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Research Article

The Dynamics of Microenterprises: Implications on Poverty Reduction in Nepal

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Abstract

Microenterprises are very small formal and informal non-agricultural activities operated by individuals or micro-organizations encounter different challenges due to changes in resources, market, technologies, know-how, and so on. To survive in such complex and changing entrepreneurial environment, microenterprises need be capable of coping with dynamics of resources, market, technologies, and know-how meanwhile fighting against the poverty they are muddling through. In this context, using primary data enumerated from 160 microentrepreneurs from control and experimental local environments from Parbat and Kaski districts in the Gandaki province of Nepal, this study has analyzed the microenterprises taking dynamics of technologies, resources, market and know-how for their implication to poverty alleviation. On average, there is an increase environment conducive to microenterprise operation. Despite the products, technologies, and know-how being basically outdated, the dynamics of resources, market, and know-how appear having significant positive effects on microenterprises. There is an improvement in employment status, economic status, access to education, access to health services, access in communication, household assets, the capacity to spend more on celebrating socio-cultural festivals and livelihood of the family members over the period after being involved in microenterprises, hence, microenterprise dynamics have confirmed significant positive implications in poverty reduction in Nepal.

Keywords: microenterprise; microenterprise dynamics; measure of poverty; poverty recuction; Nepal

Introduction

Microenterprises are very small formal and informal non-agricultural activities operated by individuals or micro-organizations encounter different challenges due to changes in resources, market, technologies, know-how, and so on. A formal microenterprise is basically registered with a regulatory entity whereas the informal microenterprises basically refer to the family-based enterprises initiated to create self-employment. Microenterprises tend to provide employment for the entrepreneur himself or herself as well as for other family members and generating incomes (Mann, 2002). They produce lower-cost goods and services for poor people (Kirkpatrick & Hulme, 2001). Theoretically, microenterprises strive to empower poor people to become economically self-sustained (Akpinar, 2004) and graduate from poverty thereby secure a sustainable livelihood with self-respect. They are not only common avenues for employment and economic activities and economic safety nets for sustainable livelihood in the least developed, developing and low-income countries, but

also in most developed countries as well. Practically, microenterprises are numerous and they cover every activity across rural and urban areas in the United States (Bowen-ellzey *et al*., 2015) and elsewhere. Microenterprises have also granted as an intervention and one of the strategies to combat poverty and promotion of sustainable livelihood.

The informal sector economy comprises a significant share of the economy and employs a majority of non-agricultural workers in many less developed countries (Leino, 2009). According to the World Bank Report (2019: viii), "2 billion people already working in the informal sector—unprotected by stable wage employment, social safety nets, or the benefits of education—new working patterns are adding to a dilemma that predates the latest innovations." Microenterprise sector has a significant contribution to employment and poverty reduction around the globe. In 2010, employment in microenterprises contributed 93 percent of the total non-agricultural employment in Nepal which was next to Timor-Leste (100%) and Pakistan (96.2%) when the contribution of informal microenterprises to the total non-agricultural employment was 78.4 percent in Pakistan (The Workd Bank, 2012). In the case of Nepal, the contribution of informal microenterprises to the total non-agricultural employment was estimated over 75 percent in 2010 whereas according to the World Development Report, 2019, 98 percent of the total workers are engaged in the informal economy, in Nepal which is the world's highest among low-income countries (The World Bank, 2019).

By the nature of the microenterprises, it is generally considered that established channels to uplift them and other support and services may not be well functional, particularly in terms of training, technology, resources and marketing channel. In such a situation, how they get their required support and services by themselves or at community basis would be interesting when the dynamics of microenterprises is studied. There are several economic, entrepreneurial and social theories such as resource-based theory, entrepreneurial trait theory, behavioural theory of entrepreneur, and social network theories (Barney, 1991; Cuervo *et al*., 2007; Deakins & Freel, 2003; Rauch, 2000; Veciana, 2007) that explain major characteristics, functioning and performance of entrepreneurs and enterprises. Scholars have noted a significant role of microenterprises in facilitating both men and women of the poor segment of the society in their economic empowerment, thus resulting in poverty reduction (Thapa, 2014 & 2015), a significantly high rate of female ownership in informal sector enterprises (Leino, 2009) and a significant gender differential in enterprise performance (Cooper, *et al*., 1994; Rosa, *et al*., 1996; Mead & Liedholm, 1998; Liedholm, 2002; Davidsson & Honig, 2003; Okurut, 2008; Stam, *et al*., 2008; Kim & Shan, 2011). The microenterprises having greater performance are likely to contribute more to poverty reduction. Thapa (2015) in a study conducted in Nepal has observed a significant influence of gender, managerial skills, need for achievement, need for autonomy, creative tendency, internal locus of control, enterprise age, enterprise size, initial financial constraint and social network on microenterprise performance while broad recommendations for planning are made on the modernization of agriculture and its forward linked agro-processing, tourism, service-oriented activities, and clean technology-based potentials activities, which eventually transforms rural informal microenterprises to formal microenterprises (Tiwari, 1998).

Despite the fact of a large share in creating employment and income to the lower-income group of people in a country and contributing in inclusive growth, improving livelihood and poverty reduction, the informal microenterprises are unorganized and largely ignored by the government as well as other formal enterprise promoting agencies on the one hand. On the one hand they are deprived of access to formal loan, formal training and skills, use of appropriate technology and access to market. On the other hand, the present globalized world has a highly dynamic, competitive, heterogeneous and sometimes hostile market environment and every enterprise faces new challenges, thus, no option to enterprises other than to being dynamic to survive. In such environment, microenterprises not only being micro in scale, but also started with a little investment and mostly using traditional or obsolete technologies seem to encounter different challenges frequently due to changes in resources, market, technologies, know-how, and so on. Microenterprises, to survive in such complex and changing business environment must be capable of coping with dynamics of resources, market, technologies, and know-how meanwhile fighting against the poverty they are muddling through. The rapid changes in resources, market, technologies and know-how can severely influence the performance of microenterprises and their effort to break out their poverty trap. The microenterprises regardless of formal or informal establishment and operation have difficulties to compete with large enterprises, specifically in terms of quality and price (Prasad & Tata, 2009).

