers better possibilities for planning and searching for the necessary resources for business development.

In the context of Afro-entrepreneurship, causation behavior can be used to plan and anticipate the problems faced in the new business (in particular, prejudice), enabling the development of actions to mitigate its effects. In this way, practices related to causation behavior provide a higher income to the entrepreneur, mitigating the impact of their ethnicity. This argument is linked to the perception that more organized management practices reduce the socioeconomic problem and allow more significant gains. Thus, Hypothesis 4a of this study is proposed, assuming that entrepreneurial behavior, in the logic of causation, potentially reduces the negative effect rooted in Brazilian society concerning the impact of the entrepreneur's ethnicity on their income.

H4a: *The causation logic of entrepreneurial behavior moderates the relationship between ethnicity and the entrepreneur's income, mitigating the effects of prejudice by ethnicity.*

Although the practices of causation logic are efficient, the set of sub-dimensions of effectuation logic can also contribute to mitigating ethnicity's effects on the entrepreneur's income. The literature on entrepreneurship, in effectuation logic, argues that one of the practices adopted, both when starting their business (Sarasvathy, 2001) and in situations of uncertainty, faced by more experienced entrepreneurs (Welter & Kim, 2018), is the option for flexibility when changing the business model to maintain earnings (Reymen, Berends, Oudehand, & Stultiëns, 2017). In addition, mistakes are taken as learning to reconfigure businesses, showing the practice of experimentation (Chandler et al., 2011).

On the other hand, the premise that the entrepreneur, by the effectuation logic, seeks acquaintances and establishes pre-agreements before closing deals as a way of circumventing the impossibility of planning (Chandler et al., 2011; Kalinic et al., 2014).

Despite these three dimensions getting closer to intuition and improvisation (Evers & O'Gorman, 2011), the entrepreneur who follows the effectuation logic is careful with the financial limits assumed, which characterizes the under-dimension of bearable losses (Chandler et al., 2011; Fiedler, Fath, & Whittaker, 2017). Therefore, in this study, it is proposed that, regardless of ethnicity, the logic of effectuation behavior can contribute to the entrepreneur's income. In this case, the practices associated with the effectuation logic can reduce the income gap of non-white entrepreneurs, leading to Hypothesis 4b.

H4b: *The effectuation logic of entrepreneurial behavior moderates the relationship between ethnicity and the entrepreneur's income, mitigating the effects of prejudice by ethnicity.*

The following (Figure 1) is a summary of the relationships proposed by this study.

In short, first, it is proposed that: (H1) there is a relationship between the individual's ethnicity and their income as an entrepreneur; (H2) entrepreneurs, whose behavior is aligned with planning (causation), tend to have a positive effect on their income; (H3) the use, by entrepreneurs, of effectuation characteristics, such as flexibility, experimentation, loss tolerance, and the building of relationships, capable of establishing pre-agreements, also promotes positive effects on their income; (H4a

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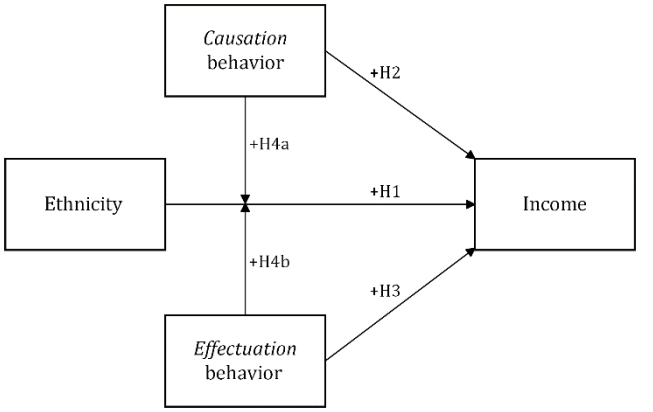
and H4b) these behaviors (causation and effectuation) can mitigate the impact of ethnic prejudice on income.

The procedures adopted to test the hypotheses are described in the next section.

Figure 1

Research Model



Note: The authors (2021).

