

ENTREPRENEURSHIP AND PERFORMANCE OF FIRMS

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Volume 10 Issue 4

2014

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From the Editors

Entrepreneurship and company performance have always been an area of interest for many researchers who have been trying to understand the way this complex relationship functions. This accounts for numerous research issues focused on the analysis of the influence of broadly understood organizational entrepreneurship on the performance of product and process innovations, local economic performance, shaping social conditions of external environment, organization of health care systems and many others. This issue attempts at grasping various views on performance which can be attained in various ways.

The first article concentrates on agricultural farms. Its authors examine entrepreneurial behavior in the context of pluriactivity. We should emphasize the impressive sample of family firms which served as a basis for analyzing the concept of pluriactivity, understood here as a strategic orientation directed at the growth and development of family farms. The authors identified four growth groups, each presenting a different orientation towards pluriactivity. The article concludes with a discussion of results and identification of future areas of research on business strategies in family firms.

The issue refers twice to the notion of innovativeness and its influence on financial results and market value of companies. The second article presents the relations between innovations and market value of tourist enterprises, thus filling the gap in this research area. The authors show investors' reactions to information concerning innovation within the analyzed period of six years. This relation turned out to be positive, namely information on innovations in marketing, distribution and external relations positively affected the evaluation of future cash flows by investors.

The third article discusses the entrepreneurial activities of the Diaspora, mostly migrants and their descendants from developing countries, emerging markets and developed states. The article proposes an approach named Descending Diaspora Entrepreneurship, referring to entrepreneurs who emigrated from rich countries to less developed states. Their entrepreneurial activity is researched on the basis of the network perspective. The article brings a thorough review of subject literature leading to identification of network benefits for entrepreneurial activities and proposes a model of network dynamics for the subject approach.

The next article brings forward the issue of inventory management in the small and medium-sized enterprises sector and the issue of poor effectiveness

of such management and its consequence for production operations. Based on a randomly selected sample of case studies and structured interviews, the authors tried to prove that effective inventory management can be achieved by determining the inventory levels, hiring qualified warehouse staff and using systems of automatic inventory control, which prevents the problems of sudden lack of inventory and related poor production capacities use. Eliminating the loss of production time allows manufacturing companies to improve their general performance.

The fifth article analyzes the influence of companies' innovative activities on their financial performance, taking into account the number of patents held by them. On the basis of a numerous group of enterprises, the authors concentrated on the 2006-2012 period and compared the return rates (mostly: ROA, ROE, or ROS) obtained by innovative companies (those holding patents), operating in the production sector in Poland. The reference point was the EBITDA margin and revenue dynamics. The research tested three hypotheses and brought interesting outcome, especially since this area is relatively new.

Another article emphasizes the influence of globalization on telecommunication companies and their competitiveness, especially as this is a dynamically developing sector witnessing permanent changes. The article analyzes the influence of strategic innovations on customers and strategies of competing on performance of selected telecoms operating in Nigeria. The article also deals with the influence of the competing strategy (lower prices, unbroken service, dealing with complaints) on customer satisfaction and loyalty. The results of the research show a clear link between competing strategies and customer satisfaction, retention and loyalty and performance of telecommunication companies.

The final article examines the entrepreneurial orientation in the context of both exploitation and exploration activities. The authors assumed the entrepreneurial orientation, its exploration and exploitation dimensions, equally affect the effectiveness and speed of internationalization.

We present our readers with this issue related to entrepreneurship, performance and innovativeness, hoping it will arouse your interest. We would like to express our gratitude to a very large group of reviewers from all over the world (a full list of the names can be found in this last issue of 2014) who reviewed several dozen articles, of which we selected 24 for publication. We would like to thank the authors for their patience in making amendments and taking into account critical and invaluable comments from the reviewers.

We hope our readers, researchers and reviewers will find our journal interesting and we would like to invite all of you to further cooperation.

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The role of Pluriactivity for Continuity and Survival in Family Farm Firms

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Abstract

Our study focuses on family farm firms as an important and yet under-researched type of family firms. We explore the entrepreneurial growth behavior in the context of family farm firms by focusing on the role of pluriactivity. By integrating the literature of family business strategies, EO, and growth intentions, this study of 1618 Finnish family farms seeks to understand the idea of pluriactivity as a strategic orientation of family farm firms leading towards the growth and renewal of their prevailing and future domains. Our study revealed that pluriactivity is associated with growth-orientation and perceived strengths of the family farm firms. We identified four types of growth groups (Established, Growth-Driven, Experimenters, Stand-Stills) and found differences in their pluriactive orientation. We suggest that pluriactivity as a strategic orientation affects the growth-intention of the family entrepreneurs and the business renewal processes of the family farm firms. Entrepreneurs need to have capabilities (knowledge, skills, experience) and willingness to change (motivation, attitude, volition) when using pluriactivity as a strategic orientation as they affect growth behavior (EO). Lastly, we discuss with our results and make some suggestions for future research avenues in family business strategy research.

Keywords: *pluriactivity, family farm firms, intentions, growth, renewal, strategy.*

INTRODUCTION

Family firm, family farm businesses and their growth strategies have rarely been researched among family business and entrepreneurship researchers (Chrisman, Chua, and Sharma, 2005; Alsos, Carter, Ljunggren, and Welter, 2011; Webb, Ketchen, and Ireland, 2010). We do not know much about the growth strategies of family businesses (Astrachan, 2010). The overall scope of the family firm strategy research has been narrow (Goel, Mazzola, Phan, Pieper, and Zachary, 2012).

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Recent studies have focused on, among other issues, strategic behavior in firm performance (Chrisman, Steier, and Chua, 2008) exploiting the unique resources of family firms (Miller and Le-Breton-Miller, 2005) and their capabilities and their financing. However, they have not focused on functional alternatives (Coleman and Carsky, 1999) and the future plans of entrepreneurial families (Miller, Le Breton-Miller, and Lester, 2013). Prior studies have also focused on strategic decision making (Holt, 2012) and planning as a strategic practice in family business context (Nordqvist and Melin 2010) but also generational perspective to strategic planning and succession planning in privately held family firms (Eddleston, Kellermanns, Floyd, Crittenden, and Crittenden, 2013). However, not many studies have focused on family farm strategies and their growth behavior (Ketchen, Webb, and Ireland, 2010).

Pluriactivity is one concept that has the potential to be considered both as a source of livelihood of farm households (Newton, 2006) as well as a source of growth (Grande et al., 2011a). In this research we are interested in the latter form. In spite of the current interest in pluriactivity as a form of growth and renewal in family farm firms (Grande et al., 2011a), there is still only a little information on how pluriactivity can be viewed as a strategy for business renewal, scanning the environment and moving towards branches that derive from family farmers' own interests and capabilities. A multiplicity of anecdotal clues as well as theory and empirical evidence support the proposition that family farm firms use pluriactivity as a growth strategy and dynamic renewal. (see e.g., Ketchen, Webb, and Ireland, 2010). However, it remains unclear what growth indicators are linked to pluriactivity and what are the dynamics behind how and why family farm firms develop their growth strategies. We fill this research gap by investigating growth behavior of family farm firms and its effects to realized growth in family farm firms in order to deepen our knowledge of the meaning of pluriactivity for the survival and continuity of family farm firms.

We refer to pluriactivity both as an entrepreneurial process of new business creation as well as a means for business growth. Specifically, we wanted to look at the visibility of growth and strategic renewal in the entrepreneurial behavior of farm firms and revisit the two concepts from the pragmatic perspective of agriculture to gain and name a micro-level perspective for the family farm growth process. As growth, pluriactivity can increase the variety of business branches when business would otherwise be non-profitable. Thus, for the purpose of our research we use the term renewal as a strategy of making changes. We see renewal in family farms as a continuous re-evaluation of the use and recombination of resources.

Growth in family firms can be both economic and non-economic (Chrisman, Chua, Pearson, and Barnett, 2012).

As we are interested in the idea of the pluriactivity that branches out beyond traditional agriculture and forestry, and pluriactive orientation of family farm firms leading towards the growth and renewal, our main research question is: What is the role of pluriactivity for family farm firms' continuity and survival? We also examined if there were connections between the new business creation processes and growth intentions and explored whether there were differences in terms of their pluriactive strategic orientation between various types of growth groups of family farm firms. Our data consists of consolidated findings from a survey of 1,618 Finnish family farm firms.

We contribute to the literature of family business strategy by examining farm firms' livelihood strategies, growth, and entrepreneurial orientation. As we study growth behavior in the family farm firms as pluriactivity comprising of growth and entrepreneurial intentions, we apply a diversity of theories and approaches of family business strategies to indicate the possibilities of pluriactivity research.

The remainder of this article is organized as follows. Firstly, we present an overview of the relevant literature and the development of our hypothesis. Secondly, we explain our research design and present our empirical results. Lastly, we discuss our results and draw implications for family business management and policymakers but also provide suggestions for further research.

LITERATURE REVIEW

Family business strategies, growth behavior and pluriactivity

Family firms represent the majority of businesses in most countries and are known to be the oldest form of business that pervades the world (e.g. Ifera, 2003; Zachary, Rogoff, and Phinisee, 2011). Family firms are essential for economic growth (Astrachan and Shanker, 2003) and development through new business startups and growth of existing family firms (Kellermans, Eddleston, Barnett, and Pearson, 2008). Family firms comprise a larger portion of rural economies compared to urban economies and rural economies are smaller than urban ones. Wealth-being of rural communities and citizens is closely linked to health of their locally owned family firms (Brewton, Danes, Stafford, and Haynes, 2010). Many of those rural businesses are small businesses, and as Habbershon (2006) states, family influence is more extensive in smaller firms. Family firm distribution is different in rural and

urban areas, thus agriculture and small family firms comprise a large portion of economies while they both are riskier than average.

The influence of family embeddedness on firm growth and performance is complicated (Astrachan, 2010) because family actors are embedded in multiples social systems and that the nature of the embeddedness has also economic implications. Thus it is necessary to draw attention to both the negative and the positive aspects of social embeddedness of family firms. Family businesses are unique and complex because the reciprocal impact of the family and the firm (Sharma, 2004).

Family business strategies and growth behavior

The research of strategic performance of family firms deepens our understanding of the relative performance of family and nonfamily firms, as well as aspects of family firm's strategic behavior that are expected to have a profound influence on performance. (Chrisman, Steier, and Chua, 2008). Family influence seems, in some instances, to function as a moderator of the relationships between strategy and performance (Sirmon, Arregle, Hitt, and Webb, 2008). In other instances, the impact of family influence itself appears to be moderated by strategic and structural context of the organization.

Researchers have become interested in how the unique interactions surfacing family involvement influence both entrepreneurship and strategy in family firms (Pittino and Visintin, 2011). Family firms' strategic orientation or entrepreneurial behavior is expected to have profound influence on performance. Family farm firms use their power to decide which strategic alternatives to pursue and the intensity with which they are pursued (Arregle et al., 2012; Nordqvist, 2005).

The entrepreneurial strategic orientation has been researched in family businesses as EO (entrepreneurial orientation) although some researchers have been skeptic about its suitability in family business context. (e.g. Zahra, 2003). Entrepreneurial orientation refers to a firm's strategic orientation, capturing specific entrepreneurial aspects of decision-making styles, methods, and practices. As such, it reflects how a firm operates rather than what it does (Lumpkin and Dess, 1996). Family businesses are characterized to be important innovators (Kellermanns et al., 2008) as they have to enter new markets with innovations to ensure the survivability over generations (Casillas, Moreno, and Barbero, 2010). Concerning the individual dimensions of entrepreneurial orientation, each can have a universal positive influence on growth (Wiklund, Patzelt, and Shepherd, 2013) as growth models describe the factors affecting attitude and strategic orientation (Covin and Slevin, 1991).

Recently, there has been some interest in how family involvement influences entrepreneurship (e.g., regarding entrepreneurial orientation and opportunities) and strategy (e.g. regarding overcoming competitive threats, providing balance in decision-making, or determining value of resources) in family firms (Webb, Ketchen, and Ireland, 2010). Zellweger, Nason, and Nordqvist (2012) regard risk taking and innovation as critical components of EO for business families. Zahra (2005) found that risk taking seems to diminish over time in family firms.

Entrepreneurial behavior in family businesses is discussed ambiguously. Family firms are often referred to as being conservative, risk-averse and cautious against innovation (Chrisman, Steier, and Chua, 2006; Nordqvist, and Melin 2010) because family business owners are paying more attention to sustainability to ensure a reliable income for family members of the next generations.

Entrepreneurial behavior may affect family firms both positively and negatively. Thus, the involvement of family does not necessarily result as outperformance or neither enhances resources of competencies of the family businesses. For example, Casillas, Moreno, and Barbero (2010) noticed a positive effect of family involvement on the relationships of innovativeness and growth, but showed no significant effect on the relationships between other characteristics of entrepreneurial orientation and growth of a family business. Casillas et al., (2010) found that EO positively influences growth only in second-generation family businesses, and that the moderating influence of the generational involvement is related to the risk-taking dimension. Also both dynamism and hostility of the environment moderate the relationships between EO and growth in a positive sense.

Several individual factors seem to affect growth such as professional experience and technological competence and team spirit (Friar and Myer, 2003), networks, (Robson and Bennet, 2000). Several authors have found a positive correlation between growth intentions and actual growth (Kolvereid and Bullvåg, 1996; Bellu anand Sherman, 1995. Le Brasseur, Zanibbi, and Zinger (2003) examined activities preceding business start up, growth intentions, actual development, business success, and the connections between these. Their results show that diverse participation in the tasks required to start an enterprise indicates the existence of growth intentions and is connected to desired and actual growth.

Along with any tangible and determinable benefits, intentions that guide business operations determine an entrepreneur's growth drive. Intentions directly impact personal behavior that result from personal attitudes towards specific behaviors and from the social pressure to engage in certain types of behaviors (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). Intentions

can equally well explain a firm's profitability and growth (Bird 1988, 1992). Orser, Hogarth-Scott and Wright (1998) have found a statistically significant connection between entrepreneurial motivation for growth and actual growth. Intentions are a useful research perspective when, for example, the enterprises are divided into growth-driven ones and non-growth-driven ones.

The examination of family-specific factors on entrepreneurial behavior in family firms is scarce (Chrisman, Steier, and Chua, 2008; Kellermanns and Eddleston, 2006), and researching the phenomenon is also challenging because family businesses are a rather heterogeneous business type (Sharma, 2004). Because the concept of growth within the framework of this study is based on the quantitative changes in a firm's business operations over a specific period of time, it may be difficult to distinguish growth and development in practice. The two may interact in a positive cycle where development enables growth and growth enables development. Firms need to change in order to grow, and changing companies grow by default. With the relationship between growth and development in mind, our first hypotheses derive from intentions:

H1. Pluriactive family farm entrepreneurs are growth driven.

Pluriactivity in family farm firms

Discussion of pluriactivity has ranged from a household perspective towards entrepreneurship to strategy-related issues. Resource-based and opportunity recognition theories (Jervell, 2011) in particular have been identified as capital accumulation strategies and as survival strategies in environments that are challenging regarding resources (De Silva and Kodithuwakku, 2011) Pluriactivity could thus be viewed as a strategic outcome and exploitation of this newborn knowledge. De Silva and Kodithuwakku (2011) suggest that accumulating wealth by pluriactivity could characterize entrepreneurial households. They argue that necessity-driven and socioeconomically worse-off farms were more survival oriented than better-off and more successful farms, which were more opportunity driven as a means of preserving their viability as well as that of entire rural areas (Jervell, 2011; Grande, 2011b; Kinsella, Wilson, de Jong, and Renting, 2000). Carter has noted (1998) that pluriactive farmers would not prefer to be wage-earners but are differentiated by their relative youth, greater experience and training. They choose to specialize rather than continue traditional mixed farming. Pluriactive farmers are said to take more risks in pursuing business success, to seek larger profits through expansion and to continually seek new markets and opportunities (Kinsella, et al., 2000; Grande, 2011b).

Our interest in pluriactivity as a form of strategy in family farm firms has led us to pay attention to strategic change processes and renewal in family firms (e.g., Agarwal and Helfat, 2009). As Hurst has stated (2002, p.1), 'Renewal is about restoration of something of value, something important, that has been either lost or forgotten as an organization has grown and prospered. Renewal, then, is about values and the central role that they play in the lives of organizations undergoing renewal'. According to studies of Mannion et al., (2001) family farm firms chosen strategies depend upon access to capital assets such as human, financial, natural, social and physical. These assets relate to skills, knowledge, land, labor, landscape or social networks available, and vary in importance depending upon economic or political changes. Accordingly, a farm household may establish an enterprise, utilizing special skills or education (human capital assets).

Pluriactivity can be divided into an industrial pluriactive form (self-employed in two or more enterprises), and a wage-earning pluriactive form, (involved in both self-employment and wage earning), especially when a spouse works outside farm labor markets (Eikeland, 1999; Jervell, 1999). In addition to on-farm agricultural production, this could include either on-farm non-agricultural, and/or off-farm agricultural or non-agricultural work. Though not only the industry in which households seek additional income, the extent of farm pluriactivity has increased in proportion to the decline in agricultural income, and has been undertaken by over 60 % of family farms in the EU (SOFER, 2001; see Newton 2006, 499). Accordingly, we view spouses' work in outside farm labor markets, or further education of the farmer, as a form of exploration. To further argue this point of spouses' work as exploration; we draw attention to the growth intentions and thought patterns behind a focus on growth. Grande, Madsen, and Borch (2011) found support for the link between the resource-based view and EO in farm firms. This link could explain how entrepreneurial efforts and unique competence positively results in superior performance at farms. However, they point out that regarding the regulated and otherwise contextual nature of agricultural industry, there might be a call for more specific measurements regarding the entrepreneurial behavior of farm firms. Grande (2011a) highlights the importance of entrepreneurial skills in developing a new farm-based venture. The farmers could highly benefit from the capacity to generate ideas, exploring the uniqueness of their own resource base (including resources at the farm, personal experience and knowledge, and surrounding opportunities). Based on the prior literature we assume that pluriactivity viewed as entrepreneurial orientation may lead to growth and renewal in family firms, which leads to our second and third hypothesis.

H2. Pluriactively growth-oriented family farm entrepreneurs base their strategies on individual skills and capabilities.

H3. Entrepreneurial orientation affects the growth of family farm firms and their renewal via pluriactivity.

In Figure 1. we describe our main concepts and approaches as a theoretical frame of the study.

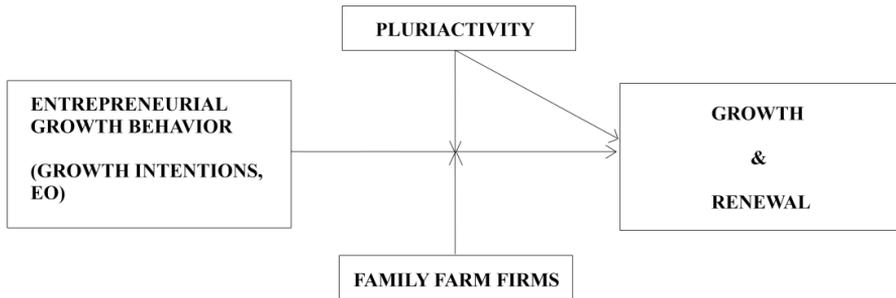


Figure 1. A Process approach to pluriactivity in the family farm firm context

RESEARCH METHODS

Sample selection and data collection

To investigate our hypotheses we re-examined our consolidated findings from a survey with 1,618 family farm farms in Central Finland (Niemiälä, Heikkilä, and Meriläinen, 2005). We acquired the names and addresses of 3620 family farm firms from the Information Centre of the Ministry of Agriculture and Forestry IACS (Integrated Administration and Control System) support register of 2004, and collected the data through a questionnaire sent by post to family farm firms entrepreneurs on 14 January 2005. We sent one reminder letter to the farms that did not respond to the first request. To examine the pluriactivity that branches out beyond traditional agriculture and forestry as a strategic orientation in family-owned farm firms, we developed a questionnaire utilizing the scales originally established by Niemiälä et al. (2005) and using the theoretical constructs based on the literature review.

The original survey questionnaire consisted of questions directed for all family farm entrepreneurs concerning their personal, family and farm data, transfer to descendants, and the economic foundation of their farm, but also questions for farms that have created new business activities other than

traditional farming (secondary and ancillary business activities, incorporated business activities) such as the nature of those business activities, various growth assessments, networking, training requirements, public sector operations and the nature of rural areas as business environments. (A.1) We tested the questionnaire on five farm firms entrepreneurs' in December 2004. However, some entrepreneurs experienced particular difficulties in defining (characterizing) their business activities other than traditional farming (secondary and ancillary activities) and their link to farming, and in determining their core production branch. Such problems may have affected the results. The questionnaire was sent to 3620 farms of which 1618 entrepreneurs answered the questionnaire. The sample was regionally representative with response rate 45 per cent. Out of the total 1,618 family farm firm entrepreneurs 679 indicated to have new business activities and ancillary activities, namely businesses that were totally differentiated from core production and incorporated as business as its own, businesses that were deviant from core production, businesses that were developed from the core production but fixedly belonging to basic agriculture and other business activities (defined by the entrepreneurs). Some farm firms are excluded from the analyses for incomplete or partially completed survey questionnaires (n = 73). The final sample used in this study comprises 606 observations on family farm firms. Due to internal non-response the effective sample size is somewhat lower in some of the analyses. (The useable response rate was 37.5% of the final sample.)

The final sample of 606 family farm firms comprised nearly 90% of family-owned, second to fifth generation family firms, 27% of which were characterized as over 200 years old, with an average age of 50 of entrepreneurs. 80% of entrepreneurs were male. Every third male and fourth female had completed Finnish basic school (Grades 1–10). Females had more vocational education than men and 14% of the females completed a higher education degree. 60% of the males were responsible for the new business activities and ancillary business activities (other than traditional farming), and 27% of the entrepreneurial couples were responsible for them together. Thus, the working experience of the family members and size of farm businesses corresponds to the definition of family businesses used in previous family business studies. Accordingly, this kind of definition of family business fits both our study and the Nordic family farm firm setting.

As a context of the study, Finnish family-owned farms are relatively small when they are compared with other European countries. Finland's northern geographic position restricts growing season and crop varieties, it increases costs, and it has influenced the country's history of combining agricultural work with additional-income-generating activities. Such families may increasingly

work off-farm, with agriculture as a secondary activity, particularly if growing crops (MTT Economic Research, 2005). We are aware of the other definitions used in family business contexts in an outside European countries and this may limit the comparability of our results to these other studies of family business.

The unit of analysis is the family farm firm owner when it comes to growth aspirations because entrepreneurs as individuals use their power over strategic decisions, although several other factors affect their decision making beyond family and business.

Constructs and measures

The data were largely collected on a scale, restricting the choice of analysis method. We used variable specific analysis in order to understand more holistically the phenomenon under scrutiny. We also used logistic regression analysis and cluster analysis, as both methods allow the use of nominal scale variables. The variables are listed in A.1. We also employed several proxies as a linkage between the constructs and measures to test our hypotheses when analyzing pluriactivity as a strategic orientation and growth as a qualitative process of family farm firms. We defined our constructs and measures based on knowledge gathered from previous studies (e.g. De Silva and Kodithuwakku, 2011; Kinsella, et al.; 2000; Grande, 2011; Jervell, 2011; Davidsson and Wiklund, 2013; Wiklund and Shepherd, 2013; Wiklund and Patzelt, and Shepherd, 2013; Miller et al., 2005) .

Dependent variables

Accordingly, as our variables were largely collected on scale, we employed the business creation process of family farm firms as a dependent variable. Based on the prior literature, we used the following proxy statement approach: the entrepreneurial orientation of family-owned farm firms affects an entrepreneur's growth intentions. Thus, entrepreneurs' attitude (behavior), resources (capabilities, skills, experience), and environment (family, completion, market) affect entrepreneurial orientation, and entrepreneurial orientation affects the growth and renewal of the family firms. Consequently, in family farm firms, we view growth as a qualitative process (Chandler, McKelvie, and Davidsson, 2009) and pluriactivity as a form of strategic orientation (Locket, Wiklund, Davidsson, and Girma, 2013).

Independent variables

We employed a number of independent variables. Firstly, we employed two independent variables, namely starting points for launching new business activities and perceived operational strengths of business that were analyzed as self-report measures. Entrepreneurs were asked to state two reasons for adding new business activities to traditional farming.. We found support from the previous studies regarding risk taking behavior, proactiveness (Covin and Slevin, 1991; Miller, 1983; Zahra and Covin, 1995; Zahra, 1993) and innovativeness dimensions of EO towards growth and renewal (Wiklund, Patzelt, and Shepherd, 2009; Lumpkin and Dess, 1996) as well as towards resource-based strategic thinking (Penrose, [1959] 1995) as entrepreneurs' human capital, knowledge and capabilities that assists entrepreneurs in identifying opportunities and growth attitude that people start and operate their own firms for a variety of reasons other than maximizing economic returns (Davidsson, 1989; Delmar, 1997).

We also offered 10 statements to entrepreneurs to measure entrepreneurs' intentions to launch new business activities. The concept of competitive advantage refers to the factors underlying profitability and growth (Grande, Madsen, and Borch, 2011; Collis and Montgomery, 1997) Enterprises differ in terms of measurable (e.g., facilities, production equipment, and raw materials) and difficult to measure, such as resources (company reputation, organizational culture, expertise and experience) and organizational abilities (resources, people, and process system complex). (Shepherd, and Wiklund, 2009; Wiklund and Shepherd, 2003; Wiklund et al., 2003); and take into account family members influence on strategic planning (Casillas and Moreno, 2010; Pittino and Visintin, 2011). Especially, Nordqvist (2005) identifies strategic proximity and strategic persistence as potential source of family firms' competitive advantage.

We also discovered subgroups among the respondents from the primary and secondary reasons for launching business activities and two other interesting groups with divergent starting points for launching business activities. Thus, we used variable specific analysis to compare each group to our observations of the three groups, individually to the total sample of family farm firms. Second, we requested the entrepreneurs to state two factors they perceived as their operational business strengths. We provided 10 statements to measure what entrepreneurs considered being their operational strengths.

Measuring these items was inspired by work of Mannion (2001), whose research was focused on family farm firms chosen strategies depending upon access to capital such as human, financial, labor, landscape, knowledge and skills, social networks, and how a farm household may established an

enterprise utilizing skills and education. To adapt these measures to wide variety of family businesses possess a specific set of resources and capabilities (Sirmon, and Hitt, 2003) that may promote or constrain entrepreneurial activities (Zellweger, Muhlbach, Sieger, in press) and studies on pluriactive farming households and their farmers point the age and education effects on constraining agricultural and non-agricultural opportunities (Hill, 2000; Jervell, 2011; De Silva, and Kodithuwakku, (2011). We also wanted to profile these groups by performing a variable-specific analysis in order to compare each of the groups to our observations of the previously indicated other three groups.

Secondly, we used two other kinds of independent variables to assess growth intentions of family farm firms. We used variables that measure the current significance of pluriactive business activities, and variables that measure the intensity of development intentions concerning pluriactive business activities. By these two variables we want to measure the significance of pluriactive business activities for family farm firms. The first variable illustrates the entrepreneurs' reports of the "current financial significance of pluriactive business activities". We provided five statements, such as "extra income and natural supplement for basic agriculture", "extra income but not related to basic agriculture", "an important source of income", "mainly a nice hobby", "other" that measure the financial significance of non-traditional business activities (A, Q39) .

The other variable provides an estimate of turnover distribution between basic agricultural activities, supplementary and ancillary business activities, and incorporated business activities (A, Q42). We combined the turnover of supplementary and ancillary activities and incorporated entrepreneurial activities and divided the variable "The Proportion of Turnover" into five categories, even though information was lost in the process. We also measured the variable of development intentions on the basis of the entrepreneurs' estimates of the development of any income gained through non-traditional business activities over the next three years (A, Q36) "income will increase considerably", "income will increase somewhat", "income will not change significantly", "income will decrease somewhat", "income will decrease considerably", "pluriactive business activities will discontinue". Farm households were found to have been influenced by their capital assets (Mannion et al. (2001) and Kinsella et al. (2000) don't account for pluriactivity being undertaken for non-financial reasons, but several households supported this in stating that income was not always the priority.

We also used four statements concerning entrepreneurs' growth intention as a variable. We asked the respondents to assess the degree to which they agree with the statements by requesting the entrepreneurs to rate

their opinion on a five point scale (completely disagree, moderately disagree, neutral, moderately agree, completely agree). As previous research suggests that growth in employment and sales are important, growth indicators of emerging venture performance (Delmar 1997; Delmar and Wiklund 2013; Wiklund and Shepherd 2013). Le Brasseur, Zanibbi and Zinger (2003) have examined activities preceding business start-up, growth intentions, actual development, business success, and the connections between these. Their results show that diverse participation in the tasks required to start an enterprise indicates the existence of growth intentions and is connected to desired and actual growth. Also Kolvereid and Bullvåg (1996) along with Bellu and Sherman (1995) found a positive correlation between growth intentions and actual growth. Delmar, Davidsson, and Gartner (2003) have divided growth-driven companies into seven categories on the basis of a cluster analysis. Enterprise attributes – age, size, and branch of industry – distinguish the seven types. Also growth models describe the factors affecting entrepreneurial attitude and strategic orientation. Covin and Slevin (1991) created a model to describe the factors affecting entrepreneurial attitude and the influence of attitudes. They confer three attributes to entrepreneurial orientation: a tolerance of uncertainty (risk taking), innovation, and proactiveness, standing out among competition.

Control variables

We utilized number of control variables in our study. First, we controlled issues that could influence family farm firm growth on individual and family level. We controlled age and gender of farm entrepreneurs since age and gender is seen as an antecedent of entrepreneurial behavior and growth of family firms, but also because the age of the farm household members influences the extent and type of pluriactivity (Carter 1998; Hill, 2000). We controlled for family influence related issues (Is your farm a family firm?) in order to identify family and non-family respondents because our study was on family farm firms (how many family members were working at the family farm firm, and family members who are responsible for the other business activities and ancillary businesses, and form of ownership), as these may have influence on the strategic behavior of family farm firms (Astrachan, 2010; Sirmon et al., 2008).