For the national economy umbrella, microenterprise is the umbrella pole/stick whereas other enterprises: small, medium, large, public and cooperative are the ribs. Ironically microenterprise (formal and informal) is even stronger pillar of the economic growth in a low-income country as it is creating gainful employment and generating subsistence (≅ reliable) income to a large population, normally next to agriculture. The microenterprises particularly the informal ones are deprived of access to formal loan, productive training and functional skills, appropriate technology, and organized market, yet their contribution to sustainable livelihood and poverty reduction is considered significant.

Several other additional complications may arise when the establishment and operation of informal enterprises are concerned. They are typically concerned to promotion; support and services for technology, training, and financial resources; market channels; and quality assurance. Moreover, they may be given less priority by promotional, supporting and service providing organizations, institutions or agencies; they may not be covered by formal financing institutions; bypassed by technology providers and unorganized in terms of marketing. In addition, their quality is not institutionally assured. Thus, their products may have low bargaining power in the market or buyers may give second priority to their products.

In the above theoretical and practical contexts, and the underlying problems of microenterprises this study has analyzed the dynamics of resources, market, technology use and know-how to examine the implications of the dynamics of microenterprises on poverty reduction in Nepal.

Materials and Methods

This paper is an outcome of a larger research conducted by the authors under the institutional research of the Pokhara University. To fulfil the research objectives an empirical study design and a survey design was developed for the information and data collection. As Microenterprise Development Program (MEDEP) was an initiative taken to promote microenterprises in Nepal since 1998, there were some entrepreneurs who received the desirable support and services from MEDEP whereas there were still other places and entrepreneurs who did not have those supports and services. Thus, two rural settings were conceptualized for this empirical study and two former village development committees (VDCs), the first, Tilahar VDC in Parbat district where MEDEP programme was implemented; and the second, Deurali VDC in Kaski district, where no official microenterprise programme was implemented were identified and purposively selected as the study areas. From these two study areas, as there were limited number of enterprises established and operated, the whole enterprise population (establishments) was decided to be used to obtain the data and information required. In this regard, since the expected number of respondents in the Tilahar VDC were not available in sufficient numbers this study area was extended to the adjacent areas which finally included five former VDCs namely Tilahar, Deupur, Pakuwa, Dhairing and Bajung of Parbat district. Date were collected from 160 entrepreneurs, 84 from the project area and 76 from the non-project area. Data were collected from the last quarter of 2017 to the first quarter of 2018. Apart from descriptive analysis using mean, frequency and percentage distribution of the quantitative variables, a multiple regression model was run to assess the effects of dynamics of microenterprises on poverty reduction. The microenterprise dynamics have been measured in terms of the change observed in the measures of resource dynamics, market dynamics, technology dynamics and know-how dynamics of the microenterprises. Equation (i) illustrates the multiple regression model.

$$PVRD = \beta 0 + \beta 1XRSDM + \beta 2XMKDM + \beta 3XTCDM + \beta 4XKHDM + \varepsilon t \quad \ldots\ldots\ldots\ldots \text{(i)}$$

Where,

PVRD — PVRD refers to the poverty reduction, which is the dependent variable in this study.

β0 — β0 is a statistical symbol representing the intercept or constant. β in other cases represents the regression beta weight or coefficient for each respective independent variable.

RSDM — RSDM refers to the resource dynamics of microenterprises. It is a regression factor derived from factor analysis.

MKDM — MKDM refers to the market dynamics of microenterprises. It is a regression factor derived from factor analysis.

TCDM — TCDM refers to the technology dynamics of microenterprises. It is a regression factor derived from factor analysis.

KHDM — KHDM refers to the know-how dynamics of microenterprises. It is a regression factor derived from factor analysis.

εt: — εt refers to a random error term that represents the influence of other variables not included in the model.

Results and Discussion

Social, Demographic and Economic Characteristics of Microentrepreneurs

Before analyzing the dynamics of microenterprises in terms of their resources, market, technology and know-how, it makes sense to describe with a view to understand the socio-demographic and economic characteristics of the microentrepreneurs as well as the enterprise related and functional characteristics of the microenterprises in the study area. For this purpose, all the available entrepreneurs from the study areas were enumerated as respondents and social, demographic and economic characteristics of microentrepreneurs include gender, caste/ethnic affiliation, level of literacy and education, occupations, and main sources of income. Variables were incorporated in description of characteristics of the microentrepreneurs.

Gender representation of the respondents:

Gender refers to a social stratification of a person which is related to the roles, responsibilities and the domains of work of a person. In the Nepalese society where, patriarchal values are still widely practiced they may have singificant impacts in various facets of life including the concept of microenterprise, preparedness for operating an microenterprise, actual operation of a microenterprise and the actual performance in an entrepreneur. Among the total respondents surveyed for the purpose of this study, over two-thirds of them (68.8%) were female whereas the number of the male is relatively low (31.3%) (table 1). This result, to a great extent, supports the findings of the study of Leino (2009) where he has argued that a significantly high rate of female ownership in informal sector enterprises. This result, to a great extent, supports the findings of the study of Leino (2009) where he has also argued that a significantly high rate of female ownership in informal sector enterprises. The reasons behind such a larger number of female microentrepreneurs compared to males in this study could be due to the nature of the microenterprises. Microenterprises are very small businesses run in the household with little investment and based on local resources mostly creating leisure-time self-employment to the entrepreneur himself/herself. In Nepalese culture, rural women largely involve in the activities in the domestic sphere and men involve in the public sphere. Men do jobs and involve other economic activities outside the home. Women due to the nature of their work in the domestic sphere also do not have much cash earnings. They have to rely on the cash provided by husbands, father or other male members of the family which limits their freedom to spend money for their necessities. Microenterprises can be a source of their cash earning. Therefore, women were observed involved more in microenterprise than men counterparts.

Caste/ethnic affiliation of the respondents:

Nepal is a country with enormous diversity of population groups. According to the National Statistics Office, 2023 there were over 142 caste/ethnic groups in Nepal. Among these 142 groups, the largest population belongs to Chhetri (16.4%) whereas the smallest population of only 36 people belongs to Narang. These caste/ethnic groups are broadly classified as Brahmin/Chhetri, Janajati, Dalit and others. Traditionally, on the basis of religious sanctions, outcome of legal provisions during different regimes, advantages gained from family-base, and traditional practices of certain occupation different caste/ethnic groups perform different occupations. This study revealed relatively a higher percentage of Janajati (40.6%) engaged in microenterprises from the study area followed by Brahmin/Chhetri (36.3%), and Dalits and other groups (23.2%) (Table 1).

