

Dariusz Leszczyński

University of the Third Age at SGH Warsaw School of Economics

The study of key success factors in business: the case of women micro-entrepreneurs from Mazovia Province

Introduction

A critical factor in ensuring the long-term socioeconomic development of a country is creating the appropriate environment for building entrepreneurial attitudes among both women and men [Leszczyński 2013a; Lisowska 2017], as well as supporting the sustainable growth of micro-enterprises in increasingly competitive markets [Kmieć 2017]. The expansion of entrepreneurship enables the creation of new market opportunities and the exploitation of existing ones, for example, by introducing new products and services to the market, introducing different types of innovation, creating new jobs, and contributing to the well-being of local communities [Elam et al. 2019:41–55].

Entrepreneurship is an important driver of change in the contemporary global economy [Davidsson 2017]. In particular, the investigation of factors that influence the success achieved by female entrepreneurs has become, following the global financial crisis of 2007–2009, an important research topic addressed by researchers from different disciplines and examined in specific regional contexts [Kelley et al. 2015]. It is a very attractive research topic [Gołębiowski, Russel 2017] that should be examined from many different perspectives: economic, personal, sociocultural, and the external business environment [Carranza, Dhakal, Love 2018:6–11].

Different views and definitions of success in the context of women operating their own business can be classified into six broad research categories [Kirkwood 2016:594–615; Gorgievski, Ascalon, Stephan 2011:209–217]:

- 1) financial success of the firm,
- 2) economic expansion of the firm measured in terms of an increase in employment or in revenue from the sale of goods and/or services,
- 3) firm survival on the market,
- 4) stakeholder relationships, i.e., building and maintaining long-term relationships with the firm’s suppliers, customers, and employees,
- 5) achieving a work-life balance,
- 6) personal success (e.g., the sense of satisfaction from achieving business targets, the contentment of achieving career plans, receiving public recognition, etc.).

Considering the multidimensional nature of success, researchers propose using a variety of measures to evaluate this phenomenon in the context of women’s entrepreneurship [Khan et al. 2021; Razmus, Łaguna 2018]. This approach implies the use of a combination of quantitative (i.e., objective economic indicators of a firm’s performance) and qualitative measures (i.e., perceptual indicators related to personal evaluation of a firm’s performance) of business success. Their application makes it possible to explain the personal, organizational, and sociocultural success factors of female entrepreneurs [Cabrera, Mauricio 2017].

A review of the literature suggests that researchers are not unanimous on the number of key factors that comprehensively explain the phenomenon of women’s entrepreneurship [Fielden, Davidson 2010]. The success factors identified can be grouped into three major categories: personal factors, including women’s entrepreneurial attributes and skills [Alene 2020:4–8]; organisational factors relating

to the characteristics of firms operated by women [Abdul et al. 2017:17–21]; and factors associated with the external business environment [Shakeel, Yoakuang, Gohar 2020:7–12].

The bulk of scholarly knowledge published to date on the economic activity of entrepreneurs is based on research about the experiences of male business owners, who are sole proprietors, and the examination of their firms [Yadav, Unni 2016]. However, contemporary researchers argue that it is inappropriate to indiscriminately use research results on men's economic activity and draw conclusions from them about the economic performance of women business owners [Mitchell 2004].

Despite the increasing number of women-owned businesses and their growing beneficial impact on the economies of many countries around the world [Elam et al. 2021], they still remain an understudied category of entrepreneurs [Wishart 2018]. International studies indicate that self-employment among women and men differs in many respects [Veena, Nagaraja 2013]. For example, these differences relate to: motivation to operate one's own business [VISA 2019]; a propensity for risk-taking [Abdieva, Sulaimanova, Karymshakov 2019]; networking and participation in social networks [Klyver, Grant 2010]; goals to be pursued in business [Gottschalk, Niefert 2013]; business financing [McGrath Cohoon, Wadhwa, Mitchell 2010]; human capital resources [Khalife, Chalouhi 2013]; leadership style [Burke, Collins 2001]; the way business is managed [Mukhtar 2002]; and economic performance [Fairlie, Robb 2008].

The study reported here¹ is a response to the call made by many researchers, drawing attention to the need for empirical research on women's entrepreneurship in Central and Eastern European countries [Ramadani et al. 2015; Leszczyński 2013b]. It fills a research gap on the examination of a variety of factors that positively influence the achievement of business success by female entrepreneurs in the context of the Polish experience [Leszczyński 2016a; 2016b]. The study's findings add to the body of scientific knowledge on Polish women who run their own businesses by developing a theoretical research model that describes this business activity. The model was empirically validated on the population of women micro-entrepreneurs operating in Mazovia Province.

The aim of the study is to determine the key factors positively influencing the achievement of success in business by Polish female micro-entrepreneurs from Mazovia Province.