We also controlled the education level of entrepreneurs and his/her spouse because livelihood opportunities were constrained by education (or lack of it) a good education should therefore enhance both the employment prospects (Hill, 2000) and effects of education on growth is positive (Wiklund and Shepherd, 2003). Furthermore, we controlled experience (entrepreneurs

entrepreneurial, and industry experience such as years as an entrepreneur at the farm), and we controlled characteristics of entrepreneurial couples and family relationships (such as family's multiple and complementary expertise) because prior research has stressed that industry can affect the planning growth relationships (see e.g. Eddleston et al., 2013). We controlled for 12 sub-industries as a business activities related to pluriactivity such as tourism, construction, wood processing to mention but a few. We asked these because, as Brannon, Wiklund and Haynie, (2013) suggest, these factors influence outcomes related to venture creation and start-up. Experience in the industry indicates the potential of managerial skills required for expanding a business, and it is found to have a positive relationship with firm growth (Covin, and Slevin, 1997)

We also control location of the farm firm as these may be an indication of the overall opportunities considering the market and demand of the farm products and services (Eddleston, et al., 2013). Lastly, we controlled the continuity of the production from the viewpoint of succession, namely production and business continuity in farms from the viewpoint of succession. However Kinsella et al., (2000) have suggested that farm households' choices are pluriactive either to ensure a viable income or as a stage in the transition to leaving farming. We also controlled size and age of the farm firms (how long farm ownership has been held in family, area of cultivated fields) as they have identified to related to opportunity exploration and exploitation (Eddleston, Kellermanns, Floyd, Critten, and Crittenden, 2013; Wiklund, and Shepherd, 2013; Casillas, Moreno, and Barbero, 2010; Boyd, and Hollensen, 2012; Ducassy and Prevot, 2010; Nordqvist, and Melin, 2010).

ANALYSIS/STUDY

Growth intentions of the pluriactive family farm firms

We used two kinds of variables to assess growth intentions: variables measuring the current significance of pluriactive business activities, and variables measuring the intensity of development intentions concerning pluriactive business activities. We used two variables to measure the significance of pluriactive business activities. The first variable illustrates the entrepreneurs' reports of the current financial significance of pluriactive business activities:

Extra income and natural supplement for basic agriculture	<i>n</i> = 264	45.4%
Extra income but not related to basic agriculture	<i>n</i> = 113	19.4%
An important source of income	<i>n</i> = 112	19.3%
Mainly a nice hobby	<i>n</i> = 80	13.8%
Other	<i>n</i> = 12	2.1%
Overall	<i>n</i> = 581	100%

The other variable shows an estimate of turnover distribution between basic agricultural activities, supplementary and ancillary activities, and incorporated entrepreneurial activities in 2004. We combined the turnover of supplementary and ancillary activities and incorporated entrepreneurial activities. We divided the variable (the proportion of turnover) into five categories, even though some information was lost in the process:

Less than 5%	<i>n</i> = 29	5.7%
5%–10%	<i>n</i> = 82	15.9%
11%–30%	<i>n</i> = 138	26.7%
31%–65%	<i>n</i> = 145	28.0%
66%–94%	<i>n</i> = 101	19.4%
95%–100%	<i>n</i> = 24	4.6%
Overall	<i>n</i> = 519	100%

We measured development intentions on the basis of the respondents' estimates of the development of any income gained through pluriactive entrepreneurial activities over the next three years. Below are the respondents' estimates:

Income will increase considerably	<i>n</i> = 41	7.0%
Income will increase somewhat	<i>n</i> = 233	39.8%
Income will not change significantly	<i>n</i> = 236	40.3%
Income will decrease somewhat	<i>n</i> = 51	8.7%
Income will decrease considerably	<i>n</i> = 12	2.0%
Pluriactive business activities will discontinue	<i>n</i> = 13	2.2%
Overall	<i>n</i> = 586	100%

We also used four statements concerning growth as a variable. The respondents assessed the degree to which they agreed with the statements. They rated their opinion on a five-point scale (completely disagree, moderately disagree, neutral, moderately agree, completely agree). The four statements are as follows (the number of respondents who commented is given in parentheses):

We consider growth one of our key operational goals	(n = 517)
Growth and profitability are inseparable	(n = 519)
My and my family's livelihood is more important than firm growth	(n = 517)
Firm growth is not an intrinsic value for us	(n = 513)

We divided our observations into four groups in accordance with the above variables. The results of the cluster analysis are presented in Table 1. We used the groups' average values to interpret the content of their answers and to name the groups. The groups are called: established, growth driven, experimenters and stand-stills. They differ in their growth intentions and their special characteristics in pluriactive farms.

In the group of established farm firms, activities other than agricultural and forestry business are highly economically significant. In many cases, such activities are a primary source of income. The respondents expect to see an increase in the income gained through other business activities in the next few years. Nevertheless, their expectations are moderate as their business activities are often quite stable. They acknowledge the significance of growth. They also adopt a realistic approach, valuing stable income for themselves and their families – as do the other groups – and not attributing intrinsic value to growth.

For those in the growth-driven category, income gained through pluriactive business activities is significant to family livelihood in this group. However, such income clearly constitutes a supplementary source of income. The respondents in this group are vigorously growth driven and see a strong link between growth and profitability. They also believe that their operations will expand in the next few years. This group highlights the significance of growth for business operations, as they do not really attach intrinsic value to growth. Nevertheless, this group attaches the most positive value to growth.

For experimenters, income gained through pluriactive business activities is important, but clearly constitutes a supplementary source of income. The respondents have a skeptical outlook on the future and lack vigorous growth motivation. For stand-stills, income gained through pluriactive business activities is an extremely significant source of livelihood. The respondents are apprehensive about the future. Their enterprises' pluriactive business activities do not really have growth prospects. The respondents additionally lack the desire to grow. Compared with the other groups, they attribute the most negative values to growth. These respondents also most clearly put their family's livelihood before business growth. They do not feel growth is currently necessary, but they do not entirely rule it out, either.

Table 1. Growth groups differing from each other by their growth intentions and their special characteristics in pluriactive farms

Variables	Groups differing from each other by their growth intentions and their special characteristics in pluriactive farms			
	Established (other than nontraditional businesses)	Growth driven	Experimenters	Stand-stills (no growth orientation)
THE PROPORTION OF SALES	4.94	3.30	2.62	4.00
The meaning of other business activities at the moment (Q39)	4 (The most important)	2 (Additional income)	2 (Additional income)	2 (Additional income)
The development of other sources of business income during the next three years (Q36)	2 (Grows)	2 (Grows)	3 (Unchanged)	3 (Unchanged)
We consider growth to be one of our key operational goals the pivotal target in our business (Q4712)	3 (Neutral)	4 (Describes well)	2 (Describes poorly)	3 (Neutral)
Growth and profitability are inseparable (Q4713)	3 (Neutral)	4 (Describes well)	2 (Describes poorly)	3 (Neutral)
My and my family's livelihood is more important than firm growth"(Q4714)	4 (Describes well)	4 (Describes well)	4 (Describes well)	4 (Describes well)
Firm growth is not an intrinsic value for us (Q4715)	4 (Describes well)	3 (Neutral)	4 (Describes well)	5 (Describes extremely well)
Observations (n = 421)	102	158	107	54
Total 100%	24%	38%	25%	13%

The results above show that the farms can be divided into groups based on growth intentions. How do farms that intend to convert pluriactive business activities into a primary source of income over the next few years diverge from other farms? We asked the respondents if they meant to convert their pluriactive business activities into their most important source of income over the next three years (Q40).

The group that said 'yes' comprised 165 respondents (n = 591). To analyze this, we used an estimated logistic regression model (Nagelkerke R² = .131), parameter values, and parameter significance. The significance (p) was below 0.1 (in bold face):

VAKIO	1.262	.106
TUOSUUNTA		.012
TUOSUUNTA (1)	-0.714	.042
TUOSUUNTA (2)	-1.817	.001
TUOSUUNTA (3)	-0.780	.101
TUOSUUNTA (4)	-1.080	.043
JATKO		.005
JATKO (1)	0.079	.923
JATKO (2)	-1.001	.086
JATKO (3)	0.383	.581
Q1601 (1)	-1.244	.012

Slightly over a quarter of the farms aim to convert a pluriactive business activity into a primary source of income over the next three years. This was most common (42%) on farms in the others category, and least common on dairy farms (16%) and cattle farms (17%), where work and capital input tend to be strongly linked to current production. Plans concerning the production branch also depend on whether farms aim to convert pluriactive business activities into a primary source of income. This is most common on farms planning a change of production branch (42%) and least common on farms planning to maintain their current production branch (20%). Remote work on the farms also seems to indicate the desire to convert a pluriactive business activity into a primary source of income.

The results clearly indicate that a strong inclination towards pluriactive business operations is somehow connected with the level of commitment required by current farm operations. Farms involved in the other production category are not as bound by their current production operations as dairy farms. They also often have experience in business activities other than basic agriculture. Then again, they are also clearly oriented to systematic pursuit and change. These are the factors most obviously distinguishing the farms planning to convert a pluriactive business activity into a primary source of income in the near future.

Connections between business creation processes and growth intentions

Next we present our results about the connection between new business creation processes and growth intentions, and about differences in strategic orientation between various growth groups of family farm firms. (See Table 2.) Note the percentages of types of growth intentions are in boldface.) First, the results showed a statistically significant dependency ($\chi^2 = 21.8$; $df = 12$; $p = 0.040$) between growth intentions and motives for start-up. The dependency

between growth intentions and perceived operational strengths verges on statistical significance ($\chi^2 = 14.0$; $df = 9$; $p = 0.125$). The initial motives and strengths sparking pluriactive business activities on farms are therefore generally connected to the farms' growth orientation and to their approach to business growth. In the following sections we explain the results as short narratives describing the differences between the four groups discovered in the study.

Table 2. Differences in strategic orientation between various type of growth groups of family farm firms

Motives for, and perceived operational strength of business start-ups	Growth intentions				Total, amount and (%)
	Established (living consists of other business activities) amount and (%)	Growth-driven amount and (%)	Experimenters amount and (%)	Stand-stills (meaning great; no growth orientation) amount and (%)	
The foundations of business start-ups:					
Perceived compulsion	19 (24)	24 (19)	12 (13)	13 (28)	68 (20)
Active	7 (9)	12 (10)	13 (14)	5 (11)	37 (11)
Depended on resources	7 (9)	33 (26)	31 (34)	11 (23)	82 (24)
Depended on resources and perceived compulsion	23 (30)	31 (25)	22 (24)	10 (21)	86 (25)
Depended on resources and active	22 (28)	25 (20)	14 (15)	8 (17)	69 (20)
Total	78 (100)	125 (100)	92 (100)	47 (100)	342 (100)
Perceived strengths of the activity					
Depended only on resources	34 (39)	70 (52)	49 (53)	21 (46)	174 (48)
Resources and cooperation	17 (19)	15 (11)	16 (17)	4 (9)	52 (14)
Resources and quality	21 (24)	26 (19)	10 (11)	7 (15)	64 (18)
Resources and marketing know-how	17 (19)	25 (18)	18 (19)	14 (30)	74 (20)
Total	89 (100)	136 (100)	93 (100)	46 (100)	353 (100)

Established

The established group experienced a higher than average level of necessity to launch new pluriactive business activities. Their strengths were largely based on quality and cooperation. They were the least resource-oriented in terms of business creation and strengths. The farms reached a situation where, in many cases, pluriactive business activities already constituted a primary source of income and the respondents had a positive approach to and positive expectations concerning growth. This group covers approximately a quarter of the pluriactive family farm firms. The entrepreneurs in the established group can be described as follows: They are mainly younger than in the other groups and they have the least entrepreneur experience. Many have started pluriactive business activities at an early stage in their career as an entrepreneur and are now more or less established. The significance of forestry income and income transfers is the lowest in this group, while the significance of income from other business activities is the highest. The respondents also have high salary income. These family farmers have the least cultivated area and are the most unsatisfied with the current state of agriculture and future profitability. The production branches of family farm firms fall under the other business activities category more often than in the other groups. Another indication of the established nature of the group's entrepreneurial base is that they plan to hire external labor in the near future more often than the growth-driven farms where economic growth is often still in the planning phase.

Growth-driven

Growth-driven family farm firms are highly average, particularly regarding their starting points for business activities. This group experienced necessity slightly less frequently than the other groups and relied on resources slightly more than the other farms engaged in pluriactive business activities. Their resource-oriented starting points manifest rather strongly in their perception of their perceived strengths, as does quality. These farms seek cooperation rarely. The connection between start-up and growth drive is therefore tinted with resource orientation, quality orientation, and a lack of necessity. The entrepreneurs state economic reasons as their motivation for growth, including obtaining a sufficiently profitable operational scale or crossing the market entry threshold. (see Table 1). The marginal benefit for expanding business operations is high in this group.

Growth-driven enterprises cover over a third of all the farms engaged in pluriactive business activities. They cultivate a slightly larger than average area. This group includes the farms that have been in a single family for the

longest, the farms which attach the highest significance to agricultural and forestry income, and the farms which are the most satisfied with the current state of agriculture and future profitability. The group includes a slightly higher than average percentage of grain-growing and dairy farms. Established and growth-oriented farms planned a change in the form of enterprise ownership or company type clearly more often than the other groups. This indicates a more active level of business planning.

Overall, the group did not significantly diverge from all other farms engaged in pluriactive business activities. This lack of divergence indicates that, in practice, a high percentage of farm firms engaged in such activities can be growth-driven, because this requires no particular or exceptional starting point or strengths. The results could also mean that an entrepreneur family's specific conception of their own orientation (intention) dictates their growth drive to a greater extent than any necessity, resources, or active objectives underlying business start-up, or any perceived business strengths.

Experimenters

Experimenters experienced the least necessity to launch other business activities. Then again, their operations are clearly the most resources-based. This group is also the most active and aspiring one (unlinked to resources). They have the narrowest strength-base of all the groups and their strengths often rely on resources alone. These respondents additionally define cooperation as a strength more often than average and they rarely consider quality to be a strength. This group covers approximately a quarter of the farms engaged in pluriactive business activities. They have the largest share of income from agriculture and forestry and the smallest share of salary income and income from other business activities. The farms in this group have the most cultivated area. The group includes a higher than average percentage of dairy farms. The respondents in this group additionally have children more often than average.

The respondents are therefore experimenters who are engaged in a small-scale business built on a narrow resource base (e.g., production facilities, equipment, or limited expertise). Time will tell whether they will grow or discontinue their operations. Engaging in pluriactive business operations is not always a suitable method of improving livelihood.

Stand-stills

Stand-still farms have experienced the most initial necessity (unconnected to resources) to engage in pluriactive business activities. They also present the lowest levels of activity and pursuit. They diverge from the other groups

in many ways in terms of strengths. They consider market competence to be a strength more often than average, but perceive cooperation and particularly quality as strengths less frequently than average. Quality is not a relevant factor, possibly because the respondents started because they felt they had to, and then managed to enter the market on their own.

This group is the smallest of the four, covering approximately one out of eight farms engaged in pluriactive business activities. Their livelihood is the most dependent on salary income and income transfers. They have less than average cultivated area, they are on average slightly older than the other respondents and they have been entrepreneurs for longer than average. Their primary production branch falls under the other production category more often than average. The percentage of entrepreneurs planning to reduce the number of permanent employees is significantly higher in this group compared with the others, meaning that the entrepreneurs are preparing to cut back their operations or discontinue them.

The specific needs of this group are difficult to determine. Pluriactive business activities are significant to them, but they do not really have growth prospects. There may be a call for some form of reorganization to pull them out of their stand-still state, such as diversifying competitive advantage and identifying growth opportunities or a realistic method of discontinuing operations.

Summary

The element of necessity does not appear to be connected with growth intentions or the initial level of activity in pursuing business start-up. However, both dimensions remain underlying factors. On the contrary, growth drive does not seem to be a relevant factor in situations where the exploitation of resources is combined with strong motivation. Pluriactive orientation was a strong underlying factor in the growth-driven group, more so than in the other groups. Growth-driven business activities, along with other farm business activities, appear to be the combined outcome of opportunity and will, and that it is possible to distinguish different life cycle stages in the process of renewal and discontinues of family farm firms.

DISCUSSION AND CONCLUSIONS

Our study focuses on family farm firms as an important and yet under-researched type of family firms. We have investigated the pluriactivity that branches out beyond traditional agriculture and forestry and which acts as a strategic orientation of family-owned farm firms. Our main research question was: What is the role of pluriactivity for family farm firms' continuity and

survival? More specifically, we have examined whether there is a connection between new business creation processes and growth intentions, and explored whether there are differences in strategic orientation between various growth groups of family farm firms. To carry this examination out, we used the consolidated findings we received from a survey of 1,618 family farm firms in Central Finland. We employed proxies such as growth intentions, entrepreneurial orientation, and family firm essence approach to test our hypotheses. We wanted to look at the visibility of growth as strategic renewal, revisiting the concepts from the pragmatic perspective of agriculture.

Our study revealed that pluriactivity is associated with growth-orientation and perceived strengths of the family farm firms. We identified four types of growth groups (Established, Growth-Driven, Experimenters, Stand-Stills) and found differences in their pluriactive orientation. We suggest that pluriactivity as an entrepreneurial orientation affects the growth-intention of the family entrepreneurs and the business renewal processes of the family farm firms. Entrepreneurs need to have capabilities (knowledge, skills, experience) and willingness to change (motivation, attitude, volition) when using pluriactivity as a strategic orientation as they affect growth behavior (EO). Next, we discuss with our results and make some suggestion for future research avenues in family business strategy research.

Prior research has suggested that growth in family firms can be based on economic and non-economic goals. Family-oriented goals could be understood as dimensions of family firm behavior and performance, which in turn may be seen as a multidimensional concept (Chrisman et al., 2013; Basco, 2013; Astrachan and Jaskiewicz, 2008).

Our findings show that various factors contribute to business creation, and we used these factors to categorize entrepreneurs into four growth groups: established, growth-oriented, experimenters, and standstills. Our first hypothesis - pluriactive family farm entrepreneurs are growth driven, was reinforced when, in over half of the cases, we observed an element of necessity underlying business creation of new business activities. In approximately a quarter of the cases, the strongest pull factors comprised various resources, active pursuit, and intentions. In nine out of ten cases, the strengths comprising competitive advantage were resources. This indicates that pluriactive farm business activities are rarely primarily based on partnership, quality, market competence, or market contacts. However, growth intentions related to pluriactive farm business activities helped in dividing enterprises and entrepreneurs into various categories. By categorizing the farm firms according to their growth intentions, observing the reasons for their chosen growth strategies becomes possible. A deeper awareness of the grass-root level growth strategies will both enhance our understanding

of entrepreneurial behavior and of how growth becomes possible through entrepreneurial action.

Our second hypothesis - pluriactively growth-oriented family farm entrepreneurs base their strategies on individual skills and capabilities, was reinforced by the result that shows approximately a quarter of the farms are already established entrepreneurs with extensive pluriactive operations based mainly on the resources provided by the farm firm. Slightly over one-third of them are growth driven, and a quarter are small-scale or initial stage experimenters. The rest (approximately 13%) are at some kind of a stand-still or problem stage. The strong orientation towards pluriactivity in recent years was mainly explained by the nature of and commitment required by current operations, systematic pursuit, and a drive for change. The nature of the initial motives and strengths for engaging in pluriactive farm business activities was generally (statistically) connected with the entrepreneurs' approaches to growth and their specific growth orientation. Our results support the findings of Ferguson and Olofsson (2011) that although farmers felt a necessity to create new business, they had two different logics of departure: the logic of leverage, which focuses on reconfiguring existing resources, and the logic of opportunity, where the focus was on recognizing external opportunities.

Our results also indicate that growth-driven farms did not in any particular way diverge from all other farms engaged in pluriactive farm businesses. Therefore, it is possible that a high percentage of farms engaged in pluriactive activity could commit to growth. Another conclusion, based on our proxy statement of family essence approach, is that entrepreneurs' family members may affect entrepreneurs' growth intentions, and that an entrepreneur family's own perception of their orientation (i.e., their intention) largely dictates the extent of their growth drive. Growth, therefore, can be influenced by clarifying intentions, that is, by fostering internal growth and awareness of one's own strengths. Our third hypothesis, Entrepreneurial orientation affects the growth of family farm firms and their renewal via pluriactivity, was reinforced by the result that shows proxy statement of family essence approach is connected to growth intentions and functional renewal of family farm firms. Namely, pluriactivity as a form of growth contributes to the family business essence approach. Our findings support Basco's (2013) finding that the strategic decision-making is influenced by those family members who were working actively on pluriactive farm firms.

However, our findings also suggest that the influence of those family members who are not actively working (e.g., spouses) on the farm might appear in the strategic decision-making. We suggest that family farm firms high in these factors might be more likely to use pluriactivity as a growth strategy. Furthermore, our findings are in line with Grande et al. (2011a,

2001b), which considers a variety of development paths in family farm firms and suggests the importance of entrepreneurial skills in developing new farm-based ventures

Our study contributes to the research on family business growth strategies by demonstrating that one family-oriented goal could be to let the family members choose their own paths beyond the family firm but instead of leaving them alone on their chosen path, seek to involve them in the business by diversifying the business according to the family member's interests. We suggest that pluriactivity can be seen as a form of strategic orientation, namely a growth strategy of family farm firms (Astrachan, 2010; Miller, Le Breton, and Lester, 2013)

Our research contributes to the prior literature on family firms and their growth strategies in various ways. We have examined family firms that have a great impact on local and global economy and well-being. This study demonstrates also the influence on family ownership because family farm firms' governance are often motivated by both social (non-economic) and economic outcomes (Zahra, 2007; Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, and Moyano-Fuentes, 2007; Berrone, Cruz, and Gomez-Mejia, 2012; Ducassy, and Prevot, 2010), and thus we agree that a farm's growth and value cannot be measured by monetary terms only (Smith and Mc Elwee, 2013) while pluriactivity is perceived as a strategy. Strategic orientation as a perspective for qualitative growth and renewal may increase the visibility of the micro-level aspects of entrepreneurship, as stated to understand what drives entrepreneurs, namely family farmers in entrepreneurial action at the micro-level. (Davidsson and Wiklund, 2013; Zahra, 2007) but also in the level of family business groups (Piana, Vecchi, and Cacia, 2012). Though scholars (Basco, 2013; Basco and Rodriguez, 2009) have begun to more finely examine the contribution of family governance to business success, additional studies should examine the role of these interventions, collectively, in sustaining family distinctiveness (Graig, Dibrell, and Garrett, 2013). Graig et al., (2013) point out that family owned or family influenced family businesses have been noticed to be different compared to other businesses. Especially tacit knowledge, transmitted among the family, has been recognized as a strategic asset in family firms. These kinds of strategic assets are unique and difficult to imitate but they also have the potential to be utilized as a competitive advantage.

Implications for practice

This study has several implications for family business management and policymakers. Our study has revealed that family firms need support for

both exploring and exploiting their opportunities for growth and renewal, that is, they need support for pluriactive businesses. Our study may also help policymakers support family farm firms in a more targeted manner.

The established group could receive tailored business training, consultancy, and development projects (e.g., quality, cooperation, product development), which would help the family farm firms to reinforce the competitive ability and advantage of their pluriactive businesses.

The growth-driven group needs to be encouraged to grow as entrepreneurs by influencing their strategic thinking and by helping to clarify their intentions. Because intentions significantly steer growth, family business management consultants and policymakers, perhaps in cooperation, could offer, instead of only capital or production- and business-related training, strategic expertise to growth-driven family farm firm entrepreneurs as means to clarify their future business plans. The experimenters group must often decide on the strategic choices they want to take. They should be provided mainly with critical external assessment help as a basis for their future planning solutions. The stand-still entrepreneurs often require some kind of reorganization, for example in diversifying their competitiveness, identifying growth opportunities, or in finding an applicable method of discontinuing operations.

Limitations and paths for future research

Our study is not without limitations. We revisited the previously collected quantitative data and consider the results to be merely suggestive. Our focus was also limited to pluriactive family farm firms in Central Finland. Nevertheless, the results can be cautiously generalized to the whole country because we included production branch, farm size, age, education, regional type, and other similar characteristics as cluster analysis variables. Our sample's small size and geographical limitations might cause method bias. We compared our sample with larger national studies and found our family farm firms to be representative of family farm firms in the country as a whole, both in the extent of their pluriactivity and in their size.

Sharma and Sharma (2011) argue that, based on Ajzen's (1991) theory of planned behavior, "dominant coalitions in firms with higher levels of family involvement in business are more likely to have stronger intentions to pursue a PES." We were interested in seeing if pluriactivity and diversified incomes could be regarded as planned behavior in family farm firms. By dividing the respondents into groups according to their willingness to grow, we ended up with groups that were differentiated from each other.

For future research, it is important to develop a further understanding of farms' functional strengths. We might accomplish this by incorporating the different concepts of capital—economic, human, social and psychological—into the data acquisition. This method could generate ideas for practical development. Qualitative growth should be carefully reviewed and defined because growth models do not necessarily cover these variables, which do not seem to exist in the analyses yet (Davidsson and Wiklund, 2013; Chrisman et al., 2012). For family firms it is even more important to notice that the performance of a firm may depend on individual capabilities and resources and on the entrepreneur's abilities to facilitate them effectually into business as our sample of family farms illustrated when contextualizing growth strategies and renewal.

Instead of extrinsically given strategies and forced plans, farmers could also benefit from slowly emerging and coherent strategies (Hurst, 2002; Webb, et al., 2010). However, more information is needed about the role of family involvement in shaping strategic entrepreneurship and the probable differences between family-owned and family-influenced firms. We suggest that further research is needed about family business strategies and the performance of business outcomes, but also about failures of growth strategies.

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Abstrakt (in Polish)

Nasze badania skupiają się na rodzinnych gospodarstwach rolnych jako ważnym, choć wciąż zbyt mało zbadanym rodzaju firm rodzinnych. Badamy zachowania przedsiębiorcze w kontekście rodzinnych gospodarstw rolnych, skupiając się na roli wielozawodowości. Integrując literaturę na temat strategii stosowanych przez rodzinne firmy, możliwości i zamiarów rozwoju, nasze badanie, obejmujące 1618 fińskich rodzinnych gospodarstw rolnych pokazuje ideę wielozawodowości jako strategicznej orientacji rodzinnych gospodarstw, prowadzącej do wzrostu i odnowienia obecnych i przyszłych domen. Nasze badania pokazują, że wielozawodowość związana jest z orientacją na rozwój i postrzeganymi mocnymi stronami rodzinnych gospodarstw rolnych. Wyodrębniliśmy cztery rodzaje grup wzrostu (Ustabilizowany, Skupiony na Wzroście, Eksperymentujący oraz Unieruchomieni), jak również pokazaliśmy różnice w ich orientacji na wielozawodowość. Sugerujemy, że wielozawodowość jako orientacja strategiczna wpływa na zamiary rozwoju przedsiębiorców rodzinnych oraz na procesy odnowy biznesu w rodzinnych gospodarstwach rolnych. Przedsiębiorcy muszą posiadać możliwości (wiedzę, umiejętności, doświadczenie) oraz chęć do wprowadzania zmian (motywacja, postawa, wola), jeżeli stosują wielozawodowość jako strategiczną orientację wpływającą na zachowania prowadzące do wzrostu. Wreszcie omawiamy nasze wyniki i oferujemy kilka sugestii dotyczących przyszłych obszarów badań w zakresie strategii biznesowych firm rodzinnych.

Słowa kluczowe: *wielo-zawodowość, rodzinne gospodarstwa rolne, zamiary, wzrost, odnowienie, strategia.*

Appendix

Variables	The interpretation of the variables
(Q1) AREA	The location of the farms: 1 = Jyväskylä, 2 = Jämsä & Äänekoski, 3 = other areas ($N = 1,577$)
(Q10) FARM SIZE1	Area of cultivated fields (ha): 0–10, 11–30, 31–60, 61–120, 101–180, 181–300, 301– ($n = 1,577$)
(Q23) PRODUCTION LINE	Production line: 1 = grain, 2 = dairy products, 3 = forestry, 4 = cattle, 5 = other ($n = 1,571$)
(Q7) OWNERSHIP	How long farm ownership has been held in family, years (2005-K07) ($n = 1,406$)
(Q4) AGE1	The age of the respondent, years (105-K04) ($n = 1,609$)
(Q9) ENTREPRENEURSHIP	How long the respondent has been a farm entrepreneur, years (2005-K9) ($n = 1,536$)
(Q5) HIGH SCHOOL1	Respondent graduated from high school: 1 = no, 2 = yes ($n = 1,618$)
(Q5) HIGH SCHOOL2	Spouse graduated from high school: 1 = no, 2 = yes ($n = 1,618$)
(Q5) HIGH SCHOOL12	Respondent and the spouse both graduated from high school: 2 = neither did, 2 = either one did, 3 = both did ($n = 1,618$)
(Q5)POST-SECONDARY1	Respondent has at least post-secondary education 0 = no, 1 = yes ($n = 1,618$)
(Q5)POST-SECONDARY2	Spouse has at least post-secondary education 0 = no, 1 = yes ($n = 1,618$)
(Q5)POST-SECONDARY 12	Respondent and the spouse have both at least post-secondary education 0 = neither do, 1 = either one does, 3 = both do ($n = 1,618$)
(Q5 sum) EDUCATION	Sum variable including the basic education of the respondent and the spouse (high school = 1, other = 0) and vocational education and training (1 = post-secondary level, polytechnic or university, 0 = other) Sum variable can appear in values 0 (both spouses 0 regarding their basic and vocational education) - 4 (both spouses 1 regarding their basic- and vocational education) ($n = 1,618$).
(Q8)CHILDREN	The amount of children in the household: 0 = no, 1 = yes ($n = 1,618$).
(Q24) CHANGE	A change in production line is expected in the forthcoming three years: 1 = giving up, 2 = remaining the same, 3 = changing, 4 = concentrating
(Q15) K1501	Someone does paid work outside the farm: 1 = no, 2 = yes ($n = 1,583$)
(Q16) K1601	Someone does paid work as remote work in the farm: 1 = no, 2 = yes ($n = 1,583$)
(Q28)PROFITABILITY1	A vision of the profitability of agriculture at the moment: 1 = extremely weak, 2 = quite weak, 3 = tolerable, 4 = satisfactory, 5 = quite good, 6 = extremely good) ($n = 1,455$).