Educational attainment of the respondents:

The Educational attainment basically reflects the horizon of knowledge that strengthens creativity and analytical skills of a person to live a dignified life. It also have an effect on the capability of a person to run enterprise/business consequently determining the performance of the enterprise. This study revealed a largest group of entrepreneurs who have completed the Secondary School Education (SEE) level (which is Grade 10 education) whereas only a small percentage of the entrepreneurs (9.4%) have attained education above SEE. Ironically, more than one-fourth of the entrepreneurs (28.8%) do not have formal education and less than one fifth (15.6%) have completed primary level only (Table 1).

Source of livelihood and income of the respondents:

Microenterprises given their size (including the economy of scale) may not provide enough employment and income to the microentrepreneurs to manage the livelihood of the family. Therefore, besides the income from microenterprise, microentrepreneurs can have income from several other sources as well. This study observed that about one third (33.1%) of the respondents consider microenterprise as a main source of their incomes followed by agriculture (31.3%), foreign job employment (13.1%), job employment (7.5%), other businesses (6.3%), pension (5.6%), daily wages (1.3%) and others (1.9%) respectively (Table 2).

Table 1: Socio-demographic and economic characteristics of the respondents

Socio-demographic characteristics	Categories	N	Percent
Gender	Female	110	68.8
	Male	50	31.3
	Total	160	100.0
Caste/Ethnicity	Janajati	65	40.6
	Brahmin/Chhetri	58	36.3
	Dalit and others	37	23.2
	Total	160	100.0
Educational Attainment	No Formal Education	46	28.8
	Primary Level	25	15.6
	Up to SLC (School Leaving Certificate)	74	46.3
	Above SLC (School Leaving Certificate)	15	9.4
	Total	160	100.0

Source: Field Survey, 2017/2018

Table 2: Source of income of the respondent

Sources	Main Source of Livelihood		All Sources of Livelihood	
	Frequency	Percent	Frequency	Percent
Microenterprises	53	33.1	149	37.2
Agriculture	50	31.3	114	28.4
Foreign Job Employment	21	13.1	56	14.0
Job Employment	12	7.5	30	7.5
Other Business	10	6.3	23	5.7
Pension	9	5.6	19	4.7
Daily Wages & Other / /Sources	5	3.2	6	2.5
Total	160	100.0	401	100.0

Source: Field Survey, 2017/2018.

Dynamics of Microenterprises

Understanding the dynamics of an enterprise is very important to gauge its sustainability in the present competitive, heterogeneous and hostile business environment as well as the change in poverty. This study has diagnosed the dynamics of resources, market, technology and know-how of microenterprises which are briefly described below.

Dynamics of Resources of Microenterprises

Dynamics of resources of microenterprises in this study are mainly assessed through the change in the availability of raw material, price of raw material, interest rate, and accessibility of loan over the last three years. The dynamics of each resource used is briefly describe below.

Raw Materials and Change in its Availability and Price:

Raw materials are indispensable for production-oriented enterprises. Types, place of availability, accessibility, sufficiency, and change in the availability and prices of the raw materials over the periods are the key indicators of dynamics of raw materials used in enterprises. An entrepreneur must have sound knowledge and information about these dynamics and skills to handle the enterprise efficiently. This study revealed that majority microenterprises use the natural resource-based raw materials (58.1%) followed by refined (24.4%) and semi-refined raw material (17.5%) respectively. The raw materials used by a great majority of the microenterprises (83.8%) are locally available. Only a few microenterprises bring raw materials from outside the district. Raw materials used by a great majority of the microenterprises (86.9%) are

accessible throughout the year. Some microenterprises (12.5%) use seasonally accessible raw materials (Table 3).

Table 3: Dynamics of raw materials used in microenterprises

Raw Materials	Attributes	N	Percent
Types of raw materials	Natural resource-based raw materials	93	58.1
	Refined raw materials	39	24.4
	Semi-refined raw materials	28	17.5
	Total	160	100.0
Place of availability of raw materials	Locally available	134	83.8
	From other districts	26	16.3
	Total	160	100.0
Accessibility of raw materials in year	Throughout year	139	86.9
	Seasonally	20	12.5
	Rarely	1	0.6
	Total	160	100.0
Sufficiency of raw materials	Sufficiently available	142	88.8
	Not-sufficient up to the required quantity	18	11.3
	Total	160	100.0

Source: Field Survey, 2017/2018.

Table 4: States of raw materials used in microenterprises within the last three years

State of Raw Materials	Attributes	N	Percent	Value assigned	Index
Availability of raw materials	Moderately decreased	10	6.3	-0.5	-5
	No change	65	40.6	0.0	0.0
	Moderately increased	67	41.9	0.5	33.5
	Highly increased	18	11.3	1.0	18
	Total	160	100.0		46.5/160=0.29
Price of Raw Materials	Highly decreased	1	.6	-1.0	-1.0
	Moderately decreased	7	4.4	-0.5	-3.5
	No change	31	19.4	0.0	0.0
	Moderately increased	78	48.8	0.5	39.0
	Highly increased	43	26.9	1.0	43
	Total	160	100.0		77.5/160=0.484

Source: Field Survey, 2017/2018

Raw materials used by a great majority of microenterprises (88.8%) is sufficiently available. However, some of the microenterprises (11.2%) face shortages of supply of raw materials up to the required quantity. In the last three years, majorities of microenterprises (52.2%) have experienced an increase in the availability of raw materials for their enterprises whereas some of them (6.3%) have experienced a moderate level of decrease during the same time.

More than two-fifth of the microenterprises (40.6%) have not experienced any change in the availability of raw materials at that time. Regarding the change in the price of the raw materials used in the microenterprises, in the last three years, over three-fourth of them (75.7%) have experienced an increase in the price. Among them, more than one-fourth of them (26.9%) of them have experienced a highly increased price of raw materials and about half of them (48.8%) have experienced a moderate increase in during that period. Nevertheless, a few of them (5%) have also experienced a decrease in the price of raw materials in the same period (Table 4).