METHODS

This research is characterized by the quantitative approach, with primary data, and descriptive, as it seeks to show what the theory defends (Carneiro & Dib, 2007), using multimethod techniques (Schotter & Beamish, 2013), for the researcher to make sure that biases about the method are not interfering in the research results. Therefore, statistical data are brought and analyzed to obtain information concerning the entrepreneurs' daily lives.

According to Mattar (2007), the field study, conducted via survey, is less concerned with the generation of large representative samples of a population and more with the moderately deep analysis of some typical situations, such as the distinction of criteria socioeconomic factors to compare the effect of ethnicity on the entrepreneur's income.

Data

The questionnaire, used for data collection, was previously evaluated by doctors and entrepreneurs, who validated the Portuguese version of the instrument, later sent via email and social networks (Facebook, Linked In, and WhatsApp) through link sharing the respondent to Google Forms.

In addition to sending, via researchers' networks, some entities representing Afro-entrepreneurship in Brazil (who requested discretion about their data and demanded care not to reuse the list), as well as groups linked to female entrepreneurship, were invited to distribute the questionnaire to achieve a homogeneous sample.

According to Hair, Anderson, Tatham, and Black (2005), researchers generally want to know if two or more variables are associated and if they are also related when there is covariation. The correlation coefficient is then used to assess such an association. If significant coefficients are presented during the analysis, it is an indication that there is a high covariation and a strong correlation. When two variables change together on a reliable basis, it is possible to make predictions.

Although the correlation between variables contributes to understanding the sample composition, it is necessary to apply regression analysis to verify the effects of one variable on another (Maroco, 2010). So, even if the cross-sectional data have limited power to reveal the impact, it is possible to determine associations that, interpreted and compared to other studies, infer the dependence relationships between the variables (Dancey & Reidy, 2006).

To obtain these data, identify correlations, and perform regression analysis, Excel, SPPS (version 25), and Smart PLS (version 2) were used.

Questionnaire

The first 20 questions were grouped into five dimensions, along with their respective factorial loads. The first dimension, with seven items, refers to the causation approach, and the others, to effectuation, with 13 items, divided between experimentation (four), bearable losses (three), flexibility (four), and pre-agreements (two).

Such questions were developed by the study by Chandler et al. (2011), cited and used by Faia et al. (2014), and adapted by Vasconcellos et al. (2019). A Likert scale - recommended for application in countries where the dominant logic is the metric (Awang, Afthanorhan, & Mamat, 2016) - of ten points was developed to obtain the answers, based on the respondent's agreement, being | 1 | total disagreement, and | 10 | maximum agreement.

As for control variables, specific questions were included, in which respondents should identify, according to IBGE criteria, ethnicity, gender, age, level of education. Respondents should also answer about their previous experiences as entrepreneurs and how long they have been undertaking (the instrument in its entirety, the description of the five dimensions, the factorial loads, the details of the mean, the standard deviation, kurtosis, and asymmetry are detailed in Appendix A).

The sending of the questionnaire started on August 10 and ended on September 2, in the year 2018. In total, 2,721 contacts received the questionnaire and up to three emails (three waves), reaching 107 valid responses from entrepreneurs of 14 states of Brazil, which represented a response rate of 4%, denoting the degree of difficulty in data collection.

ANALYSIS

First procedures

For statistical validation, initially, the existence or absence of absent or atypical values was evaluated through visual inspection of the scatter plots; after that, the following constructs reliability tests were performed - extracted variance, composite reliability, and Chronbach's alpha (Table 1).

The data allowed to confirm the robustness of the sample and the statistical models. Although the variance extracted from effectuation was below the acceptable limit (0.5) (Hair et al., 2005), the construct was validated, as it is a subjective variable, acceptable for a value above 0.32 (Tabachnick, Fidell, & Osterlind, 2001), and also for having obtained adequate indexes for the compound reliability and Cronbach's alpha (above 0.7) (Hair et al., 2005).

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In addition, asymmetry and kurtosis were evaluated, confirming the normality of the data. Values greater than | 3 | are expected to be obtained for asymmetry; and a | 10 | for kurtosis (Hair et al., 2005) (results of asymmetry and kurtosis tests available in Appendix A).

Table 1

Robustness test

	Extracted variance	Composite reliability	Chronbach's alpha
Causation	0.621573	0.919565	0.899133
Effectuation	0.360511	0.868947	0.834668

Note: The authors (2021).