(Q28)PROFITABILITY 2	A vision of the profitability development of agriculture in the near future: 1 = extremely weak, 2 = quite weak, 3 = tolerable, 4 = satisfactory, 5 = quite good, 6 = extremely good) (n = 1,354).
(Q51)NETWORKING	An intention to develop the farm activity based on cooperation: 0 = no, 1 = yes (n =1,618)
(Q30)CONDUCTIBILITY1	How contemporary work is conductible with the present arrangements at the farm at the moment: 1 = extremely badly, 2 = quite badly, 3 = tolerably, 4 = satisfactorily, 5 = quite well, 6 = extremely well) (n = 1,442).
(Q30)CONDUCTIBILITY 2	How contemporary work is conductible with the present arrangements at the farm in the near future: 1 = extremely badly, 2 = quite badly, 3 = tolerably, 4 = satisfactorily, 5 = quite well, 6 = extremely well) (n = 1,442).
PARTICIPATION (Q27,32)	Who is responsible for agriculture/for other business activities and working in your farm: 0 = the farmer or the Spouse, 1 = the farmer and the Spouse together.
(Q20)SUCCESSOR	The continuity of the production from the viewpoint of succession: 1 = not currently important, 2 = known successor, 3 = possibly known successor, 4 = no known successor

Q11: Form of ownership

Q16: Family members doing remote work from the family farm firm

Q18: Family members working actively in the family farm firm (regularly/seasonally)

Q32: Family members responsible for business activities other than traditional farming (supplementary and ancillary and other incorporated business activities)

Q34: Yes/no question asking if the respondent's firm is a family firm

Q36: The development of other business incomes during the next three years

Q 38: Entrepreneurs intentions to launch new business activities

Q39: Statements measuring the financial significance of non-traditional business activities.

Q40: The respondent's intentions to convert pluriactive business activities into their most important source of income over the next three years

Q42: An estimate of turnover distribution between basic agricultural activities, supplementary and ancillary business activities, and incorporated business activities

Q45: Number of person-years produced by respondent's farm in 2004

Q47: Statements regarding respondent's relationship to other business activities

Q 47(option 12) We consider growth as the pivotal target in our business

Q 47(option13) Growth and profitability go hand in hand

Q 47(option 14) Me and my family's livelihood is more important than firm growth

Q 47(option 15) Firm growth is not an intrinsic value for us

Q48: statements evaluating the source of respondent's strengths in other business activities

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Short- and Long-term Effects of Innovations on Enterprise Market Value: A case of the Tourism Industry

Dawid Szutowski¹, Marlena A. Bednarska²

Abstract

Innovations seem crucial for contemporary enterprises willing to achieve the objective of increasing firm's value. The aim of this paper is to examine, both conceptually and empirically, the relationship between innovations and tourism enterprises' market value. Tourism sector was taken into consideration in order to fulfill the existing research gap. This focused paper was based on relevant market data. Event study and calendar time portfolio approaches were chosen to test investors' responses to innovation announcements. Six tourism companies listed on the Main Market of Warsaw Stock Exchange were examined within the six years research period and 34 innovation announcements were identified. Polish Press Agency database and Warsaw Stock Exchange databases were used to collect data. Results indicate that innovations affected positively investors' valuation of tourism enterprises. The average event day market value change equaled 0.63% and differed considerably from the one-year one of 3.02% meaning that investors adjust their initial reaction over time. Initially investors reacted mostly to marketing, distributional and external relations innovations while within one-year period they attributed the most value to marketing and external relations ones.

Keywords: *innovation, market value, event study, calendar time portfolio, tourism enterprise.*

INTRODUCTION

There is only one thing that is constant nowadays, that is constant change (Gunday, Uluso, Kilic, Alpan, 2011). Issues concerning innovations are strongly related to the current worldwide scientific discussion and stem from such domains as: innovation driven economy, knowledge economy and neo-Schumpeterian economics. They are also key factors in OECD and EU policies. Moreover, innovations are crucial at the enterprise level (Janasz

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and Koziół, 2007) as all enterprises operating in a contemporary market expose themselves to innovations (Ciborowski, 2003; Gunday et al., 2011). Also innovations represent the most significant component of a company's strategy as they provide directions for the firm's evolution (Siguaw, Enz, Kimes, Verma, Walsh, 2009). All these characteristics of innovations apply also to tourism enterprises, especially in the European Union, where tourism is considered to be an important contributor to the economy and one of motors of future growth (WTTC, 2014). In this context research concerning innovations with respect to tourism enterprises remains crucial.

At the same time market value increase seems to be the most important goal for every company (Copeland, Koller and Murrin, 1997). Growing companies stimulate employment, are able to discharge liabilities and offer trade credit to their customers (Rappaport, 1998). A company's value is also the best measure of its performance (Szablewski and Tuzimka, 2004). The purpose of market value increase is emphasized in companies where owners hire managers. In such situation both groups represent their own, differing goals (Wilimowska, 2008). However establishing the maximization of market value as company's goal allows their goals to approach one another or overlap (Szczechankowski, 2007). The issue of market value is vital for listed companies as they commonly deal with stock prices. The increase in value is determined on the market and reflected through investors' offerings.

In the light of the above discussion what seems especially important is the relationship between innovations and market value of tourism companies listed on European stock exchanges. This issue will constitute the axis of the present paper, which is structured as follows. The first section discusses innovations in the tourism industry and delivers research hypotheses. Then methodology and data sources are presented. Findings of the study on short- and long-term effects of innovations in tourism enterprises are presented in the third section of the paper. Finally, implications and recommendations for future research are proposed and main conclusions are summarized.

LITERATURE REVIEW AND RESEARCH HYPOTHESES

The growing recognition of services as the core of the process of structural change in modern economy has resulted in a proliferation of research on innovations in this sector. As noted by Carlborg, Kindström and Kowalkowski (2014), service innovation is no longer considered a side activity to product innovation; it constitutes a research field in its own right. However, the progress made by investigators regarding innovative practices and their consequences for firm performance in the service context has not been transferred with equal intensity to the tourism sector (Camisón and Monfort-

Mir, 2012; Williams and Shaw, 2011). The present study, therefore, aims to address this gap and seeks to contribute by recognizing effects of innovations on tourism companies' market value.

A substantial body of contemporary innovation research has been built on Schumpeterian approach (1934). In Schumpeter's theory economic development is driven by innovations, defined as new combinations of means of production. These new combinations refer to a new product or a new quality of a product; a new method of production; a new market; a new source of supply; and a new organization of industry. Proponents of the synthesis perspective on service innovation research find Schumpeter's concept to be broad enough to encompass both service and manufacturing innovations (Drejer, 2004). Still it is advisable to display specific characteristics that make innovations in tourism significantly different in type and in adoption processes from innovations in manufacturing settings. According to Hall and Williams (2008) four distinctive features of tourism innovations should be taken into account and these are:

- 1) The co-terminality of tourism service production and consumption – tourists are active collaborators in encounters with service providers, hence they can become co-creators of innovations.
- 2) Information intensity – the tourism industry is heavily reliant on information exchanges, which stimulates developing and implementing IT innovations.
- 3) The importance of the human factor – there is a constant tension between managing labor costs and labor quality in tourism, which leads to intensifying intra-firm organizational innovations.
- 4) The critical role of organizational factors – tourist experience is made up of multiple encounters with different service providers, in consequence inter-firm organizational innovations grow in importance.

In the present study the broad concept of innovation is applied, which is consistent with Schumpeterian perspective. Innovation refers to the process of generation, development and implementation of ideas or behaviors new to adapting organization. A new idea or behavior may pertain to a product, service, technology, structure, system, or practice (Damanpour, 1996).

Innovations can take a wide variety of forms and can be classified in different ways. Perhaps the most common approach to categorization of innovations stems from Oslo Manual (OECD and Eurostat, 2005). It defines four types of innovations at the level of the firm that encompass a wide range of changes involving new or significantly improved solutions: product, process, organizational, and marketing innovations. In tourism research Hjalager (2010) applies a categorization close to Schumpeter's original one and analyses five types of innovations: product (service), process, managerial (organizational), management (marketing), and institutional innovations.

Distributional innovations can be considered as a part of process innovations (Weiermair, 2004), however given the critical role of distribution channels in tourism marketing it seems suitable to classify them as a separate category (Nicolau and Santa-María, 2013). Due to the complex and networked characteristics of the tourism product (Pikkemaat and Peters, 2005) and growing recognition of the significance of external knowledge in developing innovative capabilities (Saunila and Ukko, 2012) it seems essential to include inter-organizational relations in innovation analysis.

Based upon the above arguments a modified typology of innovations has been proposed in the paper:

- 1) Product (PROD) – components, user- friendliness, functional characteristics, technical specifications etc.
- 2) Process (PROC) – equipment, software, techniques etc.
- 3) Management (MGMT) – staff empowerment, job profiles, authority systems, collaborative structures etc.
- 4) Marketing (MKTG) – promotion, pricing, design, packaging etc.
- 5) Distribution (DISTR) – intermediaries, distribution channels etc.
- 6) External relations (EXT REL) – collaboration with research organizations, relations with other firms and institutions, integration with suppliers etc.
- 7) Institutional (INST) – destination management systems, financing accessibility, control over the access to vulnerable areas etc.

In recent years innovative practices in tourism have received an increasing attention in academic literature. Although it is generally recognized that tourism organizations function in an extremely competitive sector, which causes the innovative activity to be a prerequisite for their successful operation and survival, empirical evidence of effects of innovation has been marginal (Hjalager, 2010). Furthermore, little research has linked innovations to objective business performance measures.

Ottenbacher (2007), who studied success factors of innovations in the hospitality industry in Germany, found that new service development was positively linked to market performance, financial performance and employee and customer relationship enhancement, all dimensions being subjectively evaluated by managers. In their investigation of small and medium-sized tourist enterprises in Greece, Petrou and Daskalopoulou (2009) identified positive relationship between the decision to adopt an innovation and the firm's growth prospects approximated by expected employment increase in the next five-year period. Grisseemann, Plank and Brunner-Sperdin (2013) investigated the interplay between customer orientation, innovation, and business performance in the Alpine lodging industry. Using perceptual measures they concluded that innovation behavior of hotels positively influenced financial performance, customer retention, and reputation. Orfila-

Sintes and Mattsson (2009), in their research of determinants and outcomes of innovation behavior in the hotel industry in Spain, reported there was the lagged effect of innovation on performance measured as the average occupancy rate. In their study of innovation–performance relationship in Spanish hotels, Nicolau and Santa-María (2013) analyzed market value as a firm performance indicator and found that innovations yielded an increase in stock exchange returns.

Overall, empirical research adopts either a subjective or an objective approach towards measuring effects of innovations in the tourism industry, the latter being less frequently used. For that reason the present study concentrates on enterprise market value. For listed companies market value is reflected through stock prices determined in investors' sell and buy offers. In line with the efficient market hypothesis - the information efficiency of financial markets is assumed, thus stock prices reflect all available information (Fama, 1970). Among other qualities market value is the most up-to-date and precise measure of company performance (Milburn, 2008). First, it changes every time new information hits the market. Second, it represents a market consensus of multiple investors' valuations that is especially important while single investor valuation undergoes erroneous beliefs and tastes for assets as consumption goods biases (Fama and French, 2007).

Innovations are presumed to have positive influence on tourism enterprises market value. Potential benefits from innovations' implementation change investors' predictions of future cash flows resulting in stock price increase. Thus the first hypothesis is stated as follows:

H1: Innovations influence positively investors' perception of the company's future cash flows reflected through the company's market value.

Investors perceive different innovation types differently because they influence diverse fields of companies operations and differ in costs and potential profits. Therefore the second hypothesis is expressed in the following statement:

H2: Different types of innovations influence tourism companies' market value differently.

The consecutive result of innovations' diversity is their sophistication resulting in considerable time investors need to recognize their potential effects. Furthermore different innovation types can entail different information policies conditioning investors' adjustments in time of their initial reactions. Hypothesis three is presented as follows:

H3: Investors' initial reactions to different types of innovations can be adjusted over a long period of time.

H1 is set against the nulls that markets will not respond to innovation announcements, H2 against the one that the market does not distinguish between innovation types, and H3 against the one that investors incorporate new information fully in the stock prices at the appearance of innovation announcement. The three hypotheses will be tested with the use of methods described in the following section.

RESEARCH METHODS

To test the proposed hypotheses empirically data on tourism enterprises listed on the Main Market of Warsaw Stock Exchange – WSE was used. Polish exchange holds the regional dominant position by slightly outranking Central and Eastern Europe Stock Exchange Group - CEESEG (Szutowski, 2014). On the Main Market it trades eight tourism companies among which there are: three gastronomic ones – Amrest holding, Mex Polska and Sfinx Polska; two hotel companies – Interferie and Orbis; and one of each: casino – Olympic Entertainment Group, tour operator – Rainbow Tours, ski operator – Tatry Mountain Resort. MEX Polska and Tatry Mountain Resort undertook their IPOs in May and October 2012 respectively and due to insufficient data they were excluded from further research. All companies chose Main List (instead of MTF platform - NewConnect), and PLN as listing currency. There is no index dedicated to tourism enterprises on WSE.

The time scope was determined as 2008 – 2013 due to empirical evidence from previous research. Mitchell and Stafford (2000) used the period of 3 years to capture the event's effects on stock price performance. Nicolau and Santa-Maria (2013) in their study on innovation's effect on hotel market value observed inter alia the longest period with no innovation announcement surpassing slightly 2 years. In this period 34 innovation announcements were identified for the whole sample.

One of the examples of product innovations could be the introduction of figlokлубy.pl by Rainbow Tours, the on-line service designed for tourists to meet their companions before the actual trip. The information was released on 17th November, 2012. One of the announcements concerning process innovations, released on 20th April, 2012 by Olympic Entertainment, proclaimed the launch of the pilot project for Cloud solutions in on-line gaming. The pieces of information on management innovations, released by Orbis on 12th April, 2012 was that the company introduces the generation diversity management program in order to ensure an increased level of mutual understanding among

the workers. In order to personalize effectively offers and promotions Rainbow Tours introduced a system that tracks user movements on the website. Such announcement referring to that marketing innovation was released on 30th August, 2012. The example of a new distribution channel is the reception of on-line license for Olympic Entertainment, which was the first to introduce the advanced platform for on-line gaming. Such information was announced on 16th July, 2013. The example of innovative external relation was the joint introduction of postgraduate studies designed for hotel staff by Orbis and the University of Łódź. The information was released on 15th May 2012.

In order to study the relationship between innovations and tourism enterprise market value two different approaches were applied: event study to determine short-term investors' reaction to innovation announcements and calendar time portfolio to assess the long-term one. Both will be consecutively described in details.

Event study method is used to measure financial effects of unanticipated events and it allows assessing whether there are abnormal stock price changes associated with them (McWilliams and Siegel, 1997). The usefulness of such an approach comes from the fact that such an event will be reflected immediately in security prices (MacKinlay, 1997). Thus, the abnormal return provides an estimate of the future earnings generated by the event (Geyskens, Gielens and Dekimpe, 2002). In the present study the event of interest is publicly available innovation announcement made by companies under investigation.

The innovation announcements (press releases) were chosen to represent innovations basing on several assumptions. First, the announcements are relevant, and they contain full and true information about the innovations. Second, they concern innovations with significant impact on market value, thus are incorporated by investors in the moment of press release. Third, the new information comprises all necessary information for investors to predict future market value change due to innovation. In the moment of the press release the factual change of company's cash flows due to innovation is unknown.

Assessment of the event's effect requires a measurement of the abnormal (excess) return over the event window – the period over which the stock price fluctuations will be examined. It is typical to determine the event window to be larger than the day of the release of innovation announcement. This permits examination of pre- and post-event stock price changes due to leakage and dissemination effects (Geyskens et al., 2002). In the present study eleven windows were examined ranging from 1 to 21 days (10 pre-event days, the event day and 10 post-event days).

In line with McWilliams and Siegel (1997) every event window was checked for confounding announcements such as: declaration of dividends or earnings, mergers and acquisitions, equity offering, change in key executives. Such financially relevant events unrelated to innovation could seriously reduce validity of the empirical results, as it would be difficult to isolate the impact of one particular event. Due to the procedure no announcements were eliminated. In present research only announcements were taken into consideration, all kinds of preannouncements signaling future actions concerning innovations were neglected.

Central to event study approach is calculating abnormal returns, which are assumed to reflect the stock market’s reaction to new information arrival (McWilliams and Siegel, 1997). The abnormal return is the difference between the actual return and the expected return that would have occurred if the event had not taken place:

$$AR_{it} = R_{it} - E(R_{it}), \tag{1}$$

where AR_{it} , R_{it} and $E(R_{it})$ are abnormal, actual and expected returns respectively for firm i on day t .

Expected returns were computed using market model, which assumes a linear relation between the security return and the market return:

$$E(R_{it}) = \alpha + \beta * R_{mt}, \tag{2}$$

where R_{mt} is the return on the stock market index on day t (in the present study – WIG, Warsaw Stock Exchange Index) and α and β are the parameters estimated from a least squares regression of R_{it} on R_{mt} over the estimation period of 250 days before the announcement.

The daily abnormal returns were aggregated over the event window and cumulative abnormal returns were calculated as follows:

$$CAR_{i(f,l)} = \sum_f^l AR_{it}, \tag{3}$$

where $CAR_{i(f,l)}$ is cumulative abnormal return for firm i over the event window L (horizon length) equalling $l - f + 1$ (Eckbo, 2007) and f and l are first and last days of the event window respectively.

Lastly, to obtain a single CAR for different innovation types and for the whole sample an average of all event-specific CARs was computed:

$$ACAR_{(f,l)} = \frac{1}{N} \times \sum_{i=1}^N CAR_{i(f,l)}, \tag{4}$$

where $ACAR_{i(f,t)}$ is average cumulative abnormal return over the event window and N is a number of observations (in the present study – a number of innovation announcements).

In order to verify the results' statistical significance the J test was used (Szyszka, 2003). The test is based on standardized cumulative abnormal returns determined as:

$$SCAR_{i(f,t)} = \frac{CAR_{i(f,t)}}{\sigma_i}, \quad (5)$$

where $SCAR_{i(f,t)}$ is standardized cumulative abnormal return for firm i and σ_i is estimate of standard deviation of firm's i CAR calculated over the event window.

The next step in performing the test is the calculation of average standardized cumulative abnormal return that represents arithmetic mean of all observations:

$$ASCAR_{(f,t)} = \frac{1}{N} \times \sum_{i=1}^N SCAR_{i(f,t)}, \quad (6)$$

where $ASCAR_{(f,t)}$ is average standardized cumulative abnormal return over the event window.

It is assumed that $SCAR_{i(f,t)}$ follows a t-Student distribution with $L-2$ degrees of freedom. In present test the null hypothesis is that an event doesn't influence the stock prices. Null hypothesis is tested through the following statistic:

$$J = \left(\frac{N \times (L-4)}{L-2} \right) \times ASCAR_{(f,t)}. \quad (7)$$

Statistical significance was tested for 0.05 and 0.1 α -values.

Before introducing a calendar time portfolio approach an important limitation of event study should be indicated. Applying event study approach to measure long-term effect of innovations (e.g. one-year period) results in significant overlaps between different event windows and causes cross-sectional correlations among different abnormal returns. Standard errors are biased towards zero, inflating t-statistics and misleading statistical inference (Mitchell and Stafford, 2000). In this case overlapping events occurring in one company share common measurement period, overlapping events from different companies are influenced by same industry and market events.

Calendar time portfolio is used to assess long-term events' effects. The approach is based on creating one hypothetical portfolio from stocks of studied entities (all stocks are equally weighted). Shares are added to the portfolio gradually, when consecutive events occur (Seasholes and Zhu, 2010), held for a predetermined period, and removed (Sorescu, Shankar and Kushwaha,

2007). In present research after an event occurs the company's shares are added to the portfolio for one year. A single abnormal return measure for the entire sample is calculated on the monthly basis. Mitchell and Stafford (2000) advocate such approach strongly due to that all event-firm abnormal return cross-correlations are accounted for in the portfolio variance. In present research events are represented by publicly available announcements.

Calendar time portfolio procedure consists of three stages. First, the portfolio is constructed and the factual return is measured. Second, the expected return is calculated using an economic model. Third, one abnormal return is calculated for the whole sample. The abnormal return is calculated as the difference between excess return and the expected return.

$$AR_{pt} = Ex(R_{pt}) - E(R_{pt}), \quad (8)$$

where AR_{pt} is abnormal return of portfolio p during month t, $Ex(R_{pt})$ stands for excess return of portfolio p in month t, and $E(R_{pt})$ is the expected return of portfolio p in month t.

The excess return is calculated as the difference between factual return and the risk free rate of return.

$$Ex(R_{pt}) = R_{pt} - R_f, \quad (9)$$

where R_{pt} is factual rate of return of portfolio p in month t, and R_f is the risk free rate of return.

In order to calculate expected returns three-factor model was used. In three-factor model the expected return is calculated as a function of overall market returns, size, and book to market ratio with the use of following formula:

$$E(R_{pt}) = \alpha + \beta * (R_m - R_f) + \gamma * SMB + \delta * HML + \epsilon, \quad (10)$$

where $E(R_{pt})$ is the expected return of portfolio p during month t, R_m stands for market return, SMB represents small minus big (difference between returns of small and large firm stocks), and HML is the high minus low (the difference between returns of high and low book-to-market stocks), α is the model's intercept, β , γ , δ are parameters of the three factors, ϵ is the error term.

In present research Fama and French three-factor model was chosen to calculate expected returns, because it surpasses the capital asset pricing model (CAPM). The intercept and the three parameters (β , γ , δ) were estimated with the use of linear regression. The estimation period preceded the verification period and lasted for 12 months. Market return were represented by WIG – WSE main index.

The final equation for calculating expected returns took a form of:

$$E(R_{pt}) = -0.033 + 1.721 * (R_m - R_f) - 0.687 * SMB + 6.780 * HML, \quad (11)$$

The prediction model was statistically significant, $F(3, 7) = 5.58$, $p < .05$, and accounted for approximately 70% of the variance of expected returns ($R^2 = .70$, Adjusted $R^2 = .58$).

Necessary data concerning stock prices and WIG were collected from Warsaw Stock Exchange database and directly from companies' websites. Risk free rate of return as well as SMB and HML ratios are published in "Fama/French European Factors" section on Kenneth R. French website (French, 2014). Data referring to innovations was obtained through Polish Press Agency official database and companies websites.

RESULTS AND DISCUSSION

The results of the analysis are divided into short-term and long-term ones and presented consecutively. First part leads to positive verification of H1 and H2, while the second part holds H3.

Short-term analysis is reported in Table 1, which presents cumulative abnormal returns averaged across 34 observations for multiple periods. In general, the investigation revealed that investors' reactions to innovation announcements made by tourism enterprises were mostly positive. In eight out of eleven event windows under consideration actual returns were greater than expected returns; in three remaining windows the opposite was the case. Further analysis showed that abnormal returns were significantly different from zero at the 5% significance level in half of examined intervals; in most cases the differences were positive. It appears that, on average, the stock market recognized innovation announcement value, thus hypothesis 1 can be confirmed.

The findings indicate that firms developing innovations experienced 0.63% abnormal returns on the event day. Of all windows surrounding the event day, the one from -5 to +5 showed the highest (and statistically significant) ACAR, with a value of 2.00%. The findings are partially consistent with the research of Nicolau and Santa-Maria [2013]. Authors calculated the event-day abnormal return at the level of 0.64% and the +/- 5 days AR equaling 0.83%. The shorter event windows were tested by Sood and Tellis [2009]. The authors reported event-day abnormal return at the level of 0,40% and the AR for +/-1 and +/-2 event windows both equaling 0,50%.

Table 1. Average cumulative abnormal returns over event windows under study

Windows	ACARs	J-values
Event day	0.63%	1.96**
+/-1	0.37%	1.06
+/-2	0.32%	4.33**
+/-3	0.94%	5.60**
+/-5	2.00%	3.19**
+/-10	2.27%	-0.48
0/+1	0.18%	0.23
0/+2	0.35%	4.83**
0/+3	-0.02%	4.48**
0/+5	-0.54%	0.56
0/+10	-0.75%	-2.16

* significant at the 0.1 level; ** significant at the 0.05 level

Figure 1 presents average cumulative abnormal returns from -10th to +10th day. The peak of cumulative abnormal returns averaged for all 34 announcements surpassing 3.5% occurs right in the event day. Results suggest that investors were able to anticipate to some extent future innovation announcements. They included new information in stock price valuation in periods preceding official announcement itself. This could be based on innovation preannouncements, related announcements, reports, financial reports, informal information etc. This kind of reaction refers to well known, old trading rule “buy the rumor, sell the fact”. The results are contrary to the Nicolau and Santa-Maria’s [2013] study that indicates a market value increase up to three days after the event.



Figure 1. Average cumulative abnormal returns over +/-10 days event window

Table 2 provides an overview of the short-term results disaggregated along innovation types; all of which follow a different pattern of stock price fluctuations. In most windows stock prices increased and among all the statistically significant results all were positive. Product and process innovation announcements produced the strongest investors' reaction during the event day, while longer windows surrounding the event (+/-1, +/-2, +/-3, +/-5 and +/-10) were dominated by marketing, distribution and external relations ones. In the period following the event investors reacted the most to external relations innovation announcements, which produced statistically significant, positive returns in four windows (0/+2, 0/+3, 0/+5, 0/+10). The only innovation announcement type for which no statistically significant results in short term were observed is management one.

Table 2. Average cumulative abnormal returns for innovation types

Windows	ACARs					
	PROD	PROC	MGMT	MKTG	DISTR	EXT REL
Event day	1.95%**	1.62%*	0.19%	0.71%	-1.31%	0.70%
+/-1	0.57%	0.95%	-1.62%	0.67%**	0.71%	0.95%
+/-2	-1.45%	-1.39%	0.35%	1.18%*	2.81%**	0.78%**
+/-3	-4.70%	-3.69%	1.49%	1.90%**	7.09%**	3.46%**
+/-5	-5.57%	-2.71%	-2.51%	2.19%*	11.72%**	7.54%**
+/-10	-5.99%	-4.67%	0.41%	-0.71%	17.68%**	4.77%**
0/+1	0.63%*	0.90%	-1.99%	0.19%	-0.17%	1.19%
0/+2	0.01%	-0.28%	-0.63%	1.95%*	-1.58%	1.90%**
0/+3	-2.64%	-1.91%	-0.88%	2.32%**	6.45%	2.53%**
0/+5	-4.11%	-2.43%	-3.46%	0.61%	12.55%	3.67%**
0/+10	-6.01%	-4.28%	-4.12%	-3.15%	7.35%**	3.49%**

* significant at the 0.1 level; ** significant at the 0.05 level

In order to test the differences between short-term abnormal returns resulting from innovation announcement of particular innovation types the one-way analysis of variance (ANOVA) followed by Games-Howell post hoc tests was employed. There was a statistically significant difference between groups as determined by one-way ANOVA ($F(5,120) = 2.397, p < .05$). Post hoc test indicated that distribution innovations ($M = .0084, SD = .011$) generate the mean excess return significantly higher than product innovations ($M = -.0028, SD = .012$) or process ones ($M = -.0023, SD = .010$). No significant differences between other innovation types were found. The data supports hypothesis 2.

Long-term innovations' impact on tourism enterprises market value was proven to be positive. Average one-year cumulative abnormal return

equaled 3.02%, meaning that the factual return in companies implementing innovations was 3.02% higher than the one predicted by Fama and French three-factor model. The result exceeds 0.77% one-year increase reported by Liu, Yeung, Lo and Cheng [2014] who studied the financial value of innovative technologies. The results suggest that investors' reaction to innovation announcements in tourism companies spreads over the long period. The result is consistent with the research of Petrou i Daskalopoulou [2009] in which authors proved that innovation announcements influence the market value in the long term.

In order to verify the differences in investors' reactions towards diverse innovation types, announcements were assigned to six separate portfolios. Consecutively within all portfolios abnormal returns were calculated. Figure 2 delivers average cumulative abnormal returns for the one-year period for six portfolios representing different innovation types.

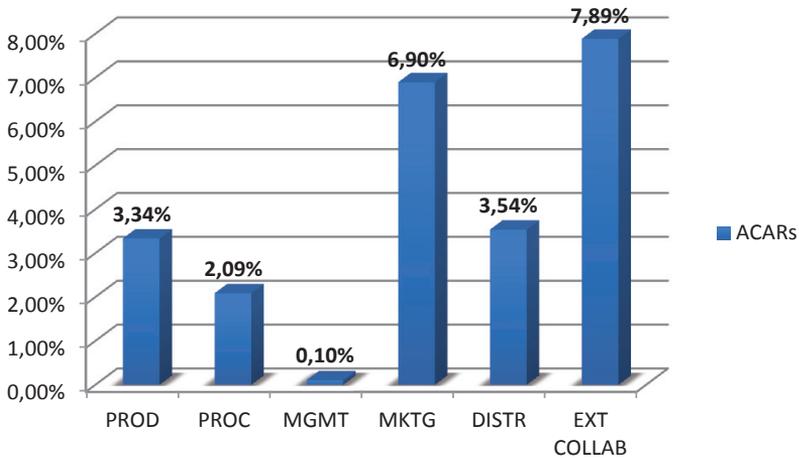


Figure 2. Calendar time average cumulative abnormal returns for six innovation types

All innovation types resulted in increase in company's returns relative to Fama and French three-factor model. The strongest long-term investors' reaction was caused by external relations innovations. One-years calendar-time ACAR matched almost 8%. Marketing innovations for which ACARs reached almost 7% produced second strongest reaction. Distribution and product innovations' effects were oscillating around the average for the whole population studied (3.02%) and equaled consecutively 3.54% and

3.34%. Investors responded the less to process innovations (2.09%) and management ones (0.10%).

Due to the fact that the whole surveyed population was divided into six categories, results can be biased by insufficient number of observations. As Sorescu, Shankar and Kushwaha (2007) state, reduced number of observations in portfolio causes a noteworthy loss of power in the empirical tests.

In order to verify whether different innovation types produced statistically significant differences in investors' reactions, one-way ANOVA was performed. There was no statistically significant difference between groups ($F(5,189) = 13.255, p > .05$). These results uphold H3. Long-term innovation effects on market value differ from short term ones suggesting that investors adjust their initial reaction over time.