Loan, interest rate and change in interest rate:

Financial capital is one of the important resources required to run enterprises. The loan is one of the sources of financial capital to invest in enterprises. Access to loan, interest rate and change in the interest rate over the period are some of the measures of resource dynamics of microenterprises. This study showed a large majority of microentrepreneurs (70%) did not receive any loan to operate microenterprises

whereas less than one-third of them (30%) received loan for operating a microenterprise (Fig. 1).

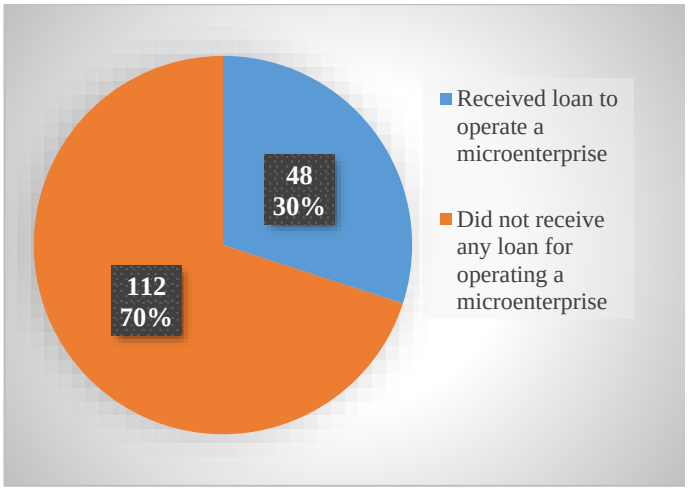

Fig.1: Status of loan for operation of microenterprises
Source: Field Survey, 2017/2018

Moreover, the average rate of interest on the loan paid by microentrepreneurs is 6.79 percent (Table 5). The greater value of standard deviation than the mean value indicates that the rate of interest varies significantly among the loan providers. It varies from 0% to 24% annual (Table 5). The highest rate of interest could be on the loan normally borrowed from neighbours without any collateral.

The interest rate change over the last three years over receiving loans was observed. A few microentrepreneurs (2.7%) have experienced a moderate decrease in the interest rate, less than half (46.3%) have experienced an increase and about a half of them (50.9%) did not experience any change. (Table 5). When an aggregate change was calculated by assigning -1.0 for highly decreased, 0.5 for moderately decreased, 0.0 for no change, 0.5 for moderately increased and 1.0 for highly increased rate of interest in the last three years, an aggregate value of 0.241 was derived, which showed that the interest change was low as it fell between no change and moderately increased. (Table 6).

Market Dynamics of Microenterprises

Entrepreneurs must have sound knowledge and information about the market dynamics of the products. Change in the market of the products, price of products, competition and pace of hostility and heterogeneity in the market can have a significant influence on the performance of enterprises.

Market sufficiency for the products of microenterprises:

Market in the context of this study refers to the place to sell the products of the microenterprises as well as to purchase goods and services required for the microenterprises. Lack of sufficient market to sell the products discourages microentrepreneurs to run the business. On the other hand, if the market is sufficient, it tends to motivate microentrepreneurs to expand their business as well. This study with the total 160 responses observed that a great majority of microenterprises (85.4%) have sufficient market to sell the products of their microenterprise. Only some microenterprises (14.6%) do not have sufficient market to sell the products of their microenterprises (Fig. 2).

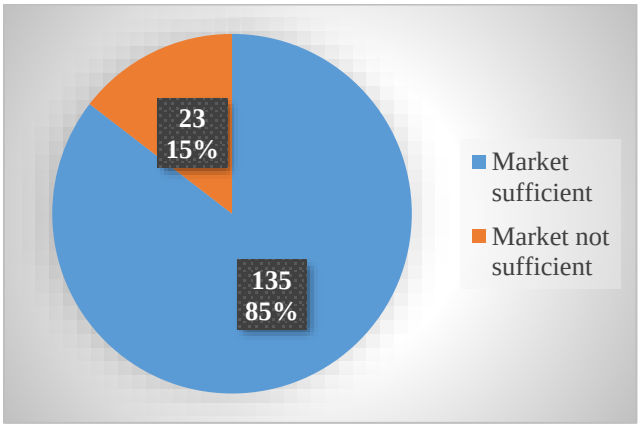

Fig. 2: Status of market sufficiency for the products of microenterprises
Source: Field Survey, 2017/2018.

Table 5: Descriptive statistics: Interest rate of loan (annual %)

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
Interest Rate of Loan	108	.00	24.00	6.7963	8.81880

Source: Field Survey, 2017/2018

Table 6: Change in interest rate in the last three years

Change in Interest Rate	N	Valid Percent	Value assigned	Index
Moderately decreased	3	2.7	-0.5	-1.5
No dhange	56	50.9	0	0
Moderately increased	46	41.8	0.5	23
Highly increased	5	4.5	1.0	5
Total	110	100.0		26.5/110=0.241

Source: Field Survey, 2017/2018

This study also observed that the duration of insufficiency highly varies among microenterprises. The shortest duration of market sufficiency was none whereas the longest duration of market insufficiency to sell the products is eight months. On average, microenterprises face market insufficiency problem for about one month (Table 7) with a standard deviation of 2.154. The greater values of standard deviation than the mean value indicates that the duration of market sufficiency varies significantly over the months.

Market dynamism:

A market is a place where enterprises keep competing with other enterprises to sell their products. Competition leads to changes in the market, price, and life of the products of an enterprise. The nature of change in the market, price, and completion over the periods indicate the dynamics of the market. Entrepreneurs must have enough knowledge and information about the market dynamics of their products. This study observed that majorities of microentrepreneurs (60.1%) have experienced an increase in the market for their products in the last three years. During the same period, about one-fifth of them experienced no change. Meanwhile about one-tenth of them experienced a decrease in the market for the products of their microenterprises (Table 8). When computed an index of of market change of the products over the last three years, an index value of 0.478 was derived, which showed that the change was moderately increasing.

Similarly, large majorities of microentrepreneurs (78.1%) have experienced an increase in the price of the products in the market in the last three years. During the same period, less than one-fifth of them (18.1%) have experienced no change in the price of the product of their enterprise. However, a few of them also experienced a decrease in price during the same period (table 8).

A majority of micro-entrepreneurs (58.8%) also agreed that the products of their microenterprises are rapidly outdated or old fashioned in the market. It means there is competition in the market and many other competitors are supplying similar products in the market. However, a few of them have not experienced such rapid change in the fashion of their product in the market. About one-third of them (36.3%) had a neutral opinion in this regard (Table 8).