Theoretical model, research thesis, and hypotheses

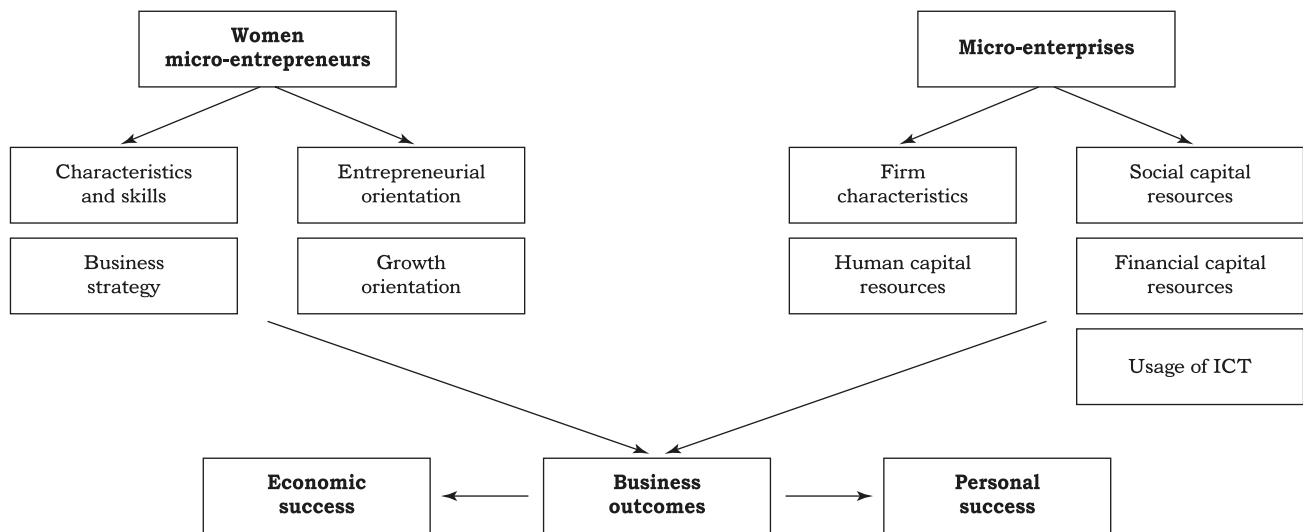
The theoretical research model developed by the author [Leszczyński 2012; 2013b] is grounded in an extensive review of the literature on women's entrepreneurship and three influential theoretical concepts. The first theoretical concept is related to B. Wernerfelt's [1984] academic achievements and his contribution to the resource-based view of the firm theory, which the researcher used to analyse the firm's competitive advantage in the market. The second is associated with the theoretical model of W.B. Gartner [1985], which was used to explain the process of creating a new business venture. In turn, the third refers to the theoretical model developed by D.J. Storey [2000], which was employed to analyse the key factors that positively influence the growth of small firms in the market.

The research model is presented in Figure 1. It shows the relationship between the examined business success factors and the personal and economic success achieved by firms owned or co-owned by Polish women micro-entrepreneurs. Economic success was measured using the dependent variable, referred to in the study as "composite business performance of the micro-enterprise." It was computed using a 7-point itemized rating scale. In turn, personal success was measured on the basis of the perceptual opinions of women micro-entrepreneurs (using categorical variables) relating to the most important goal to be accomplished in business².

The examined predictors of business success were grouped into two research categories presented in the model. The first shows variables describing the socio-demographic characteristics and business skills of female entrepreneurs, while the second presents variables relating to firm characteristics and resources held by micro-enterprises owned or co-owned by women.

Socio-demographic characteristics and women's essential entrepreneurial skills relate to independent variables such as the entrepreneur's gender and age, formal education, marital status, work experience, managerial and industry-related experience, or family members' track record and history in business. Researchers in the field of entrepreneurship tend to share the view that these variables are not sufficient to fully explain the phenomenon of female entrepreneurship in every dimension of its complexity [Robichaud, Cachon, Haq 2010:40–41].

Figure 1. Theoretical research model depicting business success factors of women micro-entrepreneurs from Mazovia Province



Source: own elaboration.

Entrepreneurial orientation describes the activities, behaviours, and business practices carried out by women business owners, understood as a strategy-making process that is used to establish a competitive advantage in the market. The main components of this concept, consistently reported in the literature, are innovation, risk-taking propensity, and pro-activeness, defined as the ability to anticipate and stay ahead of competitors' actions [Rauch et al. 2009:763–764].

R.M. Grant [2016:15–16] defines business strategy as “the means by which individuals or organisations achieve their objectives.” A properly developed strategy consists of the following elements: coherent and concisely formulated goals that are long-term in nature; a thorough understanding of the firm's business environment; and a reliable evaluation of the firm's resource holdings. For market success, the formulation of a business strategy and its subsequent implementation are important elements [Leszczyński 2016b; Lemańska-Majdzik 2009].

Firm growth is the focus of research undertaken by many scholars [Davidsson 2016]. This notion is used to measure changes in the size of an organisation (e.g., an increase in sales of goods and/or services) when a business is expanding. Growth can also describe a firm's expansion process, which results in an increase in the firm's assets or an improvement in the quality of management of the firm's operations [Davidsson, Achtenhagen, Naldi 2010]. Research shows that small and medium-sized enterprises go through dif-

ferent stages of growth [Gupta, Guha, Krishnaswami 2013]. The concept of “growth orientation” captures the choices and decisions made by female entrepreneurs when the aim of these efforts is to expand the business in the near future [Elam et al. 2021].

Human capital is a notion that describes the intangible economic value of an employee's attributes such as age, education, knowledge, work experience, and skills [Parker 2009:113–119]. Human capital theory posits that a firm's employees can increase their productive potential by becoming better educated and by participating actively in vocational training [Ross 2021]. Research indicates that human capital resources (e.g., skills possessed) play an important role in women's business start-ups [Brush et al. 2017].

P. Davidsson and B. Honig [2003:307] define social capital as “the ability of (economic) actors to extract benefits from their social structures, networks, and relationships (in organisations).” Social capital includes such groups as immediate and extended family, close friends, local communities, and business and work contacts [Parker 2009:119–121]. Women entrepreneurs can benefit from engaging in personal and professional social networks because these contribute to the short-term survival of the business and also to its long-term prosperity in the marketplace [McGrath Cohoon, Wadhwa, Mitchell 2010].

Female entrepreneurs who strive to succeed in a competitive market need to raise sufficient financial capital from various sources (e.g., own funds, bank loans) to finance ongoing operations and ensure the

long-term growth of their firms [Carter, Marlow, Bennett 2012]. Research on women's business ventures indicates that they often had less financial capital when starting their own firms compared to men [Carter, Allen 1997]. This shortage of funds when starting a business, in the case of women-owned firms, negatively affects their economic performance and prospects for future growth in the market [McAdam 2013].

Information and communications technology (ICT) is an integral feature of the modern world. This technology has significantly transformed the way businesses operated by female entrepreneurs are managed [Bhowal 2020]. ICT is now regarded as one of the most important factors affecting the profitability and growth of businesses around the world [Stair Jr, Crittenden, Crittenden 1989]. ICT implementation enables firms to reduce operating costs, improve management efficiency, and increase operating profits [Nordin, Hamid, Woon 2011].