CONCLUSION

Due to a great level of uncertainty coming from growing competition and more and more demanding customers, tourism enterprises need to put more effort into developing and implementing innovations. Despite the growing interest in innovative practices in the tourism industry, relatively few studies to date have focused on the issue of financial effects of innovations. The main objective of this investigation was to examine the relationship between innovations and tourism enterprise market value in the short and long run. The results allow us to conclude that innovation announcements do convey information which is useful for the valuation of tourism firms and that, on average, in investors' opinion the performance-enhancing factors related to innovation announced outweighed the performance-hindering factors.

Event study and calendar time portfolio approaches were employed to verify three initial hypotheses. The research showed that, on average, stock market investors judged that the expected gains stemming from innovations outweigh the expected costs. In their initial reaction investors seemed to perceive marketing, distribution and external relations innovations as the most beneficial, fewer recognized product and process ones while omitting management innovations. In the one-year period innovations implementation caused factual return to surpass the expected one. Simultaneously in the long term investors attributed the greatest value to external relations and marketing innovations and lower values to management and process ones. Product and distribution innovations caused market value rise close to average.

The findings have important implications for practice and research. First, the relation between the flow of information concerning innovations and

share price was confirmed. Therefore effective company value management can rely on announcement policy. Second, innovations were confirmed to be a highly diversified category, as their different types produce different investors' reactions. Third, results suggest the existence of leakage and dissemination effects, as share prices tend to rise in the period preceding the event day. Consequently the use of windows surrounding the event seems necessary. Fourthly, investors adjusted their initial reaction over time as their short-term valuation differed considerably from the long-term one. Thus research on innovations' effects on tourism companies should consider long-term investors' reactions.

The findings of this study should be considered in light of its limitations. The sample consisted only of 34 innovation announcements issued by 6 enterprises. It is regrettable that more data were not collected, as this would have facilitated a more rigorous analysis. Thus, replication using a larger sample would be beneficial. Data analysis was based on one typology of innovations. Other classification criteria could lead to interesting conclusions. Another important avenue for further research would be to conduct a more detailed analysis of variables moderating the strength of a relationship between innovations and tourism enterprise market value. It would be of value to examine the role of the type of economic activity, organizational characteristics and external factors play in the process of investors' updating their expectations about future cash flows due to innovation implementation. Future research should seek for insights into these areas.

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Abstract (in Polish)

Innowacje są kluczowe dla współczesnych przedsiębiorstw dążących do osiągnięcia podstawowego celu działania – zwiększania wartości. Celem niniejszego opracowania było zbadanie jaka jest relacja pomiędzy innowacjami i wartością rynkową przedsiębiorstw turystycznych. W badaniu skoncentrowano się na sektorze turystycznym, w którym występuje istotna luka wiedzy w odniesieniu do badanej relacji. W badaniu wykorzystano aktualne dane rynkowe. Aby przetestować reakcje inwestorów na ogłoszenia dotyczące innowacji wykorzystano metody analizy zdarzeń (event-study) i analizy efektów kalendarzowych (calendar time portfolio). Badaniu poddanych zostało sześć przedsiębiorstw turystycznych notowanych na rynku podstawowym Giełdy Papierów Wartościowych w Warszawie (GPW). Wyznaczono sześcioletni zakres czasowy. Uzyskano 34 ogłoszenia prasowe dotyczące innowacji. Dane o ogłoszeniach prasowych zaczerpnięto z bazy danych Polskiej Agencji Prasowej, dane o wahaniami wartości rynkowej przedsiębiorstw z bazy danych GPW. Uzyskane rezultaty wskazują, iż komunikaty dotyczące innowacji wpływały pozytywnie na ocenę przyszłych przepływów pieniężnych przez inwestorów. Średnia anomalna zmiana wartości rynkowej w dniu ogłoszenia komunikatu wyniosła 0,63%, w okresie jednego roku zwiększyła się zaś do 3,02%, wskazując iż inwestorzy dostosowują swoją początkową reakcję z biegiem czasu. W okresie krótkim inwestorzy reagowali najsilniej na informacje o innowacjach marketingowych, dystrybucyjnych i związanych z relacjami zewnętrznymi. W okresie jednego roku przypisywali największą wartość innowacjom marketingowym i związanym z relacjami zewnętrznymi.

Słowa kluczowe: *innowacje, wartość rynkowa, analiza zdarzeń, analiza efektów kalendarzowych, przedsiębiorstwo turystyczne.*

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Network Dynamics of Descending Diaspora Entrepreneurship: Multiple Case Studies with Japanese Entrepreneurs in Emerging Economies

*Aki Harima*¹

Abstract

Entrepreneurial activities of the Diaspora attracted increased research attention in the recent years, as the phenomenon of migration is rapidly growing. The Diaspora refers to the migrants and their descendants who maintain a strong relationship with their country of origin (Safran, 1991). The previous research has, however, predominantly focused on diaspora entrepreneurs from developing or emerging economies and those who originate from developed countries are almost invisible, even though they are empirically observable (cf. Elo, 2013; Horiuchi, 2010). In fact, their entrepreneurial activities have mostly been neglected by previous research in diaspora as well as international entrepreneurship. This study coins a new concept 'Descending diaspora entrepreneurs' for the entrepreneurs from developed countries who migrate to less developed ones and explores their entrepreneurial activities through the network perspective. The literature review on entrepreneurial networks as well as diaspora networks identifies three potentially significant benefits of networks on entrepreneurial activities: (i) opportunity recognition, (ii) access to resources and (iii) motivation sustainment. Explorative multiple case studies with Japanese diaspora entrepreneurs in emerging economies (Philippine, Guatemala and Argentina) was conducted and the empirical findings were descriptively analyzed in line with the identified network benefits. Finally, the model of network dynamics for Descending Diaspora Entrepreneurs is developed based on the findings.

Keywords: *Diaspora Entrepreneurship, Japanese Diaspora, Entrepreneurial Networks, Diaspora Networks, Emerging Economies, Transnational Entrepreneurial Networks*

INTRODUCTION

Diasporans refer to the migrants and their descendants who maintain a strong relationship with their country of origin (Safran, 1991). In the recent years, diaspora entrepreneurship has attracted research interests, as the

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phenomenon of migration is rapidly growing with technological development in communication and transportation technology and it has become an urgent issue for the modern society to grasp the details of their transnational business activities beyond borders. Despite the numerous research attempts to understand their nature and political, social and economic impacts, the entire picture of diaspora entrepreneurs is still not clear mainly due to the inherent heterogeneity within the diaspora phenomenon. In fact, previous researchers have predominantly focused on observing a certain type of the Diaspora as if this type of people could represent the heterogeneous group, namely those who are originated from developing or emerging countries. The term “diasporans” has been even used synonymously as this population in some researches. Therefore, either intentionally or unintentionally, a number of researchers tend to describe diaspora entrepreneurs as victims of inferiority who are driven by the necessities caused by the lack of alternatives and resources. These people are, however, just a part of the whole phenomenon. In fact, the modern transnationalism allowed the emergence of various types of human motilities with different motivations and migration paths. The current status of diaspora research does not encompass these emerging new diasporans. Especially the diaspora entrepreneurs who move from developed countries to less developed one are almost invisible in the early discussion, even though they are empirically observable (cf. Elo, 2013; Horiuchi, 2010). We still have little evidence of their nature and entrepreneurial activities. Given this background, this study focuses on the overlooked dimension of economic directions in the context of migration paths through coining new terms: ‘Ascending Diaspora Entrepreneurship (ADE)’ for the diasporans who move from economically less developed contexts to the more developed ones and ‘Descending Diaspora Entrepreneurship (DDE)’ for the diasporans who pursue the opposite directions. The purpose of this study is to explore the entrepreneurial activities of Descending Diaspora Entrepreneurship through network perspectives.

According to a number of researchers, network has been recognized as a significant factor for entrepreneurship (cf. Hoang & Antoncic, 2003; O’Donnel et al., 2001). Due to their mixed embeddedness (Kloosterman et al., 1999), diasporans have diversified networks in countries of origin (COOs) and countries of residence (CORs) (Kuznetsov, 2006). For this reason, their network dynamics has been regarded as an important factor for their business activities in the past. Especially their ethnic network outside of their home countries is called ‘Diaspora Network’ and characterizes their network dynamics (Kuznetsov, 2006). We still know, however, very little about the network dynamics of DDE. Since they have different starting points and settings compared in their COOs to mono-cultural entrepreneurs, which has

been observed in the studies of entrepreneurial networks as well as Ascending Diaspora Entrepreneurs, it is questionable whether and to which extent the previous findings are applicable for the case of DDEs.

In this study, their network dynamics is explored and investigated. Thereby the following research questions will be answered: (i) which networks have influence on entrepreneurial activities of Descending Diaspora Entrepreneurship (DDE), (ii) how these networks influence on their businesses. In order to answer these questions, a multiple case study method is employed and four Japanese diaspora entrepreneurs in developing and emerging economies will be empirically observed (Philippine, Guatemala and Argentina). This paper has the following structure: Firstly, the concept and characteristics of DDE will be discussed in contrast with the previous findings on ADE. Secondly, previous research on networks in entrepreneurship will be reviewed. Thirdly, previous research on diaspora network in the context of their entrepreneurial activities will be reviewed. After the methodological explanation, the findings from the multiple case studies will be narrated and analyzed along with the identified factors from literature review. In the end of this study, a model of network dynamics in the context of DDE entrepreneurship will be developed.

Descending Diaspora Entrepreneurship (DDR)

Diaspora entrepreneurship refers to entrepreneurial activities conducted by so-called diaspora populations. Diasporans are migrants and their descendants who maintain a strong relationship with their country of origin (COO) (Safran, 1991). These people are in a special cultural constellation being embedded in multiple cultures and societies of different countries (Kloosterman & Rath, 1999). Connotations of a 'diaspora' situation were usually rather negative as they were associated with forced displacement, victimization, alienation, loss (Vertovec, 1999). In recent years, however, positive impacts of the diaspora phenomenon have aroused researchers' interest. As the wave of transnationalism as well as globalization have been accelerated by rapid technological development in transportation and communication technologies, migration has gained increased significance to the modern society in the last decades (Levitt, 2001; Tölölyan, 1996). According to the International Migration Outlook from OECD (2013) there are 232 million people living outside their country of birth around the world in 2013, which represents 3.2% of the world's population. When migration continues to grow at the same pace as over the past twenty years, it is assumed that there will be 405 million migrants by 2050 in the world (International Organization for Migration, 2014). The migration phenomenon

has considerable impacts on the world economy, as it creates flows of people, money and resources especially through their transnational business activities. According to the Bilateral Remittance Matrix 2012 (Worldbank, 2012), the total amount of the worldwide inwards and outwards remittance in 2012 was c.a. 529 billion USD. Besides this immense money transfer, their entrepreneurial activities have non-monetary impacts. Diasporans are often more likely to become self-employed than mono-cultural population (CFE & DueDil, 2014). Previous research revealed several unique positive functions of diaspora entrepreneurship such as transferring information and technologies (Saxenian, 2002: 2005; Tung, 2008), economic development through home country investment (Barnard & Pendock, 2013), Immigrant economic adoption to the local economy (Portes et al. 2002). For its high social and economic relevance to the modern transnational world, diaspora entrepreneurship is of great concern not only for academicians, but also for policy makers and its importance is assumed to be growing in the future.

Despite the rapidly increasing social and academic significance of diaspora entrepreneurship (Dutia, 2012; EUKN, 2010), previous research has not given any considerable thought on the variety of diaspora entrepreneurship. Diaspora is a complex phenomenon since its definition encompasses various kinds of people (c.f. Cohen, 2008). For instance, both of war refugees and elite expatriates can be classified into diasporans, which are incomparable in numerous aspects: motivation (necessity vs. opportunity entrepreneurship), available resources and social capitals, and surrounded institutional environments. In the previous research on diaspora entrepreneurship, however, either implicitly or unconsciously, only a specific type of the diaspora has predominantly researched: namely people from economically less developed countries who migrate to more developed ones to increase their quality of life. Recently, Harima et al. (2014) raised a question about this implicit assumption and emphasized the necessity to research on diasporans from developed countries establishing their own business in developing and emerging countries due to their potential positive impacts on the modern societies. These people can be agents transferring information, technologies and institutions from developed contexts to less developed ones. In this study, I coin the term 'Descending Diaspora Entrepreneur (DDE)' for this type of people, since they migrate from the higher economic standard to the lower one. In the same manner, the other one is called 'Ascending Diaspora Entrepreneur (ADE)'.

In the past research on diaspora entrepreneurship, it is assumed that so-called diaspora networks have substantial impacts on their transnational business activities such as labor source (Light et al., 2003), source of finance (Saxenian, 2002), source of information (Meyer & Wattiaux, 2006) and

role models (Toledano & Urbano, 2008). Harima et al. (2014) argue that it is questionable whether these findings can be applicable to the context of DDE, since the initial situations of these diasporans are different from what ADE face. In this regard, they named three reasons: (i) the total number of diasporans originated from 'rich' countries is smaller than the other one and therefore, large scale of networks is not available unlike, for instance, Chinese and Indian diasporans, (ii) diasporans with the background from developed contexts have more resources and therefore, it is less necessary to depend on networks for resource complement, (iii) a majority of people from developed contexts has a rather cosmopolitan lifestyle and therefore it is less necessary to depend on networks for maintenance of their culture, tradition and ethnic values. Their argumentations solely suggest the possibility that DDE has different types of networks from ADE. Which types of networks influence on their entrepreneurial activities and how they function is still unknown. As next, previous research on networks in entrepreneurship as well as in diaspora entrepreneurship is reviewed in order to discuss possibly influencing network factors for DDE.

Previous research on network in entrepreneurship

Network has been recognized as significant factor on entrepreneurial activities by numerous researchers (cf. Hoang & Antoncic, 2003; O'Donnel et al., 2001). Before some researchers started recognizing the importance of networks on economic activities in recent years, economists' argumentation was dominated that one can obtain additional resources only through market mechanism or a hierarchically arranged firm achieved through vertical integration (O'Donnel et al., 2001). Granovetter (1985) recognizes the significance of the embeddedness of economic behavior in networks of interpersonal relations. Building on the argumentations of Granovetter (1985), Williamson (1991, 1996) also discusses that network can be acknowledged as a third organizational arrangement along with market mechanism and vertical integration.

While various research on different levels of network analysis has been conducted, it falls into two principal categories: formal and informal networks (Johannisson, 1986). Similar classification has been done by Brown and Butler (1993) with inter-organizational and social networks and O'Donnel et al. (2001) inter-organizational networks and the entrepreneur's personal network. Formal networks refer to the ones related to relationships on firm and business level, while informal networks related to the relationships on individual and private level. According to O'Donnel et al., 2001, mainly two types of networks under the inter-organizational network: (i) vertical

networks, (ii) horizontal networks. Vertical networks can be observed between members of the value-adding system or distribution chain (Piercy & Cravens, 1995).

A number of potential benefits which entrepreneurs can gain from their networks have also been identified. A literature review identified mainly three categories of network benefits: (i) opportunity recognition, (ii) access to resources and (iii) motivation sustainment. First, correlation between networks and entrepreneurial opportunity recognition has been discussed by many researchers (Kontinen & Ojara, 2011; Stuart & Sorenson, 2007; Arenius & De Clercq, 2005; Hansen, 1995). Stuart and Sorenson (2007) argue that social networks shape the entrepreneurial process because they provide the conduits of private information which are important for opportunity identification. Hansen (1995) discusses that networks provide product and service ideas which is highly relevant to entrepreneurial opportunity recognition. Second, entrepreneurs can benefit from networks by accessing various types of resources such as tacit knowledge (Stuart & Sorenson, 2007), recruiting skilled labor (Birley, 1985; Stuart & Sorenson, 2007), access to financial capital (Fried & Hisrich, 1994; Hsu, 2004) and specific industrial knowledge (Bergman & Saksä, 2004). Third, networks can increase the chance that firms survive longer by motivating entrepreneurs to strengthen their business and implement change to make the company grow (Tjosvold & Weicker, 1993). Tjosvold & Weicker (1993) differentiate networks into competitive and cooperative relationships. They found out that entrepreneurial networks with cooperative relationships are positively related to long-livingness of enterprises through enhancing motivation, emotional support, encouragement and providing self-confidence.

Previous research on diaspora networks

Despite the significant role of diaspora network and the increased research interest, the term diaspora network still suffers from absence of definitional consensus. The concept of diaspora network is not necessarily employed in relation with their business and economic activities (cf. Aldrich & Waldinger, 1990). It can also be used for the purpose of culture and language preservation. Since this paper investigates the role of networks in the context DDE, economic aspects of diaspora network will be focused. Diaspora networks are defined as a tool that plays an important role in reducing the costs of brain-drain by fostering cooperation and the conveyance of knowledge and skills as well as collective and business investment.

Through some recent research attempts, potential positive impacts of diaspora network have been identified both on macro and micro levels.

Probably the most discussed impact is information/knowledge transfer (Saxenian & Hsu, 2001; Taib et al., 2012; Grossman, 2010). Saxenian (2005) coined the term 'brain circulation' instead of 'brain drain', arguing that both home and host countries benefit from knowledge transferred by diasporans who move back and forth between two countries. Some scholars believe that the rapid development China and India experienced in the last decades was not possible without diaspora contributions (Huang & Khanna, 2003). Kuznetsov and Sabel (2006) discuss that such networks function as transnational search networks. Besides information/knowledge transfer, diaspora network can function as a catalyst to transfer technologies as well (Saxenian & Hsu, 2001; Kapur, 2001). Täube and Sonderegger (2009) find that diaspora network can accelerate growth and bridge weakness in local clusters. Lebrang (2010) finds that diaspora networks have both a substantively significant effect and a statistically significant effect on cross-border investment. Besides economic factors, Kent (2006) argues that organized diaspora networks may contribute to the peace-building of COOs.

It is worth to note that diaspora networks are not bounded to specific geographic locations. Due to the technological development of communication and transportation technologies, the network's nature has been transformed from geographical ethnic enclaves to virtual nations (Cheung, 2004) and therefore its impacts have grown. Therefore, it is a high-profile issue for policy makers to develop the preferable legal and economic environments for diasporans to maximize the positive impacts of diaspora networks on their own countries. Some scholars have illuminated systematic and organized attempts of governments or municipalities to leverage diaspora resources. Taib et al. (2012) investigate Malaysian government programs to attract high skilled diaspora human resources to develop a cluster in comparison to the Taiwanese successful cluster Hsinchu. Kurnetsv and Sabel (2006) discovered three examples of such governmental programs from practices: Global Scot (Scotland), ChileGlobal (Chile) and CONACYT (Mexico).

On the micro level, potential benefits of diaspora network on their entrepreneurial activities have been discussed. Diaspora networks enable entrepreneurs to access leading-edge technologies (Saxenian, 2001; Kuznetsov, 2006). Through diaspora networks, entrepreneurs can also enjoy access to the information about institutional and market information of CORs (Freinkman, 2000) as well as industrial knowledge (Taib. Et al., 2012; Saxenian, 2001). Sharing various types of tacit-knowledge compensates the lack of resources or information, which is a common challenge which migrants face in CORs, and helps diasporans to overcome cultural and institutional barriers (Nanda & Khanna, 2007). It is especially effective for diasporans who have problems with languages of host countries and the lack of available resources

and qualifications. Diaspora network has also been seen to connect people with the same ethnical background. It can, for instance, function as a labor pool for their entrepreneurial activities (Kuznetsov, 2006). Salaff et al. (2003) find that ethnic enclave helps diasporans to find more or less all the business-related people such as suppliers, customers and employees. This benefit is not restricted to regional ethnic enclave. Besides access to knowledge and human resources, diaspora network let their members find investors easier. Diasporans are more likely to invest the people from same ethnic backgrounds, since many of them have a willingness to improve conditions of their home country (Gillespie et al., 1999). It is worth to remark that diaspora entrepreneurs are often financed by their family and friends (Boyd, 1989). The impact of diaspora network on opportunity recognition as well as motivations has not explicitly been discussed in the previous studies.

Despite the findings from many studies that emphasize the role of diaspora networks as an important resource (Kuznetsov, 2006; Saxenian, 2001; Dutia, 2012), actually there is very little empirical evidence in which way and to what extent diaspora networks are relevant to entrepreneurial activities of DDE. According to Harima et al. (2014) whether these diaspora networks are crucial in this case is questionable for mainly three reasons. First, the total number of diasporans from developed countries seems to be smaller, since they experience generally no financial pressure to leave their country – compared to diasporans from developing or emerging economies. Therefore, the availability of such comprehensive diaspora networks is not comparable to that of, e.g., Chinese or Indian ones. Second, DDE are often aware of different ways of how to develop a new business based on similar solutions in different settings. Insofar, they often have not only more resources and competences available compared to ADE, but also blueprints of working business models in mind. Third, a large portion of the population in developed economies often has a rather cosmopolitan lifestyle where the role of tradition and religion is not of great significance. In such cases diaspora networks, which may require intensive contributions of members and where shared uniqueness of cultural values and norms compared to these of the COR may be essential, do not have the comparable relevance to them. Therefore, it seems possible to assume that DDE are assumed to leverage from their diaspora networks differently. Given Descending Diaspora Entrepreneurs use diaspora networks in a different way, which role diaspora network play in their entrepreneurial activities? And are there other significant networks? The discussed benefits of networks on entrepreneurship and diaspora entrepreneurship are summarized in Table 1.

Table 1. Benefits of networks on entrepreneurship and diaspora entrepreneurship

	Entrepreneurship	Diaspora Entrepreneurship
(1) Opportunity recognition	Product idea & service Market/Industrial knowledge	Market/Industrial knowledge
(2) Access to resources	Tacit knowledge Skilled labor Financial capital	Knowledge about COR Ethnic labor Diaspora FDI / Financial capital
(3) Motivation maintenance	Entrepreneurial motivation	

Research methods

In order to explore the network dynamics of DDE, a multiple case study method is applied in line with the principles by Eisenhardt (1989) in an explorative way inspired by grounded theory (Charmaz, 2014). The explorative approach is chosen, since it is suitable for the early stage of research where little is known about the phenomenon (Eisenhardt, 1989). As research objectives, Japanese diaspora entrepreneurs conducting their business in emerging economies are selected, as Japan has one of the strongest economic power as indicated by the third highest GDP worldwide (IMF, 2014). The country is also characterized by the high educational standard where 50.8% of the population study at university (OECD, 2012) and its literacy rate is 99% (Human Development Report, 2014). The country's income inequality is one of the smallest among OECD countries (OECD, 2013), which reduces the heterogeneity within the population. Its income inequality is very small (Global Finance, 2012), which reduces the heterogeneity within the population. In total four case studies have been conducted with Japanese entrepreneurs in Philippines, Guatemala, and Argentina in summer/autumn 2014. Interviewees were found through the author's personal network as well as social networks. All of interviewees were born in Japan, are male entrepreneurs and it was their own decision to migrate. Observed entrepreneurs' information is summarized in the Table 2.

While focusing on a specific COO, motivation for migration and generation allows this study to reduce related extraneous variations, choosing some different CORs enables to control the environmental variation of CORs (Eisenhardt, 1989). It also makes sense to choose cases from the Philippines, Guatemala and Argentina, since each of these three countries has different migration history with Japan. There was no significant wave of migration from Japan to the Philippines for a long time until recently. About a decade ago, Japanese entrepreneurs started moving to the Philippines to establish language businesses as Filipino workforces are, due to their English proficiency as well as low wage, ideal as English teachers for Japanese people. Now it is said that there are more than 300 Japanese companies operating language business in the Philippines. Guatemala is the first Latin American country

where Japanese migrated in the early 20th Century. But after that there is no significant migration wave between these two countries. According to Annual Report for Statistics on Japanese Nationals Overseas (the Ministry of Foreign Affairs of Japan, 2014), there are only 365 Japanese living in Guatemala in 2014. Similarly, Argentina experienced the migration wave from Japan in the beginning to 20th Century. Unlike Guatemala, Argentina has more inwards migration from Japan and has in 2014 11,791 1st generation of Japanese migrants living in the country. Argentina is also characterized by the presence of the large Japanese community. Investigating cases in these three countries illustrates meaningful comparison of environmental influences in CORs.

In-depth interviews with entrepreneurs themselves as well as related people such as employees, competitors, friends and families have been conducted in order to grasp the entire picture of circumstances surrounding enterprise. On-site observations have also been conducted in Argentina. For the sake of data triangulations, contents on company websites as well as related secondary data about the enterprise were analyzed (Yin, 2008; Denzin, 1970) The collected data was transcribed in Japanese and translated into English. It is then analyzed descriptively in line with the a priori construct (Eisenhardt, 1989) about benefits of networks discussed above: Both inter-organizational and personal networks have been analyzed (cf. O’Donnell et al., 2001). Based on the descriptive analysis, a model is developed which illustrates the assumptions how each of network components influence on DDE’s entrepreneurial activities.

Table 2. List of Observed Entrepreneurs

	COO	COR	Business	Age
Entrepreneur A	Japan	Philippine	Online English course	30-39
Entrepreneur B	Japan	Philippine	English school	30-39
Entrepreneur C	Japan	Guatemala	Online Spanish course	20-29
Entrepreneur D	Japan	Argentina	Trading and logistics	60-69

RESULTS

Entrepreneur A set up his business in 2009 and operates an online English school mainly for Japanese customers. The prices of English lessons are much lower than the conventional ones and lessons can be taken for 24/7 via Skype. This low price is realized by the low wage for his employees and a lack of physical facilitations. There are currently more than 20 employees and most of his employees are Filipinos and work with their own personal computers at home in the Philippines. There are also some native English teachers from England and USA and all work via internet, too. The people in

the Philippines speak fluent English and have friendly personalities, which makes them excellent English teachers for Japanese customers who do not necessarily want to be taught by native speakers but want to have more opportunities to speak English. His business is truly transnational that the official firm location is in Japan, although entrepreneur himself operates his business from outside of the country such as Buenos Aires and Mexico City, while his employees are mostly working in the Philippines. In his case, no significant formal networks can be observed. Entrepreneur A had worked as a photographer before his current carrier and his previous vocational networks do not play a role on his business. It is noticeable that all the employees are English teachers and he does not have any full-time managerial employees after five years of successful operation. As indicated in the previous section, the industry of online English lessons in Philippines for Northern Asian customers is a rapidly growing and there are more than 300 Japanese firms according to the informants. His company is one of the first-movers and still one of the most famous ones. His operation is mostly conducted virtually through the Internet. He outsources some of managerial operations such as accounting and lawyer and accountant to foreign professionals from third countries such as India, Mexico and other Latin American countries whom he found in the Internet. As for personal networks, he has a number of friends in many countries and some of them are entrepreneurs. These networks can be described as weak ties, since the entrepreneur A does not have intensive and regular interactions with certain people. Entrepreneur A goes to informal meetings and parties for international entrepreneurs where he can exchange his entrepreneurial experiences with other entrepreneurs. He is embedded neither in Japanese diaspora networks nor in the Philippine community deeply, but has 'cosmopolitan' networks consists of various weak ties with the people from different countries.

Entrepreneur B established his English school in early 2010 in a rural area in the Northern part of the Philippines together with a Philippine co-founder. At the time of the interview, he had 4 Japanese full-time employees and 120 Filipino teachers and staff. His business is very successful - almost 2000 students have already studied at school since the foundation. The value propositions of his business are to make it possible for customers to learn English abroad at affordable prices and to experience foreign contexts. He recognized this opportunity through his own experience at a language school in the USA. Most of Japanese people who pay much money to learn English at language school in the USA or in other English speaking countries have already good grammatical understanding and can read and write English sufficiently. Speaking is, however, a crucial issue for them, since Japanese education system does not encourage people to proactively speak English. Even though

the major aim of the Japanese who decided to invest time and money to learn English abroad is to improve their speaking proficiency, they are afraid of making mistakes in front of others and mostly do not speak during the lesson, once they are in a foreign country and learn English with the people from other parts of the world. He thought “actually, what Japanese need is a chance to talk with someone in English. For this purpose, they don’t have to pay much money for native speakers!” In his school, students can take at least 4 hours of personal English lessons with Filipino teachers with a good English proficiency during the week. Additionally, they often communicate with each other in English, because all of the students and teachers live in apartments located on school’s property. In this way, he managed to offer opportunities for Japanese customers to speak English proactively and intensively. He has some horizontal inter-organizational networks with competitors. While he has less networks with dominant market players, he gives advices to young Japanese companies who are establishing similar businesses in Philippines. The vertical network in his case is also assumed to be intensive and strong. Since all the students live in the same place as the Entrepreneur B and his employees, he is in the condition to acquire diversified information from his customers. His open-mindedness as well as high communication skills allow him to obtain important information about potential customer demand. He analyzed for himself that this co-creation process made a unique selling proposition of this company and had made his company survive successfully in the fierce competition. The importance of Japanese diaspora network was not recognized in his case. His local co-founder also plays a crucial role, since he has some properties which they could use for school buildings in the beginning. With his help, he could start his business with small initial investment. In addition, this local partner negotiates with local people as well as business partners. In his case, his employees and customers (students) are crucial motivational factors. Entrepreneur B is driven by his object to make his school better for his students and employees.