Table 7: Duration of insufficiency of market in a year for product of microenterprise

Duration of Insufficiency	N	Minimum	Maximum	Mean	Std. Deviation
Insufficiency (in Months)	107	0	8	1.00	2.154

Source: Field Survey, 2017/2018.

Table 8: Market dynamism in the last three years

Measures of Market Dynamics	Attributes	N	Percent	Value assign for change	Index
Change in the market of the products	Highly decreased	2	1.3	-1.0	-2.0
	Moderately decreased	15	9.4	-0.5	-7.5
	No change	31	19.4	0	0
	Moderately increased	90	56.3	0.5	45.0
	Highly increased	22	13.8	1.0	22.0
	Total	160	100.0		57.5/160=0.359
Change in the price of the product of microenterprise	Moderately decreased	6	3.8	-0.5	-3.0
	No change	29	18.1	0	0.0
	Moderately increased	104	65.0	0.5	52.0
	Highly increased	21	13.1	1.0	21
	Total	160	100.0		70/160=0.437
Products and services being rapidly outdated/old- fashioned in the market	Strongly disagree	2	1.3	-1.0	-2.0
	Somewhat disagree	6	3.8	-0.5	-3.0
	Neutral	58	36.3	0.0	0.0
	Somewhat agree	50	31.3	0.5	25.0
	Strongly agree	44	27.5	1.0	44.0
	Total	160	100.0		64/160=0.4

Source: Field Survey, 2017/2018.

Dynamics of Technology Used in Microenterprises

Technology refers to the machines and methods that are used to improve the efficiency of the production process of goods and services by enterprises. Knowledge and information about technologies update in the market are essential for an entrepreneur to survive in this competitive environment. A brief description of the use of technology, support technology transfer to microenterprise and dynamics of technology is presented below:

Type of technology used in microenterprises: This study with the total 160 responses observed that majorities of microenterprises (56.9%) have used new technologies to improve the production process and quality of goods and services provided by the enterprises. About two-fifth of them (42.5%) are still using traditional technologies for the same (Fig. 3).

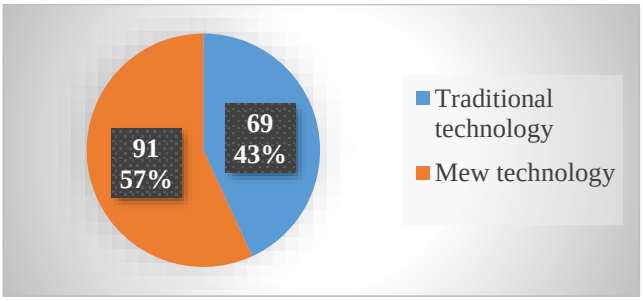

Fig. 3: Type of technology used in microenterprises
Source: Field Survey, 2017/2018

Dynamics of technologies:

Dynamics of technology refers to the change in the development of technology, accessibility of technology, price of technology, and the new technologies available in the market. A five category Likert Scale type of responses, highly/strongly decreased/reduced/disagreed, moderately decreased/reduced/disagreed, no change/neutral, moderately increased/changed/agreed and highly increased/changed/agreed were taken to measure the technology dynamics.

Among the microentrepreneurs surveyed for this study, some 3.8 to 5 percent of the respondents responded that they do not know about the technology dynamics. However, more than half of them (53.1%) responded that there is no such significant change in technological development in the last three years. Morever, over two-fifth of them (42.6%) agreed on an increase in technological development in the same period. (Table 9). From such categorical response an aggregate change was calculated for the four measures of technology dynamics by assigning -1.0 for highly highly/strongly decreased/reduced/ disagreed, -0.5 for moderately decreased/reduced/disagreed, 0.0 for no change/neutral, 0.5 for moderately increased/agreed and 1.0 for highly increased/agreed values.

Table 9: Dynamics of technologies used in microenterprises in the last three years

Measures of Technology Dynamics	Attributes	Valid response (N)	Percent	Value assign for change	Index
Change in technological development	Don't know	6	3.8		
	Moderately decreased	1	.6	-0.5	-0.5
	No change	85	53.1	0.0	0.0
	Moderately increased	58	36.3	0.5	29.0
	Highly increased	10	6.3	1.0	10.0
	Total	160	100.0		38.5/154=0.25
Change in accessibility of technology	Don't know	6	3.8		
	Reduced some how	1	.6	-0.5	-0.5
	No change	78	48.8	0.0	0.0
	Moderately increased	69	43.1	0.5	34.5
	Highly increased	6	3.8	1.0	6
	Total	160	100.0		40/154=0.259
Change in price of technology	Don't know	8	5.00		
	No change	61	38.1	0.0	0.0
	Moderately increased	77	48.1	0.5	38.5
	Highly increased	14	8.8	1.0	14
	Total	160	100.0		52.5/152=0.346
Technologies being rapidly outdated/old-fashioned	Don't know	6	3.8		
	Strongly disagree	4	2.5	-1.0	-4
	Moderately disagree	9	5.6	-0.5	-4.5
	Neutral	65	40.6	0.0	0.0
	Moderately agree	39	24.4	0.5	19.5
	Strongly agree	37	23.1	1.0	37
	Total	160	100.0		48/154=0.312

Source: Field Survey, 2017/2018.

About half of the microentrepreneurs (48.8%) responded that there is no significant change in the accessibility to technologies required for microenterprises in the last three years. However, over two-fifth of them (46.9%) agreed on an increase in accessibility to technologies in the same period. (Table 9).

A majority of microentrepreneurs (56.9%) observed that there is an increase in the price of technologies in the market in the last three years. However, about two-fifth of them (38.1%) did not observe such a significant change in the price of technologies during this period. (Table 9).

Similarly, about half of the microentrepreneurs (47.5%) agreed that there was a trend of the microenterprise products getting old fashioned or outdated rapidly in the market. However, two-fifth of them (40.6%) expressed their neutral opinion in this regard. (Table 9).

When computed an average value for the measure of technology dynamics, an average of 0.25 was observed for the changes in technology development, 0.259 for the changes in accessibility of technology, 0.346 for the changes in the price of technology, and 0.312 for agreeing if technologies are being rapidly outdated or old fashioned. These figures showed that the changes are not high in either side, rather the changes range between 0.25 and 0.346 which show that the chanages are reflecting something between no changes and moderately increased (Table 9).

