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## MICROBUSINESS DEVELOPMENT

## AND QUALITY OF LIFE OF

## MICROENTREPRENEURS'S FAMILIES

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## ABSTRACT

**Purpose:** This paper aimed at verifying the influence of microcredit in the development of microbusinesses and in the quality of life of the microentrepreneurs' families, using the elaboration of a structural equation model based on the borrowers' perception.

**Originality/gap/relevance/implications:** In the last 15 years, only 9.3% of the studies analyzed (national and international) covered the topic "quality of life after the access to microcredit". The general goals of the Brazilian National Oriented Productive Microcredit Program (PNMPO) do not mention quality of life, and gaps are yet to be investigated.

**Key methodological aspects:** It was developed a quantitative research, with a probabilistic sample consisting of 250 microentrepreneurs, borrowers of microcredit. Descriptive statistical techniques and analysis of structural equation models were applied with the aid of the softwares SPSS and AMOS.

**Summary of key results:** It was observed that the factor business management exerts positive influence on the access to the media, on leisure and on quality of life. The access to the media and to leisure activities exerts positive influence on the quality of life. The variables used herein, when associated in a predecessor form, explain 54.0% of the transformation in the quality of life of the families benefited.

**Key considerations/conclusions:** The results show the Program preference in benefitting women and encouraging their economic activity. It has been found the absence of joint and several guarantee, but the need for a guarantor for the granting of the loans. The entrepreneurs mostly work in the informal sector, despite government incentives. Through the increase in purchases of consumer goods, education, health and leisure, it was confirmed the improvement in the businesses' and in the quality of life of the families, after the microcredits were granted.

## KEYWORDS

Microcredit. Microbusinesses. Microentrepreneurs. Quality of life. Structural equations.

## 1 INTRODUCTION

The lack of access to conventional credit by the population belonging to the poorer social classes has been one of the major obstacles to the economic growth of a country (Hermes & Lensink, 2007), due to the social problems that poverty and income inequality bring to society in general. In this respect, first-time small entrepreneurs find in the informal economy (Corsini, 2007) a possibility of reducing poverty and improving quality of life (Amarnani & Amarnani, 2015). In addition, it provides social inclusion (Barone & Sader, 2008; Vasconcelos, 2009) and emancipation, not only for individuals, but also for families and communities involved in informal businesses.

In this reality, the financial support provided by microcredit constitutes a promotion of small-scale entrepreneurship as a means to mitigate poverty, by allowing the more needy groups to have access to fomentation services (Barone & Sader, 2008).

It is estimated that 30 million people have had access to microfinance services offered by more than 2000 specialized institutions installed in various places in the world for the past 25 years. However, it is believed that not all financial institutions are considered mature and provide proper services that meet the needs of its users (Ahmed, Brown, & Williams, 2013).

International studies have raised doubts concerning the efficiency of the services provided by these financial institutions, although the results are not conclusive (Araújo & Lima, 2014). Meeting the potential demand of 235 million families remains extremely low. Although 15 million Asian families have access to microfinance services, only 9.3% of their potential needs are met. In Africa and the Middle East, in Latin America and the Caribbean, this percentage is even lower (6.2% and 5.8%, respectively). Although low, Europe and Central Asia have the best index: 11.4% (Daley-Harris, 2002).

In Brazil, around 16 million micro and small businesses are qualified to apply for microcredit. However, only 43.8% are income applicants, considering that the others use equity (IBGE, 2005). Such reality can be justified by the fact that the credit market is directed more to the consumer than to the microproducer (as well as to informal entrepreneurs) due to the “lack of guarantees or insufficient

guarantee provided by persons without or with low income” (Neri, 2002, p. 27). In June 2012, there were in Brazil 480 microcredit institutions which served an average of 1.5 million clients, granting about 2.46 billion Brazilian reais in microcredits (PNMPO, 2012).

As much as there is a certain consensus among scholars of microcredit that such policy reduces poverty and social exclusion, since it offers productive assets for individuals considered socially unfortunate or with material survival restrictions (Santiago, 2014), the romantic vision that low-income individuals need only a “push” to get rich is questioned (Krohen, 2011). Since microcredit is not charity, but a real tool to promote the microentrepreneurship in an intense and capillary form, by means of support oriented to the different ideas and local or regional initiative projects. In this sense, the provision of microcredit would be linked to improvement in income and quality of life of the borrowers.

At this juncture, the following question arises: microcredit can have a socio-economic feature that extrapolates the private interest of maintenance and development of micro and small enterprises, to the point of promoting the quality of life of microentrepreneurs?

In this respect, it is considered that an adequate inclusion of less-favored populations to financial services can contribute to the reduction of social inequalities and promoting the economic development of the individuals (Newman, Schwarz, & Borgia, 2014). Thus, this study aims to check the influence of microcredit on the development of microbusinesses and on the quality of life of the families of microentrepreneurs in the State of Minas Gerais, Brazil, from the perspective of 250 borrowers from a bank which provides oriented and productive microcredit in that State.

The bibliographic survey of articles published in the last 15 years in the bases linked to Ebsco, JSTOR, SciELO and Sage produced a total of 575 international and national studies on the theme of microfinance. Three hundred articles were randomly picked and tabulated using the software Nvivo 11, in order to identify in which ways the studies were being conducted. Twenty eight of them (9.3%) researched the benefit microcredit brought to the borrowers' quality of life (regarding the welfare, education, health, nutrition, sanitation, social inclusion and leisure), and most of the loans had support of solidary groups of guarantors.