Firm characteristics (organisational attributes) include variables such as firm age, firm size, number of founders, legal form, initial start-up capital, sources of financing, and the amount of earnings reinvested in the firm [Parker 2009:319–324]. Research shows that the size of the firm's management team [Westhead, Howorth 2006], operating the business as a limited company [Capelleras, Greene 2008], and using different sources of financing [Westhead, Cowling 1995] are correlated with the owners' intentions to

pursue business growth. Studies reveal that female entrepreneurs are less ambitious when it comes to the growth of their firms compared to male business owners. This may be explained by sociocultural factors (e.g., social expectations, stereotypes, norms, cultural considerations, roles attributed to women and men in society), and the extent of institutional support for childcare or policies aimed at reducing gender inequality [Darnihamedani, Terjesen 2020].

The theoretical research model, shown in Figure 1, was used to formulate the research thesis and ten research hypotheses.

For the purpose of this study, the research thesis was formulated as follows:

- 1) success accomplished in business (measured in terms of economic performance) is positively correlated with the social-demographic attributes and business skills of entrepreneurial women, as well as with the resources held and the characteristics of micro-enterprises operated by women,
- 2) the combined positive effect of the investigated independent (explanatory) variables on the economic performance of micro-enterprises owned or co-owned by women makes it possible to distinguish micro-enterprises with better economic performance from those that have not been successful in business.

In addition, ten research hypotheses were formulated, as shown in Table 1.

Table 1. Research hypotheses tested in the course of the study

No.	Research hypothesis tested
H1A	There is a positive relationship between the age of women micro-entrepreneurs and business performance.
H1B	There is a positive relationship between the completed level of education of women micro-entrepreneurs and business performance.
H1C	There is a positive relationship between the business experience of women micro-entrepreneurs and business performance.
H2	There is a positive relationship between the entrepreneurial orientation of women micro-entrepreneurs and business performance.
H3	There is a positive relationship regarding the use of a business strategy in business management by women micro-entrepreneurs and business performance.
H4	There is a positive relationship between the growth orientation of women micro-entrepreneurs and business performance.
H5	There is a positive relationship between human capital resources held by women micro-entrepreneurs and business performance.
H6	There is a positive relationship between social capital resources used by women micro-entrepreneurs and business performance.
H7	There is a positive relationship between financial capital resources held by women micro-entrepreneurs and business performance.
H8	There is a positive relationship regarding the use of information and communications technology (ICT) by women micro-entrepreneurs and business performance.

Source: own elaboration.

The research hypotheses³ were empirically validated using bivariate linear regression models. This analysis made it possible to evaluate the usefulness of the investigated independent variables as predictors of business success achieved by female entrepreneurs in terms of the direction (positive or negative) and the magnitude of their impact (i.e., the strength of the relationship between the variables in the surveyed population of firms) on the economic performance of the studied micro-enterprises. In turn, the combined effect of independent variables on the economic performance of micro-enterprises operated by women was empirically tested using three multivariate regression models. This analysis enabled the selection of the best combination of success factors (predictors) and the model with the highest explanatory power, as measured by the adjusted coefficient of determination R^2 .

Research methods and data

The population from which the survey sample was drawn consisted of micro-enterprises registered in Mazovia Province, operating in all sectors of the national economy, whose owners or co-owners were women. These firms were selected for the study using a systematic sampling method. A direct link to the web-based questionnaire was sent to 3,000 women micro-entrepreneurs, 309 of whom completed the survey questionnaire.

The design, pilot study, and use of the online questionnaire for the survey was outsourced to a professional public opinion and marketing research firm, which gathered the empirical data in accordance with accepted research standards⁴. The survey was carried out using combined data collection methods consisting of CAWI (computer-assisted web interviewing) and CATI (computer-assisted telephone interviewing) from 10 to 30 September 2014.

Analysis of the gathered empirical data was performed using IBM® SPSS® Statistics version 24 software. Exploratory factor analysis was used in the preliminary study to extract four independent (explanatory) variables and one dependent (predicted) variable using data collected from an internet-based questionnaire. These variables were measured using a 7-point itemized rating scale, a 7-point comparative scale, or a 7-point Likert scale. For categorical variables (measured on a nominal or ordinal scale) that had more than two categories as predic-

tors, binary variables were created using frequency distribution tables for each variable in order to be included in bivariate linear regression and multivariate (multiple) linear regression models.

The main part of the study was conducted by means of bivariate linear regression, and the obtained results served to validate the formulated research hypotheses. In the final part of the study, three statistical models (models A, B, and C) were built and tested using multivariate (multiple) linear regression. This approach was applied to verify the research thesis by determining the best combination of success factors (predictors) included in the examined statistical models and to select the multivariate linear regression model with the highest explanatory power, as measured by the adjusted coefficient of determination R^2 .

Limitations of the study

The study presented here has several limitations that are related to the research process, methods, and research tools applied [Leszczyński 2019]. The most important limitation relates to the generalisation of the research results obtained, which means that conclusions drawn from the study findings should be restricted to the studied population of women micro-entrepreneurs operating their businesses in Mazovia Province.

The next limitation is that the study is cross-sectional in nature, with empirical data obtained from female respondents only during one time period. Therefore, the detected relationships between the examined variables in the theoretical model tested may change over time and as a result of the influence of extraneous factors.

Another limitation of the study relates to the obtaining of empirical data through the usage of an online questionnaire. To take part in the survey, respondents had to have a reliable internet connection and an active e-mail address. To mitigate the limitations of using an internet-based questionnaire, the women entrepreneurs drawn for the study were informed by telephone about the purpose of the study and the opportunity to obtain the research findings free of charge on publication.

An additional limitation is the measurement of the dependent variable employed (composite business performance of the micro-enterprise) using a perceptual 7-point itemized rating scale, which was

adapted to the Polish business reality of the female micro-entrepreneurs under study. Using this measurement scale, the respondents evaluated the economic condition of their businesses over the last three years prior to completing the survey. In the study, a 7-point itemized rating scale was applied as a proxy measure due to the lack of access to the actual economic results of the surveyed micro-enterprises. This scale was developed on the basis of the recommendations of J. Kickul and T. Iakovleva [Iakovleva, Kickul 2007; Kickul et al. 2010], who investigated the success factors of female entrepreneurs and the businesses they managed in the Russian market.