Entrepreneur C is the youngest interviewee in this research. He established an online Spanish school in Guatemala in 2012 with his Japanese co-founder. His business model is similar to the one of Entrepreneur A, in fact was inspired by the online English school market in the Philippines. There is, however, one remarkable difference that they have two physical company buildings with technical facilities such as personal computers, electric generators and the Internet where teachers can give lessons to students via Internet. The reasons why they have these facilities is that technical infrastructures in Guatemala are less developed than in the Philippines and they cannot rely on private technical conditions of their employees due to a slow internet connection, frequent electrical outage and the low quality

of computers. Students can take personal Spanish lessons via Skype for low prices and all the teachers are Guatemalan and native Spanish speakers. After working for a large advertisement company in Japan, entrepreneur C quit his job to travel around the world. During this trip, he learned Spanish in Guatemala and noticed the bad working conditions Spanish teachers have due to the low wage and strong seasonal fluctuations through the conversation with them during Spanish classes. Entrepreneur C thought “I thought this would be a problem we could solve. The bad situation they faced drove me to make a decision to build up a business.” In fact, through his business, he has created a perfect match between the demand of Japanese customers who want to learn Spanish for affordable price and the demand of Guatemalan Spanish teachers who seek a fair wage as well as season-independent working condition. In online Spanish school market, he is one of the pioneers and the market is still not concentrated as English school market in the Philippines. While entrepreneur C has had no strong horizontal inter-organizational network with other online language schools, he has a strong intention to leverage from vertical networks with customers systematically. In order to identify hidden or potential demands for his business in the future, he proactively gathers information about vocational and personal backgrounds of his customers. As soon as he identifies interesting customers, he contacts them personally via email and asks them for their opinions. In fact, some crucial company’s strategic decisions such as expansions of operating units are made based on such information. As for personal networks, he has strong emotional supports from his family as well as his partner. What is worth mentioning about the network dynamics in his case is the significant role of digital world. He gathers information related to his business through communication via social networks. Social networks also gave him some pictures of role models and ideas for his business. He is also a selected member of Global Shapers, a network of hubs initiated by World Economic Forum, where he is connected virtually to other international entrepreneurs. This specific network contributes to enhance his motivation for his business, as it enables to communicate with other international social entrepreneurs who have similar motivations as entrepreneur C. Apart from virtual networks, it is noticeable that he has a trustful Guatemalan headmaster of a Spanish language school as his local cooperation partner. Without her help, he would not have managed to find trustful and qualified employees. In his case, it is also worth mentioning that local employees play a significant role for sustaining his entrepreneurial motivation, since improving their working conditions was his primary motivation to start his business and he has a strong sense of responsibility for their life.

The case of entrepreneur D differs from other ones in many aspects. He migrated to Argentina already in 1970s and the company has survived 24 years in the turbulence of instable economic and political situations of Argentina. Entrepreneur D established his company in 1990 in Buenos Aires, after working for several local Japanese companies. He conducts businesses in some different areas such as trading, distributing and travel agency. His initial motivation for migration is to challenge himself to survive in a completely different environment and to create something new from the scratch by himself. Since internet was not popularized at the point entrepreneur D migrated to Argentina and started his business, his business and its success heavily rely on both formal and informal networks of the entrepreneur. In fact, from the very beginning, he had a strong intention to establish different types of networks with diversified sorts of people including Japanese expatriate managers and directors, presidents of some Japanese, Argentinean companies, Japanese embassy and chamber of commerce and local people. In the beginning, he frequently flew between Japan and Argentina to establish some meaningful networks for his future business. The significant impact of networks on his business-related decision can be observed in the history of business development. For instance, the first business he established before the current company was related to fishing equipment. This industry was chosen only because he had contacts with some managers of Japanese fish equipment companies. There is also another example showing the impact of networks on his business. Through intensive relationships with the local Japanese community consisting of both 1st and 2nd generations of Japanese migrants, he recognized a next business chance to distribute Japanese newspapers as well as publications to Japanese expatriates in Buenos Aires. The intensive interactions with the Japanese Diaspora in Argentina allowed him to see how important for those who conduct their business with Japanese companies it is to keep abreast of the latest information and to notice many members of the Japanese Diaspora community long for readings in Japanese, even those who speak Spanish at almost native-speaker level. Simultaneously he managed to establish a contact with OCS (Overseas Couriers Service) in Japan. Under this perfect condition, he became a representative of OCS Argentina to be responsible for distribution of Japanese publications within the local Japanese community. This distribution of publications is still one of his businesses until now. One more example is his friendship with the Japanese football association. In the beginning, he took care of planning for the trip of the Japanese national football teams to Latin American countries informally, which turned to be a part of his business later. One of the departments of his company functions as a travel agency and still takes care of the travel of the national football

team. Like the other cases, the role of local partners was also crucial. In his business, it was necessary to obtain some licenses to operate as freight forwarder, which required him to overcome a number of legal obstacles. He had a few trustful local partners such as accountant who could take care of these issues. Besides local partners, the local employees gave him motivation to make his business successful, because he believes trustful employees are most important assets for the company in order to survive in the instable environment of the country.

Benefits of the networks for Japanese entrepreneurs

The network dynamics of four Japanese diaspora entrepreneurs will be analyzed along with the potential benefits of networks on entrepreneurial activities discussed above: (i) opportunity recognition (Kontinen & Ojala, 2011; Stuart & Sorenson, 2007; Arenius & De Clercq, 2005; Hansen, 1995), (ii) access to resources (Stuart & Sorenson, 2007; Birley, 1985; Fried & Hisrich, 1994; Bergman & Saks, 2004) and (iii) motivation sustainment (Tjosvold & Weicker, 1993).

Opportunity Recognition – two timing-related different types of opportunity recognitions were recognized: (i) Initial opportunity recognition and (ii) opportunity recognition for expansions based on the multiple case study. As for the initial opportunity recognition, case studies show that digital social networks such as twitters and blogs offer information about the business insight of other diaspora and international entrepreneurs which have positive impacts on their entrepreneurial opportunity recognition in the initial phase. Entrepreneur A and C used these social networks in order to identify business opportunities before they found their company in their pre-migration phase. Entrepreneur B identified his initial opportunity during his travel with the help of information from digital social networks. Entrepreneur A, B and C do not use digital social networks passively like reading blogs and twitters, but interact with other diaspora entrepreneurs by exchanging opinions. Entrepreneur D was the only one who identified his initial business idea through physical networks with various people, from both his formal and informal relationships, in his post-migration phase. It is interesting to observe that entrepreneur A, B and C, who proactively use social networks as their information tool in the context of initial opportunity recognition, identified their business opportunity in their pre-migration phase, while entrepreneur D, who relies on his networks in COO and Japanese diaspora networks in COR, recognized his business chance after the migration. It can be assumed that the digital world enabled for people who are interested in establishing their business outside of their home countries to identify entrepreneurial

opportunities, while they are still based on their home country. It was not possible in 1970s, when entrepreneur D migrated to Argentina. Social networks may function as substitution to diaspora networks in COR.

While the observed entrepreneurs used either digital social networks or networks in COO and COR in the initial phase of their entrepreneurial activities, it was observed that they used different types of networks for expanding their business in the later stage. Especially the active usage of vertical networks of entrepreneur B and C is of significance. They proactively attempt to use their customers as information source to identify future opportunities for their business. Entrepreneur B decided to expand his business to offer IT-education, since he noticed during the interaction with his students that IT proficiencies are demanded besides language proficiencies from international companies outside of Japan, where many of his students are willing to work after their graduation. Entrepreneur C also made a strategic decision to offer his service for Japanese universities, since he recognized that linguistic students at many Japanese universities take Spanish lessons at his school, since there are not sufficient opportunities to speak Spanish at their universities. Entrepreneur D, in contrast, relied heavily on his networks in COO and in COR. With whom he has contacts is directly related to his strategic decisions in terms of expansion. The people with whom he established relationship became later his customers, business partners and suppliers.

Access to Resources - As discussed above, resources include tacit knowledge (Latour, 1989; Stuart & Sorenson, 2007), market & industrial knowledge (Bergman & Saksa, 2004), human resources (Birley, 1985; Stuart & Sorenson, 2007) as well as financial resources (Fried & Hisrich, 1994; Hsu, 2004). In the diaspora context, access to tacit knowledge about COR is especially important due to their mixed embeddedness. Operating businesses in foreign contexts require them to overcome social, political and economic barriers. Empirical findings suggest that the role of local partners is enormous. In all of the four cases, entrepreneurs have at least one local co-founder or business partner who plays a significant role in negotiating with local people and coping with of institutional barriers. Without the existence of trustful partners, they could not have managed a number of challenging situations caused by such barriers. It can be therefore assumed that it is crucial to find a trustful local partner to overcome barriers.

Some networks provided accesses to market and industrial knowledge. In case of entrepreneurs A, B and C, they proactively use information gathered through digital social networks about competitors and industries. In the case of entrepreneur D, his business network in Japan as well as the Japanese Diaspora network gave him an access to this type of information. Again, the substitutive function of digital social networks to classic physical networks

can be observed. In fact, interestingly enough, entrepreneurs A, B and C do not have visible diaspora networks in their COR. Networks can potentially give an access to talented or qualified human resources to entrepreneurs (Birley, 1985). Interviewees used different types of networks to acquire human resources for their business. Entrepreneur A, B and C acquired their local personals through their local partner. The local partner enables diaspora entrepreneurs not only to overcome barriers, but also to find trustful local employees. Due to the linguistic and cultural differences between COO and COR, it is challenging to find qualified and trustful local personnel for diaspora entrepreneurs. Besides the local partners, social networks in the case of entrepreneur A play an interesting role in finding low-cost managerial personals such as lawyers and accountants via internet from all over the world.

In previous studies, diaspora networks as well as family ties were seen as an important financial resource for entrepreneurship in the diaspora context (Boyd, 1989). In four observed cases, all entrepreneurs financed their business on their own and did not rely on others. Therefore, the network's function as financial capitals could not be observed in this study.

Motivation Sustainment - Entrepreneur A has a sort of cosmopolitan network with other international entrepreneurs especially from Western countries in his COR, which offers him opportunity to discuss businesses and entrepreneurial activities. Entrepreneur B has an interesting relationship with younger Japanese entrepreneurs who want to establish similar businesses in Philippines. He provides concrete managerial advices as well as business know-how to younger entrepreneurs who potentially become his direct competitors in the future. This horizontal inter-organizational network functions to motivate younger diaspora entrepreneurs, but simultaneously he seems to be energized by younger entrepreneurs by recognizing his own strengths and the necessity to focus on them in order to survive the competition. Entrepreneur C is a member of Global Shapers organization, which a number of international social entrepreneurs belong to. Entrepreneur C's primary motivation to become entrepreneur is to improve the working condition of Guatemalan people. Global Shapers gives an opportunity to him to share his motivation with other social entrepreneurs who have similar goals.

Besides these networks, four interviewed entrepreneurs have a common factor which keeps their entrepreneurial motivation: a strong sense of responsibility for their local employees. Entrepreneur A, B and C see them as a sort of social entrepreneurs, since their primary motivation was to improve the life condition in CORs. Entrepreneur D is not a social entrepreneur but he values his employees and treats them as his family. The trust of employees in entrepreneur D is especially worth mentioning in this regard. He made

substantial efforts at the sacrifice of his own benefits to offer good working conditions for his employees. For instance, there is a department in his firm which does not create positive figures to the company over years. Entrepreneur D decided to keep this department running because he did not abandon his employees working for the department. At one time, he also paid the entire tuition of one of his employees who had worked as a driver for years. This driver told him that he wanted to study business so that he could make more contributions to the company. Such decisions seem to be illogical and irrational from the economic perspective at first sight. However, these efforts created a strong sense of loyalty of his employees, which reduced the turnover rate and increased the working efficiency. In fact, his employees work hard in order that the company can survive for a long time and that driver is still working for the company, but not as a driver any more, but a sales professional after his graduation. It is a virtuous cycle that the existence of his local employees motivate him to keep his business successful, and his efforts motivate his local employees to work for the company. Empirical results are summarized in the Table 3 below.

Table 3. Empirical results

Network Benefits		A	B	C	D
(i) Opportunity recognition	In the initial phase	VN	VN	VN	DN & HN
	In the expansion phase	VN	VN	VN	DN & HN
(ii) Access to resources	Market/industrial Knowledge	VN	VN	VN	DN & HN
	Tacit knowledge	LP	LP	LP	LP
	Skilled labor	VN	LP	LP	LP
	Financial capital	-	-	-	-
(iii) Motivation maintenances	Entrepreneurial motivation	LE	LE	LE	LE
	& self-confidence	TEN	HoN	TEN	

VN: Virtual network, DN: Diaspora network, HN: Home network, LP: Local partner; LE: Local employees; TEN; Transnational entrepreneurial network, HoN: Horizontal network.

Network mechanism of descending diaspora entrepreneurship

Based on the empirical findings and discussion above, a model illustrating the network dynamics of descending diaspora entrepreneurs is developed and visualized in Figure 1. Multiple case studies with four Japanese DDEs identified eight different types of networks which are related to this type of entrepreneurs: (1) Private networks such as family and friends of entrepreneurs, (2) Vertical networks with customers in COOs, (3) Business networks in COOs, (4) local partners in CORs, (5) local employees in CORs, (6) Diaspora networks in CORs, (7) Transnational entrepreneurial networks, both

formal (e.g. Global Shapers) and informal, (8) digital social networks such as twitter, blogs and Facebook. As the Figure 1 depicts, there are three categories of networks where diaspora entrepreneurs can be embedded: networks in COOs, in CORs and the ones beyond national borders (Transnational entrepreneurial networks and digital social networks).

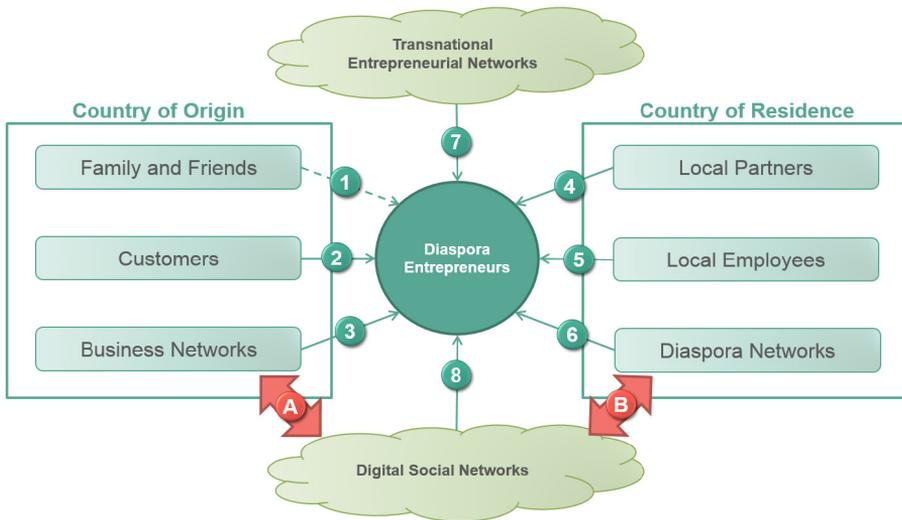


Figure 1. Network dynamics of descending diaspora entrepreneurship

The conducted case studies did not show any significant role of private networks (1). Entrepreneurs' family and friends in COOs support them emotionally, but unlike the conventional assumptions for ADEs, this type of network does not function as financial capital (Boyd, 1989) or human capital (Kuznetsov, 2006) in the context of DDEs. The vertical network with customers (2) often provides useful information for their business expansion. The (previous) business networks in COOs (3) are often helpful in terms of opportunity recognitions both in the initial and expanding phase. However, it was observed that entrepreneurs who proactively use digital social networks tend not to rely on this network. Therefore, this network and the digital social network are assumed to substitute to each other. This study highlighted the significant function of local partners (4) for diaspora entrepreneurs in overcoming barriers caused by institutional, cultural and legal differences between COOs and CORs, since they possess tacit knowledge about the context of CORs which entrepreneurs cannot learn in a short term. The

relation with local partners gives them an access to local human resources. The networks with local employees (5) have a unique function. DDEs with strong social orientation have a sense of responsibility for the life quality of their local employees. Therefore, the relation with them has a positive impact on their motivation for their business. The diaspora network in CORs (6) allows entrepreneurs to recognize business opportunities and provide market and industrial knowledge. But again, this network seems to substitute digital social networks which have similar functions. For the entrepreneurs with strong digital orientation the diaspora network does not play a significant role. It turned to be clear that DDEs benefit from transnational entrepreneurial networks (7) which formed by entrepreneurs from different countries. It gives them an opportunity to share their motivation and challenges in their entrepreneurial activities beyond national borders. The digital social networks (8) might characterize the modern diaspora entrepreneurs most as it could have all of three network benefits: opportunity recognition, access to resources and motivation maintenance.

DISCUSSION

While the model above illustrates basic assumptions of how different networks influence the entrepreneurial activities of DDEs, there are some issues to be considered in order to apply it for future research. First of all, this model is developed based on the cases solely with the 1st generation of migrants in order to avoid the complexity caused by the heterogeneity within the diaspora phenomenon. A certain modification is necessary to apply this model in case of investigating the 2nd generation diaspora. For instance, the 2nd generation diaspora who were born and have grown up in CORs do not have difficulties with their settings. Therefore, it is assumed to be unnecessary to have local partners in CORs. These people would rather need partners in COOs, when they make a business related to their COOs.

The second issue to be considered is external factors influencing the intensive usage of digital social networks. The empirical findings indicate some of DDEs use digital social networks as a substitute of physical networks. In this regard, several aspects should be clarified. First, the intensive use of digital social networks can be specific to the sample populations. Japanese population is characterized by its intensive use of digital media. For instance, Japan has the third largest number of Twitter accounts in the world and is also the second most-active country in terms of posted tweets, behind the USA. Japanese is also the second most-used language on Twitter (All Twitter, 2012). According to the Internet Geographies at the Oxford Internet Institute (Graham & De Sabbata, 2013), however, almost all of the developed

countries have higher internet population as well as penetration. It is related to the well-developed internet infrastructure as well as the high salary to allow the population to afford own personal computers as well as smart phones in developed countries. In other words, developed countries offer better conditions for the intensive use of digital media for their population. Therefore, it can be assumed that digital networks are more significant for DDEs than ADEs, while, due to the technological development, digital networks are assumed to play an increasing role for ADEs, too. Second, this intensive use of digital networks can be specific to the industry (online service providers). While entrepreneur B, who is offering his service physically, also relies heavily on digital social networks in many respects, further cases with entrepreneurs who offer their services and products physically should be investigated.

The third issue handles the motivational heterogeneity within DDEs. Their motivation to leave their COO and to become an entrepreneur in a country with a worse economic condition does not seem to be necessity driven at first sight. However, we know little what exactly drives them to make this courageous decision. In this study, the surveyed entrepreneurs seem to have a mixed motivation of social entrepreneurship as well as aspiration for self-realization. As indicated in the finding, a relationship with local employees has a positive impact on their motivation sustainment for those who are motivated by social missions. There are, however, DDEs driven by the favorable economic gap between developed and developing/emerging countries. Since their primary goal is to maximize the benefit from this gap, this relation with local employees are assumed to have different influences on their businesses.

The fourth issue is related to the role of local partners. The results of multiple case studies revealed the significance of local partners for Japanese entrepreneurs in emerging economies. Since the role of local partners has not been discussed by previous research on ADEs, their presence seems not to be important for ADEs. This can be explained by ADE's strong reliance on their diaspora network in CORs. It can be assumed that ADEs attempt to overcome institutional and cultural barriers with the help of their diaspora networks, while DDEs with the help of the local partners, since their diaspora networks are not so intensive as the one of ADEs (Harima et al., 2014).

The last issue is the necessity to consider environmental difference in terms of the availability of extensive diaspora networks. Some countries (cities) have large community of a certain ethnicity, while others not. In the investigated cases, the Philippines and Argentina have rather large Japanese communities, while Guatemala has only a limited number of Japanese population. In such a case, entrepreneurs should rely on other types of

network, since there is no significant diaspora network. The correlation between the degree of intensiveness of available diaspora network in CORs and entrepreneurs' usage of digital social networks should be further investigated.

CONCLUSION

In this study, the network dynamics of diaspora entrepreneurs who migrate from developed to developing and emerging country was investigated. For this purpose, multiple case studies with Japanese diaspora entrepreneurs in emerging economies (the Philippines, Guatemala and Argentina) were conducted. The findings were analyzed in line with the benefits of networks identified through the literature review. The empirical studies identified eight potentially significant networks on their entrepreneurial activities: (1) Private networks such as family and friends of entrepreneurs, (2) vertical networks with customers, (3) business networks in COOs, (4) local partners in CORs, (5) local employees in CORs, (6) diaspora networks in CORs, (7) transnational entrepreneurial networks, both formal (e.g. Global Shapers) and informal, (8) digital social networks such as twitter, blogs and Facebook. A model of network dynamics was developed and potential benefits of each network was discussed.

This study has some limitations. Since this study observed one ethnic group, these findings can be specific to their contexts. The results might differ in other diaspora groups from developed countries (e.g. European or Northern American diasporans). For example, Japanese population is strongly characterized by its intensive usage of digital media. The strong reliance on digital networks, which was one of the major findings in this research, may not be the case for other diaspora populations. Therefore, it is necessary to conduct further qualitative research with other ethnic groups. In the future, how specifically digital networks can substitute physical ones in the diaspora context should be investigated, since there are various types and usages of digital networks, which this research did not refer. Other dimensions such as motivations should be further investigated, since all of the four observed entrepreneurs have a strong sense of social responsibility. This may not be representative in the group.

There are some major findings in regard of DDEs which contribute to the current research status of diaspora entrepreneurship. First of all, local partners in CORs play a crucial role for their businesses in terms of overcoming institutional and cultural barriers between COOs and CORs with their tacit knowledge about the country. Secondly, networks with their local employees exert a positive impact on their motivation maintenance, since

these entrepreneurs are driven by similar motivation. Thirdly, they may have access to transnational entrepreneurial networks with other entrepreneurs from different countries which enhances their entrepreneurial motivations. In the previous diaspora research, while the emergence of digital networks within the same ethnicity has been featured recently, the existence of this transnational entrepreneurial networks is almost invisible. Fourth, this study highlighted the potential impacts of digital social networks which may substitute networks of diaspora entrepreneurs in their COOs and CORs. The digital social networks are assumed to have similar functions as classical business networks in COOs and diaspora networks in CORs in terms of opportunity recognition, access to resources and motivation. In fact, it seems that the emergence of digital world changed the nature of the network dynamics surrounding diaspora entrepreneurs that they are now able to enjoy these benefits through internet while staying in their COOs. It might enable the opportunity recognition and access to resources in the pre-migration phase.

In conclusion, this study takes a first step to tackle the inherited heterogeneity of the diaspora phenomenon by shedding a light on the overlooked type of diasporans and their entrepreneurial activities from the lens of network theories, who migrate from developed countries to less developed ones. This study also coined terms, Descending Diaspora Entrepreneurs and Ascending Diaspora Entrepreneurs, which enable the future research to consider the economic dimension of migration paths and its impacts on their entrepreneurial activities.

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Abstrakt (in Polish)

Działania przedsiębiorcze diaspory przyciągają coraz większą uwagę badaczy, co ma związek z gwałtownym wzrostem zjawiska migracji. Diaspora odnosi się do migrantów i ich potomków, którzy utrzymują silne relacje z ojczystym krajem (Safran, 1991). Dotychczasowe badania koncentrowały się przede wszystkim na przedsiębiorcach diaspory z krajów rozwijających się lub wschodzących rynków, natomiast przedsiębiorcy z państw rozwiniętych pozostawali prawie niewidoczni, chociaż da się ich zaobserwować empirycznie (cf. Elo, 2013; Horiuchi, 2010). W rzeczywistości, ich działania przedsiębiorcze były zazwyczaj pomijane w badaniach diaspory jak również badaniach dotyczących międzynarodowej przedsiębiorczości. Niniejsza praca proponuje dwa nowe pojęcia: Przedsiębiorców Diaspory-Potomków Emigrantów – dla przedsiębiorców, którzy wyemigrowali z bogatych krajów do krajów mniej rozwiniętych i bada ich działalność przedsiębiorczą stosując perspektywę sieci. Przegląd literatury zajmującej się sieciami przedsiębiorców, jak również sieciami diaspory identyfikuje trzy potencjalnie znaczące korzyści sieci dla działań przedsiębiorczych: (i) uznanie szans, (ii) dostęp do zasobów, oraz (iii) podtrzymywanie motywacji. Przeprowadzono eksploracyjne, wielowątkowe studia przypadków obejmujące przedsiębiorców japońskiej diaspory na wschodzących rynkach (Filipiny, Gwatemala, i Argentyna), a wyniki empiryczne przeanalizowano zgodnie z przyjętymi korzyściami sieciowymi. Wreszcie, stworzono model dynamiki sieci dla Przedsiębiorców Diaspory-Potomków Emigrantów na podstawie wyników badań.

Słowa kluczowe: przedsiębiorczość diaspory, japońska diaspora, sieci przedsiębiorców, sieci diaspory, wschodzące rynki, trans-narodowe sieci przedsiębiorców.

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Inventory Management – A Tool for Optimal Use of Resources and Overall Efficiency in Manufacturing SMEs

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Abstract

Observation shows that there is a serious problem regarding inventory management in manufacturing organizations, particularly in Small and Medium Enterprises (SMEs). This has prompted the desire to embark on a study that will examine the problem and strive to proffer useful suggestions. This paper intends to bring to the fore the salient issue of inefficiency in the practice of inventory management and its effects on production operations of manufacturing concerns. Survey design was used with the application of random sampling technique in selection of units within the case study areas. Primary data were collected through the use of structured questionnaires and the analysis was done using Pearson correlation coefficient and frequency counts and percentages to give adequate descriptions. The study concluded that efficient management of stock would be achieved through determination of stock levels, engagement of skilled store personnel, and the use of automated stock control. It went further to assert that the achievement of optimal use of resources through efficiency in the management of stock will eliminate the problems of sudden lack of stock; the resultant low capacity utilization, loss of production time, and thereby improving overall efficiency of the manufacturing SMEs and breed high performing entrepreneurs.

Keywords: *inventory management, production operation, manufacturing organizations, SMEs, resources, optimization, entrepreneur.*

INTRODUCTION

Inventory management is critical to the overall performance of any manufacturing concern, be it SME or large organization. Beside demand and other forces like competitors' actions and general price index, inventory situation in terms of efficient management and effective planning determines the activity level, the turnover and the ultimate profit in a given company. The inventory function is assumed to be organized and operated on an integrated

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basis and is presumed to be responsible for material forecasting, planning, inventory control, scrap control and disposal; providing management information regarding purchases and inventories within the framework of the financial policies and norms.

Inventory management being the coordination of efforts (planning, controlling, organizing, directing) towards achieving efficiency in the procurement, transportation, stocking and utilization of inputs of a manufacturing organization is therefore central to production activities and management. Effective and efficient functioning of the inventory management has direct bearing on the total performance of the organization and that of its managers. The management of inventory in a manufacturing organization therefore deserves attention and critical study in order to achieve uninterrupted production runs and enhanced performance in operations. Besides, holding the right stock level could improve the level of available working capital that could be profitably employed in other areas. These objectives could only be achieved through integrated approach to inventory management functions by combining planning, procurement and inventory control.

SMEs all over the world are said to be the major driving force of the global economies today both in terms of contribution towards the GDPs of nations and employment. Campos, Acuna, Nuno de la Parra and Valenzuela (2013) opined that in the entrepreneurial universe, microenterprises play a very special role in the business context of the economy. It is affirmed that 95% of manufacturing organizations in Nigeria are SMEs. Therefore, any serious discussion on national productivity and economic development must involve manufacturing SMEs. This reason informed the adoptions of some SMEs as units of the case study for this research effort.

The performance of SMEs has been a source of concerns to investors and political leaders alike, given the magnitude of the resources committed to ensure that SMEs play vital roles in the economic development of Nigeria, like their counterparts in other parts of the globe. It is disheartening to note that SMEs in the country have underperformed.

There are problems associated with raw material/inventory management in manufacturing organizations in Nigeria in general but the enormity of the problem in relation to Small and Medium Enterprises (SMEs) seems catastrophic, in view of the problems facing the SMEs and the mortality rate in the subsector. The National Association of Small Scale Industrialists (NASSI) in Nigeria is of the opinion that, the contributions of the manufacturing sector to the GDP have declined from 9.9% in 1981 to about 5.7% in 2003, while capacity utilization averaged between 30-35% annually during the years 2001-2005 (Ojukwu, 2006). The problems in manufacturing are rarely

given adequate attentions due to inability of people involved to trace them to inventory management.

The following problems are traceable to inefficiency in raw material/ inventory management in Nigeria:

- 1) The inefficient use of production time, labor and other resources due to delays or incessant short down and interruptions during production have become inherent part of operations in many manufacturing organizations in Nigeria. This often led to inability to meet customers' order and eventual loss of market shares. Low capacity utilization and loss of revenue as consequence of these problems led to closure of many manufacturing firms in the country.
- 2) The poor liquidity position of many manufacturing concerns, particularly the SMEs in Nigeria is a matter of concern to many stakeholders. To hold too much stock than necessary will lead to capital lock-up in inventory. The inventory held idle in stores has values attached to them; and the likelihood is that the organization will never regain the money in them if they become obsolete and useless.
- 3) In many manufacturing concerns in Nigeria, there is inadequate provision of good quality manpower in stock maintenance and management. This is, indeed, a serious issue since employees are those charged with the responsibility of monitoring progress and reporting impending insufficiency. They are to ensure that stocks are properly kept and protected against fire and other disaster or loss. The "people" are to ensure efficient use of warehouse facilities and space; keep proper and adequate records.
- 4) The employment of staff illiterates or semi literates is a source of the problems being experienced in most manufacturing organizations. This is evident in occurrence of incidences like misplacement and dislocation of vital documents, files and stock items. The inability to use inventory models and lack of knowledge of the use of quantitative values to produce information is the major hindrance in model application by store personnel (Akindipe, 2005).

This study evaluates the elements of inventory management and their significant impact in achieving optimization in the use of resources of the manufacturing SMEs and other producing organizations. It attempts to provide solutions to the problem being faced in inventory management and control. To this end, the specific objectives are: attempt to provide solution to the problem of in-optimal use of production time, labor and other resources in manufacturing organizations. Furthermore, the study sought to examine possible ways of forestalling the problem and more importantly, explore all avenues to ensure that there will be high level of organizational efficiency and development in the performance of the owner-manager through inventory management.

Significance of the study

This research focuses on the application of inventory management to achieve optimal use of resources and overall efficiency in manufacturing SMEs. It asserts that Inventory management is central to the attainment of optimization of resources and acceptable level of capacity utilization and improved performance.

The study has potentials to engender efficiency in production operations and bring about tremendous improvement in the performance of firms and their managers. Optimal use of resources as evident in removal of idle time, reduction of cost and adequate working capital will undoubtedly influence improved capacity utilization, improved profit, high competitiveness, waste reduction and customer satisfaction. The research is an addition to the body of knowledge, particularly in the fields of entrepreneurship, inventory management and production management.

RESEARCH HYPOTHESES

In order to achieve the objectives of this study, the following hypotheses are advanced and tested during the course of this research.

Hypothesis 1 (H₁): There is strong relationship between determination of stock level and optimum use of production resources.