The studies reviewed for this investigation emphasize aspects inherent to microcredit, such as prospects of occupation and income and instrument of social and economic development. It is understood that this research broadens the scope of earlier studies about the role of microcredit in the social development and effective improvement in the quality of life of microentrepreneurs. Therefore, the theme chosen for this study is emerging and is highlighted in the national and international literature.

## 2 MICROCREDIT AND ITS SOCIAL ROLE

In recent decades, microfinance and microcredit issues have been the subject of debates with emphasis on the development of public, academic and economic policies, and on poverty reduction (Knight, Hossain, & Rees, 2009; Reymão & Corrêa, 2014). Based on the model of the Grameen Bank of Bangladesh, several countries have replicated and/or modified the original microcredit model, adapting it to their local realities (Sarkar & Singh, 2006).

For granting microcredit, the microfinance institutions (MFIs) adopt different criteria, although with some fundamental similarities such as: small loans, use of social collateral, proximity between the customers and the credit agent of the institution, and sustainable but not subsidized interest rates (Reymão & Corrêa, 2014).

In some MFIs, the renewal of individual loans is pegged to the solidarity lending group's non-defaulting guarantee (Paiva & Galiza, 2008). On the other hand, on the part of the borrowers, there is some resistance to the formation of risky solidarity groups. These agents value structuring groups in which members are able to honor the loans, building an environment enhanced by confidence and at the same time discouraging the misconduct (Kraychete, 2005) and offering real guarantees (Reymão & Corrêa, 2014).

Although in Brazil the joint and several guarantee is not a universal practice, the Brazilian National Oriented Productive Microcredit Program (PNMPO), created by Federal Law 11.110/2005, has, among its premises, the provision of oriented productive microcredit to meet the microentrepreneurs' financial needs. To accomplish that, the Program uses a methodology based on the direct relationship at the place where the actual economic activity is carried out, and does not require collateral security. That is, these can be replaced by alternative and suitable forms to be defined by the financial institutions (art. 4 of Law 11.110/2005).

However, the profit-making institutions (i.e. the banks) are less likely to provide loans to risky ventures, while the non-profit organizations focusing on microfinance tend to mitigate poverty by supporting the creation of new enterprises (Shahriar, Schwarz, & Newman, 2015).

Knight *et al.* (2009) highlight the importance of microcredit programs for traditional banks, to the extent that these programs promote good governance, integration policy between low-income people and banking system, increased income, and, ultimately, there are improvements in the quality of life, measured by improved nutrition of children, and in school enrolment rates (Goldberg, 2005). It should be noted that most programs focus on female entrepreneurs

because they are able to repay their loans regularly and direct a larger portion of the business revenues to their families (Karlan & Goldberg, 2007). In Spain, for example, women receive between 61% and 67% of all the microcredit offered (Garrido & Calderón, 2006).

Even so, it would be unwise to state that microfinance programs have been fulfilling effectively their role, since certain differences – such as types of clients, variety of services rendered, operations on extremely heterogeneous conditions and regions – would lead to the conclusion that no model can be just as effective to the point of working as a strategy to reduce global poverty (Goldberg, 2005).

However, it can be said that, from the moment that an individual has access to microcredit, his or her chances of having a stable income increase, and in the future, maybe to the point to use the traditional banking services. Anyway, we cannot leave out the assumption that the borrower of microcredit is seeking, in fact, an improvement of living conditions (Amarnani & Amarnani, 2015).

## **2.1 IMPACTS OF MICROCREDIT ON MICROBUSINESSES AND ON THE QUALITY OF LIFE OF THE BORROWERS**

The granting of loans follows two methodologies: loans with joint and several guarantee and individual loans. References identified in this study are mostly related to improvements brought by the various credit programs through the granting of loans to solidarity groups, a point considered critical to microcredit.

Among village families of Moroccan rural areas who had been benefited by microcredit, Crépon, Devoto, Duflo and Pariente (2015) identified the existence of an effective increase in the investment in assets, especially those used in their farming activities. There was a great reflection on autonomous activities leading to an increase in profits and decrease of informal work. On the other hand, there was no evidence that the increased consumption or improvement in the quality of life of these families would be related to microcredit. This result is similar to that presented in the study by Awaworyi (2014).

Amarnani and Amarnani (2015) analyzed the quality of life of Indian families who had access to microcredit. It has become clear that microcredit offers a flexible path to financial autonomy, mainly of women; there was also improvement in the borrowers' quality of life. However, to sustain these improvements over a period of time, other interventions in social and human levels are required.

Vijayamohanan and Asalatha (2011) assessed the meaning of microcredit in the process of expanding the involvement of women in economic activities. The results show an important role in reducing poverty, when promoting financial self-sustainability and valuation of women. However, Torri and Martinez (2014) argue that, as much as the economic contribution of women is

acknowledged, the informal sector is still a major problem for this work force in many economies.

The access to microcredit was also mentioned as a factor for the empowerment of women in the development of their economic activities. Here, empowerment is meant as in the perspective of Rowlands (1997) and Stromquist (1997). This social empowerment is the result of the participation of groups of solidarity guarantees and intensified by social ties (Cassar, Crowley, & Wydick, 2007; Mamun, 2014; Chowdhury, 2016).

The analysis of microcredit was presented in the context of health with Hamid, Roberts and Mosley (2011), who examined the impact of a micro health insurance provided by Grameen Bank in Bangladesh. The authors realized an increase in the awareness about health care and the need to seek specialized care in 329 rural households that dealt with that Bank.