It is important to note that perceptual (subjective) measures of the economic performance of firms are gaining widespread use in academic research [Wall et al. 2004]. Contemporary scholarly research confirms the presence of a strong and positive correlation between research results, obtained by using perceptual indicators to evaluate the economic performance of firms by their business owners, and objective indicators gained on the basis of the figures reported in firms' financial statements [Partanen et al. 2018; Lee, Hallak, Sardeshmukh 2016; Singh, Darwish, Potočnik 2016].

Research results

The characteristics of the surveyed women micro-entrepreneurs and their firms. The dominant age category among the women surveyed was 30–39 years (34.6%), and the least represented age category was under 29 years (3.2%). As many as 45% of the female entrepreneurs surveyed declared that they had completed a university degree, while another 33% had also earned a postgraduate diploma. However, a mere 0.3% of the female business owners surveyed had graduated from a vocational school.

The research findings reveal that women with no work experience (34.6% of respondents) and those with a short work history (up to 5 years; 26.9% of respondents) are more likely to run their own business than females with very long working experience (21 or more years; 7.4% of respondents). The respondents had been running their firms on average for about 11 years. The research results show that the vast majority of the women surveyed managed relatively young and still growing businesses.

To achieve an advantage over competitors in the industry, women micro-entrepreneurs pursue business strategies such as offering products and/or services that are significantly different from those offered by competitors (13.6%) and improving the quality, efficiency, and timeliness of customer service (13.3%). The percentage of women who adopted strategies such as the introduction of new information and communications technology (ICT) in their firms (1%) or strategies related to the implementation of innovation (1.6%) was very low.

The overwhelming majority of surveyed females operated their businesses primarily as sole proprietorships (91.9%). The results of the survey indicated that 72.8% of female-owned micro-enterprises operated in the service sector. The second most frequently reported economic activity was retail and wholesale trade (16.2%).

The highest concentration of the surveyed micro-enterprises (58.9%) was in the capital city of Warsaw. Only 11% of the micro-enterprises researched were registered in rural boroughs (“gminy”) located in Mazovia Province. Nevertheless, some 54.7% of firms surveyed had no employees. In comparison, however, only 23.6% of the micro-enterprises studied hired more than two employees.

The vast majority of female micro-entrepreneurs surveyed (79.9%) reported that they used their own funds to finance their business operations. As far as external sources of financing are concerned, bank loans were the most common (11.7%).

Verification of research hypotheses and the research thesis. Table 2 presents the results of the first part of the bivariate linear regression analysis. It includes statistics on measures of goodness of fit of the tested bivariate linear regression models to the empirical data and the results of the analysis of variance (ANOVA). The results of the *F*-test and the corresponding levels of statistical significance (*p*-values) relating to the analysis of variance (ANOVA) show to what extent the variability of the dependent variable examined in this study (composite business performance of the micro-enterprise), in each of the tested bivariate linear regression models (models 1–10), can be explained by the explanatory variable examined (verified as a research hypothesis).

The research results for the analysis of variance (ANOVA) show that for the bivariate linear regression models tested, each of these models explains the variability of the economic performance of the studied micro-enterprises significantly better than the baseline regression model, which contains only

Table 2. Measures of goodness of fit of tested bivariate linear regression models to empirical data and results of analysis of variance (ANOVA)

Model tested	Explanatory variables tested (predictors of business success of micro-enterprises)	Bivariate linear regression models' goodness of fit statistics				Analysis of variance (ANOVA) results	
		Correlation coefficient <i>R</i>	Coefficient of determination (<i>R</i> Squared)	Adjusted coefficient of determination (Adjusted <i>R</i> Squared)	Standard error of the estimate	<i>F</i> -test value	<i>F</i> -test level of significance (<i>p</i> -value)
1	Age (up to 39 years)	0.358	0.128	0.119	1.513	14.914	0.000 (***)
1	Age (40 to 49 years)	0.358	0.128	0.119	1.513	14.914	0.000 (***)
1	Age (60 or more years)	0.358	0.128	0.119	1.513	14.914	0.000 (***)
2	Completed education	0.216	0.046	0.043	1.577	14.956	0.000 (***)
3	Business experience	0.344	0.119	0.116	1.516	41.288	0.000 (***)
4	Entrepreneurial orientation	0.365	0.133	0.131	1.504	47.283	0.000 (***)
5	Business strategy	0.147	0.022	0.018	1.598	6.772	0.010 (*)
6	Growth orientation	0.182	0.033	0.030	1.588	10.497	0.001 (**)
7	Human capital (1)	0.120	0.014	0.011	1.603	4.506	0.035 (*)
8	Social capital	0.157	0.025	0.021	1.595	7.756	0.006 (**)
9	Financial capital (1)	0.139	0.019	0.016	1.599	6.083	0.014 (*)
10	Usage of ICT	0.122	0.015	0.012	1.603	4.629	0.032 (*)

Notes: The dependent (predicted) variable is the composite business performance of the micro-enterprise, measured by a 7-point itemized rating scale. For the independent variable "ICT usage," the abbreviation ICT stands for information and communications technology. $N = 309$ observations. Asterisks (shown in parentheses) for analysis of variance (ANOVA), indicating the level of statistical significance for the *F*-test values, denote: (*) for $p < 0.05$; (**) for $p < 0.01$; and (***) for $p < 0.001$.

Source: own elaboration.

a constant term called the intercept (specifying the point of intersection of the regression equation with the axis). In addition, the results of the *F*-test indicate that the *p*-values for all tested bivariate linear regression models were statistically significant at a confidence level of $p < 0.05$.

Among all ten analysed bivariate linear regression models, model 4 (testing the independent variable "entrepreneurial orientation") shows the highest explanatory power, measured by the adjusted coefficient of determination R^2 (13.1%). This result means that entrepreneurial orientation as a predictor of women's success in business explains up to 13.1% of the variance in economic performance achieved by the micro-enterprises studied. In comparison, the investigated model 7 (testing the variable "human capital") shows the lowest explanatory power, measured by the adjusted coefficient of determination R^2 (1.1%). In this case, the results obtained mean that human capital as a predictor of women's success in business explains only 1.1% of the variation in the economic performance of the micro-enterprises surveyed.