This proposition is on the premise that when the level of stock to hold at particular time is determined by a firm, such organization will obtain efficient use of its production resources. Resources like labor, time, fund and other operational facility will be used efficiently since idle time will be minimal on prevention of stock-out. When stock levels such as safety stock, maximum stock and re-order levels are established; it is expected that instances of stock-out will be forestalled.

Hypothesis 2 (H₂): There is strong relationship between engagement of skilled store personnel and optimal use of production resources.

This hypothesis is formulated on the basis that the realization of optimum use of production resources is a direct consequence of engagement of educated and skilled store workers. The use of illiterates and unskilled store personnel will be counterproductive, especially in developing countries where the level of automation is still very low. Skilled personnel are useful in stock tracking, and are instrumental to adequate record keeping, reporting low stock level, or impending damage to stock.

Hypothesis 3 (H₃): There is strong relationship between automated stock control and optimal use of production resources.

This postulation sees optimum use of resources as achievable through automated control and management of inventory. Automated system allows producers to input inventory and track the items that are delivered to store and spot depreciating inventory. Depending on the application software, automated inventory system alerts or triggers orders when re-order level is reached. The system prevents over and under stocking and therefore improves working capital, reduces waste and ensures that optimal use of labor and time are achieved.

Hypothesis 4 (H₄): There is strong relationship between optimum use of production resources and overall organizational efficiency.

This hypothesis stems from the fulfillment of optimization of resources. This study proposes that optimum use of resources as a direct consequence of stock level determination, engagement of skilled personnel, and automation will produce a direct effect on overall efficiency level in the SMEs. It is envisaged that overall efficiency will be attained with improved sales, customer satisfaction, improved profit and high competitive advantage for SMEs.

Hypothesis 5 (H₅): There is strong relationship between optimum use of production resources and performance of entrepreneurs.

Kachru (2011) opined that innovation and learning are the basis on which entrepreneurship is established. Upon attaining optimality in the use of resources, the owner-manager is motivated to improve his performance. The learning experience of the entrepreneur (through the process of attainment of overall-efficiency) is proposed to influence constant high-level performance and improved managerial skills since innovation and growth is inherent in entrepreneurship.

These hypotheses are further explained through the following research model:

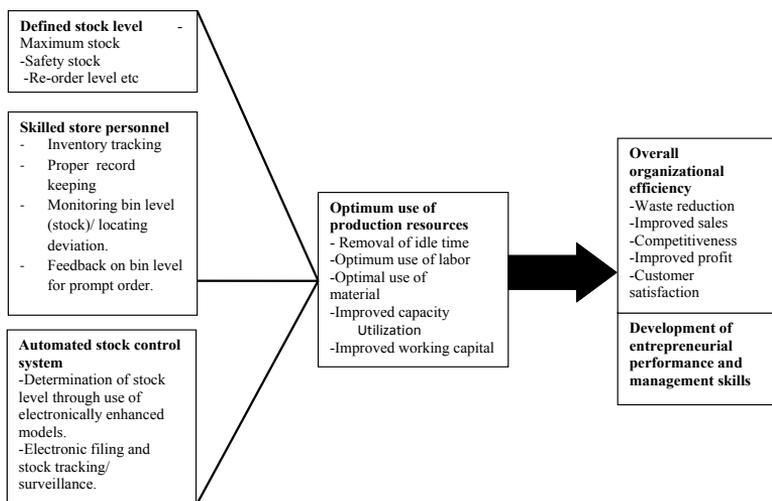


Figure 1. Research model

LITERATURE REVIEW

In a work of this nature, a conceptual analysis of relevant studies on the problem under consideration is desirable; given the universal perception and the enormity of the challenges that inventory management has posed to manufacturers.

Inventory refers to totality of stocks, being held by a business enterprise at a particular time. The following groups of inventory are of concern to managers in manufacturing organizations:

- 1) Raw materials,
- 2) In-progress or semi-finished goods,
- 3) Finished goods.
- 4) Other stocks such as: tools, spare parts and production consumables.

Inventory management basically aims at providing both internal and external customers with the required service levels in terms of quality, quantity and order fill rate, to ascertain present and future requirements for all types of inventory to avoid overstocking while avoiding bottleneck in production and to keep costs to a minimum (Sharif, 2011).

Classification of inventory management system

The use of inventory management system in inventory management practice is imperative today; given the dynamic nature of operations in the frequently changing world of business.

Mantho, (1994) classified Inventory Management computer based activities into three broad areas:

- 1) *Inventory record keeping*: due to the availability of computers at a reasonable price, SMEs have found it appropriate to automate their inventory records through computerization.
- 2) *Inventory decision-making*: many models can be integrated into computer based inventory systems.
- 3) *Material requirement planning (MRP) system*: MRP is an Inventory Management (IM) information system concerned with getting the right materials to the right place at the right time.

However, modern Inventory Management systems are more challenging because of several variables. According to Sharif (2011), in a fluid IM environment, these factors include high inflation rates at certain periods, low availability of traditional materials, high costs of labor leading to less making and more buying, increasing numbers of suppliers entering the procurement market and rapid development of micro-processors and software in decision-making support systems. In addition, new technological innovations lead to the development of substitutes (for example, smart materials replacing steel and aluminum), which add to the challenges for IM (Mohanty 2009).

Universality of inventory management problem

Inventory management problem cut across national boundaries and sector divisions (Nasiri, Davoudpour and Karimi 2010). Its rears its ugly head virtually in all sectors of the global economy regardless of whether the business is retail, distribution or manufacturing.

Chan and Wang, (2014) made impressive contribution by examining the negative impact of inventory inaccuracy. They reported that in enterprise resource planning systems, the record of inventories are often not equal to the real quantities of inventories. So was Rajeev (2008), who studied forty small and medium enterprises (SMEs) in Bangalore, India and observed that even in an inventory intensive manufacturing industry sector, Inventory Management practices were poor. He went further that the use of formal practices for managing inventories was also inadequate. In the same vein, inventory management (IM) practices of small and medium scale enterprises in Finland and Greece were studied by Chikan and Whybark, (1990) to identify the experiences of managers concerning IM. The findings revealed that IM

decisions are made at the operational level with minimal guidance from the top.

Given the foregoing, it is clear that the problem of inventory management is universal and people had; over the years attempted to seek solution. The solution offered by Townsend (1992) is in what he termed “the standard requisition concept” which he said could be achieved through:

- 1) Determination of order quantity and stock level, to be controlled and managed;
- 2) Anticipation of workloads.

Dear (1989) suggests “an adaptive method of forecasting” by setting safety stocks in terms of a desired service (stock) level under management control using one of the adaptive available algorithms. In providing solution to inventory problem of perishable products, Ali, Madaan, Chan and Kannan (2013) applied logistic approach to determine optimum perishable schedule to forestall deterioration, shortages and time decay.

Wadhwa, Bibhushan and Chan (2009), studied the impact of impulsive demand fluctuations on different inventory policies used in supply chain and revealed that simpler inventory policies are better prepared to dampen or even reduce the impulsive demand fluctuations. In corroboration, Todd (1990) asserts that the problem started with the implementation of material management systems. He believes that material management will be successful if its implementation is one, which is designed to provide the real benefit. For Chan and Prakash (2012), in examining manufacturing supply chain with vertical, horizontal and lateral collaboration; they emphasized lateral collaboration by determining the impact of inventory policies on supply chain performance.

SMEs in developing countries

The Nigerian government has expended vast resources in its efforts to ensure the inflow of foreign direct investment (FDI), to boost the nation’s economy, provide more jobs, improve GDP, and diversify the economy; making it less petroleum dependent. Attempts by governments to attract foreign investment may not produce the desired results unless efforts are made to contain the mortality rate of SMEs in the country.

A critical analysis of the global political economy reveals that the Asian nations are gradually moving from consuming nations to producing and large emerging economies with potentials to achieve greatness within the short run. This feat was possible, due largely to the use of SME as agent of economic transformation in these countries. The share of employment for SME accounted for 70% of total employment and the output share for over

46% in South Korea (Tang 2007). In 2007, Malaysia had 96% of establishments of SMEs, which contributed 30.7% of total manufacturing output and employed 31% of total workforce (Rose, Deros and Nordin, 2011). SMEs are the major growing force behind China's prominent success in terms of their contribution towards the national GDP (accounting for 40%), scale of assets, diversification of products, and the creation of employment (Tang 2009). SME has equal strategic importance in Nigeria. A study conducted in Nigeria by the Federal Office of Statistics shows that over 97% of all businesses in Nigeria employ less than 100 employees. This therefore means that about 97% of all businesses in Nigeria are SMEs (Ariyo, 2000). The Federal Government of Nigeria initiated and actualized some policy measures, like the setting up of Small and Medium Industries Equity Investment Scheme (SMIEIS), in the expectation that improved funding would facilitate the achievement of higher economic growth. It has been stated that small and medium enterprises (SMEs) now constitute about 95%, by numbers, of the organized manufacturing establishments in Nigeria (Ojukwu, 2006). The contribution of these SMEs to the Nigerian economy, in terms of GDP, exports and employment is low.

Despite the potential role of SMEs to accelerate economic growth and create jobs in developing countries, a number of challenges impart their ability to realise their full potentials. Beside the inventory related problems of SMEs earlier identified, there are other problems that are common to them, irrespective of their level of operation, their sector of operation and the country within which they operate. The development of SMEs is plagued by lack of managerial skills, equipment and technology, and inadequate finance. Despite the numerous institutions providing training and advisory services, there is still a skills' gap in the SME sector as a whole (Kayanula and Quartey, 2000). In terms of technology, SMEs often have difficulties in gaining access to appropriate technologies and information on available techniques (Aryeetey, 2001). SMEs are regarded by creditors and investors as high-risk borrowers; due to insufficient assets and low capitalization, vulnerability to market fluctuations and high mortality rate (Abereiyo and Fayomi, 2005).

One of the ways of solving the numerous problems of SMEs is through efficient inventory management.

RESEARCH METHODOLOGY

This research used the survey research design. The study population of this research was restricted to the members of staff of ten (10) manufacturing SMEs in Lagos, Onitsha and Ibadan, all in southern part of Nigeria. Out of the ten (10) SMEs considered, four (4) were selected from Lagos being the most industrialized and three (3) each from Ibadan and Onitsha. The choice

of SMEs as case study was informed by the reason that SMEs constitute about 95% of the manufacturing organizations in Nigeria as earlier reported. Their respective Owner-managers, Executive Managers and Supervisors represented the selected SMEs. A total of two hundred and fifty (250) managers and supervisors were randomly selected as samples and questionnaires were dispatched to them. Out of the two hundred and fifty (250) participants who received the questionnaires, two hundred and thirty one (231) respondents filled and returned the questionnaires for analysis. This indicates 92.4% response. The response rate was considered high enough and acceptable for the study.

All items in the research questions used five-point Likert scale ranged from 1 = “strongly disagree” to 5 = “strongly agree.” To ensure the validity of the research instrument, content validity which deals with item validity and sampling validity was used to ensure adequacy by the scope implied by the subject of study. In addition, experts in the field also helped in the evaluation of the question items of the instrument and the adequacy of the sample elements of the population by measuring the instrument used. In this study, the test-retest reliability was used to check the degree of consistency of the instrument. This was done by distributing the questionnaires on two occasions to determine the level of consistency. The result was not the same but highly correlated, which shows that the research instrument is reliable for the research work. The data collected through the questionnaire were analyzed using descriptive statistics while coefficient of correlation was employed to test the hypotheses and establish the relationship between the variables. Specifically, Pearson’s correlation coefficient was preferred, because the measurement level on each variable value is on continuum scale and found to be normally distributed based on histogram curves.

DATA ANALYSES AND DISCUSSION OF RESULTS

Relevant data obtained from the field that deals with the objectives of the study were analyzed and interpreted accordingly. The research hypotheses were also tested to determine their validity or otherwise. Frequency counts and correlation analyses were used to test the hypotheses.

Data analyses

Each hypothesis was tested separately to determine its relevance in the light of the available evidence from the data collected and analyzed for the study. The descriptive analysis of respondents’ opinion and the Pearson’s correlation in respect of the test of all the five hypotheses are presented based on the related hypotheses as follows:

H_1 : There is strong relationship between determination of stock level and optimum use of production resources.

Table 1. Relationship between determination of stock level and optimal use of resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	99	42.9	42.9	42.9
	AGREE	104	45.0	45.0	87.9
	UNDECIDED	15	6.5	6.5	94.4
	DISAGREE	12	5.2	5.2	99.6
	STRONGLY DISAGREE	1	.4	.4	100.0
	Total	231	100.0	100.0	

The Table 1 above indicates 42.9%, 45.0%, 6.5%, 5.2% and 0.4% response for strongly agree, agree, undecided, disagree and strongly disagree respectively; a cumulative percentage response of 87.9% for strongly agree and agree; showing positive opinions on relationship between determination of stock level and optimum use of resources.

Table 2. Showing correlations between determination of stock level and optimum use of resources

		Determination of stock level	Optimum use of resources
Determination of stock level	Pearson Correlation	1	.984**
	Sig. (2-tailed)		.000
	N	231	231
Optimum use of resources	Pearson Correlation	.984**	1
	Sig. (2-tailed)	.000	
	N	231	231

** . Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 2 above, the relationship between the two variables is significant with a correlation of .984 at 0.01 levels. Hence, we accept H_1 : that there is strong relationship between determination of stock level and optimum use of resources. Therefore, a strong relationship exists between determination of stock level and optimum use of production resources.

H_2 : There is strong relationship between engagement of skilled store personnel and optimal use of production resources.

Table 3. Relationship between engagement of skilled store personnel and optimum use of resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	54	23.4	23.4	23.4
	AGREE	129	55.8	55.8	79.2
	UNDECIDED	21	9.1	9.1	88.3
	DISAGREE	21	9.1	9.1	97.4
	STRONGLY DISAGREE	6	2.6	2.6	100.0
	Total	231	100.0	100.0	

Table 3 indicates 23.4%, 55.8%, 9.1%, 9.1% and 2.6% response for strongly agree, agree, undecided, disagree and strongly disagree; showing also a cumulative percentage of 79.2 for strongly agree and agree. This shows positive response on relationship between the two variables.

Table 4. Showing correlations between engagement of skilled store personnel and optimum use of resources

		Optimum use of resources	skilled store personnel
Optimum use of resources	Pearson Correlation	1	.861**
	Sig. (2-tailed)		.000
	N	231	231
skilled store personnel	Pearson Correlation	.861**	1
	Sig. (2-tailed)	.000	
	N	231	231

** . Correlation is significant at the 0.01 level (2-tailed).

The Table 4 above shows the analysis of the correlation of .861 between engagement of skilled store personnel and optimum use of resources. The strength of the relationship is significant at 0.01 levels. Hence, H_2 is accepted: that there is strong relationship between engagement of skill personnel and optimum use of resources is accepted.

H_3 : There is strong relationship between automated stock control and optimal use of production resources.

Table 5. Relationship between automated stock control and optimum use of resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	66	28.6	28.6	28.6
	AGREE	109	47.2	47.2	75.8
	UNDECIDED	26	11.3	11.3	87.0
	DISAGREE	27	11.7	11.7	98.7
	STRONGLY DISAGREE	3	1.3	1.3	100.0
Total		231	100.0	100.0	

Table 5 above indicates 28.6%, 47.2%, 11.3%, 11.7% and 1.3% response for strongly agree, agree, undecided, disagree and strongly disagree respectively; a cumulative percentage response of 87.9% for strongly agree and agree on relationship between automated stock control and optimum resources. This shows positive response on relationship between the two variables.

Table 6. Showing correlations between optimum use of resources and automated stock control

		Optimum use of resources	Automated stock control
Optimum use of resources	Pearson Correlation	1	.858**
	Sig. (2-tailed)		.000
	N	231	231
Automated stock control	Pearson Correlation	.858**	1
	Sig. (2-tailed)	.000	
	N	231	231

** . Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 6 above, the relationship between the two variables is significant with a correlation of .858 at 0.01 levels. Hence, H_3 is accepted. Therefore, a strong relationship exists between automated stock control and optimum use of production resources.

H_4 : There is strong relationship between optimum use of production resources and overall organizational efficiency.

Table 7. Relationship between optimum use of resources and overall efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	101	43.7	43.7	43.7
	AGREE	103	44.6	44.6	88.3
	UNDECIDED	15	6.5	6.5	94.8
	DISAGREE	10	4.3	4.3	99.1
	STRONGLY DISAGREE	2	.9	.9	100.0
	Total	231	100.0	100.0	

Table 7 indicates a response of 43.7%, 44.6%, 6.5%, 4.3% and 0.9% for strongly agree, agree, undecided, disagree and strongly disagree respectively; a cumulative percentage response of 88.3% for strongly agree and agree on relationship between optimum use of resources overall efficiency. This shows positive response on relationship between the two variables.

Table 8. Showing correlations between overall efficiency and optimum use of resources

		overall efficiency	optimal use of production
Overall efficiency	Pearson Correlation	1	.872**
	Sig. (2-tailed)		.000
	N	231	231
optimal use of production	Pearson Correlation	.872**	1
	Sig. (2-tailed)	.000	
	N	231	231

** . Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4 above, the relationship between overall efficiency and optimum use of resources is significant with a correlation of .858 at 0.01 levels. Hence, H_4 is accepted.

Therefore, a strong relationship exists between automated stock control and optimum use of production resources.

H_5 : There is strong relationship between optimum use of production resources and performance of entrepreneurs.

Table 9. Relationship between optimal use of resources and entrepreneur's performance/ managerial skill development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	64	27.7	27.7	27.7
	AGREE	120	51.9	51.9	79.7
	UNDECIDED	21	9.1	9.1	88.7
	DISAGREE	22	9.5	9.5	98.3
	STRONGLY DISAGREE	4	1.7	1.7	100.0
	Total	231	100.0	100.0	

Table 9 indicates 27.7%, 51.9%, 9.1%, 9.5% and 1.7% for strongly agree, agree, undecided, disagree and strongly disagree. In addition, respondents' view indicates 79.7% cumulative for strongly agree and agree; showing positive response to research suggestion.

Table 10. Showing correlations between optimum use of resources and entrepreneur's performance/ skill development

		Entrepreneur's performance	Optimal use of resources
Entrepreneur's performance	Pearson Correlation	1	.872**
	Sig. (2-tailed)		.000
	N	231	231
Optimal use of resources	Pearson Correlation	.872**	1
	Sig. (2-tailed)	.000	
	N	231	231

** . Correlation is significant at the 0.01 level (2-tailed).

The Table 10 shows an analysis of correlation of .872 between entrepreneur's performance/ skill development and optimum use of resources. The strength of the relationship is significant at 0.01 levels. Therefore, we accept H_5 that there is strong relationship between optimal use of resources and entrepreneur's performance.

DISCUSSION OF RESULTS

Tables 1, 3, 5, 7 and 9 provides information on respondents' views concerning the research questions; while tables 2, 4, 6, 8 and 10 are about correlations (r) between variables. A correlation is conducted to identify the strength and direction of relationship between two variables (Pallant, 2011). According to

Elifson, Runyon, and Haber (1998), the r-value should range from zero to one (that is, $0 \leq r \leq 1$). They explain further that r-value, which range from 0.01 to 0.30, should be considered as weak, from 0.031 to 0.70 should be regarded as moderate and 0.71 to 0.99 should be interpreted as strong. Consequently, it is important to note that all the r-value obtained in the above analyses are above 0.71 meaning that they are strong.

Results from Table 2, Table 4, Table 6, Table 8 and Table 10 indicate that significant relationship exists between the pairs of dependent and independent variables; all relationships are found statistically significant at p-value 0.01. Based on the suggestion by Elifson et al (1998), all strength of relationships between the variables were strong. Hence, the results indicate that H_1 to H_5 are supported.

From the statistical analysis performed, the study establishes that determination of stock level, engagement of skilled store personnel and automated stock control significantly, positively and strongly influence optimality in the use of production resources.

It was further observed that optimal use of resources had significant, positive and strong influence on overall organizational efficiency. In the same vein, optimal use of resources is discovered to have significant, positive and strong influence on entrepreneur's performance and development of entrepreneur's managerial skills.

CONCLUSION

Based on the empirical and theoretical findings, there is significant, positive and strong relationship between determination of stock level, engagement of skilled personnel, automated stock control and optimal use of production resources. The empirical results in particular further reveals that there is significant, positive and strong relationship between optimum use of resources and overall efficiency on one hand; and between optimum use of resources and entrepreneur's personal performance/development on the other hand.

Noting that indeed, significant, positive and strong relationship exist between all pairs of variables of the hypotheses tested; we conclude that where levels of stock are determined, perhaps with models or automation, sudden unavailability of stock will be forestalled. With the removal of stock-out, other banes such as loss of production time, low capacity utilization, and inability to meet production targets will be removed. In addition, the engagement of skilled stock personnel and automation will boost the efficiency level in stock management leading to optimization of resources. When the desired efficiency is attained, the culture of continuous maintenance of obsolete and

slow moving items will be stopped. The discontinuation of the practice of keeping obsolete and slow moving items will go a long way in assuring that tied-up fund that could be useful as working capital is available. In this way, liquidity positions of manufacturing organizations will be better and overall efficiency of production operations will be enhanced. Consequently, the entrepreneur is motivated to seek to attain constant high-level performance and improved managerial skills since innovation and growth is inherent in entrepreneurship.

Although the situation being experienced in the practice of inventory management in Nigeria today is to say the least, disheartening; given the poor level of computerization, non-determination of stock level, the involvement of illiterates and unskilled personnel in the management of inventory; the prospects for improvement are evident. This assertion is on the strength that manufacturers are willing to adopt research reports of this nature as working papers in solving the identified problems.

Towards optimization and efficiency

Despite the slight difference in the Nigerian situation from the rest of the world, particularly the advanced economies where business organizations are IT compliance; within a different socio-cultural and more literate environment, the same suggestions could be applicable in similar circumstances. To this end, the following recommendations are proffered to ensure efficiency in the practice of inventory management in Nigeria and other parts of the globe:

- 1) It is recommended that manufacturing organizations should always determine the minimum level of stock to carry. This is to ensure that stock-out or sudden unavailability is forestalled. With the removal of stock-out, other banes such as loss of production time, low capacity utilization, and inability to meet production targets will be removed.
- 2) That manufacturing organizations should make inventory plans and schedules such that arrival of inventories is programmed to ensure that there is no delay between requisition time and the time of supply. This will prevent production operations from being disrupted and as such low capacity utilization and inability to meet production targets will be addressed.
- 3) All slow-moving stock items should be identified; their time of need noted to ensure that the maintenance of such item stops immediately. All obsolete items should be sold to recoup capital lock up in them. Acquisition of obsolete items could be removed by being aware of trends in the technological and business environments. Over-stocking could be forestalled by having clear definition of maximum stock level. An adherence to recommendations on slow-moving stock, obsolete items and over-stocking would ensure that tied-up fund that could be

useful as working capital is available. In this way, liquidity positions of manufacturing organizations will be better.

- 4) Employment of stock illiterates as store workers should be stopped as it results in problems such as misplacement and dislocation of vital documents, files and stock items. In areas where higher stock management education is not required, employee should be given adequate orientation and training. There should also be training and retraining of employees to ensure that they are kept abreast of developments in the field.
- 5) Automated inventory management system is capable of eliminating most problems relating to engagement of unskilled personnel, perform some beneficial operations earlier mentioned and can limit cost. Where affordable, the introduction of electronic stock management devices is highly recommended.

FUTURE RESEARCH SCOPE

The research concludes that determination of stock level, engagement of skilled store personnel and automated stock control strongly influence optimal use of resources. Resources were treated as single construct. However, further studies could treat these resources: time, labor, material, installed capacity and working capital, separately and consider the effects of stock level determination, skilled store personnel and automation on them.

Furthermore, this paper affirms the influence of optimization on overall performance of organizations and development of entrepreneurial skills without adequate consideration of performance variables like waste reduction, improved sales and profitability. Further studies could examine the influence of optimization based on different aspects of performance.

Moreover, the paper examines optimization and performance from the opinions of owner-managers and their subordinates in the case study areas. Future studies could take more objective approach, by analyzing optimization of resource and performance based on available data.

Acknowledgment

I wish to acknowledge with thanks, the useful comments and recommendations of the anonymous reviewers for improvement of this paper.

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Abstrakt (in Polish)

Obserwacje pokazują, że istnieje poważny problem dotyczący zarządzania zapasami w organizacjach wytwarzających, w szczególności w sektorze małych i średnich przedsiębiorstw (MŚP). Sytuacja ta zrodziła chęć zbadania problemu i opracowania użytecznych sugestii. Nasza praca ma na celu podkreślenie kwestii braku efektywności praktyk zarządzania zapasami oraz ich wpływu na działalność firm produkcyjnych. W badaniu zastosowano technikę losowo dobranej próbki do wyboru jednostek mających stanowić podstawę studiów przypadku. Podstawowe dane zebrano używając ustrukturyzowanych kwestionariuszy, jak również przeprowadzono analizę współczynnika korelacji Pearsona, oraz rozkładu częstości i udziałów, w celu stworzenia adekwatnych opisów. Badanie dowodzi, że wydajne zarządzanie zapasami można osiągnąć poprzez określenie poziomów zapasów, zaangażowanie wykwalifikowanego personelu magazynu oraz użycie systemów automatycznej kontroli zapasów. Badanie dowiodło także, że osiągnięcie optymalnego wykorzystania zasobów poprzez efektywne zarządzanie zapasami wyeliminuje problem nagłego braku zapasów, wynikającą z niego słabe wykorzystanie mocy produkcyjnych, utratę czasu produkcji, a w wyniku tego poprawi ogólną efektywność MŚP z sektora wytwórczego i da szansę na zaistnienie przedsiębiorcom osiągnięciem dobre wyniki.

Słowa kluczowe: zarządzanie zapasami, operacje produkcyjne, organizacje produkcyjne, MŚP, zasoby, optymalizacja, przedsiębiorca.

Biographical note

Olusakin Akindipe is a seasoned management consultant, Administrator and Teacher who has a number of publications to his credits. A member of the Nigerian Institute of Management, he holds a master's degree in Business Administration from the University of Ado-Ekiti, Nigeria. His wealth of experience over the years at various positions in the industry and in teaching qualifies him a reliable source on Production Management issues. He is currently a lecturer, Head of Department of Business Administration and Ag. Dean, faculty of Management studies Igbajo Polytechnic, Igbajo, Nigeria.

The Patents and Financial Performance of Firms - Evidence from Polish Manufacturing Companies¹

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Abstract

This article is a contribution to the discussion on innovation activity and its influence on financial performance of companies. The authors employ a simple measure of innovativeness, which was also used in other studies, and the division of companies into two groups (innovative and non-innovative) was based on the fact whether they obtained a patent (patents) or not. In this paper, we compare the rates of return and revenue growth achieved by innovative versus non-innovative companies operating in the manufacturing industry in Poland, in the years 2006 to 2012. Financial and qualitative data for testing the hypotheses were taken from the Amadeus database provided by Bureau van Dijk. The sample consisted of 4004 enterprises, of which 681 were owners of at least one patent. T-Student test, ANOVA and OSL models were used to verify the working assumptions. The study tests the following three research hypotheses. H1: "Innovative companies achieve higher rates of return than the non-innovative ones." That hypothesis was confirmed in relation to the EBITDA margin and ROS (return on sale), but not to ROA (return on assets) and ROE (return on equity). The fact of belonging to a group of innovative companies had an impact on an average EBITDA margin increase by 0.83 p.p. in 2007, 0.78 p.p. in 2009 and 0.73 p.p. in 2012, ceteris paribus. The difference between ROE was found statistically insignificant in most analysed periods (except 2007 and 2009), however, non-innovative companies have achieved a higher return on equity than innovative companies. It can be associated with higher operational risk in innovative companies which restrict access to external capital, leading such companies to expand their businesses through their own equity. The second tested hypothesis is: "An innovative activity has higher impact on financial performance in medium-sized companies than in large and very large ones." During the research, it was found out that having obtained a patent is important determinant of EBITDA margin for medium-sized companies, increasing it

1 The project was funded by the National Science Centre allocated on the basis of the decision number DEC-2013/11/D/HS4/03941.

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by 0.76 p.p., *ceteris paribus*. In large companies, it contributed to an increase of 0.71 p.p., and for very large ones – by only 0.19 p.p., with the slope for the latter group at a number other than zero found to be statistically insignificant. In relation to third tested hypothesis: “Innovative companies are more sensitive in terms of revenue dynamics to economic slowdown than the non-innovative ones.” it was found out that in the period of time from 2006 to 2012 the dynamics of revenue growth in innovative companies was generally higher than in the non-innovative ones, except in the year 2009, when all companies showed a significant decline in revenues, but for innovative companies, the decline amounted to 6.39%, and for the remaining ones it was found at 4.98%. Based on those findings it was confirmed that innovative companies are characterized by a greater sensitivity to economic slowdown.

Keywords: innovation, financial performance, economic slowdown, patents.

INTRODUCTION

In the contemporary world, innovations are perceived as a crucial factor of economic growth, warranting the success and the survival of companies, particularly small and medium ones. Understanding the benefits offered by investing in innovation, research, development and other innovative activities is a key element in convincing managers and politicians to undertake and support this type of activities.

The authors compare rates of return achieved by innovative companies with those of companies qualified for the non-innovative group of entities, out of a sample of companies operating in the manufacturing industry in Poland. Previous studies have been conducted mainly with respect to companies operating in the UK, USA, Italy, Germany, and Austria. This analysis covers the period of 2006 to 2012, i.e. a time of good economic prosperity, followed by the economic slowdown started in 2008, and the period of slow economic growth in Poland, contrasted with the detrimental effects of the financial crisis in the rest of the world.

In the research, a simple measure of innovativeness was adopted, namely the number of patents granted to the firm. However, the authors are aware of the fact that patents are only one of the determinants of innovativeness, and, although that measure is significantly different from the ideal measurement of innovativeness, deciding to conduct research in this form, taking under consideration a limited access to data on other determinants of innovativeness for Polish enterprises, such as, for example, expenses on the activity in the field of R&D, obtained grants for launching innovative products on the market, or the number of innovative solutions recently launched in the market.