When considering the microcredit as a poverty reduction tool, many indirect long-term benefits can be assumed. As an example, one of them would be increased investment in education by the borrower families. This trend was investigated by Islam and Choe (2013), however, the results were adverse, that is, the access to micro-credit would not mean an increase in education. Van Rooyen, Stewart and De Wet (2012) analyzed the impact of microcredit on sub-Saharan Africa and observed that the participation in such programs has a positive impact on several aspects, including the motivation, to the borrower families, such as: wellness, control of assets and expenses generating income, education, access to health services, information, increase in nutritional levels, housing improvement, reduction of child labor, women empowerment and creation of jobs.

In Brazil, Guerra (2008) targeted the rural community Diamante, in the State of Pernambuco. After the access to the rural microfinance program of the National Program for Family Agriculture (Pronaf), the borrowers realized improvement in their quality of life, characterized by access to education, the purchase of consumer goods and for income generation. However, this improvement is supported by the families' association, through the assistance in management of their small businesses, rooting a culture that values the collective and the bonds of solidarity, as the studies of Feigenberg, Field and Pande (2013) and Mamun (2014) observed.

The effectiveness of microfinance as a real tool for fighting poverty does not depend on its short-term, but on its long-term impact (Terano, Mohamed, & Jusri, 2015; Chowdhury, 2016), even because, in the short term, it cannot be perceived, or seems innocuous in the light of who experience it (Awaworyi, 2014). The reasons would be the delay in the return of the investment and/or delayed consumption, leading to the detachment of the greater objective of microfinance, which lies in the sustainable increase of the capacity of families to create wealth (Awaworyi, 2014; Crépon *et al.*, 2015).

As for individual loans, Mendes (2009) found the impact of microcredit on the quality of life of the borrowers of Banpará Bank, in the metropolitan region of Belém, in the State of Pará, Brazil, regarding the improvement of housing and greater access to leisure, arising from the increase in income.

Anyway, by means of the studies described earlier, it was tried to outline the variables used for the preparation of the structural model presented in the methodology. The term “improvement in the quality of life”, treated in this text, is closer to the prospect of economic development. This is to avoid incongruity of classifications, in the hermeneutical and scientific sense. The research hypotheses were also considered from the survey on the studies quoted here. However, they were formulated to meet the assumptions in the context emphasized, namely, whether the evidence of improvement in quality of life is or is not related to the microcredit program. Here, we adopt the definition of quality of life of Limongi-França (2007, p. 167): “the perception of well-being, from the individual needs, social and economic environment and life expectancy”.

### 3 METHODOLOGICAL PROCEDURES

This research is characterized as quantitative (Richardson, 1999) on a case study (Roesch, 2007), in which the subject was a microcredit agency in the State of Minas Gerais, Brazil. We chose this unit of analysis because it is an institution dedicated exclusively to oriented and productive microcredit, with the goal of generating employment and income. The major borrowers are small low-income entrepreneurs working formally or informally, associated or not, who do not have a bank account and access to conventional financing. In the planning period of the survey, we contacted other institutions from other States; however, we did not have a favorable response about accessing the register of their borrowers. This strategy followed the steps of international studies consulted, which largely used the databases of financial institutions to reach the subjects of interest.

Since the beginning of its activities (May 2003) until the date of the survey (initiated in February 2012), the institution under study granted loans to 2850 microentrepreneurs. For the sample calculation, we used the formula of conservative scaling for population of finite size sample (Oliveira, 2004):

$$n = \frac{\frac{1}{4} Z_0^2 N}{\frac{1}{4} Z_0^2 + (N - 1) e^2}$$



where:

$n$  = sample size;

$Z_0 = 1.96$ , coefficient charted according to the certainty (confidence interval);

$N = 2,850$  (population size);

$e = 0.05$  (estimated error).

Through the sample calculation performed over 339 microentrepreneurs randomly chosen, from the records provided by the bank, the survey had access to 250 respondents, showing an error of estimate of 6.17%.

The data collection tool was a structured questionnaire, which sought to understand the respondents' profile, the contact with the credit market, the information about the economic activity and the changes perceived after access to microcredit, as well as issues that refer to the transformation in the quality of life of the respondents' families. The questionnaire was developed with a Likert scale of 5 points – ranging from *Strongly disagree* (1) to *Totally agree* (5).

*A priori*, a pre-test was carried out for verifying and adjusting the questionnaire to a small sample of just 15 microentrepreneurs. The questionnaire was applied, personally by one of the authors, during the month of February 2012. Because it did not need reformulation, the final data collection was initiated, and the data were tabulated using the Statistical Package for the Social Sciences (SPSS) (Hair Jr., Black, Babin, Anderson, & Tatham, 2005), and integrated using the Analysis of Moments Structures (Amos), a system for the specification and generalized modelling of the relational structure of sample moments (Marôco, 2010).

To develop the equation analysis, we used the exploratory factor analysis in which each individual variable was explained by their loads on each factor, via application of Bartlett's test of sphericity and Kaiser-Meyer-Olkin's test (KMO). In the process of specifying the measurement model, it was made the transcription of the factorial on which variables described each factor.

The Structural Equations model assumptions were tested. The Mahalanobis square distance ( $DM^2$ ) test was applied, and the consistency of the model was checked by means of multivariate normal distribution of the endogenous variables, with the tests of asymmetry and kurtosis  $|sk| > 3$  and  $|ku| > 7.10$  (Marôco, 2010).