Table 3 presents a summary of the second part of the bivariate linear regression analysis with respect to the research findings relating to the verification of the research hypotheses formulated.

To accept (confirm) the formulated research hypothesis, two conditions had to be met simultaneously for any bivariate linear regression model tested. Firstly, the obtained value of the standardised regression coefficient (Beta) had to be consistent with the assumed positive direction of the relationship between the dependent variable (composite business performance of the micro-enterprise) and the examined independent variable (predictor of success) for any research hypothesis tested. Secondly, the calculated *t*-test value associated with the regression weight for the standardised regression coefficient (Beta) relating to the tested independent variable (predictor of success) had to be statistically significant at the assumed significance level of $p < 0.05$. In the decision-making process of research hypothesis verification, the recommendations suggested by J.F. Hair Jr. et al. [2014:157–161] and A. Field [2018:457–532] were applied.

Table 3. Summary of bivariate linear regression analysis regarding the results of testing the research hypotheses

Model tested	Independent variables tested (predictors of business success)	Research hypotheses (H_R) tested	Unstandardized regression coefficients		Standardized regression coefficients	t -test value	t -test significance (p -value)	Null hypothesis (H_0) t -test result	Research hypothesis (H_R) t -test result
			B	Standard error	Beta (β)				
1	Age (up to 39 years)	H1A	1.413	0.228	0.426	6.209	0.000 (***)	Rejected	Accepted
1	Age (40 to 49 years)	H1A	0.668	0.247	0.181	2.700	0.007 (**)	Rejected	Accepted
1	Age (60 or more years)	H1A	0.249	0.295	0.053	0.847	0.398 (NS)	Accepted	Rejected
2	Completed education	H1B	0.838	0.217	0.216	3.867	0.000 (***)	Rejected	Accepted
3	Business experience	H1C	-0.079	0.012	-0.344	-6.426	0.000 (***)	Accepted	Rejected
4	Entrepreneurial orientation	H2	0.573	0.083	0.365	6.876	0.000 (***)	Rejected	Accepted
5	Business strategy	H3	0.488	0.187	0.147	2.602	0.010 (*)	Rejected	Accepted
6	Growth orientation	H4	0.248	0.076	0.182	3.240	0.001 (**)	Rejected	Accepted
7	Human capital (1)	H5	-0.387	0.182	-0.120	-2.123	0.035 (*)	Accepted	Rejected
8	Social capital	H6	0.218	0.078	0.157	2.785	0.006 (**)	Rejected	Accepted
9	Financial capital (1)	H7	0.554	0.225	0.139	2.466	0.014 (*)	Rejected	Accepted
10	Usage of ICT	H8	0.137	0.064	0.122	2.151	0.032 (*)	Rejected	Accepted

Notes: The dependent (predicted) variable is the composite business performance of the micro-enterprise, measured by a 7-point itemized rating scale. $N = 309$ observations. Symbols (shown in parentheses) used to indicate the level of statistical significance for the t -test values denote: (NS) for "Not statistically significant;" (*) for $p < 0.05$; (**) for $p < 0.01$; and (***) for $p < 0.001$.

Source: own elaboration.

The data presented in Table 3 show that the tested research hypotheses were confirmed for the following independent (explanatory) variables: (a) age up to 39 years (H1A; Beta = 0.426; $t = 6.209$; $p < 0.001$); (b) entrepreneurial orientation (H2; Beta = 0.365; $t = 6.876$; $p < 0.001$); (c) completed education (H1B; Beta = 0.216; $t = 3.867$; $p < 0.001$); (d) growth orientation (H4; Beta = 0.182; $t = 3.240$; $p < 0.01$); (e) age 40 to 49 years (H1A; Beta = 0.181; $t = 2.700$; $p < 0.01$); (f) social capital (H6; Beta = 0.157; $t = 2.785$; $p < 0.01$); (g) business strategy (H3; Beta = 0.147; $t = 2.602$; $p < 0.05$); (h) Financial capital 1 (H7; Beta = 0.139; $t = 2.466$; $p < 0.05$); and (i) usage of information and communications technology or ICT (H8; Beta = 0.122; $t = 2.151$; $p < 0.05$).

In the case of the above-mentioned independent (explanatory) variables, the formulated research hypotheses (H_R) were confirmed (accepted) and the null hypotheses (H_0) were rejected because the two required conditions of the decision-making process, relating to the verification of research hypotheses, were simultaneously met. These concerned the positive direction of the standardised regression coefficient (Beta) for the relationship between the dependent (predicted) variable and the independent

(explanatory) variable (predictor of success), as well as the statistical significance for the value of the t -test concerning the standardised regression coefficient (Beta) at the assumed significance level of $p < 0.05$ for the independent variable studied.

The research results obtained indicate that the tested variable "age up to 39 years" (Beta = 0.426; $t = 6.209$; $p < 0.001$) showed the highest explanatory power for the achieved economic results of the micro-enterprises in the surveyed period.

In comparison, in the case of the three tested explanatory variables, namely business experience (H1C; Beta = -0.344; $t = -6.426$; $p < 0.001$), human capital 1 (H5; Beta = -0.120; $t = -2.123$; $p < 0.05$) and age 60 and over (H1A; Beta = 0.053; $t = 0.847$; $p = 0.398$), the formulated research hypotheses (H_R) were rejected and the null hypotheses (H_0) were accepted due to their failure to meet the required conditions of the decision-making process.

The business success factors presented in the theoretical research model (Figure 1) were empirically verified by bivariate linear regression (Tables 2 and 3) and then examined by three multivariate linear regression models: A, B, and C (Tables 4 and 5).

Multivariate (multiple) linear regression was used in the study to identify the best combination of success factors (predictors) for the micro-enterprises studied. In addition, this statistical method was used to verify the research thesis (its second part) by identifying the multivariate linear regression model with the highest explanatory power, as measured by the adjusted coefficient of determination R^2 .

Table 4 displays statistics on the overall characteristics and evaluation metrics of the tested statistical models A, B, and C, obtained by employing multivariate (multiple) linear regression analysis.