LITERATURE REVIEW

The debate on the benefits of innovations is not new, and over the recent decades researchers have related the research and development expenditures to the measures of total factor productivity and labour, suggesting a positive relationship between the share of R&D expenditure in revenues and the number of patents granted with the rate of revenue growth, profitability, and company survival (Audretsch, 1995; Ciftci and Cready, 2011; Del Monte and Papagni, 2003; Geroski, Machin and Reenen, 1993; Koellinger, 2008; Neuhäusler, Frietsch, Schubert, and Blind, 2011; Nunes, Serrasqueiro and Leitão, 2012; Paunov, 2012; Scellato, 2007; Teece, 1986).

According to Schumpeter (1934, 1950), an innovative new product which has been launched tends to face little competition at the moment of introduction, and therefore earns relatively high profits, which can attract imitators, so finally, an increased competition leads to profit reduction for the firm which has introduced the new product on the market. Geroski (1995) examined the effects of the production of major innovations and patents on the various measures of corporate performance on panel data for 440 UK firms over the period: 1972-1982. He observed that the direct effects of innovations on performance are relatively small, and the benefits from innovation are more likely to be indirect, namely for user industries. According to Geroski (1995), innovative companies are less sensitive to cyclical pressures than non-innovative firms. Companies in a competitive environment are more prone to engage in innovative activities than other firms. Audretsch (1995) found out that the effect of company growth and profitability on subsequent innovation depends on the technological opportunity environment. Profitability is found to promote a subsequent innovative activity for firms in high-technological opportunity industries, but not in the low-technological opportunity ones. By contrast, high growth generates more innovative activity for firms in low-technological-opportunity industries, but not in high-technological-opportunity environments. Cefis (2003) on the basis of research suggested that companies which are persistent innovators and earn profits above the average are highly likely to keep innovating and earn above the average profits. The likelihood of earning profits in the long term is higher if a company starts to act as a systematic innovator. Neuhäusler, Frietsch, Schubert and Blind (2011) analysed how the results of R&D and its protection can influence companies' market value and profits. On the basis of theoretical arguments, they hypothesized that the large and highly-valuable patent portfolios of firms can have substantial effects on their competitiveness in the long term. Furthermore, in an analysis of a sample of German manufacturing firms, Czarnitzki and Kraft (2010) found out that the patent stock of a company has a significant effect on profitability. For example, the average profit margin in

the sample of Western German firms amounts to 3.98%. A Western German firm whose innovation activity is at an average level (i.e. means of the patent stock among innovating firms) will *ceteris paribus* achieve a profit margin that is 0.67% points higher compared to patent stock equal to zero.

A separate motif in the research concerning the innovativeness of firms was devoted to analysing the significance of the size of the firm for that issue. One of the basic assumptions of the Schumpeterian hypothesis is that large companies are more efficient in transforming R&D investments into an innovative activity than small firms. The main reason for this situation is a high risk connected with R&D investment. Usually, small companies invest a large part of their resources in a single R&D project, which makes them sensitive to any failure connected with project implementation. On the contrary, larger entities can reduce the risk connected with innovation through diversification into parallel research projects. In addition, due to the economies of scale, larger firms realize a greater profit potential from innovation. Diaz-Mayans and Sanchez-Perez (2013), using the panel data set of Spanish manufacturing firms over the period: 2004–2009, demonstrated that innovative firms are more efficient than the non-innovative ones, and that small and medium-sized companies tend to be more efficient than the large entities. The authors also expected that the larger the economic entity under study, the less significant the impact of innovation activities on its financial results would be, which may be due, *inter alia*, to the significant diversity of production and the scale of economic activity characteristic of big entities. Also Ciftci and Cready (2011) find that the positive association between the level of future earnings and R&D intensity increases with firm size, and that the positive association between the volatility of future earnings and R&D intensity decreases with firm size, consistent with R&D productivity increasing with scale. They also showed that R&D scale is associated with lower market returns, consistent with the idea that R&D investment risk declines with scale.

Discussion on innovativeness focuses, *inter alia*, on finding the adequate measure of innovativeness. Battagion and Tajoli (2000), Lin, Lee, and Hung (2006) used granted patents as criteria for innovation. In other studies, Scellato (2007) decided to include in the sub-sample of innovative entities not only those companies which filed at least one patent per year, but also the companies belonging to the top 5% of innovators in their industry, according to the absolute number of patents granted between 1995 and 2000. An alternative measure of companies' innovation is the yearly R&D expenditure or the share of this type of expense in the operating revenue (Del Monte and Papagni, 2003; Nunes et al., 2012; Shefer and Frenkel, 2005; Ughetto, 2008; Wakelin, 2001).

Another problem in research connected with innovations is the number of lags between R&D expenditures, time of granting a patent and the effect on profits. The empirical results of Ravenscraft and Scherer (1982) point to a mean lag of four to six years, but the first returns are realized in the next year after starting the project and the effect for the second and third year.

In the research, it is as well a connection between the innovativeness of companies and business cycle that is analyzed. There is some empirical research at the national level, e.g. Paunov (2011) provides quantitative evidence on these questions based on original firm-level datasets for eight Latin American countries in 2008–2009; he found out the crisis led many firms to stop ongoing innovation projects. Probit regression results show that firms with access to public funding were less likely to abandon those investments.

HYPOTHESES AND RESEARCH METHODS

In the research presented in this paper, it was presumed that the ownership of only one patent is enough to qualify a company as an innovative one. Companies without any patents were considered non-innovative for the purpose of this study. Due to the fact that patent protection may last in Poland for maximum 20 years, it was presumed that benefits resulting from a patent granted for an invention may be observed in a firm for a long period of time. Moreover, the experiences of the authors in the course of assessing several hundred of innovative projects in Poland and the EU give rise to the conclusion that firms which protect their inventions usually constantly conduct a pro-innovative activity directed at launching new products and services on the market. As it can be concluded from the analysis of the database which is used in the research into enterprises which received patents, such enterprises quite frequently take advantage of other methods of protecting intellectual property, such as, for example, the right to protect trademark, which proves their high awareness of the necessity of protecting intellectual property, and may be a result of the conviction that such an investment will bring benefits to the firm.

Similar criteria for innovation (patents granted) were used for example by Battagion and Tajoli (2000), Lin, Lee, and Hung (2006). An alternative measure of companies' innovation is the annual R&D expenditure or the share of this type of expense in the operating, however, in the light of Polish accounting regulations, companies are not obliged to include this type of information in their financial statements. Moreover, many companies (particularly the smaller ones) do not spend much money on R&D but can patent a new solution or acquire the right to use the patented solution under a license agreement. Taking into account all the previously mentioned circumstances,

as well as observations that Polish companies are not prone to patent their inventions, and that smaller companies show a preference for alternative protection measures (e.g. industrial secrecy), a single patent held seems enough to classify the company as an innovative one.

Based on a literature review, the authors expected the companies classified as innovative to reach higher rates of return, inter alia, on the grounds that they better protect their own solutions against imitations by competitors, which allows them to achieve above-average returns, compared to non-innovative firms (Geroski et al., 1993; Schumpeter, 1934).

This led them to formulate the first hypothesis: H1: *Innovative companies achieve higher rates of return than the non-innovative ones.*

The following ratios were considered in studies:

- EBITDA margin (EBITDA to revenue sale),
- ROSb – return on sale (profit/loss before taxation to revenue sale),
- ROAb – return on assets (profit/loss before taxation to company booking assets value),
- ROEb – return on equity (profit/loss before taxation to equity).

The return on sales (ROS) indicator is a synthetic depiction of the sale profitability, and evaluates company efficiency on sales activity. The higher the indicator, the better cost management in a company. The EBITDA margin is a measurement of a company's operating profitability, and it is equal to earnings before interest, tax, depreciation and amortization (EBITDA) divided by total revenue. EBITDA excludes depreciation and amortization so the EBITDA margin gives a clearer view of a company's core profitability and ability to generate operational cash flow.

ROAb gives information about how efficient management is at using its assets to generate earnings. The ROSb, ROAb and EBITDA margins vary a lot across different sectors, so in the study, the authors used companies from only one sector (manufacturing) to test the H1.

Return on equity is a ratio that provides investors with insight into how efficiently a company is managing the equity that shareholders have contributed to the company.

Thus, finally, for H1 four specific hypotheses can be formulated:

H1a: Innovative companies achieve a higher EBITDA margin than the non-innovative ones.

H1b: Innovative companies achieve a higher ROSb than the non-innovative ones.

H1c: Innovative companies achieve a higher ROAb than the non-innovative ones.

H1d: Innovative companies achieve a higher ROEb than the non-innovative ones.

The verification of the H1a,b,c,d was made by establishing whether any statistically significant differences occur in profit margins calculated for innovative and non-innovative companies using the t-Student test. In the next step, we used the OLS regression model in which EBITDA margin was a dependent variable and with independent variables of: company age, company size, patents in possession, company independence.

The inclusion of company age in the model was based, among others, on the concept of company life cycle. The inclusion of company size was related to the empirical research trend that focuses on company size as a determinant of its financial result (Diaz and Sanchez, 2008; Serrasqueiro and Nunes, 2008). Large companies benefit from the effect of scale, improved bargaining position in relation to customers and suppliers, and facilitated access to capital compared to smaller entities. Smaller companies are markedly less affected by the agency problem and show more flexibility in their reaction to the changing market conditions. In this context, it may also be useful to note a number of studies examining the correlations between company size and its innovation level (Diaz-Mayans and Sanchez-Perez, 2013). In this context, it seems that company size is a factor to be considered in the model. Professional literature provides no definitive approach to company size categorization. This aspect is typically measured by asset value, revenue or the employment figures. For the purpose of this study, the authors adopted both the logarithm of revenue and that of assets for each year, in order to reduce the distance between the analyzed entities, since the research sample contained both very large and very small companies.

Since the sample included both independent companies and those operating within larger structures of capital groups, the factor of ownership structure was also considered as a potentially significant determinant of the return rates.

Taking into account the fact that previous studies on innovation and profitability of companies focused on their size (Ács and Audretsch, 1990; Hall and Bagchi-Sen, 2007; Lefebvre, Lefebvre and Bourgault, 1998; Schumpeter, 1934), the authors decided to include this factor in the study. This led to the formulation of H2: *An innovative activity has higher impact on financial performance in medium-sized companies than in the large and very large ones.*

The verification of H2 was initially carried out by analyzing the statistical significance of the difference in the average rates of return between innovative and non-innovative companies for very large, large and medium-sized enterprises, as well as on the basis of three multiple regression models constructed for each of the groups which were classified on the basis of size criteria where independent variables were the same as for EBITDA margin model.

Since the selected test period of 2006-2012 was a time of changing economic conditions, the authors analyzed the impact of the economic slowdown on the results of innovative and non-innovative companies in Poland. Taking into consideration the fact that innovative activity is associated with higher operational risk, the authors formulated a third hypothesis: *H3: Innovative companies are more sensitive in terms of revenue dynamics to economic slowdown than the non-innovative firms.*

The authors worked on an assumption that in 2009 the economic slowdown resulted in revenue fall. For 2011, business recovery was assumed to be well under way, followed by an operating revenue growth (Table 1). Using the t-Student test and comparing the average revenue dynamics of innovative vs. non-innovative companies, the authors expected to verify whether, in the time of the economic slowdown, innovative companies would be more exposed to drops in revenue. An opposite effect was anticipated during the periods of economic revival, in the case of which it was expected that the revenues dynamic of innovative companies is higher than those of the non-innovative ones.

Table 1. GDP growth rates in Poland against the EU-27 results

Year	2012	2011	2010	2009	2008	2007	2006
GDP Poland [%]	2	4.5	3.9	1.6	5.1	6.8	6.2
Average GDP EU-27 [%]	-0.4	1.6	2.0	-4.5	0.4	3.2	3.4

Source: Eurostat database.

DATA

The sample framework employed for this study was obtained from the Amadeus database provided by Bureau van Dijk, covering financial statements of private and public companies from European countries, together with the number of patents owned by companies. The empirical analysis was based on the balance sheets and profit-and-loss accounts of manufacturing companies. The selection process was based on the NACE rev.2 code. C. Manufacturing. As of the day of acquiring data (August, 2014), the Amadeus database included data on 142,047 active enterprises on the territory of Poland, 8,490 of which

belonged to section C. Manufacturing. The main financial indicators, such as profit margins and revenue growth, were calculated for each year from 2006 to 2012; therefore, the additional criterion in data selection was that the financial data had to be complete for the selected companies for this particular period of time, which narrowed the sample down to almost about 50%. Finally, the panel sample consists of 4004 companies: 275 very large, 1489 large, and 2240 medium-sized ones.

The classification of companies into three size subsamples (medium, large, very large) was based on the number of employees, the operating revenue and the total assets value. In an early concept of this research, the number of employees was considered as a proxy for company size criteria. However, due to the unavailability of employment figures for many companies, the authors were forced to use database classification as the criterion for company size. Taking into account only the workforce, the sample size would be significantly smaller. The typology of companies used in the database (very large, large and medium) is contrasted with the approach adopted by the European Union in Table 2. The classification of firms on the basis of the criteria adopted in the database as medium enterprises includes both part of firms which are small in accordance with the EU definition (employing between 15 and 49 people), and also part of the medium ones (employing between 50 and 150 people). In turn, the category of large firms in accordance with the database criteria of classification (based on the EU definition) includes both part of medium enterprises employing between 151 and 249 people, as well as large firms with the number of employees between 250 and 1,000. Therefore, the conclusions which are formulated in the course of the research and concerning the group of medium firms are, de facto, relevant both to firms which are small by the EU definition, but employing more than 15 people, and part of medium firms with the staff of up to 150. In the research we omit, therefore, micro-firms (in accordance with the EU definition), employing fewer than 10 people, and part of small firms employing between 10 and 15 people.

Table 2. Comparison between typology for company's size – database vs. European Union

Size of company	Number of employee - database	Number of employee - EU	Operating revenue (in mln EUR) database	Operating revenue (in mln EUR) - EU	Total assets (in mln EUR) - database	Total assets (in mln EUR) - EU	Additional criterion in database
Very large	1000+	no	>=100	no	>=200	no	must be listed on the stock exchange
Large	151-999	250+	<10-100)	>=50	<20 -200)	>=43	
Medium-sized	16-150	50-249	<1-10)	<10-50)	<2-20)	<10-43)	
Small	<=15	10-49	<1	<2-10)	<2	<2-10)	
Micro	No	<10	no	<2	no	<2	

Source: Amadeus database and UE Commission Recommendation 2003/361/EC of 6 May 2003.

On the basis of the database of the Central Statistical Office, it was established that in the year 2012 in Poland, in the C. Manufacturing section 175,692 companies were registered (CSO database), therefore, the researched sample constitutes 2% of the population of entities active in section C, whereas 29,333 enterprises employing more than 9 people in the industrial processing section were registered in 2012 (Statistical Yearbook of Industry – 2013, Warsaw), therefore, taking under consideration the fact that the research omits firms employing fewer than 15 people, finally, it covers more than 14% of population. It is difficult to compare the structure of the sample of researched firms in terms of their size with the structure of production firms in Poland due to the different criteria of dividing firms on the basis of the number of employees adopted in the database from which the data was obtained, and those in force in the Central Statistical Office (they are partly identical in terms of the number of employees in accordance with the EU definition). However, it might be claimed, having adopted approximated criteria in the scope of employees' number, that the structure of firms is partly similar to the structure of firms in economy.

The authors collated the number of patents owned by each company, whereas it was not possible to obtain information about which patents were obtained as a result of own notification for the purpose of invention protection, and which patents were acquired from other individuals. The database includes both information about domestic and international patents. Patent counts have been collected for all years available in the database.

The Amadeus database uses patent data only to supplement other corporate information so there is a risk that some errors may occur in the

database. The authors randomly verified patent data on the basis of specialized patent databases such as e.g. the database of the Polish Patent Office and the results were positive. Taking into account that the authors assumed one patent as the basis for qualifying a company as innovative, some mistakes that may occur in the number of patents assigned to a company in fact do not affect the results of the study. The outcome of the research may, however, be slightly distorted by assigning the patent to a company which in fact does not hold any patent or vice versa, a company qualified as non-innovative in reality has a patent and should be qualified as an innovative company. Therefore, in order to get 100% certainty that the data in the Amadeus database correspond to patent reality of companies, the whole sample (4004 firms) should be “manually” verified, and not only in the database of the Polish Patent Office, but also in other international patent databases. In this situation the optimal solution is the adoption of the data verified by Bureau van Dijk, being aware, however, that these data may contain slight errors.

It was expected that the bigger the company, the higher its rating with respect to the number of patents held would be; this assumption has been confirmed. The share of companies with patents in the ‘very large companies’ subset is 32%, in that of large companies 21%, and in case of the medium-sized ones it amounts to 13% (Table 3).

Table 3. The structure of companies, taking into account the number of patents held

Firm size	Number of companies	Companies with patents (number)	Companies with patents (%)
Very large	275	88	32%
Large	1489	309	21%
Medium-sized	2240	284	13%
Total	4004	681	17%

Table 4 presents the structure of companies in each company size group, taking into account the number of patents owned (both concerning inventions being the subject of own notification, and patents acquired from other entities). Most of the very large and large companies owned between 2 to 5 patents. Nearly half of the medium-sized companies which were found to hold any patents, were found to hold not more than one patent.

Table 4. The structure of companies, taking into account the number of patents held

Number of patents	1	2 to 5	6 to 10	11 to 20	21 to 98	103 to 128	600*	Total
Very large	29.5%	30.7%	14.8%	13.6%	8.0%	2.3%	1.1%	100%
Large	36.6%	36.9%	14.9%	6.1%	5.2%	0.3%	0.0%	100%
Medium-sized	45.8%	37.7%	9.2%	3.9%	3.5%	0.0%	0.0%	100%
Total	39.5%	36.4%	12.5%	6.2%	4.8%	0.4%	0.1%	100%

*Note: This number of patents was assigned to PKN ORLEN in the Amadeus database. In case of many patents assigned to PKN ORLEN in the Amadeus database the inventors are connected to The Institute of Heavy Organic Synthesis „Blachownia”, which is R&D centre working within the field of organic chemistry.

The research involved companies operating within corporate groups as well as independent entities. A company was qualified as independent when 25% of direct ownership or more was in the hands of a single shareholder. The research sample consisted of 1704 independent companies and 2300 companies operating within the structures of corporate groups. The structure of companies, taking into account the company size, innovation and ownership status, is shown in Table 5.

Table 5. The structure of companies, taking into account the company size, innovation and ownership status

Description	Independent	In a corporate group	Total	Independent (%)	In a corporate group (%)	Total
Very Large	30	245	275	11%	89%	100%
NON-INNOV	23	164	187	8%	60%	68%
INNOV	7	81	88	3%	29%	32%
Large	482	1007	1489	32%	68%	100%
NON-INNOV	373	807	1180	25%	54%	79%
INNOV	109	200	309	7%	13%	21%
Medium sized	1192	1048	2240	53%	47%	100%
NON-INNOV	1047	909	1956	47%	41%	87%
INNOV	145	139	284	6%	6%	13%
Total	1704	2300	4004			

For each indicator (profit margin and change of revenue), 10% of abnormal results were removed from the sample (5% of the highest and 5% of the lowest figures). The selected descriptive statistics are presented in Table 6.

Table 6. Descriptive statistics

Variable	Mean	Med.	Min.	Max
ROE_2012 (%)	12.55	10.3540	-27.4990	56.0460
EBITDA_2012 (%)	7.76759	6.94250	-5.21500	23.1620
ROA_2012 (%)	6.21292	4.92200	-13.0280	27.1130
ROS_2012 (%)	3.16717	2.55155	-10.4649	15.9833
Rev. change_2012/2011 (%)	3.128	2.278	-30.3792	45.507
Rev. change_2009/2008 (%)	-5.222	-4.898	-46.5826	39.862

Patents and rates of return

To verify the H1a hypothesis, the authors calculated the EBITDA margin for both groups – the innovative and the non-innovative companies – and tested the statistical significance of the difference between the groups using the t-Student method (Table 7). Very low results of the *p-value* in the period under study (from 2006 to 2012) suggest the high statistical significance of patent ownership in EBITDA margin results. The difference of margin values for companies classified as innovative and non-innovative is always in excess of 1 p.p., with the highest value observed for the year 2006 (1.6 p.p.), and the lowest – for the year 2011 (1.04 p.p.).

Table 7. The EBITDA arithmetic mean margin (%) in innovative and non-innovative companies, 2012

Year	INNOV	NON-INNOV	Statistically significant difference?	p-value
2012	9.00679	7.56568	YES***	<0.001
2011	9.36167	8.31792	YES***	0.0009
2010	9.63665	8.29739	YES***	<0.001
2009	10.5661	9.20665	YES***	0.0002
2008	10.3127	8.74672	YES***	<0.001
2007	10.6654	9.43489	YES***	0.0002
2006	11.0044	9.39818	YES***	<0.001

Note: * p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

Verification of H1a was carried out also on the basis of a multiple regression model (Table 8), using EBITDA margin as a dependent variable, and the explanatory variables of: the time of company operation on the market (AGE), the company size measured by the logarithm of revenues (Log_REV) and assets (Log_ASSETS), the number of patents granted (INNOV) and membership in a capital group (CAP_GR). Estimations were carried

out for the years: 2007 (significant economic growth), 2009 (economic slowdown) and 2012 (slow economic growth). All explanatory variables proved to be statistically significant, and the model explains the formation of the explanatory variable in 12% (2009), 10.9% (2007) and 13.4% (2012). A low value of R^2 results, among others, from the fact that selected variables are not the only ones having a connection at the level of the EBITDA margin. Apart from them, there also exist a number of other variables, e.g. connected with sales market (number of competitors, market capacitance), general market outlook, the level of the abilities of the executives.

Table 8. The econometric model – EBITDA Margin in years: 2007, 2009, 2012

Description	Model 1 OLS, Dependent variable: EBITDA Margin 2007	Model 2 OLS, Dependent variable: EBITDA Margin 2009	Model 3 OLS Dependent variable: EBITDA Margin 2012
Const	12.2768*** (0.898824)	4.75674*** (0.975718)	4.33166*** (0.82699)
AGE	-0.0277605*** (0.0051362)	-0.0448521*** (0.006066)	-0.0217614*** (0.00487673)
log_REV	-8.88083*** (0.513213)	-6.45645*** (0.535454)	-6.7642*** (0.444274)
log_ASSETS	9.04693 *** (0.478413)	8.28011*** (0.511357)	8.12536*** (0.431376)
CAP_GR (1 for CG, 0 for independent company)	-0.896909*** (0.231164)	-1.46475*** (0.262282)	-0.804881*** (0.222396)
INNOV (1 for innovative companies, 0 for non-innovative)	0.82926** (0.314667)	0.779329* (0.355158)	0.733387* (0.307323)
Sample size	4004	4004	4004
Number of complete observations	2521	2532	2548
Mean dependent var	9.611091	9.404771	7.767592
Sum squared resid	74296.71	96416.30	70419.09
R-squared	0.133630	0.119591	0.136406
F(5, 2526)	77.58332	68.62401	80.30263
S.D. dependent var	5.833548	6.577894	5.658170
S.E. of regression	5.435203	6.178152	5.263292
Adjusted R-squared	0.131908	0.117848	0.134707
P-value(F)	7.60e-76	1.93e-67	1.94e-78

Note: *p-value < 0.05; ** p-value <0.0 1; *** p-value <0.001.

Stand. error in brackets.

All three models suggest a negative relation between company age and its profitability. On average, the longer the history of company operation on the market, the lower the EBITDA margins are, which is in line with the theory

of company life cycle. The value of trade margin is also lower with increased sales revenue, which may be related to the fact that larger companies tend to increase their rate of return on assets by increasing the asset rotation with simultaneous decrease of trade margins. On the other hand, the relation between asset value and profitability was positive, as expected, since the higher the asset value, the more profits can be expected due to the effect of scale, which is reflected in the reduction of per-product costs. Affiliation with a capital group, in turn, has a negative effect on the EBITDA margin, which is probably associated with such activities as tax optimization at the level of the whole capital group.

The most important, from the viewpoint of the formulated hypotheses, was the relation between company innovativeness and profitability. The fact of belonging to a group of innovative companies had an impact on an average EBITDA margin increase by 0.83 p.p. in 2007, 0.779329 p.p. in 2009 and 0.733387 p.p. in 2012, *ceteris paribus*. Therefore, the H1a was confirmed as valid.

Verification of H1b was conducted based on the ROS ratio. In this respect, the observations were similar to the ones obtained for the EBITDA margin. The ratio gradually drops in value for the respondent sample, but the status of an innovative company generally allows the entity to reach a higher ROSb ratio (Table 9).

Table 9. The ROS arithmetic mean in innovative and non-innovative companies, 2006-2012

Year	INNOV	NON-INNOV	Statistically significant difference?	p-value
2012	0.0355542	0.0308799	YES*	0.0234
2011	0.0465977	0.0418938	YES*	0.0460
2010	0.0477664	0.0406275	YES**	0.0032
2009	0.0494733	0.0417225	YES**	0.0045
2008	0.0501716	0.0418563	YES**	0.0022
2007	0.0675721	0.0593717	YES***	0.0005
2006	0.0355542	0.0308799	YES*	0.0234

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

The ROSb ratio is a proportion of gross profit to the revenues from sale, and, therefore, it is presented as the final profitability. Its value is influenced, among other things, by company asset structure, as reflected in the depreciation cost, and by financial decisions (revenues and financial

costs), therefore the observed differences are less pronounced (as reflected in higher p-values) than in case of the EBITDA margin.

In the next stage, we tested the arithmetic means of ROEb (H1d). Research conducted in this area has not yielded the expected results. The average rates of return on equity drastically decreased from approximately 21% in 2006 (Table 10) to the level of 0.9-0.8% in 2009 (almost twenty-fold) and then, during the following years, the rates slowly increased to an average value of 12%. The most crucial aspect of the research, however, is the fact that non-innovative companies have, on average, achieved a higher return on equity than innovative companies, which is a tendency contradictory to the previously analyzed trade margins. The differences between ROEb for innovative companies and the other ones were statistically significant for 2007 and 2009. The ROEb indicator is determined by capital structure, which can be significantly different across the analyzed companies. Furthermore, operating in the innovation field may, due to the associated higher operational risk, restrict access to external capital, leading to such companies being forced to expand their businesses through their own equity.

Table 10. The ROEb arithmetic mean in innovative and non-innovative companies, 2006-2012

Year	INNOV	NON-INNOV	Statistically significant difference?	p-value
2012	12.2524	12.6239	NO	0.5778
2011	13.3953	13.8555	NO	0.4934
2010	12.9323	13.7027	NO	0.2526
2009	0.809117	0.9076	YES**	0.0035
2008	15.0053	14.9798	NO	0.9765
2007	21.247	23.1604	YES*	0.0180
2006	21.6756	21.5781	NO	0.9027

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

In the case of return on assets (H1c), which is determined by an enterprise's structure of assets used for operating and other activities, innovative companies have achieved a higher return on assets, but only in one of the researched years, 2006, the difference was statistically significant (Table 11).

Table 11. The ROAb arithmetic mean in innovative and non-innovative companies, 2006-2012

Year	INNOV	NON-INNOV	Statistically significant difference?	p-value
2012	6.47945	6.15735	NO	0.3616
2011	7.01283	6.86798	NO	0.6850
2010	6.63391	6.73758	NO	0.7701
2009	7.15839	7.1416	NO	0.9665
2008	7.9174	7.53479	NO	0.3888
2007	10.9007	11.015	NO	0.7829
2006	10.9477	10.061	YES*	0.0292

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

The above study proves that being a patent holder improves trade margins of companies operating in the manufacturing industry in Poland. Particularly significant effects were observed to EBITDA margin. In terms of other indicators as ROSb and ROAb the authors obtained evidence that the innovative status of a company helps to keep these indicators on average level higher than in other companies. Quite different observations were made for ROEb indicator. It was found that return on equity is lower in innovative companies. As the authors mentioned above, the reason of the lower ROEb might be higher operational risks associated with innovative activities and the need to involve a relatively substantial amount of equity, due to possible difficulties in obtaining outside capital.

Patents, company's size and the rates of return

With reference to the second hypothesis, the authors wanted to verify whether the observed rates of return differences between innovative and non-innovative companies in the context of changing economic conditions would also be found statistically significant if the companies were distributed according to the size criterion. Special attention was paid to the analyses for the years 2012, 2011, 2009 and 2007. The years 2012 and 2011 were most recent at the time the research was conducted. The year 2009 was of interest since it marked the initial effects of the global financial crisis for companies operating in Poland, as attested (among other things) by the marked decrease of GDP in Poland (1.6%) and in EURO-27 countries (-4.5%), as well as by a decrease of sales revenues (Table 6). The year 2007 was deemed of interest, since it directly preceded the onset of the financial crisis, with a marked increase of Poland's GDP (6.8%) and company revenues

in the respondent sample (Table 6). The analysis of the selected years, particularly the periods of prosperity and economic slowdown, was intended to help address the question of whether being an innovative company brings better financial results regardless of the economic conditions or if it has the opposite effect, by making the pro-innovative companies more susceptible to economic downturns. As shown in Table 7, within the whole respondent sample, the differences between innovative and non-innovative companies were significant, both in the periods of economic slowdown and in the periods of prosperity. Table 12 presents a comparison of mean EBITDA margins in the selected years, by company size. The observations may suggest that being a patent holder is relatively insignificant for very large companies, while it plays an important role in the case of medium-sized companies. The latter holds true for every year under study. For large companies, the difference between the innovative and non-innovative ones was found statistically significant in the years 2012 and 2007.

Table 12. The EBITDA arithmetic mean margin (%) in innovative and non-innovative companies, 2012, 2011, 2009, 2007

Company size	2012			2011			2009			2007		
	INNOV	NON-INNOV	Statistically significant difference?	INNOV	NON-INNOV	Statistically significant difference?	INNOV	NON-INNOV	Statistically significant difference?	INNOV	NON-INNOV	Statistically significant difference?
Year	2012	2012	2012	2011	2011	2011	2009	2009	2009	2007	2007	2007
Very large	8.92	8.46	NO (0.702)	10.44	8.97	NO (0.227)	11.92	9.84235	NO (0.159)	10.0027	9.29578	NO (0.571)
Large	9.37	7.96	YES** (0.003)	9.39	8.67	NO (0.123)	10.74	9.89695	NO (0.129)	10.9271	9.58252	YES** (0.006)
Medium-sized	8.65	7.25	YES** (0.004)	9.17	8.05	YES* (0.014)	10.18	8.73303	YES** (0.006)	10.5032	9.3614	YES* (0.018)

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001; p-value in brackets.