For assessing the quality of the adjustment model, a confirmatory factor analysis was performed (AFC), analyzing the model scales via simple reliability testing (Cronbach's Alpha), of composite reliability (CC) and the Average Variance Extracted (AVE). This analysis was carried out in two phases: first, on

the original scale with all items and then purified by AFC scale, when the items with factorial loads of internal consistency and composite reliability less than 0.7 were excluded for presenting AVE less than 50% (Fornell & Larcker, 1981). The discriminant validity and the correlation matrix tests were applied (Fornell & Larcker, 1981).

The structural model test, in which the proposed relationships between the constructs (hypotheses) were tested, seeking to show the values of Chi-square test ( $X^2$ ), showing the degree of freedom (GL – the smaller, the better) and the factor of significance (p-value > 0.05). We evaluated the this model adjustment indexes represented by the  $x^2/df$  indicators; Comparative Fit Index (CFI); Goodness of Fit Index (GFI); Root Mean Square Error of Approximation (RMSEA) and the factorial weights of these indicators, considered high when greater than 0.5 (Marôco, 2010).

After the tests, we sought to confirm or reject the following hypotheses proposed in the model:

Main hypothesis:

- $H_0$  – microcredit users show improvement in their quality of life.

Confirmatory hypotheses:

- $H_1$  – negotiation with suppliers has positive influence on business management;
- $H_2$  – business management has positive influence on access to the communication media;
- $H_3$  – business management has positive influence on leisure activities;
- $H_4$  – business management has positive influence on the quality of life;
- $H_5$  – access to the media has positive influence on the quality of life;
- $H_6$  – leisure activities have positive influence on the quality of life;
- $H_7$  – business management has positive influence on health care;
- $H_8$  – health care has positive influence on the quality of life.

It is important to note that the variables were selected from the indication of some studies, namely: business management: from Guerra (2008), Vijayamohan and Asalatha (2011), Awaworyi (2014), Amarnani and Amarnani (2015), Crépon *et al.* (2015); health: Hamid *et al.* (2011); education and communication: Van Rooyen *et al.* (2012) and Islam and Choe (2013); leisure: Mendes (2009). We understood that all these variables exert positive influence on the quality of life.

## 4 PRESENTATION AND DISCUSSION OF THE RESULTS

Initially, the entrepreneurs' profiles were examined. Most were women (54%), with age range between 41 and 50 years old (33.2%), married (62.7%), having two or three dependents (42%), secondary education (93.6%) and monthly income of up to three minimum wages (77.9%). The profile is similar to the one found in some international studies (Karlan & Goldberg, 2007; Garrildo & Calderón, 2006; Vijayamohanan & Asalatha, 2011). By belonging to a low-income social class, it was expected that this public did not own houses; however, it was the opposite: 72.8% of respondents had their own household.

The main reasons that led the 250 respondents to exert their current professional activity lie in the desire to work on their own (46%), supplement the income (24%) and have professional experience (19.6%).

With regard to information on microcredit, conversations with friends (37.3%) and commercial advertisements (36.9%) were identified as the key sources.

Many of the respondents (60.5%) highlighted the possibility of getting a loan from a conventional bank, a situation different from that presented in other studies. In many cases, the second loan had similar value to the first loan (46.7%) or larger values (42.3%), and obtaining these loans was guaranteed by means of a guarantor (90.8%) and not solidary groups, opposing Paiva and Galiza (2008), Kraychete (2005) and Reymão and Corrêa (2014). As for the purpose, these funds obtained were applied to meet the working capital needs of the economic activity in the purchase of goods (52.7%) and machinery (25.1%).

In relation to the activity, there is a concentration in commerce (42.3%) and services (39.1%), which were developed in the informal sector (58.6%) before the borrowers got the microcredit. Despite a considerable part of them continued working in the informal sector (46.8%), it was shown a migration of these activities to the legality, in the form of individual entrepreneurship (22.2%) or microbusiness (19.4%).

After the access to microcredit, 90% of respondents declared maintaining some kind of financial control. The most used were the control of accounts receivable (22.3%) and accounts payable (22%), followed by the control of cash budget (16.4%) and control of costs and prices (13.3%). The results of these controls have provided improvements and changes in habit, such as: in the family welfare as regards to clothing, hygiene, health, transportation, education, buying electronic devices, leisure, and in the income generation, as noted in Crépon *et al.* (2015), Awaworyi (2014), Hamid *et al.* (2011), Islam and Choe (2013), Van Rooyen *et al.* (2012), Mendes (2009) and Amarnani and Amarnani (2015).

To validate the results and respond to the study hypothesis, it was elaborated a structural equation model, inspired in Hair Jr. *et al.* (2005), Byrne (2009) and Marôco (2010). Initially, it was carried out an exploratory factor analysis (that is, Bartlett's test of sphericity and Kaiser-Meyers-Olkin's test). It was identified that applying the factorial considering only one questionnaire would produce distortions in the compositions of the constructs, so the data collection instrument was divided into two parts: changes in economic activity and in the socio-cultural environment. Thus, we chose to perform two factorial analyses.

KMOs equal to 0.813 and 0.815, respectively, were obtained for these instruments. Therefore, the correlation matrix offered a good structure for the application of the factor analysis (Pestana & Gageiro, 2003). The Bartlett's test presented a significance level of 0.000; thus, the correlation between the variables was confirmed, which allowed to proceed with the factorial (Pestana & Gageiro, 2003). An orthogonal rotation was applied to extreme the values of the loadings in order that each variable was associated to only one factor (Hair Jr. *et al.*, 2005). Thus, the indicators with factorial load less than 0.5 were excluded from the sample.