Dynamics of Know-how to Run Microenterprises

Know-how, in the context of this study, refers to the practical knowledge or skills required to run microenterprises. Know-how is very important to run an enterprise efficiently. Microentrepreneurs gain practical knowledge or skills from training and workshops. This study revealed that majorities of microentrepreneurs (65%) have participated in some sorts of training required for the operation of microenterprises such as the training on modern bee farming, basic hatchery, poultry farming, knitting and cutting, bag knitting, dhaka knitting, fish farming, furniture making, goat raising, hotel management, training on operating new technologies, machine maintenance, off seasonal vegetable farming, business skills development, training of potential entrepreneurs and training of starting entrepreneurs (TOPE/TOSE), start and improve your business (SIYB), and so on. However, more than one-third of the microentrepreneurs (35%) have not yet received any training related to their business. These might be the microentrepreneurs from Deurali VDC from where general microentrepreneurs, who were not supported under any program of government or non-government organizations like MEDEP/MEDPA or Small and Cottage Industry.

The current know-how is challenged by technological development and knowledge advancement. Know-how must be updated as per requirement. Some kinds of know-how may be relevant for a longer time meanwhile some others may be outdated frequently. This study revealed that in the microenterprise sector, majorities of micro-entrepreneurs (58.8%) agreed that the entrepreneurial know-how in this sector got outdated or old fashioned rapidly in the last three years. Only a few of them (7.5%) disagreed on this. However, about one-third of them (33.8%) seemed to be neutral in this regard (Table 10).

When an average of the responses was computed by assigning a range of values between -1.0 for strongly disagree and +1.0 for strongly agree, an average value of 0.365 was observed which showed a state of neutral and moderately agreed that the know-how becomes outdated very fast (Table 10).

Table 10: Dynamics of know-how to run microenterprises during the last three years

Changes in know-how	N	Percent	Value assigned for change	Average
Strongly disagree	5	3.1	-1.0	-5
Moderately disagree	7	4.4	-0.5	-3.5
Neutral	54	33.8	0.0	0.0
Moderately agree	54	33.8	0.5	27.0
Strongly agree	40	25.0	1.0	40.0
Total	160	100.0		58.5/160=0.365

Source: Field Survey, 2017/2018.

Impacts of Microenterprises on Poverty Reduction

In rural areas, people generally run microenterprises intending to create self-employment and generate some income for livelihood. Most of the microenterprises are run when the members of the family are free from other major occupations of the family such as agriculture, job, and so on. The government of Nepal with financial and technical support from the United Nations Development Program, DFID, Australian Aid, and several other donor agencies, initiated Micro-Enterprise Development Program (MEDEP) in the late 1990s as a strategy to combat poverty in rural areas of the country.

In this study, various measures of poverty – change in employment, economic status, access to education, access to health facilities, access in communication, household assets, expenditure for celebrating of festivals and livelihood of the microentrepreneurs and their family before and after involving in microenterprises have been used to assess the effects of microenterprises on the reduction of poverty in the household of microentrepreneurs. The study revealed that a great majority of the microentrepreneurs (81.7%) agreed that microenterprises have increased employment in their families after involving in microenterprise. However, some of the microentrepreneurs (18.2%) did not notice any significant increase in employment creation in their families. A significantly great majority of the microentrepreneurs (93.7%) agreed that microenterprises have improved the economic status of their families after involving in a microenterprise. However, a few of them (6.3%) did not report any significant improvement in the economic status of the families (Fig. 4).

A large majority of the microentrepreneurs (73.1%) agreed that microenterprises have increased access of their family members to education after involving in microenterprise business. Nevertheless, over one-fourth of them (26.9%) did not notice any significant increase in access to education. Over three-fourth of the microentrepreneurs (75.8%) agreed that microenterprises have increased the access of the family members to health services. Yet, about one-fourth of them (24.2%) did not notice a significant increase in access to health services (Fig. 4). Over two-third of the microentrepreneurs (69.1%) agreed that microenterprises have increased the access of their families to communication after involving in microenterprise business. However, less than one-third of them (31%) did not report a significant increase in the access of their families to communication (Fig. 4).

A majority of the microentrepreneurs (63.5%) agreed that microenterprises have increased the household assets after involving in a microenterprise. Yet, over one-third of them (36.5%) did not notice any significant effect on increasing the household assets . Similarly, a great majority of the microentrepreneurs (84.7%) agreed on that microenterprises have increased the capacity of the entrepreneur's family to spend more on celebrating socio-cultural festivals after involving in microenterprise business. However, some of them (15.3%) argued that microenterprises do not have any significant effect on increasing the capacity of the entrepreneur's family to spend more on celebrating festivals. Likewise, a significantly great majority of the micro-entrepreneurs (89.8%) agreed that microenterprises have improved the livelihood status of the families of micro-entrepreneurs after involving in microenterprise business. Yet, a few of them (10.2%) did not notice a significant improvement on the livelihood of their families (Fig. 4).