Finally, the robustness of the model was tested, and it was observed that the three models are significant at p <0.001 and are close to | 2 |, by the analysis of Durbin Watson.

Descriptive analysis

In terms of gender, it was observed that the sample is uniform: the male represents 50% of the answers, and the female, 49%, while the others or who prefer not to identify their gender represent 1%. For data analysis purposes, the female gender was represented by | 1 |, and the male | 0 |.

Regarding ethnicity, of the 107 respondents, 60 declared themselves to be white (56% of the sample), and 47, black/brown (44%). Blacks and browns were grouped in the research as non-whites, in alignment with what Degler (1986) describes as a characteristic of the slave-owning heritage in Brazil, which also affects the fruits of miscegenation. For the analysis, non-whites were assembled and represented by | 1 |, and whites by | 0 |.

The collection of descriptive data is helpful to test whether socioeconomic factors should be controlled and to evidence whether they could interfere in the comparative analysis between the means. The synthesis of the sample's descriptive data is presented below (Table 2).

Of the 60 entrepreneurs who identified themselves as white, 58% are men and 42%, women; and 47 non-white entrepreneurs, 40% are men and 60% are women.

Regarding the geographic distribution of the entrepreneurs, responses were obtained from 14 units of the federation, validating the national scope of the collection, which corresponds to 81% of the GDP and 79% of the population of Brazil (IBGE, 2020).

The mean age of the respondents was 41 years, making the sample homogeneous concerning age. The age difference between white and non-white men is less than half a year, while the age difference between white and non-white women is less than one year.

Income was categorized, according to IBGE criteria, into five ranges: (1) up to two minimum wages (SM); (2) above two and up to four MW; (3) above four and up to ten MW; (4) above ten and up to 20 MW; and (5) above 20 MW.

Based on the IBGE criteria, eight ranges were considered for the education variable, from incomplete elementary education to complete graduate school.

The interviewees were also asked about their experience in entrepreneurship, in terms of whether or not they had already constituted other businesses, being able to respond in ranges - from one to four businesses, and above five; and, for control, over the time, in years, they have been an entrepreneur.

Table 2

Sample

Variable	Min.	Max.	Mean	Std. Dev.
Age	*22*	*63*	*41,2*	*11,16*
Years of Experience	*0,5*	*40*	*9,14*	*8,42*
Business Experience	*1*	*5*	*1,93*	*1,11*
Income	*1*	*5*	*2,64*	*1,14*
Education	*1*	*8*	*6,28*	*1,68*

Note: The authors (2021).

Before analyzing the relationships between the independent, dependent, and moderating variables, it was checked whether there was a correlation between the control variables. Spurious data would not compromise the results (Hair et al., 2005).

Next (Table 3), there is the presentation of the data to observe the representativeness of the research, if compared to others, the limitations of the analysis. For example, in the survey, the female gender is represented by one and the male gender by zero; the negative correlation indicates that, in the sample, the respondent men are older, more experienced, in terms of years, as entrepreneurs and have an income 27% higher than that of women. The positive correlation between ethnicity - non-whites | 1 | and whites | 0 |, and gender indicates that, in this sample, most women entrepreneurs are not white.

Still, concerning gender, there was no significant correlation with education, experience in other businesses, and characteristics of entrepreneurial behavior. Thus, initially, there is an indication that the sample, in terms of gender, does not compromise the analysis of the relationship between ethnicity and income.

The correlation analysis shows that, in the sample, the positive correlation between an experience (measured by the number of previous ventures and time as an entrepreneur) is more intense with effectuation than with causation. As they create businesses and gain experience, entrepreneurs apply less management and planning practices associated with causation behavior and take advantage of what they learn from effectuation behavior.

Among the control data considered, there is a negative correlation between age and ethnicity: non-white entrepreneurs are younger than whites. The sample size does not indicate whether this is decisive in the entire universe of entrepreneurs in Brazil, represented by the sample. However, GEM data (IBQP, 2018) is in line with this finding, pointing out that the average age of non-white entrepreneurs in Brazil is lower than that of whites, which ensures the reliability of the information collected.