By means of the Analysis of Variance Explained, five factors were obtained to the questionnaire of the transformations in the *socio-cultural environment* – quality of family life: quality of life (QOL); Communication; Leisure; Health and Education, the latter being excluded from the model due to a convergence of only two manifest variables (Marôco, 2010). In the instrument *changes in economic activity*, four constructs were redefined: Negotiation with Suppliers (NF); Business Management (NG); Improving the Environment and Workplace (MALT) and Pension Contribution and Hiring Employees (CPCF), being the last two excluded for having convergence of only two manifest variables (Hair Jr. *et al.*, 2005).

The construct Quality of Life (QV) was formed by the variables R41 (“I have increased the purchase of appliances”); R43 (“I have renovate or expanded the family residence”); R44 (“I have improved my means of transportation”); R42 (“I have purchased a home”); R40 (“I have improved the clothing and hygiene care of the family”), and S56 (“I have improved food”).

The construct Communication was formed by the variables E52 (“I have gotten access to internet”); E51 (“I have bought computer products”), and R45 (“I have improved my access to land and/or mobile telephone services”).

The construct Leisure was formed by the variables L59 (“I have made recreational trips”); L58 (“I have performed leisure activities more frequently”); L57 (“I have purchased cable TV”), and E49 (“I have purchased magazines subscription and books”).

The construct Health was formed by the variables S54 (“I have purchased a health plan”); S53 (“I have had access to physicians and dentists services”); S55 (“I have bought medicines”), and E50 (“I have attended language and professional training courses”).

The construct Negotiation with Suppliers (NF) was formed by the variables F29 (“I have managed to facilitate the negotiations with the suppliers”); F30 (“I have bought larger quantities of stock products”); F31 (“I have found suppliers with new or alternative products”), and F32 (“I have sought suppliers with different forms of customer services and payments made easier”).

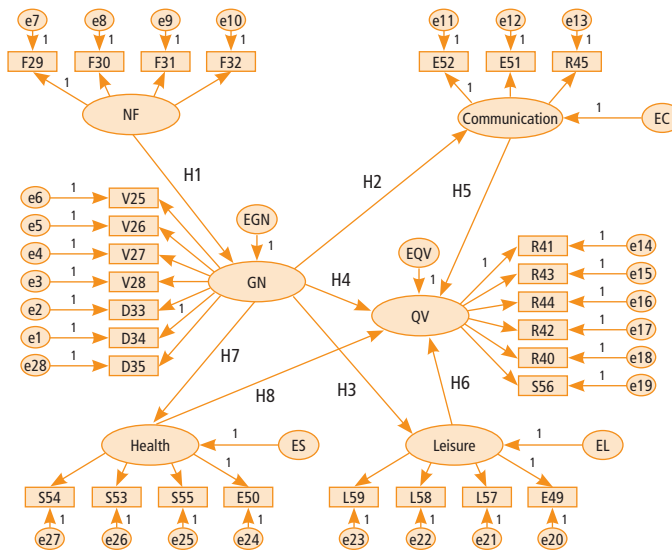
The construct Business Management (NG) was formed by the variables V25 (“I have managed to better know my clients’ needs”); V26 (“I have increased the number of clients”); V27 (“I have increased the sales”); V28 (“I have improved the control of accounts receivable from customers”); D33 (“I have improved the control of accounts payable”); D34 (“I have separated the business expenses of family expenses”); and D35 (“I have increased profit”).

### 4.1 MODEL SPECIFICATION

From the results of the factor analysis, it was developed a model based on the correlation between the variables that presented factorial load greater than 0.4. In the process of specifying the measurement model, it was carried out the transition from factor analysis about which variables described each factor, being specified the variables that determined each construct according to the model specification (Figure 1).

FIGURE 1

#### MODEL SPECIFICATION



Source: Adapted from Marôco (2010).

With the application of the Mahalanobis test ( $DM^2$ ),  $H_0$  was rejected (no observation that suggested extreme values), and 35 observations that showed extreme values were identified ( $DM^2 > 41.400$ ;  $p_1$  and  $p_2 < 0.05$ ) and excluded. The multivariate normality evaluation tests (Fávero *et al.*, 2009; Marôco, 2010) allowed accepting  $H_0$  (the endogenous variables follow a multivariate normal distribution), existing no asymmetry and kurtosis showing values under the referenced  $|sk| > 2.3$  and  $|ku| > 7.10$  (Marôco, 2010).

## 4.2 CONFIRMATORY FACTOR ANALYSIS

In the Confirmatory Factor Analysis (AFC) (Marôco, 2010), the validation of the original scale reliability was carried out through the simple reliability (Cronbach's Alpha), in which the items Negotiation with Suppliers and Business Management presented Cronbach's Alpha of 0.82, followed by Communication (0.76), Quality of Life (0.73), and Leisure (0.70). Only in Health (0.59), it was less than 0.7, which is the acceptable reference value according to Fornell and Larcker (1981).

The Composite Reliability (CC) generated the following values: for Business Management, 0.85; Negotiation with Suppliers, 0.84; Communication, 0.81; Leisure, 0.76; and Quality of Life, 0.74. Only for Health (0.63), it was less than 0.7 (Fornell & Larcker, 1981).

The loads for the indicators of the measurement model analysis were used to evaluate the convergent validity of each construct using the Average Variance Extracted (AVE). Before purification, the AVE was: in Communication, 0.60; Negotiation with Suppliers, 0.57, and the others presented values less than 0.50, showing the need to improve the model.

The items with loads of the analysis of internal consistency and composite reliability less than 0.70 were excluded from the model. Thus, the item Health was excluded for presenting Alpha = 0.59, CC = 0.63 and AVE = 0.31.