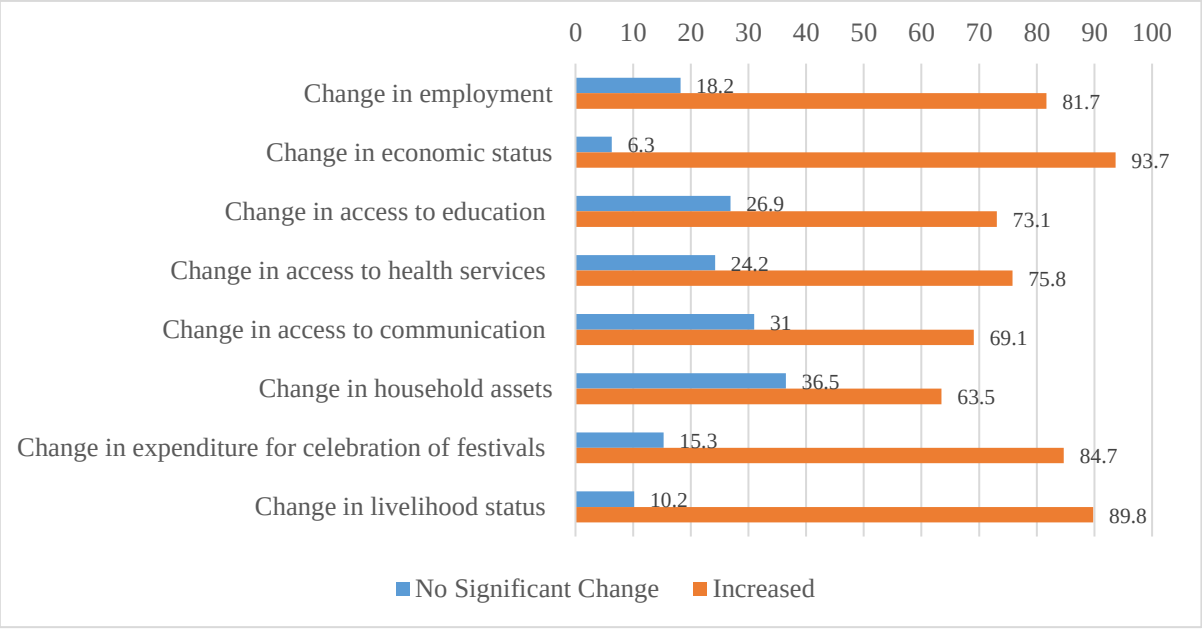

Fig. 4: Measures of impacts of microenterprises on poverty reduction after microenterprise operation
Source: Field Survey, 2017/2018.

Furthermore, the mean values of all measures of impacts of microenterprises on poverty reduction being greater than 3 in 5 points Likert scale indicate that on an average, there is an increment in employment, economic status, access to education, access to health services, access in communication, household assets, capacity to spend more on celebrating socio-cultural festivals and livelihood of the family members after involving in microenterprise business. Moreover, the study also revealed that on average, microenterprise contributes over 45 percent share on household income. The contribution of microenterprises on household assets varies from zero percent to 100 percent, which means some households do not rely on the income from microenterprises meanwhile some other households rely fully on the income from microenterprises only (Table 11).

Association between Dynamics of Microenterprises and Poverty Reduction

A correlation analysis was run to examine the preliminary association between the variables used in the study. It showed that resource dynamics (r=.567, p<.01), market dynamics (r=.190, p<.05) and know-how dynamics (r=.239, p<.01) were positively correlated with poverty reduction factor, significantly. The positive correlation between the factors of microenterprise dynamics and poverty reduction factor indicates that the microenterprise dynamics is likely to have significant positive effects on poverty reduction. Furthermore, market dynamics factor is also found to have a positive correlation with resource dynamic factor (Table 12).

Table 11: Impacts of microenterprises on poverty reduction after microenterprise operation (Descriptive statistics)

Impacts of Microenterprises on Poverty Reduction	N	Min	Max	Mean	SD
Share of income from microenterprises on the total household income (in %)	140	0	100	45.31	27.997
Employment status*	160	2	5	4.07	.687
Economic status*	160	2	5	4.18	.559
Access to education*	159	2	5	3.94	.760
Access to health services*	157	2	5	3.93	.743
Access to communication*	159	1	5	3.75	.693
Household assets*	160	1	5	3.72	.737
Expenditure for celebration festivals*	160	1	5	4.07	.719
Livelihood status*	160	1	5	4.16	.699

Note: *Change before and after involving in microenterprise business Source: Field Survey, 2017/2018

Table 12: Correlation matrix of the poverty factors

	PRRF	RDRF	MDRF	TDRF
PRRF				
RDRF	.567**			
MDRF	.190*	.343**		
TDRF	-.005	-.132	.061	
KNRF	.239**	.136	-.012	.148

Note: **p<.01; *p<.05; PRRF=Poverty Reduction Regression Factor; RDRF=Resource Dynamics Regression Factor; MDRF=Market Dynamics Regression Factor; TDRF=Technology Dynamics Regression Factor; KNRF=Know-how Dynamics Regression Factor.

Source: Field Survey, 2017/2018

Effects of microenterprise dynamics on poverty reduction

A multiple regression model was run to assess the effects of dynamics of microenterprises on poverty reduction. In the model, poverty reduction which is a regression factor was inserted as a dependent variable, and resource dynamics regression factor, market dynamics regression factor, technology dynamics regression factor, and know-how dynamics variable were inserted as independent variables.

The regression results showed that the resource dynamics, market dynamics, technology dynamics, and know-how dynamics explained about 38 percent variance in the poverty reduction (R2=38.0, F=15.005; p<.001). Durbin-Watson Statistics being closer to 1.5 indicates that the regression model does not seriously violate the assumption of autocorrelation. Similarly, VIF factor being smaller than four also tells that the model does not violate the multicollinearity assumption (Table 13).

Regarding the effects of microenterprise dynamics on poverty reduction, the regression results show that resource dynamics, market dynamics, and know-how dynamics seem to have significant positive effects on poverty reduction. Among three factors, resource dynamics factor (β=.463; p<.01; t=5.268) appears to be the strongest one affecting poverty reduction followed by know-how dynamics (β=.181; p<.05; t=2.221) and market dynamics (β=.182; p<.05; t=2.129) respectively (Table 13).

The positive effects of resource dynamics, market dynamics and know-how dynamics on poverty reduction indicate that a more frequent change in availability and price of raw materials, accessibility and interest of loans, change in the market and prices of products of the microenterprises and pace of such changes in the market, and the pace of changes in know-how related to microenterprises results in positive changes in employment, income, access to education, health services, communication, assets, expenditure in celebration of festivals and changes in livelihood status of households which means a reduction in poverty in the household of the microentrepreneurs. The microentrepreneurs who sensed challenges of such changes in resources, market, technology, and know-how, they might have prepared themselves more aggressively to cope with such changes in the business environment, therefore, resulting in more employment and income consequently contributing significantly in the poverty reduction in the household.

The technology dynamics do not seem to have significant effects on poverty reduction. It indicates that microentrepreneurs are not being able enough to manage changes in technology development and/or adoption to cope with the changing business environment and get the benefits of it in reducing poverty in the households. It tells that if microenterprises could be strengthened with capacity, knowledge, and skills to develop technologies or adopt the appropriate technologies for their microenterprises, the overall microenterprise dynamics could have even greater positive effects in poverty reduction.