There is also a correlation between age, experience in years, and previous experiences of entrepreneurship. Again, this is an expected fact, as entrepreneurs tend to start their businesses in the first years of adulthood and, with older people, they have an income higher than that obtained by the youngest, which can be

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justified by the continuity of their performance as an entrepreneur and for earning gains from experience.

In addition, there was a correlation between age and behavioral characteristics in the causation logic, although effectuation is also likely to improve with age but with less intensity. This finding is in line with the theory, which predicts an increase in the network of contacts of more experienced people, who learn from their mistakes, try alternatives and have a better sense of how much they can risk their business (Chandler et al., 2011).

Table 3
Correlations

	Mean	Standard deviation	1	2	3	4	5	6	7	8	9
1 Gender	0.500	0.502	1								
2 Age	41.21	11.162	-0.304 (0.001)	1							
3 Ethnicity	0.44	0.499	0.366 (0.000)	-0.266 (0.006)	1						
4 Education	6.28	1.681	0.169 (0.082)	0.032 (0.743)	-0.171 (0.079)	1					
5 Income	2.64	1.144	-0.274 (0.004)	0.293 (0.002)	-0.444 (0.000)	0.147 (0.131)	1				
6 Business experience	1.93	1.113	-0.136 (0.164)	0.209 (0.031)	-0.263 (0.006)	0.052 (0.597)	0.304 (0.001)	1			
7 Years as entrepreneur	9.14	8.4202	-0.446 (0.000)	0.526 (0.000)	-0.453 (0.000)	0.015 (0.877)	0.429 (0.000)	0.349 (0.000)	1		
8 Causation behavior	6.711	2.054	-0.149 (0.126)	0.247 (0.010)	-0.136 (0.163)	-0.019 (0.847)	0.387 (0.000)	0.003 (0.977)	0.159 (0.101)	1	
9 Effectuation behavior	6.907	1.519	-0.150 (0.123)	0.191 (0.049)	-0.184 (0.058)	-0.023 (0.817)	0.281 (0.003)	0.232 (0.016)	0.186 (0.055)	0.627 (0.000)	1

Note: The values in parentheses represent the p-value when assessing the significance of the correlations. The authors (2021).

Based on previous research (IBQP, 2018), it was possible to ensure that the sample is normal compared to data published by GEM, referring to the age and gender of entrepreneurs by need. In combination with the 2018 unemployment data (IBGE, 2020), it is possible to infer that, in recent years, non-whites are being attracted by entrepreneurship as self-employment (Margolis, 2014) due to the difficulty of repositioning themselves in the labor market. After a long period of job deficit, mainly in the non-white population. With this, the thesis of entrepreneurship by necessity is evident since many people invest in their businesses to survive.

In the sample, the education variable showed a positive correlation with gender and ethnicity, indicating that women are more highly educated than men. A negative correlation with ethnicity, pointing out that the educational background of whites is superior to that of non-whites, aligning the research with information from the Brazilian Institute of Geography and Statistics (IBGE, 2020).

Experience with new businesses and years of experience in entrepreneurship, in turn, showed a positive correlation, indicating the propensity of entrepreneurs, over time, to try new businesses. However, previous experience in other businesses related to effectuation behavior, not causation, is perceived, indicating that entrepreneurs who follow the effectuation logic tend to open new businesses. In contrast, those with higher rates of causation behavior tend to persist in the business created

Descriptive analysis

The moderating effect of the causation and effectuation behavior variables was tested to assess whether entrepreneurial behavior may be attenuating or contrasting with the differences between ethnicity and income (Table 4)

For the regression analysis, six models were tested, all significant and robustness ensured by the Durbin Watson test, indicating values close to | 2 | (Maroco, 2010), as shown in Table 4.

Initially, Model 1 was proposed, with only the control variables to verify whether similar effects and socioeconomic origin and experience could or could not influence income without considering ethnicity. Disregarding ethnicity and the way entrepreneurs behave, it was observed that age has no effect on income, but: (a) experience with previous businesses (β = 0.169, p = 0.071); (b) years of experience as an entrepreneur (β = 0.272, p = 0.018); and (c) the level of education (β = 0.155, p = 0.083).