After purification, the model presented a better quality, especially on Alpha, with 0.86 for Business Management, 0.84 for Negotiation with Suppliers, 0.79 for Communication, 0.75 for Leisure, and 0.73 for Quality of Life (Table 1).

In the process of purification, the items that showed AVE less than 0.50 were modified: Business Management, which went from 0.45 to 0.55; Leisure, from 0.45 to 0.52; and Quality of Life, from 0.33 to 0.41, and the others remained unchanged. Due to the complexity of the theoretical model (Fornell & Larcker, 1981), despite of the AVE in Quality of Life (0.41) did not meet the stipulated as acceptable load (0.50), it allowed the acceptance of the value as adequate due to the objective of the study.

TABLE 1

**CRONBACH'S ALPHA, COMPOSITE RELIABILITY AND VARIANCE EXTRACTED**

CONSTRUCT	PRE-PURIFICATION				POST-PURIFICATION			
	ITEMS	ALPHA	CC	AVE	ITEMS	ALPHA	CC	AVE
Negotiation with Suppliers (NF)	4	0.82	0.84	0.57	4	0.84	0.84	0.57
Business Management (GN)	7	0.82	0.85	0.45	5	0.86	0.86	0.55
Communication	3	0.76	0.81	0.60	3	0.79	0.81	0.60
Health	4	0.59	0.63	0.31	-	-	-	-
Leisure	4	0.70	0.76	0.45	3	0.75	0.76	0.52
Quality of Life (QV)	6	0.73	0.74	0.33	4	0.73	0.73	0.41

Source: Elaborated by the authors.

The variables D33 and D34 were excluded from the item Business Management, the Variable E49 was deleted from Leisure and the variables R42 and R43 were excluded from Quality of Life.

The Discriminant Validity was conducted by comparing the shared variance between different pairs of constructs with the variance extracted in each of them (Fornell & Larcker, 1981). According to the results presented in Table 2, the correlation between the constructs ranged from 0.16 (Communication and Business Management) and 0.70 (Negotiation with Suppliers and Business Management). The shared variance between the constructs was less than the variance extracted for all of them, indicating the Discriminant Validity between the constructs.

TABLE 2

**DISCRIMINANT VALIDITY TEST AND CORRELATION MATRIX**

CONSTRUCTS	NF	GN	COMMUNICATION	QV	LEISURE
NF	<b>0.57</b>	0.70	0.21	0.40	0.35
GN	0.49	<b>0.55</b>	0.16	0.45	0.40

(continue)

TABLE 2 (CONCLUSION)

DISCRIMINANT VALIDITY TEST AND CORRELATION MATRIX

CONSTRUCTS	NF	GN	COMMUNICATION	QV	LEISURE
Communication	0.04	0.03	<b>0.60</b>	0.63	0.50
QV	0.16	0.20	0.40	<b>0.41</b>	0.62
Leisure	0.12	0.16	0.25	0.38	<b>0.52</b>

Note: the values above the main diagonal are the correlations (for all  $p < 0.001$ ) and the values below are the squared correlations ( $R^2$ ), shared variance. The  $R^2$  must be less than the values of the diagonal (AVE) in order that the Discriminant Validity criteria are accepted, according to Fornell and Larcker (1981).

Source: Elaborated by the authors.

### 4.3 EVALUATION OF THE QUALITY OF THE ADJUSTMENT OF THE MODEL

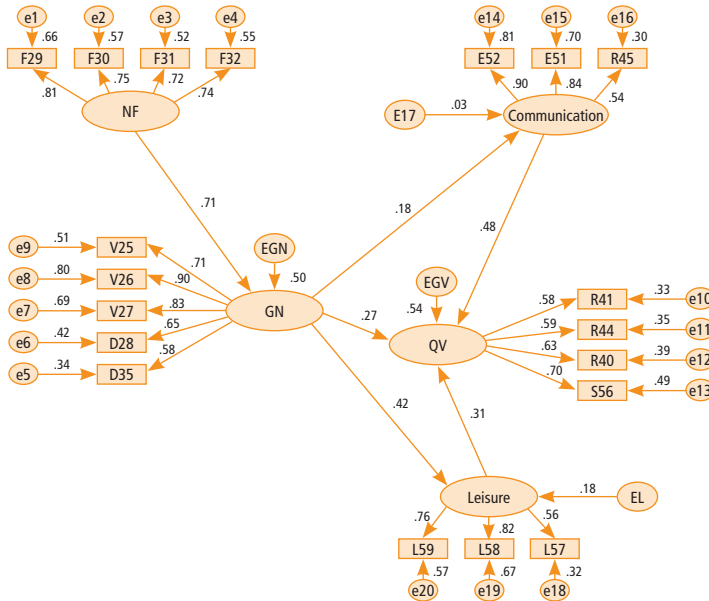
Each construct was analyzed separately to legitimate whether the requirements were met or to identify potential problems that could compromise the quality of the general adjustment. The structural model test, in which the proposed relationships between constructs (hypotheses) were tested, was carried out. In the tested model (Figure 2), the  $X^2$  test was applied for adjustment (Marôco, 2010), showing the values  $X^2 = 331.90$  ( $gl = 146$ ;  $sig. = 0.000$ ). Although the test is quite used in the evaluation of adjustment, its use is not valid in most empirical work, being at best considered a simplification of the real phenomenon with some significance and substantive usefulness. On the other hand, the  $X^2$  test is very sensitive to larger samples, showing a high degree of significance. These problems associated with  $X^2$  led to the creation of other adjustment measures.