Table 13: Effects of microenterprise dynamics on poverty reduction

Microenterprise Dynamics Factors	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Collinearity Statistics**	
	B	**Std. Error**	**Beta**		**Tolerance**	**VIF**
(Constant)	-.939	.356		-2.640		
Resource Dynamics	.474	.090	.463**	5.268	.821	1.219
Market Dynamics	.220	.103	.182*	2.129	.867	1.154
Technology Dynamics	-.059	.084	-.057	-.707	.965	1.036
Know-how Dynamics	.208	.094	.181*	2.221	.952	1.050

Note: Dependent Variable: Poverty Reduction; R2 = 38.0; Adjusted R2 = 35.5; F = 15.005; p<.001; Durbin-Watson = 1.258

Conclusions

This study has assessed the effects of dynamics of resources, market, technology, and know-how as the measures of microenterprise dynamics on poverty reduction in the households at local level. On an average, there is an improvement in employment status, economic status, access to education, access to health services, access in communication, household assets, capacity to spend more on celebrating socio-cultural festivals, and changes in livelihood status of the family members over the period after being involved in microenterprises. Resource dynamics, market dynamics, and know-how dynamics appear to have a significant positive effect in poverty reduction. Hence, it is concluded that microenterprise dynamics have a significant positive implication in poverty reduction in Nepal. The study revealed that resource dynamics, market dynamics, and know-how dynamics seem to have significant positive effects on poverty reduction in the households of microentrepreneurs in Nepal. Yet, technology which is considered as highly influencing factor in the operation of microenterprises, its contribution is not significant. Hence, it is concluded that microenterprise dynamics have significant positive effects on poverty reduction in Nepal. Based on the findings of the study, to make microenterprises more effective in fighting against poverty in the rural areas of Nepal, this study recommends that the concerned government authorities and non-government organizations and related policymakers to (i) focus more on strengthening microentrepreneurs in technology development and/or technology adoption; (ii) support microenterprises in developing or adopting appropriate technologies for microenterprises; (iii) focus on strengthening the knowledge, capacity, and skills of microentrepreneurs; (iv) initiate some policies and programs to strengthen the capacity of microentrepreneurs to practice research, innovation and technology development; (v) assist microentrepreneurs increase access to sufficient raw materials; (vi) strengthen policies and programs to ease for an affordable loan process for microentrepreneurs; and (vii) support microentrepreneurs in channelizing the products of microenterprises to the market.

Conflict of Interest

The authors declare no conflicts with the present publication.

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References

Akpinar BD (2004) *The evolution of microentrprise strategies in the United States*. Virginia: Virginia Polytechnic Institute and State University.

Barney J (1991) Firm Resources and Sustained Competitive Advantage. *Journal of Management* **17**: 99-120.

CBS (2018) *Statistical Yearbook of Nepal - 2017*. Kathmandu: Central Bureau of Statistics.

Cooper AC, Gimeno-gascon JY & Woo CY (1994) Initial Human and Financial Capital as Predictors of New Venture Performance. *Journal of Business Venturing* **9**: 371-395.

Cuervo A, Ribeiro D & Roig S (2007) *Entrepreneurship: Concepts, theory and perspective.* Berlin: Springer.

Davidsson P & Honig B (2003) The Role of Social and Human Capital among Nascent Entrepreneurs. *Journal of Business Venturing* **18**: 301-331.

Deakins P & Freel M (2003) *Entrepreneurship and Small Firms* (3rd ed.). Berkshire: McGraw-Hill Edition.

Kim S & Shan M (2011) Mediating Effect of Social Capital: Gender and Microenterprise Performance. *15th Annual Conference: Emerging Horizons for Social Work Research.* Society for Social Work and Research. Retrieved from http://sswr.confex.com/

Kirkpatrick C & Hulme D (2001) *Impact assessment: an overview.* EDIAS, Enterprise Development Impact Assessment Information Service. Retrieved from http://www.enterprise-impact.org.uk/pdf/CoreText.pdf

Leino J (2009) *Formal and informal microenterprises. Enterprise Note, No. 5.* Washington, DC: The World Bank.

Liedholm C (2002) Small Firm Dynamics: Evidence from Africa and Latin America. *Small Business Economics,* **18***:* 227-242.

Mann J (2002) *Briefing note on assessing the impact of enterprise development interventions in relation to DFID's target strategy paper 'better health for poor people'/.* Malawi: Kadale Consultants. Retrieved June 2017, from http://www.enterprise-impact.org.uk/feature/index.shtml

Mead DC & Liedholm C (1998) The Dynamics of Micro and Small Enterprises in Developing Countries. *World Development* **26**: 61-74.

Okurut FN (2008) Determinants of Microenterprise Performance in Uganda. *The IUP Journal of Agricultural Economics*, **5**: 66-88.

Prasad S & Tata J (2009) Micro-enterprise Quality. *IJQRMS*, **26**: 234-246. doi: 101108/2656710910936717

Rauch A & Frese M (2000) Psychological Approaches to Entrepreneurial Success. A General Model and an Overview of Findings. In AC Cooper & I T Robertson, *International Review of Industrial and Organizational Psychology* **15**: 101-141. doi: 10.1080/13594320701595438

Rauch A & Frese M (2007) Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology* **16:** 353-385.

Rosa P, Carter S & Hamilton D (1996) Gender as a Determinant of Small Business Performance: Insights from a British Study. *Small Business Economics* **8**: 463-478.

Stam E, Gibcus P, Telussa J & Garnsey E (2008) *Employment growth of new firms.* Jena Economic Research Papers. Retrieved from http://zs.thulb.uni-jena.de/receive/jportal_jparticle_00096651

Thapa A (2007) Micro-enterprises and Household Income. *The Journal of Nepalese Business Studies* **4**: 110-118

Thapa A (2014) Gender Discirmination. *NIDA Journal* 45-56.

Thapa A (2015) Determinants of microenterprise performance. *Small Business Economics: An Entrepreneurship Journal* **45**: 458-594.

The World Bank (2012) *World Development Report.* Washington DC: The World Bank.

The World Bank (2019) *World Development Report.* Washington, DC: The World Bank.

Tiwari IP (1998) *Employment creation and income generation in rural regions: Peoples, places, activities and interventions in Nepal.* Lekhnath: Center for Rural and Urban Studies and Transfiguration.

Veciana JM (2007) Entrepreneurship as a scientific research program. In AR Cuervo & S Roig, *Entrepreneurs: Concepts, Theory and Perspectives.* 23-71. Berlin: Springer.