Subsequently, Model 2 assessed whether income is determined by ethnicity (H1); therefore, the dichotomous variable (non-whites = | 1 |; whites = | 0 |) was included. Compared with Model 1, it is noteworthy that education is no longer significant, as experience with previous businesses. The ethnicity variable is significant (β = -0.258, p = 0.011), showing an inverse relationship with income, ensuring that not being white determines the lowest income for the entrepreneur, but that their experience, however, alleviates this effect, for having a positive relationship.

Therefore, Model 2 allows supporting the argument defended in H1, that socioeconomic conditions, of historical origin, determine that non-whites have less access to entrepreneurship by opportunity, being subject to start their businesses, basically, out of necessity (Kopkin, 2017; Margolis, 2014), facing the adversities inherited over time.

To separately test the effect of causation and effectuation behaviors on the income of entrepreneurs, two models were

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included, Model 3 and Model 4. Model 3 tested whether income is determined by causation behavior (H2), disregarding the effect of ethnicity. In comparison with Model 1, which tested only the socioeconomic and experience variables, it can be seen that there is a positive correlation with education (β = 0.158, p = 0.058), indicating that individuals who have studied longer tend to start businesses with more planning. It is also noticed that entrepreneurs with more experience, both with other ventures (β = 0.190, p = 0.030) or as time entrepreneurs (β = 0.261, p = 0.015), tend to adopt the logic of causation in their businesses and these factors contribute to a higher income. On the other hand, it appears from the model that causation behavior is not associated with the age and gender of the entrepreneur.

Therefore, Model 3 supports the argument proposed in H2, associated with socioeconomic conditions - except for ethnicity - that the causation behavior allows a higher income for the entrepreneur. This information confirms previous studies that linked the ventures' performance to this characteristic of entrepreneurial logic because of the ability to outline the future (Welter & Kim, 2018).

Model 4 evaluated whether income can be determined by the effectuation behavior (H3), disregarding the effect of ethnicity and causation behavior. By comparing the results with Model 1, it is possible to verify that there is also a positive correlation with education (β = 0.159, p = 0.071), indicating that individuals who have studied longer possibly acquire skills related to flexibility, experimentation, and develop networks of useful relationships to start a business. It is also noticed that entrepreneurs with more experience with entrepreneurship (β = 0.267, p = 0.019) adopt the effectuation logic in their businesses. However, the relationship with the number of previous ventures is not significant, as well as concerning the age and gender of the entrepreneur.

Thus, Model 4 offers conditions to support the H3. Associated with socioeconomic factors - except for ethnicity - the effectuation behavior offers higher income conditions for the entrepreneur. This information is in line with previous studies that linked the performance of businesses to flexibility (Pacho & Mushi, 2020) and the establishment of relationship networks (Miura et al., 2019). In addition, it indicates that these skills are positively associated with education.

Then, the variables centered on entrepreneurial behavior were included to test moderation with the variable ethnicity (also centered). Model 5 tested whether the interaction between ethnicity and causation behavior could mitigate the negative effects of ethnicity on income; and the results indicated the significance of the causation logic in relation to the entrepreneur's