The structural equations model developed presented a good adjustment to the values of  $X^2/gl = 2.27$ ,  $GFI = 0.86$ ,  $CFI = 0.90$ ,  $RMSEA = 0.077$ ,  $P$  ( $rmsea < 0.05$ ) =  $0.000$ ;  $MECVI = 2.005$ . All items showed high factorials weights ( $> 0.5$ ) and confirmed the factorial validity of the mediation model of quality of life through microcredit (Figure 2).



FIGURE 2

MEDIATION MODEL OF QUALITY OF LIFE THROUGH MICROCREDIT



$\chi^2(146) = 331.904; p = .000; \chi^2/df = 2.273$

CFI = .896; GFI = .862

RMSEA = .077; P (rmsea < 0.05) = .000; MECVI = 2.005

Source: Elaborated by the authors.

#### 4.4 TESTING OF HYPOTHESES

In the assessment of the hypotheses of the proposed model, all the assumptions have been accepted, considering that the p-value was less than 0.05, corroborating the statistical significance of hypotheses. It is worth mentioning that the construct Health was removed from the model and, therefore,  $H_7$  and  $H_8$  were rejected.

In hypothesis  $H_1$ , the value of the standardized beta was 0.705, indicating that Negotiation with Suppliers (NF) exerts a positive effect of 70.5% on Business Management (GN). Negotiation with Suppliers deserves special attention, given its direct link with the productive process. Thus, in addition to improving profitability, an efficient purchasing management can improve productivity, quality of the products and therefore customer satisfaction.

In hypothesis H<sub>2</sub>, it was found that Business Management exerts positive influence on Access to Communication Media in a significant way (p-value = 0.019), with reduced power of explanation (standardized beta = 0.183).

In hypothesis H<sub>3</sub>, Business Management explains in 41.9% the positive effects on leisure activities, with statistical significance.

Hypothesis H<sub>4</sub>, although accepted as an explanation for Business Management positive influence on Quality of Life, presented a low power of explanation (standardized beta = 0.273).

Hypothesis H<sub>5</sub> showed that access to Communication Media exert positive influence on the Quality of Life directly and significantly, with standardized beta = 0.482.

Hypothesis H<sub>6</sub> pointed out that Leisure activities have positive influence on Quality of Life with significant effect, explaining 31% of the positive effects on quality of life, as demonstrated by the standardized beta.

Through the coefficient of determination R<sup>2</sup>, it was visualized that the variable Business Management (GN) is explained, in average, by 50% of the variation on the construct Negotiation with Suppliers (NF). Business Management (GN) shows an average explanation of 3% on the variation of the construct Communication and 18% on the variation of the construct Leisure. The variables presented in the model, when combined in a predecessor form, explain 54% of the construct Quality of Life (QOL) (Table 3).

**TABLE 3**

**EVALUATION OF THE PROPOSED MODEL AND RESULTS**

HIPOTHESES		COEFFICIENT	STANDARD ERROR	STANDARDIZED BETA	TEST Z	P-VALUE	HIPOTHESIS
GN	←	NF 0.406	0.058	0.705	7.054	< 0.001	Accepted
Communication	←	GN 0.403	0.172	0.183	2.341	0.019	Accepted
Leisure	←	GN 0.473	0.111	0.419	4.273	< 0.001	Accepted
QV	←	GN 0.333	0.108	0.273	3.092	0.002	Accepted
QV	←	Communication 0.267	0.049	0.482	5.392	< 0.001	Accepted
QV	←	Leisure 0.335	0.102	0.31	3.265	0.001	Accepted

Note: R<sup>2</sup>: GN (Business Management) = 0.50; Communication = 0.03; Leisure = 0.18; QV (Quality of Life) = 0.54.

Source: Elaborated by the authors.

## 5 FINAL CONSIDERATIONS

The main purpose of this study was to verify the influence of microcredit on the development of microbusinesses and on the quality of life of the microentrepreneurs' families in the State of Minas Gerais, Brazil, from the perspective of 250 borrowers from a bank that provides oriented and productive microcredit in that Brazilian State. To achieve this goal, we developed a quantitative research and, using the softwares SPSS and AMOS, descriptive statistical techniques and analysis of structural equation models were applied.

The results confirm the larger demand for microfinance institutions by women, as identified in the studies of Karlan and Goldberg (2007), Garrido and Calderón (2006), and Vijayamohan and Asalatha (2011).

In the institution, the loan guarantee is based on a guarantor. This aspect mischaracterizes social bonds and the primary function of microfinance institutions (access to credit services through the endorsement of solidarity). Such reality proves the economic personification of the institution. Most studies points out that the MFIs should not have such feature, since so they distance themselves from the major role of microcredit, which should be serving the lower social classes. This reality is confirmed by observing that most of the respondents already had their own households (73.1%), before the access to microcredit.

Although the PNMPO does not contemplate, in its general objectives, improvement in quality of life, respondents pointed out improvements not only in their enterprises but also in the lives of their families.

The changes in economic activity noticed by the microentrepreneurs after obtaining micro-credit include: increasing the customers base, improving the control of accounts receivable and accounts payable, improving negotiations with former suppliers, acquisition of new products and increased profit. Despite these changes, a large portion (46.8%) of respondents remains in the informal sector (yet).

As for the changes in quality of life, respondents reported improvement in care with family clothing and hygiene, in the purchase of suitable school supplies for their children, improvement in food and in the possibility of enjoying leisure activities more frequently.

Besides the raised hypothesis that microcredit constitutes a factor of social development and exerts influence on quality of life of families of borrowers, it was found that the negotiation with suppliers exerts positive influence on the business management. The business management, in turn, exerts positive influence on the access to the communication media, the leisure activities and the quality of life. The access to the communication media exerts positive influence on the quality of life. And leisure activities exert positive influence on the quality of life.