Statistical models A, B, and C were built drawing on the classification of business success factors presented in the theoretical research model in Figure 1. Model C included success factors from a research category grouping variables on firm characteristics and resources held by micro-enterprises owned or co-owned by women. Model B included success factors from a research category grouping variables

describing the socio-demographic characteristics and business skills of women entrepreneurs. Model A included success factors classified into the two categories displayed in the theoretical research model in Figure 1.

The research results obtained for the F -test regarding the analysis of variance (ANOVA) show that all three multivariate regression models tested are well fitted to the empirical data, as the results of this test are statistically significant for each of the models analyzed at a confidence level of $p < 0.001$. The data analysis performed showed that model A had the highest explanatory power with respect to the variability of the dependent variable under study (coefficient of determination $R^2 = 47.6\%$; adjusted coefficient of determination $R^2 = 36.2\%$). The value of the coefficient of determination R^2 for model A indicates that the business success factors (predictors) and control variables introduced into the model explained as much as 47.6% of the variance of the examined dependent variable (composite business performance of the micro-enterprise), measured using a 7-point itemized rating scale.

In comparison, model C showed the lowest explanatory power in terms of the variability of the dependent variable under study (coefficient of determination $R^2 = 24.2\%$; adjusted coefficient of determination $R^2 = 16.9\%$). In the case of model C, the value of the coefficient of determination R^2 indicates that the business success factors (predictors) and control variables introduced into this model contributed to explaining only 24.2% of the variation in the dependent variable under study (composite business performance of the micro-enterprise), as measured by a 7-point itemized rating scale.

Table 5 presents the estimated values for the multivariate linear regression coefficients (unstandardised and standardised), their standard error of measurement, and t -test results for model A. In the multivariate linear regression analysis carried out, model A was found to be the best fit to the empirical data ($F = 4.174$; $p < 0.001$) and explained 36.2% of the variance in the dependent variable studied, as measured by the adjusted coefficient of determination R^2 (adjusted $R^2 = 36.2\%$).

The business success predictors and control variables investigated were fitted to model A using the "enter" variable inclusion method. Using this method, all tested independent variables (predictors) are introduced into the multivariate linear regression model simultaneously. This method is the recommended solution for multivariate linear regres-

Table 4. Summary statistics for models A, B, and C evaluated with multivariate (multiple) regression analysis

Summary statistics of analysis of variance (ANOVA) and models' goodness of fit	Model A	Model B	Model C
Coefficients of multiple correlation R	0.690	0.629	0.492
Coefficients of determination R^2 (R squared)	47.6%	39.6%	24.2%
Adjusted coefficients of determination R^2 (adjusted R squared)	36.2%	29.3%	16.9%
Analysis of variance (ANOVA) F -test value	4.174	3.832	3.317
Analysis of variance (ANOVA) F -test significance level	0.000 (***)	0.000 (***)	0.000 (***)
Number of success factors (predictors) in the model tested	43	33	15
Number of control variables in the model tested	12	12	12
Number of observations (N)	309	309	309

Note: Asterisks (shown in parentheses) for the analysis of variance (ANOVA), used to indicate the level of statistical significance for the t -test values, denote: (***) for $p < 0.001$.

Source: own elaboration.

Table 5. Estimation of multivariate (multiple) linear regression coefficients for the model A tested

MODEL A Independent variables tested (predictors of business success)	Unstandardized regression coefficients		Standardized regression coefficients	<i>t</i> -test value	<i>t</i> -test significance (<i>p</i> -value)
	B	Standard error	Beta (β)		
Business experience	-0.052	0.015	-0.228	-3.419	0.001 (**)
Markets served – domestic	0.604	0.231	0.162	2.615	0.009 (**)
Markets served – international	0.745	0.268	0.170	2.776	0.006 (**)
Human capital (1)	-1.308	0.441	-0.406	-2.966	0.003 (**)
Previous industry experience (success factor)	0.793	0.439	0.132	1.803	0.072 (#)
Customers served – medium-sized and large enterprises	0.447	0.229	0.117	1.954	0.052 (#)
Financial capital (1)	0.413	0.208	0.104	1.981	0.049 (*)
Financial capital (2)	0.071	0.042	0.085	1.688	0.093 (#)
Business strategy – improvement of customer service	0.688	0.267	0.145	2.577	0.011 (*)
Business strategy – other strategy used	0.534	0.250	0.122	2.135	0.034 (*)
Age (up to 39 years)	0.600	0.250	0.181	2.401	0.017 (*)
Completed education (university degree or postgraduate studies)	0.399	0.207	0.103	1.930	0.055 (#)
Managerial competencies – financial management skills	-0.616	0.362	-0.102	-1.703	0.090 (#)
Entrepreneurial orientation	0.307	0.092	0.196	3.352	0.001 (**)
Social capital	-0.149	0.080	-0.107	-1.855	0.065 (#)
Micro-enterprise size – employment (no employees)	-1.003	0.445	-0.310	-2.253	0.025 (*)
Micro-enterprise size – revenue (500,000 up to 1,000,000 PLN)	0.625	0.352	0.111	1.774	0.077 (#)

Notes: The dependent (predicted) variable is the composite business performance of the micro-enterprise, measured by a 7-point itemized rating scale. $N = 309$ observations. Symbols (shown in parentheses) used to indicate the level of statistical significance for the *t*-test values denote: (#) for $p < 0.10$; (*) for $p < 0.05$; and (**) for $p < 0.01$. Table 5 shows only data on the multivariate linear regression coefficients for the explanatory variables (predictors of success), which were found to be statistically significant ($p < 0.10$) in the statistical analysis, in order to reduce the amount of data presented in the paper.

Source: own elaboration.

sion when the aim of the study is to investigate the plausible relationship between the tested variables [Tabachnick, Fidell 2013:143–144]. In interpreting the results obtained for multivariate linear regression regarding model A, the recommendations proposed by A. Field [2018:485–530] were applied. In the evaluation of the research results, the values obtained for the standardised regression coefficients (Beta) and their statistical significance (i.e., the result of the *t*-test and its *p*-value) were used.