Table 4

Regression models

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Hypotheses		**H1**	**H2**	**H3**	**H4a**	**H4b**
Dependent variable	Income	Income	Income	Income	Income	Income
Control variables	Age Gender Education Other business experience Years as an entrepreneur	Age Gender Education Other business experience Years as an entrepreneur	Age Gender Education Other business experience Years as an entrepreneur	Age Gender Education Other business experience Years as an entrepreneur	Age Gender Education Other business experience Years as an entrepreneur	Age Gender Education Other business experience Years as an entrepreneur
Independent variables		Ethnicity	*Causation*	*Effectuation*	Ethnicity, *Causation*	Ethnicity, *Effectuation*
Moderators					Ethnicity X *Causation*	Ethnicity X *Effectuation*
β Age	0.069 (0.500)	0.068 (0.492)	-0.004 (0.966)	0.049 (0.630)	-0.005 (0.955)	0.052 (0.604)
β Education	0.155 (0.083)	0.102 (0.249)	0.158 (0.058)	0.159 (0.071)	0.102 (0.220)	0.109 (0.216)
β Gender	-0.135 (0.175)	-0.070 (0.483)	-0.110 (0.236)	-0.122 (0.214)	-0.024 (0.716)	-0.069 (0.497)
β Exp. In Other business	0.169 (0.071)	0.139 (0.128)	0.190 (0.030)	0.135 (0.147)	0.165 (0.055)	0.107 (0.246)
β Years as entrepreneur	0.272 (0.018)	0.195 (0.090)	0.261 (0.015)	0.267 (0.019)	0.208 (0.056)	0.188 (0.109)
β Ethnicity		-0.258 (0.011)			-0.234 (0.014)	-0.244 (0.016)
β *Causation*			0.332 (0.000)		0.303 (0.000)	
β *Effectuation*				0.176 (0.051)		0.165 (0.073)
β *Causation* x Ethnicity					0.086 (0.298)	
β *Effectuation* x Ethnicity						-0.028 (0.762)
Durbin Watson	1.981	2.069	1.974	1.990	2.064	2.059
R^2	0.248	0.295	0.350	0.276	0.396	0.318
F	6.655	6.973	8.987	6.356	8.019	5.716
Variation in F		6,688	15,781	3,904	8,162	1,666

Note: The significance of variables are in parentheses, after the factorial load information. Exp. = Experiência. The authors (2021)

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income (β = 0.303, p = 0.000), as well as ethnicity (β = -0.234, p = 0.014). However, it was impossible to verify the full moderation between the variables, for not showing statistical significance in the interaction term, giving partial support to H4a. From this observation, it was possible to hurt that the causation behavior does not significantly and statistically mitigate the negative effects of ethnicity on income. However, it substantially increases the explanation power of the model (from R^2 = 0.350 to R^2 = 0.396).

Finally, the causation variable was excluded, and that of entrepreneurial effectuation as a moderator was included (Model 6). The mean also centered the variables ethnicity and effectuation behavior. Similarly to the previous model, Model 6 suggests that the effectuation behavior is significant concerning the entrepreneur's income (β = 0.165, p = 0.073), as well as the ethnicity variable (β = -0.244, p = 0.016), but without interaction between variables, as it does not reach statistical significance in the interaction term. Again, it appears that the entrepreneur's behavior, now by the effectuation logic, does not significantly mitigate the adverse effects of ethnicity on income, despite increasing the explanation of the model (from R^2 = 0.276 to R^2 = 0.318), giving partial support to H4b. From these results, it was possible to synthesize the results (Table 5).

Table 5
Summary of Hypotheses tests

Hippthesis	Description	Hypotheses support
+H1	The entrepreneur's ethnicity influences income; thus, the income of white entrepreneurs is higher than that of non-whites.	Supported
+H2	The entrepreneur's causation behavior has a positive effect on income, regardless of socioeconomic status.	Supported
+H3	The effectuation behavior of the entrepreneur has a positive effect on income, regardless of socioeconomic condition.	Supported
+H4a	The causation logic of entrepreneurial behavior moderates the relationship between ethnicity and entrepreneurial income, mitigating the effects of prejudice by ethnicity.	Partially Supported
+H4b	The effectuation logic of entrepreneurial behavior moderates the relationship between ethnicity and the entrepreneur's income, mitigating the effects of prejudice by ethnicity.	Partially Supported

Note: The authors (2021).

The results indicate that both ethnicity and characteristics of entrepreneurial behavior, causation, and effectuation, are related to the entrepreneur's income. However, it is not possible to ensure that the practices adopted in these behaviors can fully mitigate the effect of prejudice by ethnicity on the entrepreneur's income because, despite being statistically not validated, the effect of the interaction between the entrepreneurial behavior variables, the proposed models increase their explanation significantly, considering the interpretation of alteration of the R^2. Thus, in Model 2, the explanation was that the variables included up to ethnicity could explain up to 29.5% of the variation in income. When including the causation behavior, this explanation increased to 39.6%; and the effectuation behavior to 31.8%, leading to the understanding that income can be increased if the decision-making practices, aligned with the behavioral logic of entrepreneurship, are intensified.

DISCUSSION

This study aimed to analyze whether the behavioral logic of decision-making can mitigate the effects of ethnic prejudice on the entrepreneur's income.