The variables presented in the model, when combined in a predecessor form, explained 54% of the variation in the quality of life of the families benefited with microcredit, confirming the proposed hypothesis.

It is noteworthy that it was not the intention of this study to isolate the variable microcredit, but to check whether borrowers showed development and improvement in their quality of life, according to the perception of the own microentrepreneurs. It was not intended to compare with other groups, precisely because there are intervenient and subjective variables impossible to be completely isolated.

As much as the activities of microcredit are quite widespread in Brazil, the impact assessments of credit policies in support to microentrepreneurs, especially those working in the informal sector, as well as the benefits of microcredit are (still) incipient (Cacciamali, Matos, & Macambira, 2014), making it necessary to continue with the investigations. So, future research covering other groups of microentrepreneurs and other Brazilian regions is suggested in order to compare possible relationships and understand the gaps, which are: lack of endorsement of solidarity, the persistence of informal jobs, the real purchasing power of the groups, possible governmental benefits, the perception of quality of life and the true role of these institutions in the market.

## DESENVOLVIMENTO DOS MICRONEGÓCIOS E A QUALIDADE DE VIDA DAS FAMÍLIAS DOS MICROEMPREENDORES

### RESUMO

**Objetivo:** Verificar a influência do microcrédito no desenvolvimento dos micro-negócios e na qualidade de vida das famílias dos microempreendedores, a partir da elaboração de um modelo de equações estruturais pautado na percepção dos próprios mutuários.

**Originalidade/lacuna/relevância/implicações:** Nos últimos 15 anos, apenas 9,3% dos estudos analisados (nacionais e internacionais) contemplavam o tema qualidade de vida pós-acesso ao microcrédito. No Programa Nacional de Microcrédito Produtivo, a qualidade de vida não é mencionada em seus objetivos gerais, apresentando-se lacunas a serem investigadas.

**Principais aspectos metodológicos:** Desenvolveu-se uma pesquisa quantitativa, com amostra probabilística constituída por 250 microempreendedores mutuários

do microcrédito. Com auxílio dos *softwares* SPSS e AMOS, aplicaram-se técnicas estatísticas descritivas e análises de modelos de equações estruturais.

**Síntese dos principais resultados:** Observou-se que a gestão do negócio exerce influência positiva no acesso aos meios de comunicação, no lazer e na qualidade de vida. O acesso aos meios de comunicação e às atividades de lazer exerce influência positiva na qualidade de vida. As variáveis utilizadas, quando associadas de forma antecessora, explicam 54,0% das transformações na qualidade de vida das famílias beneficiadas.

**Principais considerações/conclusões:** Os resultados permitem concluir pela preferência do programa analisado em beneficiar mulheres e em fomentar sua atividade econômica. Verificou-se ausência de aval solidário e a necessidade de avalista para a concessão de empréstimo. Os empreendedores, em sua maioria, trabalhavam na informalidade, apesar dos incentivos governamentais. Confirmou-se a melhoria nos empreendimentos e na qualidade de vida das famílias, após o fomento de microcréditos, pela aquisição de bens de consumo, educação, saúde e lazer.

## **PALAVRAS-CHAVE**

Microcrédito. Micronegócios. Microempreendedores. Qualidade de vida. Equações estruturais.

## **DESARROLLO DE MICRONEGOCIOS Y LA CALIDAD DE VIDA DE LAS FAMILIAS DE MICROEMPRESARIOS**

### **RESUMEN**

**Objetivo:** Comprobar la influencia del microcrédito en el desarrollo de microempresas y en la calidad de vida de las familias de microempresarios, desde la elaboración de un modelo de ecuación estructural basado en la percepción de los prestatarios.

**Originalidad/laguna/relevancia/implicaciones:** En los últimos 15 años, fue percibido que solamente 9,3% de los estudios analizados (nacionales e internacionales) contemplaban el tema calidad de vida después del acceso al microcrédito. El Programa Nacional Brasileño de Microcrédito Productivo Orientado (PNMPO) no menciona calidad de vida en sus objetivos generales, presentando-se así brechas a ser investigadas.

**Principales aspectos metodológicos:** Se ha desarrollado aquí una investigación cuantitativa, con muestra probabilística consistiendo de 250 microprestatarios de microcrédito. Con la ayuda de los softwares SPSS y AMOS, técnicas estadísticas descriptivas y análisis de modelos de ecuaciones estructurales han sido aplicadas.

**Síntesis de los principales resultados:** Se observó que la gestión empresarial ejerce influencia positiva sobre el acceso a los medios de comunicación, la recreación y la calidad de vida. El acceso a las actividades de recreación y a los medios de comunicación ejerce influencia positiva en la calidad de vida. Las variables utilizadas, cuando se asocian de forma antecesora, explican 54.0% de las transformaciones en la calidad de vida de las familias beneficiadas.

**Principales consideraciones/conclusiones:** Los resultados permiten concluir la preferencia del programa en beneficiar las mujeres y fomentar su actividad económica. Se verificó ausencia del endoso solidario y la necesidad de una garantía para el préstamo. Los microempresarios, en su mayoría, trabajaban en el sector informal, a pesar de los incentivos del gobierno. Se confirmó la mejora en las empresas y en la calidad de vida de las familias, después de la promoción de microcréditos, a través de la compra de bienes de consumo educación, salud y recreación.

## PALABRAS CLAVE

Microcrédito. Microempresas. Microempresarios. Calidad de vida. Ecuaciones estructurales.

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