The results of the study for model A indicate that the best predictors of success for the micro-enterprises studied are: (a) entrepreneurial orientation (Beta = 0.196; $p < 0.01$); (b) age up to 39 years (Beta = 0.181; $p < 0.05$); (c) markets served – international (Beta = 0.170; $p < 0.01$); (d) markets served – domestic (Beta = 0.162; $p < 0.01$); (e) business strategy – improvement of customer service (Beta = 0.145; $p < 0.05$); (f) previous industry experience – success factor (Beta = 0.132; $p < 0.10$); (g) busi-

ness strategy – other strategy used (Beta = 0.122; $p < 0.05$); (h) customers served – medium-sized and large enterprises (Beta = 0.117; $p < 0.10$); (i) financial capital 1 (Beta = 0.104; $p < 0.05$); (j) completed education – university degree or postgraduate studies (Beta = 0.103; $p < 0.10$); and (k) financial capital 2 (Beta = 0.085; $p < 0.10$).

On the other hand, the research results for model A show that four independent variables had a statistically significant negative impact on the economic performance of the micro-enterprises under study. These include: (a) human capital 1 (Beta = -0.406; $p < 0.01$); (b) business experience (Beta = -0.228; $p < 0.01$); (c) social capital (Beta = -0.107; $p < 0.10$); and (d) managerial competencies – financial management skills (Beta = -0.102; $p < 0.10$).

In addition, of the control variables that were included in the multivariate linear regression analysis for model A, two were identified that had either a positive or negative effect on the dependent variable

under study. The analysed control variable “micro-enterprise size – revenue between 500,000 and 1,000,000 PLN” (Beta = 0.111; $p < 0.10$) had a positive impact, while the control variable “micro-enterprise size – self-employment” (Beta = -0.310; $p < 0.05$) had a negative influence on business success achieved by the surveyed micro-enterprises owned or co-owned by female entrepreneurs from Mazovia Province.

Discussion. Successful women entrepreneurs from Mazovia Province are 30–39 years old, have a university degree, and have gained several years of professional experience in the industry in which they operate their own businesses. Similar research findings have been reported in many economically developed countries around the world [American Express 2018].

International studies indicate that the highest rates of participation in entrepreneurship among women are generally found in the 18–34 age group [Elam et al. 2021:33–34]. Moreover, research shows that 33% of female entrepreneurs worldwide have a secondary or tertiary education. The highest rates of educational attainment among female entrepreneurs were registered in the developed countries of Europe and North America [Kelley et al. 2015:30–31]. However, international studies also suggest that women with lower levels of education are more likely to start their own businesses regardless of a country’s level of economic development [Elam et al. 2019:27–28].

Women micro-entrepreneurs, whose firms performed better economically during the study period, used a medium-term business strategy to gain an advantage over their industry competitors. The strategy implemented, which turned out to be the most effective in terms of business practice, was related to improving the quality of customer service, as most of the micro-enterprises studied operated in the service sector. Worldwide studies confirm the important role of the introduction of effective business strategies and marketing practices by female entrepreneurs in achieving a competitive advantage in the marketplace [Agarwal 2018].

Women who have succeeded as business owners in Mazovia Province are innovative and take risks, but at a reasonable level. They are also demonstrating greater agility in adapting to the changing landscape of business. Such behaviour is indicative of the superior entrepreneurial orientation exhibited by women who have achieved business success. Results of global studies support the positive correlation between fe-

male entrepreneurial behaviour (a manifestation of their entrepreneurial orientation) and the economic performance of their firms [Arham et al. 2020].

The surveyed female entrepreneurs also reported on success factors specific to the industry in which their firms operate, the legal form and type of economic activity pursued, or relating to the region under study. The identified business success factors that had a positive impact on the achieved economic results of micro-enterprises (in the examined models A, B, and C) were related to: gained professional experience in the industry; women’s entrepreneurial personality traits (e.g., self-confidence, risk-taking proclivity, creativity and innovation); tenacity and resolve in pursuit of a goal; effective exploitation of market potential and opportunities; and some miscellaneous success factors (e.g., hiring qualified employees, introducing advanced technologies, following advice from seasoned entrepreneurs).

International studies also point to the existence of a number of particular success factors relating to women-owned businesses. For example, these include: achievement of defined business goals [Robichaud, Cachon, McGraw 2015]; presence of entrepreneurial role models in the family [Rashid et al. 2015]; long-standing experience of family members in business [El-Hamidi 2011]; support of spouse, children, family and/or close friends in operating the business [Welsh et al. 2018]; attainment of work-life balance [Kagenavar, Kallimath 2021]; and number of hours devoted to running one’s own business [Dijkhuizen et al. 2016].

Successful female entrepreneurs from Mazovia Province indicated in the survey that their firms have grown since the date of business registration. In the literature, the growth of women-owned firms over time is viewed by researchers as an important indicator for measuring business success, as well as an important contributor to job creation, prosperity for local communities, and the economic development of countries worldwide [Cirera, Qasim 2014]. Several studies also report that there is a statistically significant correlation between the firm’s size (measured, for example, by the number of employees) and its owners’ aspiration to grow the business over time [Bulanova, Isaksen, Kolvereid 2016].

The surveyed micro-enterprises operated by successful women in the market offered their products and/or services to customers across multiple provinces in the country, as well as to clients from abroad. The study results show that women entrepreneurs who are able to attract customers from the business

sector also outperform female business owners who concentrate their marketing and sales efforts primarily on retail clients served in local markets.

In developed countries, the relationship between the market orientation of firms and their economic performance has been reasonably well established. Micro and small business owners recognize the importance of a thorough knowledge of the customers they serve and attach high value to the systematic collection of information about them to achieve a superior competitive position in the local market [Perry 2014]. According to research findings from Asian countries, factors such as the ability to define a market for serving customers, the introduction of new and innovative products and/or services, and the personal involvement of the business owner in marketing and sales efforts all play a significant role in the success of both male- and female-owned firms [Chittithaworn et al. 2011:183–185].

The research results show that women who were successful micro-entrepreneurs from the start of registering their business primarily relied on their own financial resources. Similar study results can be traced in the international literature [OECD 2016]. Most female micro-entrepreneurs launch their own businesses using start-up capital sources such as their own savings, loans from family and/or close friends, and private or business credit card debt [Stokes, Wilson 2017:402–413]. Nevertheless, it should be noted that dependence on using only one's own financial resources may hinder the growth potential of these firms.