The results attested that non-white entrepreneurs have their income negatively affected by their ethnicity, confirming previous research on the topic (Bosma & Kelley, 2019).

It is also noticed that the causation and effectuation behaviors contribute to the construction of the income of the entrepreneurs as a whole, as already noted in the literature (Berends et al., 2014); however, the effect of ethnic bias on income is not neutralized by behavior.

In the proposed models, control variables were included, such as age, gender, education, experience with other ventures, and time as an entrepreneur. The research data contribute to the understanding that the experience contributes to forming the entrepreneur's income, corroborating other studies (Futterer et al., 2017). However, it does not mitigate the situation of non-white entrepreneurs in terms of their income.

Based on the results of the correlation analysis, it was possible to identify that the group most in need of assistance are that of women considered to be non-white: they have been in the market for less time as entrepreneurs. They have the lowest income, concerning the rest of the sample. Relating this information to the unemployed and unemployed data (IBGE, 2016), it is possible to infer that, due to the difficulty of rising in the labor market, non-white women are venturing by necessity because being not white, they have lower pay than other groups.

Despite portraying the context, similarly to data from IBGE (2016) and GEM (IBQP, 2018), this research has the following limitations: (1) the 2018 crisis context itself, in which the research was carried out, with unemployment rates above the country's historical average; (2) out of a universe of 36% of the active Brazilian population, characterized as an entrepreneur, access to 107 respondents may not reflect the subtleties of regional and urban centers, in which most of the country's population is concentrated; (3) given the sample size, it was not possible to evaluate the gender and ethnicity groups separately, which limits the possible reflections on the context of entrepreneurship; and (4) due to the scope of the research, it was not possible to evaluate the effect of affirmative social insertion policies, recently implemented, and still in the initial evaluation stage.

Such limitations may reflect opportunities for new research, especially when developed in the long term, with more representative samples, and involving specificities of different contexts, especially because Model 1 signals that education has a positive effect on income, even before the inclusion of the variable ethnicity.

CONCLUSION

At the end of this study, it can be seen that: (a) individuals with the most intense causation and effectuation behavior have a higher income; (b) previous business experience and entrepreneurship time are factors that contribute, in general, to the composition of the entrepreneur's income.

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However, none of these behaviors or even experiences can resolve or mitigate the harmful effects of ethnic prejudice, rooted in society and capable of condemning the entrepreneur, even before beginning their activities, to have a lower income than white entrepreneurs. Therefore, this study reveals the extent to which racial prejudice permeates Brazilian society, in effect characterized by Almeida (2020) as structural racism, especially in the female population of African roots, which seek entrepreneurship by necessity for an alternative path to socially structured problems.

Thus, the research corroborates studies developed in other countries on the recurrent myth of stimulating Afro-entrepreneurship as an isolated alternative to reduce social inequalities (Bradford, 2014).

Concerning the theoretical contribution, this study highlights that the effectuation theory has the potential to explain how the cognitive aspects intrinsically associated with the theory can contribute to the understanding of the socioeconomic effects on the entrepreneur's income (provided that future research aligns the theory with the perspective of entrepreneurship out of necessity).

Specifically, concerning entrepreneurship by necessity, it reveals the fact that there is a stronger correlation between experience in other ventures and time as an entrepreneur with effectuation behavior than with causation behavior. This result indicates that, at least in the sample, as new businesses are created by the entrepreneur, increasing their baggage of experience, the less they make use of management and planning practices associated with causation behavior and takes advantage of the who learns from effectuation behavior, such as experimentation, flexibility, relationships, and their perception of bearable losses.

Notably, concerning the questioning by Kopkin (2017), presented at the beginning of this article, which asks whether racial prejudice affects the entrepreneurship of people of African descent, one can safely say, at least in Brazil, that it does. Moreover, the impact is so significant that, even with behaviors aimed at entrepreneurship, generating more gains for the entrepreneur, the effect is negligible.

In terms of entrepreneurial practices and public policies to encourage entrepreneurship, this study contributes to the understanding that entrepreneurship by necessity, which determines the survival of the less fortunate sections of society, predominantly composed of non-whites, demands a holistic perception. There is an urgent need to expand long-term affirmative policies against ethnic prejudice, given that it is not enough for the entrepreneur to behave within the dominant entrepreneurial logic, be they aligned with planning, be coined in flexibility, in experimentation, in agreements between possible partners business or under the limitation of resources.