Female entrepreneurs use financial strategies that target external sources of finance (e.g., bank loans, funds from business angels, venture capital investments) to meet their firms' current investment needs or expansion plans [Leitch, Welter, Henry 2018]. Researchers suggest that obtaining external sources of financing is one of the main economic barriers faced by women who own micro and small businesses worldwide [Boateng, Poku 2019].

Analysis of the multivariate linear regression models examined revealed that some control variables had a statistically significant positive influence on the economic performance of the micro-enterprises under study. In the case of model A discussed here, this positive effect was related to the achievement of sales revenue by the firm in the range of 500,000 to 1,000,000 PLN (micro-enterprise size – revenue). The positive effect of this control variable on the examined dependent variable was relatively small but statistically significant.

Across international studies, scholars have identified a variety of control variables, used in diverse research contexts, which are positively related to the success achieved by businesses operated by female entrepreneurs. These include, for example: age of the firm [Wan Mustapa, Al. Mamun, Ibrahim 2018]; sector or industry of the economy [Joon 2018]; legal status of the business [Gottschalk, Niefert 2013]; location of the firm [Robichaud, Cachon, McGraw 2015]; the business provides a product or service [Jaiswal 2020]; financial capital – measured in terms of the use of own funds relative to bank credit [Mozumdar et al. 2020]; size of the firm – measured in terms of the number of employees [Ribeiro et al. 2021]; size of the firm – measured in terms of revenue from the sale of goods and/or services [Robichaud et al. 2013]; and size of the firm – measured in terms of total assets [Johnsen, McMahan 2005].

Conclusions and recommended directions of further research

The main objective of this study was to explore the key factors recognized in the literature to have a positive impact on business success in relation to Polish female micro-entrepreneurs. The identified success factors were presented in the theoretical research model. Subsequently, they were analyzed in depth to examine their statistically significant influence on the achievement of success in business by women-owned or co-owned micro-enterprises operating in Mazovia Province.

The discussed research results indicate that the survival of the micro-enterprises studied in the medium-term and their future growth in the long-term depend on the presence of and an appropriate combination of key success factors. These factors concern the socio-demographic characteristics and practical business skills of women entrepreneurs, but also the resources of micro-enterprises.

The results of the study show that female entrepreneurs from Mazovia Province who were successful in business were 30 to 39 years old, had completed university education or post-graduate studies, had gained practical professional work experience in the industry (before starting their own business), and also possessed personality traits such as perseverance and determination in business.

Women entrepreneurs, whose firms have achieved more favorable economic results, showed a superior

entrepreneurial orientation, i.e., innovativeness, risk-taking proclivity, and proactiveness. The surveyed female micro-entrepreneurs who were successful in the market used a medium-term business strategy (e.g., improving quality, efficiency, and timeliness of customer service) to compete effectively in the local market. They were also able to quickly identify and seize emerging business and market opportunities.

The results of the study also show that successful female entrepreneurs from the surveyed region offered their products and/or services to customers in the national and international markets, as well as to large and/or medium-sized business clients. Women whose micro-enterprises showed better economic performance during the period under study had sufficient financial resources when they started their own businesses. However, it should be emphasized that they mainly used their own funds to finance the operational and investment needs of their firms. Women entrepreneurs who have achieved success in the market have indicated that their businesses have experienced significant growth since they were registered.

Research findings have shown a positive impact of some control variables on the economic performance of the micro-enterprises surveyed. In the case of model A, this positive influence concerned the control variable related to revenue generated by the micro-enterprise from the sale of goods and/or services in the range of 500,000 to 1,000,000 PLN. The positive effect of this control variable on the dependent variable under study was relatively small but statistically significant.

The study fills a research gap in the field of women's entrepreneurship in Poland and contributes to the broadening of scholarly knowledge on key success factors for female entrepreneurs. It is recommended that similar studies be undertaken in less economically developed regions of Poland for comparative purposes. It is also suggested to compare the population of male- and female-owned firms using a variety of research methods and tools (e.g., longitudinal studies, case study research) to obtain a more complete picture regarding the management of micro-enterprises on the topic of key success factors. Such studies could demonstrate likely gender differences in key success factors that influence firm performance.

Women's entrepreneurship is recognised internationally as a dynamic social and economic phenomenon that contributes to the development of countries and local communities [Leszczyński 2013c:120–123]. To explore the research problem in greater

depth, it is therefore recommended that future studies include in their models independent (explanatory) variables such as the entrepreneurial process (e.g., recruitment, training, development, and retention of employees); the external environment of the micro-enterprise (e.g., nature and strength of relationships built with customers, suppliers, and employees); and the sociocultural context of women's entrepreneurship (e.g., motherhood, work-life balance, partner and/or family support in running a business).

Finally, to broaden the existing body of research on the key success factors of micro-enterprises controlled by women, it is suggested that follow-up studies are also undertaken in other Central and Eastern European countries.

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- ¹ The study was carried out in September 2014 as part of a research project funded by the Polish Ministry of Science and Higher Education (MNiSW) and awarded through a competitive process (project no. KGS/BMN/04/14).
 - ² The author's study on the research problem related to the "personal success" of women micro-entrepreneurs from Mazovia Province was published in [Leszczyński 2016b].
 - ³ The research hypothesis H1 was further broken down into three supporting hypotheses: H1A, H1B, and H1C. The purpose of this procedure was to operationalise the underlying theoretical construct (presented in the theoretical model in Figure 1 as "characteristics and skills" of women micro-entrepreneurs) so that it could be empirically validated with three more precise independent variables using bivariate linear regression analysis. These variables included the age, completed education, and business experience of the surveyed women micro-entrepreneurs.
 - ⁴ The firm (a certified research agency) commissioned to conduct the survey, collect and provide empirical data, is a member of the Polish Association of Public Opinion and Market Research Firms (OFBOR), established in 1997. For details on this organisation, please visit <https://www.ofbor.pl/> [Organizacja Firm Badania Opinii i Rynku (OFBOR) 2021].

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