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Conflict of interest statement

The authors declare that there is no conflict of interest.

Authors' statement of individual contributions

Roles	Contributions		
	Rosa CM	Vasconcelos SL	Falaster CD
Conceptualization	■	■	
Methodology		■	
Software		■	
Validation		■	■
Formal analysis	■	■	
Investigation	■		
Resources		■	
Data Curation		■	■
Writing - Original Draf	■	■	■
Writing - Review & Editing		■	■
Visualization		■	
Supervision		■	
Project administration		■	
Funding acquisition		■	

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Appendix A

Questions	Mean	Standard deviation	Kurtosis	Skewness	Factorial loads
CAUSATION	6,71	2,054	-0,847	0,334	
1. I analyzed long-run opportunities and selected what I thought would provide the best returns.	6,42	2.499	-0,558	-0,363	0,662
2. I developed a strategy to best take advantage of resources and capabilities.	7.29	2,278	-0,907	0,447	0,844
3. I designed and planned business strategies.	6,51	2,820	-0,537	-0,819	0,775
4. I organized and implemented control processes to make sure I met objectives	5,94	2,848	-0,284	-1,122	0,816
5. I researched and selected target markets and did meaningful competitive analysis	6.36	2,654	-0,472	-0,708	0,807
6. I had a clear and consistent vision for where I wanted to end up	7,89	2,384	-1,269	0,818	0,755
7. I designed and planned production and marketing efforts	6,57	2,685	-0,652	-0,420	0,844
EFFECTUATION (EXPERIMENTATION)	6,05	2,136	-0,320	-0,596	
8. I experimented with different products and/or business models	6,73	2,787	0,573	-0,682	0,790
9. The product/service provided is essentially the same as I originally conceptualized.	5,81	2,832	-0,022	-1,188	n/a
10. The product/service now provided is substantially different than I first imagined	5,51	2,925	-0,051	-1,305	0,705
11. I tried several different approaches until I found a business model that worked	5,92	2,570	-0,394	-0,791	0,826
EFFECTUATION (AFFORDABLE LOSS)	7,15	2,673	-0,883	-0,259	
12. I was careful not to commit more resources than I could afford to lose	7,13	2,917	-0,896	-0,395	0,950
13. I was careful not to risk more money than I was willing to lose with my initial idea	6,93	2,980	-0,713	-0,730	0,943
14. I was careful not to risk so much money that I would be in real trouble financially if things did not work out	7,39	2,666	-0,925	-0,117	0,912
EFFECTUATION (FLEXIBILITY)	7.75	1.657	-1,142	2,115	
15. I allowed the business to evolve as opportunities emerged	7,73	2,161	-1,173	0,989	0,818
16. I adapted what I was doing to the resources I had.	8,26	1,870	-1,501	2,594	0,762
17. I was flexible and took advantage of opportunities as they arose.	8,04	1,868	-1,268	1,738	0,869
18. I avoided courses of action that restricted my flexibility and adaptability	6,95	2,432	-0,879	0,354	0,742
EFFECTUATION (PRE-COMMITMENTS)	6.14	2,579	-0.554	-0,557	
19. I used a substantial number of agreements with customers, suppliers, and other organizations and people to reduce uncertainty.	5,92	2,748	-0,328	-0,863	0,944
20. I used pre-commitments from customers and suppliers as often as possible.	6,37	2,746	-0,506	-0,705	0,933
SAMPLE DESCRIPTION					
21. Gender	0,50	0,502	0,019	-2,038	
22. Age	41,21	11,162	0,246	-1,038	
23. Ethnicity	0,44	0,499	0,248	-1,976	
24. Education	6,28	1,681	-0,855	0,637	
25. Earlier entrepreneurial experience	1,93	1,113	1,195	0,648	
26. Time as entrepreneur	9.14	8.4202	1.454	1.861	
DEPENDENT VARIABLE	2.64	1,144	0,250	-0,791	
27. Income	2.64	1.144	0,250	-0,791	