The analyses were supplemented by three multiple regression models construed for the three company size categories (Table 13).

Table 13. The econometric model - EBITDA margin for medium, large and very large firms, 2012

Dependent variable: EBITDA Margin 2012	Model 4 OLS VERY LARGE	Model 5 OLS, LARGE	Model 6 OLS, MEDIUM
const	4.40313 (5.72932)	4.40925* (2.54819)	-0.551241 (2.03157)
AGE	-0.00869636 (0.0172302)	-0.0158309** (0.00656018)	-0.0313782*** (0.00772174)
log_REV	-9.07913*** (1.88656)	-8.67289*** (0.789794)	-4.42895*** (0.712517)
log_ASSETS	10.2978*** (2.03514)	10.0438*** (0.705572)	6.99506*** (0.571613)
CAP_GR (1 for CG, 0 for independent company)	-0.568789 (1.66063)	-0.444259 (0.353421)	-1.03303*** (0.290567)
INNOV (1 for innovative companies, 0 for non-innovative)	0.197721 (1.18973)	0.715778* (0.427348)	0.763356* (0.463314)
Sample size	275	1489	1450
Number of complete observations	131	967	790
Mean dependent var	8.554931	8.208729	7.402267
Sum squared resid	3379.197	23631.84	42597.31
R-squared	0.177233	0.185921	0.111500
F(5, 2526)	5.385283	43.89491	36.24229
S.D. dependent var	5.620782	5.481846	5.752124
S.E. of regression	5.199382	4.958920	5.431346
Adjusted R-squared	0.144323	0.181685	0.108424
P-value(F)	0.000161	7.69e-41	4.72e-35

Note: *p-value < 0.1; ** p-value <0.05; *** p-value <0.001; stand. error in brackets.

All three models in the previous section suggested negative relation between company age, size (measured by revenue), affiliation with a capital group and profitability. Positive relation was found between asset value, innovations and profitability. Innovation was found to be the most important determinant of EBITDA margin for medium-sized companies, increasing it by 0.76 p.p., ceteris paribus. In large companies, it contributed to an increase of 0.71 p.p., and for very large ones – by only 0.19, with the slope for the latter group at a number other than zero found to be statistically insignificant.

Patents and revenue dynamics

The third hypothesis was verified by checking the difference in the rate of revenue growth from 2006 to 2012 with the previous year used as a base year. In four of the seven periods of time analyzed, the difference between growth rates in innovative companies vs. non-innovative ones was found to be statistically significant.

In the periods of average revenue increase (2012, 2010 and 2006), revenue growth was higher for innovative companies, compared to the non-innovative ones (Table 14). It must be noted that the year 2006 should be regarded as a period of prosperity, as attested by the mean revenue increase of 16% for innovative companies, and 14% for the non-innovative ones, while the years 2012 and 2010, despite the continued effects of the financial crisis, marked a period of economic prosperity in Poland, with economic growth at 2% in 2012, 3.9% in 2010, and continued development and increase of sales revenues in companies under study. In 2010, the dynamics of revenue growth was higher by 2 p.p. for innovative companies and amounted to 10.03%, while in 2012, it dropped to 4.15% for the innovative companies and to 2.91% for the remaining ones. However, the year 2009 deserves special attention, with companies showing, in general, a significant decline in revenues. For innovative companies, the decline amounted to 6.39%, and for the remaining ones to 4.98%. The difference between the growth rate of revenues in 2009 was found statistically significant for both groups under study.

Findings are similar to those presented in “The 2014 EU Industrial R&D Investment Scoreboard European Commission”. For 478 out of the top innovative EU 633 companies in 2009 the revenue drop almost 10%. (European Commission, 2014, p.32).

Table 14. The revenue growth in innovative an non-innovative companies

Years	INNOV	NON-INNOV	Statistically significant difference?	p-value
2012/2011	4.15%	2.91%	YES**	0.0061
2011/2010	14.35%	14.41%	NO	0.9356
2010/2009	10.03%	7.95%	YES***	0.0002
2009/2008	-6.39%	-4.98%	YES*	0.0829
2008/2007	3.99%	3.35%	NO	0.3600
2007/2006	16.54%	16.31%	NO	0.7721
2006/2005	15.95%	14.29%	YES*	0.0585

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

Using ANOVA test we also found statistically important difference between revenue growth for companies in years of economic slowdown and years of prosperity (p-value for ANOVA test for each group of companies was smaller than 0.001).

In addition, analyses were performed with respect to the dynamics of revenue growth in the year 2009, taking into account the company size (Table 15). For very large companies, the difference in revenue growth dynamics between innovative and non-innovative companies was found to be significant. Of particular note was the fact that for very large innovative companies there was a decrease of revenues by 4.94%, compared to the marked increase by 1.97% for non-innovative ones. For large companies, the difference was statistically insignificant, while medium-sized companies registered a decrease in revenues in both groups. It must be noted, however, that in the latter group the decrease was markedly more pronounced among the patent holding companies (9.47%) compared to 6.98% for the non-holding ones. The results seem to suggest that patent holding companies are more susceptible to changes in the economic environment.

Table 15. The revenue change 2009/2008

Company size	INNOV	NON-INNOV	Statistically significant difference?	p-value
Very large	-4.94%	1.97%	YES**	0.0023
Large	-4.13%	-2.85%	NO	0.2945
Medium-sized	-9.47%	-6.98%	YES*	0.0449
Total	-6.39%	-4.98%	YES*	0.0142

Note: *p-value < 0.05; ** p-value <0.01; *** p-value <0.001.

DISCUSSION

The results presented herein suggest that pro-innovative orientation of production companies in Poland, connected with the number of patents granted to a company, has the significant effect on the trade margins. The effect was particularly evident in the case of EBITDA margin, which does not reflect the remaining operational and financial activities, and disregards the company asset structure. Even after the inclusion of activities other than the operational activity, the relation between gross profit and sales revenue (ROSb) is still higher for companies holding patent rights. Also for ROAb, which is shaped by fixed and current asset policies, we find that it is higher in innovative companies, but only for one year the difference was statistically important.

The research does not confirm the above observations with respect to return on equity.

The ROEb is significantly influenced by company capital structure policies. Consequently, despite significantly more pronounced difference of EBITDA margins, the difference between rates of return on equity was found statistically insignificant in most analysed periods, however, non-innovative companies have, on average, achieved a higher return on equity than innovative companies. Indirectly, it may also be concluded that innovative companies, due to higher operational risk of their activities, may face greater problems in leveraging their operational cost and are forced to rely more on their equity. Apart from the difficulties in acquiring outside funds, we suppose the reason for the higher ROEb in non-innovative companies may be attributed to the higher cost of borrowed capital acquisition, with its reducing effect on the level of net and gross profit. This particular lead will be addressed in our future research.

Pro-innovative orientation was found statistically significant in relation to EBITDA margin for large and medium-sized companies. In very large companies, the effect of patents on EBITDA profitability was insignificant, which may be due to their greater operational diversification. Moreover, obtaining a single patent in a smaller company has a more dramatic effect in terms of revenue increase compared to very large corporation with a sizeable product portfolio, where the amount of operational margin influences a much wider spectrum of factors compared to smaller entities. In this context, and in line with the discussed concept of Schumpeterian rent, it may be concluded that innovation activities help improve the competitive advantage, particularly in smaller companies, and offers much higher rates of return on trade, with the indirect effect of improving company market value.

The above results seem to confirm a more pronounced susceptibility to economic changes on the part of innovative companies. On average, innovative companies were characterized by greater dynamics of revenues compared with the non-innovative ones in the majority of periods under examination. For 2009, when the revenue growth dynamics was negative for all entities under study, it was found to be more pronounced in innovative companies. It is particularly evident for very large companies, with the revenues for non-innovative companies increasing by 2%, compared to the decrease of nearly 5% for the innovative ones. This effect may be attributed to the greater operational risk involved in this type of activities.

Interestingly, despite the revenue decrease by more than 6% for innovative companies in the year 2009, the mean EBITDA margin in this group was still higher compared to the non-innovative ones. This may attest to their greater operational cost flexibility, particularly with respect to fixed costs, as

well as their ability to anticipate market signals, which helps adjust the fixed cost level to the decreased demand. Moreover, the innovative companies may also enjoy lower operational leverage compared to the non-innovative ones.

CONCLUSION

The relation between company innovativeness and profitability is complex, because it is shaped mainly by the responses from competing entities. The fundamental problem of any inventor is to protect the product (or process) novelty against imitation. The principal safeguard in this context comes in the form of patent rights. The sooner the innovation is copied by the competition, the less time the authoring company has in store to reap the outstanding revenues off the product.

For the purpose of this research, the authors adopted the criterion of innovative vs. non-innovative companies based on ownership of at least one patent. This criterion should definitely be more restrictive, for example by means of relating the number of patents held to the level of revenues, as well as by examining the time-gap between the results and the introduction of new products based on the registered patent. This approach may be extremely difficult in practice, due to the limited availability of this type of data. In the case of smaller companies, it would also be useful to obtain detailed information on process vs. product innovations. Nonetheless, the results of this study seem to confirm the earlier observations on the higher level of trade returns for innovative companies (compared to the non-innovative ones), thus the criterion of innovation adopted for the purpose of this study seems valid. The research also showed greater susceptibility of innovative companies to the changing economic conditions, compared to the non-innovative ones. Sudden slowdown, such as the one observed in Polish companies in 2009, seems to affect the innovative companies to a much larger extent, at least in the sphere of operational revenue. Additional in-depth analyses should also be performed with respect to the effects of innovation as a function of company size. The classification of companies by size, as used in this study, departs slightly from the criteria adopted by the European Commission. Stronger effect of innovation activities in group of medium-size entities than in other groups suggests that the smaller the entity, the greater the effects of pro-innovative activities on the EBITDA margin and ROSb ratio. But, as mentioned before, the research would require a change in the classification of companies into innovative vs. non-innovative, for example based on declarative statements of product or organizational innovations introduced on the market. Such an approach, however, would be based on

declarations, rather than factual data such as the information on the number of patents held.

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Abstract (in Polish)

Artykuł jest kolejnym przyczynkiem w dyskusji na temat wpływu działalności innowacyjnej przedsiębiorstw na ich wyniki finansowe. Autorzy przyjęli w badaniach prostą miarę innowacyjności, stosowaną również w innych badaniach, przyjmując, iż posiadane przez firmę patenty są kryterium zakwalifikowania jej do grupy przedsiębiorstw innowacyjnych. W artykule porównujemy stopy zwrotu osiągnięte

przez firmy innowacyjne i pozostałe, działające w branży produkcyjnej w Polsce, w latach 2006-2012. Dane finansowe oraz ilościowe wykorzystane w weryfikacji hipotez zostały pozyskane z bazy Amadeus prowadzonej przez Bureau van Dijk. Próba badawcza stanowi 4004 przedsiębiorstw, z czego 681 dysponowało przynajmniej jednym patentem. W badaniach wykorzystaliśmy metodę t-Studenta oraz modele regresji wielorakiej. Na podstawie danych empirycznych testowaliśmy trzy hipotezy badawcze. Pierwsza hipoteza „Firmy innowacyjne osiągają wyższe stopy zwrotu niż nieinnowacyjne” została potwierdzona w odniesieniu do marży EBITDA oraz ROS (stopa zwrotu ze sprzedaży), natomiast nie udało się jej potwierdzić w odniesieniu do ROA (stopa zwrotu z aktywów) oraz ROE (stopa zwrotu z kapitału własnego). Firmy, które znalazły się w grupie przedsiębiorstw innowacyjnych osiągnęły przeciętnie wyższą marżę EBITDA o 0,83 p.p. w 2007, 0,78 p.p. w 2009 oraz 0,79 p.p. w 2012 roku, ceteris paribus, w stosunku do firm nieinnowacyjnych. Z kolei różnica pomiędzy grupami w zakresie ROE była statystycznie nieistotna dla większości lat objętych badaniem (z wyjątkiem roku 2007 i 2009), aczkolwiek firmy nieinnowacyjne osiągają wyższe ROE niż innowacyjne, co może być spowodowane większym ryzykiem operacyjnym towarzyszącym działalności innowacyjnej, które prowadzić może do ograniczenia w dostępie do zewnętrznych źródeł finansowania dla tej grupy, a to z kolei wymusza na firmach innowacyjnych konieczność rozwijania działalności w oparciu o kapitał własny. Drugą testowaną hipotezą było stwierdzenie, że: „Działalność innowacyjna ma większy wpływ na wyniki finansowe średnich przedsiębiorstw niż dużych i bardzo dużych”. Podczas badań potwierdziło się, iż w grupie średnich przedsiębiorstw, zakwalifikowanych jako innowacyjne, marża EBITDA był wyższa o 0,76 p.p. od nieinnowacyjnych, dla dużych firm o 0,71 p.p., a dla bardzo dużych różnica wynosiła tylko 0,19 p.p. W odniesieniu do trzeciej hipotezy: „Firmy innowacyjne są bardziej wrażliwe w zakresie dynamiki przychodów ze sprzedaży na spowolnienie gospodarcze niż przedsiębiorstw nieinnowacyjne” stwierdzono, że w okresie od 2006 do 2012 roku dynamika przychodów w firmach innowacyjnych była wyższa niż nieinnowacyjnych, z wyjątkiem roku 2009, kiedy to wszystkie firmy odnotowały spadek przychodów. Obniżenie przychodów było jednak wyższe w firmach innowacyjnych (-6,39 p.p) niż nieinnowacyjnych (-4,98 p.p). Na podstawie tego badania potwierdziło się zatem, że firmy innowacyjne charakteryzują się większą wrażliwością na spowolnienie gospodarcze niż pozostałe jednostki.

Słowa kluczowe: innowacje, wyniki finansowe, patenty, spowolnienie gospodarcze.

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Competitive Strategies and Improved Performance of Selected Nigeria Telecommunication Companies

*Waidi Adeniyi Akingbade*¹

Abstract

The influence of globalization in telecommunication companies has greatly increased the level of competition in the industry and they are forced to be competitive to survive. Different types of strategies are put in place in order to be profitable and competitive. All these strategies are directed to attract, retain and maintain customers for continuous profitability. However, majority of them hardly measure the impact of their strategic innovation on their customers. The paper seeks to explore the influence of competitive strategies embarked upon by selected telecommunication companies in Nigeria on their performance. The paper also examines how competitive strategies could be implemented for improved customer satisfaction, retention and loyalty. Three null hypotheses were postulated to test the relationship between lower prices and customer satisfaction, uninterrupted trunk services and customer loyalty, and customer complaint handling and retention. Only customers using telephone service were selected as respondents from Lagos State. The state was stratified in to 20 local government council area and questionnaires were distributed to 125 respondents in each of them. The completion rate of the questionnaire in each of them is between 103 and 110. Survey research design was adopted to carry out the study. A structured questionnaire was designed and validated through the construct validity and tested for confirmation using the KMO measure of sampling adequacy. It was also made reliable using Cronbach's Alpha test. From the study, findings revealed relationship between competitive strategies and customer satisfaction, retention and loyalty. The findings revealed that there is a relationship between competitive strategies, its constituents and performance of telecommunication companies. It is recommended that universal mobile telecommunication services (UMTS) operators should adopt the culture of competitive strategies since it can impact on their performance for achieving competitive advantage.

Keywords: *competitive strategy, performance, lower pricing, customer satisfaction.*

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INTRODUCTION

In recent years, there have been a great increase in the level of competition in virtually all areas of business and that of telecommunication is not an exception. The ability to outperform competitors and to achieve above average profits lies in the pursuit and execution of an appropriate business strategy (Yoo, Lemak & Choi, 2006). These have resulted in greater attention to analyzing competitive strategies under different environmental conditions. Porter (1985) states the three generic strategies that are required for different resources, organizational arrangements, control procedures, styles of leadership, and incentive systems could translate to improved organizational performance and competitive advantages. The three generic competitive strategies are overall price leadership, differentiation and focus i.e. cost or differentiation in a narrow market segment (Porter, 1985).

The highly competitive market in the telecommunication industry is now making UMTS companies operators to utilize competitive strategies that will make them grasp surprising opportunities, respond to threats and outmanoeuvre their rivals in order to endure and succeed.

Strategy is the direction and scope of an organization over the long-term that provides advantages for the organization through its pattern of resources within a demanding environment. Strategies exist at several levels in organizations, ranging from the overall business to individuals working. However, the levels of strategies are divided into three broad categories, namely corporate, business and functional levels (Oyedijo, 2013; Thompson & Strickland, 2010).

Telecommunication industry in Nigeria in the last ten years has recorded unprecedented growth and development. There was a tremendous improvement in the qualities and quantities in different types of services provided to customers. The deregulation of the industry led to the increase in the number of providers of the telecommunication services and of the numbers of subscribers or customers. These led to competition between the providers as each of them pursues strategies that are directed to enable them to have their own share of the market in order to be profitable and to survive. The extents to which the uses of different competitive strategies by the selected telecommunication companies have led to improved performance and to what extent customers have responded to the provider's strategies have not being sufficiently examined. It is necessary to find out the extent to which competitive strategy could lead to improved performance, customer satisfaction, loyalty and retention in the telecommunication industry.

The link between competitive strategies and organizational performance is a key issue in the field of strategic management. The competitive strategy performance relationship has been a prevalent research topic over the pasts

three decades. This paper is an attempt in this direction to examine the extent to which competitive strategies could influence performance in the Nigeria telecommunication industry. It also seeks to find out the relationship between the application of each of the strategies to contribute to and improve performance in Nigeria telecommunication industry.

LITERATURE REVIEW

The field of strategic management presents various typologies to describe the generic competitive strategies of firms, how firms compete in specific businesses or companies by exporting their competitive advantage in order to realise their goals (e.g. Hambrick, 1983, Porter, 1980 Miles & Snow, 1978). The typologies all focus on a firm's relative emphasis on operational efficiency and low cost or uniqueness in the market. This paper however focuses on Miller (1992) High Performance Gestalt and Porter's (1980) typology of generic competitive strategies which is made up of overall price leadership, differentiation and focuses (cost or differentiation in a narrow market segment) and hybrid for the following reasons. First, Porters typology overlaps with other competitive strategy typologies. For instance, Porters strategy of cost leadership is synonymous with Miles and Snow's (1978) defender strategy and Hambrick's (1983) efficiency strategy. Porter's differentiation strategy also resembles Miles and Snow's prospector strategy.

Second, Porter's typology has been linked to many organizational, environmental and performance – related variables (Campbell–Hunt, 2000; Dess & Davis, 1984; Kotha & Vadlamam, 1995; Ward & Druay, 2000). Porter's framework proposes that firms that pursue any of these competitive strategies would develop a competitive advantage that would enable them to outperform competitors in their industry. However, for a firm to earn superior profits and outperform its competitors, it must make a clear choice between a cost leadership and differentiation strategy in order to avoid “the inherent contradictions of different strategies” (Porter, 1996).

This study emphasizes price leadership, differentiation and focus strategies, because they are the commonly used strategy dimensions in the literature (Dess & David, 1984; Nayyar, 1993; Allen & Helms, 2006). A differentiation strategy in Nigeria telecommunication companies may be based on simultaneously creating customer loyalty by generating differences in product image through intensive marketing and image management (Miller, 1988), creating products that are innovative, dependable, durable and serviceable (Beal & Yasai-Ardeka 2000). Dess and Davis (1984) and Beal (2000) further develop the differentiation strategy of Porter. Beal distinguishes four different differentiation strategies i.e innovation differentiation, service

differentiation, marketing differentiation and quality differentiation. The cost leadership strategy represents attempts by firms to generate competitive advantage by achieving the lowest cost in the industry (Amoako – Gyanpah & Acqyaah, 2008). The focus of firms implementing a cost leadership strategy is on stringent cost controls and efficiency in all areas of operation (Porter, 1980). Either of these two approaches can be accompanied by a focus of organizational efforts on a given segment of the market (Gibcus & Kemp, 2003). From a theoretical point of view, the arguments for the adoption of hybrid strategies stem from some problems associated with pure strategies (Miller, 1992). Thus, hybrid strategies may address customer needs better; they may be more difficult to imitate; and they may generate a more flexible wider view.

Meanwhile, Porter (1980) suggested that a business attempting to combine the two approaches invariably ends up stuck in the middle. He argued that the low cost and differentiation strategies are based on incompatible assumptions and thereby create trade – off within the organization. This notion received considerable initial support (Dess & Davis, 1984, Hambrick, 1981; Hoawes & Crittendon, 1984); it was later challenged by a substantial body of research (Oyedijo, 2012; Parnell, 1997; Parnell & Wright, 1993; Proff, 2000). Members of the “combination strategy school” have argued that business successfully combining low costs and differentiation may create synergies within the firm that overcome any trade – offs that may be associated with the combination.

The sustainability of the three generic strategies demands that a firm’s competitive advantage resist erosion by competitor behaviour or growth. The sustainability of a generic strategy requires that a firm possesses some barriers that make imitation of the strategy difficult. It is usually necessary for a firm to offer a moving target to its competitors by investing in order to continually improve its position. Each generic strategy is also a potential threat to the others (Gibcus & Kemp, 2003). Gibcus and Kemp (2003) argued that firms with a clear and consistent strategy will outperform firms without such a strategy. This is the main argument for porter to define his generic strategies.

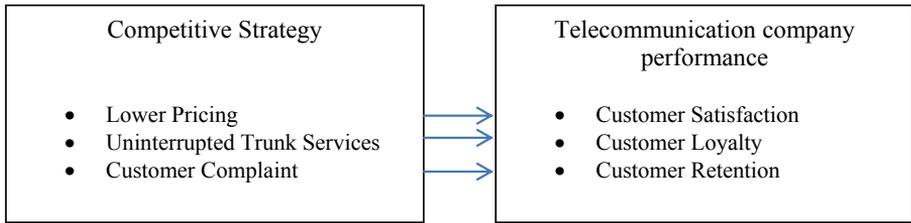


Figure 1. Relationship between competitive strategies and company performance

Meanwhile the model presented in Figure 1 suggests that company performance (customer satisfaction, customer loyalty, customer retention) is directly affected by competitive strategy (lower price, uninterrupted trunk services and customer complaint).

Telecommunication companies operations and performance in Nigeria

The development of telecommunication facilities in Nigeria began in 1886 when a cable connection was established between Lagos and London by the Colonial administration (Adegboyega, 2008). From the very beginning it was clear that the introduction of telephone services in the country was not induced by economic or commercial motives. Furthermore, it was not meant to enhance economic growth; it was originally developed as a tool for colonial subjugation.

Salawu (2008) stated that between independence in 1960 and 1985, telecommunication service became commercialized. He stressed further that the old department of post and telecommunication (P&T) under the Ministry of communication Limited (N.E.T) was created to take care of external telecommunication services while the old P & T handled internal network. By January 1985, the erstwhile (P&T) divisions merged with N.E.T to form Nigeria telecommunication limited (NITEL) a government owned Limited Liability Company. The objective of establishing NITEL was to harmonize the planning and coordination of the internal and external communication service, rationalize investments in telecommunication development and provide accessible, efficient and affordably services.

NITEL, the only national monopoly operator in the sector, was synonymous with epileptic service and bad management which made telephone then to be unreliable, congested, expensive and customer unfriendly. According to Ajayi, et al (2008) the years 1992 to 1999 were tagged as the partial

liberalization era, when government embarked on market – orientated, partially liberalizing the Nigeria telecommunication sector via NCC Decree 75 of 1992. The reforms include separation of the policy – making body from industry regulator and networks operators/ service providers and licensing of network operator/ service providers which began in 1996.

Performance is an essential concept in management research. Managers are judged on their firm’s performance. Good performance influenced the continuation of the firm (Gibcus & Kemp, 2003). Much of the research on performance measurement has come from organization theory and strategic management (Murphy et al, 1996). For instance, Porter (1980) defines good performance as the above average rate of return sustained over a period of years.

Venkatranan and Ramanjam (1996) pointed out that firm performance is a multidimensional construct. Financial performance includes return on assets (ROA), return on sales (ROS), and return on equity (ROE). They measure financial success and tap current profitability (Parker, 2000; Man, 2009). Business performance measures market – related items such as market share, sales growth diversification, and new product development (Gray, 1997; Amoako – Gyampah & Acquaaah, 2008; Man, 2009). Organizational effectiveness measures are closely related to stakeholders than shareholders like employee satisfaction, quality and social responsibility (Gibcus & Kemp, 2003; Man, 2009).

The Nigeria telecommunication sector witnessed a major revolution in 2001 with the granting of the global system for mobile telecommunication (GSM) license to providers. The current role calls of GSM operators consists of MTN, Airtel, Glomobile, Etisalat, Visafone, Nitel’s M-tel, Multi-Links, Starcoms among others. The country’s telecommunication industry was the largest contributor to growth in 2012, expanding by 34.2 percent. Telecoms as a percentage of GDP was 7.05 percent in 2012, higher than financial services and manufacturing sectors (Business Day, 2013) The environment is therefore becoming more competitive than before while some of the telecommunication companies have started expanding their operators overseas to compete with long established providers in international market.

RESEARCH METHODS

Out of 30 telecommunication companies in Nigeria only the four (4) major ones were selected for the study. This is because these 4 are the ones providing UMTS and LTS to about 98 per cent phone users in Nigeria, while the remaining 25 telecommunication companies are providing fixed lines services to less than 2 per cent of Nigerians that are using it. All the four were

considered on individual bases to assess their customer loyalty, retention, and satisfaction. This is because all of them although using various strategic approaches that are not easily discernible, are all directed to make their services competitive to attract more customers and to be profitable.

The survey (descriptive) research design was chosen mainly because it comprises cross-sectional design in relation to which data are collected predominantly by questionnaire. The study was conducted in Lagos State, the most densely populated city in West Africa, former Nigeria capital, a megacity and presently industrial and commercial capital of the country where most of the phone users resides. Lagos was therefore considered a good representation of phone users in Nigeria. Hence the population sample was taken from Lagos State, Nigeria. The target population consisted of all UMTS phone users in Lagos State.

2500 questionnaires were simply randomly distributed to mobile phone users. 2123 were returned and found usable for the study. Data were analysed using correlation coefficient and regression analysis.

The instrument used for collecting primary data in the study was a questionnaire and was mainly designed to elicit information from phone users of selected telecommunication companies. The questionnaire was developed to determine the extent to which customers responded to competitive strategies of selected telecommunication companies. Most of the items used to measure competitive strategy and performance came from the instruments developed by (Porter, 1980; Ramanujam, et al, 1987). Competitive strategy was measured by examining; lower pricing, uninterrupted trunk services and customer complaint handling strategy.

Performance was measured objectively by looking at customer satisfaction, customer loyalty and customer retention. These performance employed objective measures developed by (Gray, 1997; Venkatraman and Ramanujam, 1996). This instrument has been widely used in prior research (see for example, Asikhia, 2006; Khan, 2008; Tepeci & Eliwa, 2006, Bisby and Otley, 2004; Hoque, 2004).

A sample size of 2500 from the phone users was used for the study. Simple random sampling method was adopted in selecting respondents from the population of study and this helped to ensure that each customer has an equal chance of being selected. It was observed that all the four major telecommunications companies use the same strategies, but the success of the strategies is different. The following numbers of respondents were selected from respective telecommunication companies; MTN 860, Airtel 715, Globalcom 565 and Etisalat 360. There were 2123 usable completely filled questionnaires received from the sample size of phone users or a favourable response rate of 85%, while the remaining 377 questionnaire were rejected

due to incompleteness. Linear correlation analysis and simple regression analysis were used to test for the significance, degree and extent of relationship between the variables of competitive strategy and performance.

DATA ANALYSIS AND INTERPRETATION

In order to test for the robustness of the variables used in the study, a test of reliability and validity of the variables in the study was carried out using Cronbach’s alpha and KMO measure of sampling adequacy (see appendix). Previous description on the various constructs and their use in several past research studies provide evidence of the validity of the scales (Khan, 2008). The items used were adopted from previous studies and did not represent new scales. The reliability coefficients (Cronbach alpha) gave a value 0.971 which according to Hair et al (2006), the instrument of value of 0.7 and above is reliable. Hence, the instrument is reliable. KMO measure of sampling adequacy gave a value of 0.870; hence the degree of variations between the construct variables is very low and therefore confirms its validity for the current study.

From the analysis of the collected data R represents the coefficient of correlation to test for degree of relationship; R² represents the coefficient of determination to test for the extent to which two variables are correlated, Sig. value in the ANOVA table represents the significance of the relationship between two variables while the coefficient table represents the model establishing the relationship between the variables and their significances in the model. The results were thereafter buttressed by previous findings of scholars in the related field to justify the results of this study.

Hypothesis 1: Lower pricing do not influence customers satisfaction.

Table 1. Model summary of the simple regression for customer’s satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.983 ^a	.966	.951	.487	.038

a. Predictors: (Constant), Lower Price
 b. Dependent Variable: Customers Satisfaction

To test the first hypothesis, simple regression analysis was used to regress the independent variable against dependent variable. Table 1 above indicates the model summary of the simple regression equation that predicted customer’s satisfaction. The explanation of the results presented in the Table 2 is given below.

Table 2. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.672	.060		-28.010	.000
Lower Price	.665	.003	.983	244.452	.000

a. Dependent Variable: Customers Satisfaction.

Table 3. Summary of analysis of variance for customers satisfaction

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	14197.377	1	14197.377	59756.625	.000 ^b
Residual	503.921	2121	.238		
Total	14701.298	2122			

a. Dependent Variable: Customers Satisfaction.

b. Predictors: (Constant), Lower Price.

The model summary table (Table 1) provides useful information about the regression analysis for the first hypothesis. First, the 'simple r ' column is the correlation between the actually observed independent variable and the predicted dependent variable (i.e., predicted by the regression equation). ' r^2 ' is the square of r and is also known as the 'coefficient of determination'. It states the proportion (percentage) of the (sample) variation in the dependent variable that can be attributed to the independent variable(s). The correlation coefficient (r) value of 0.983 indicates the existence of strong positive relationship between lower pricing and customers satisfaction. The co-efficient of determination (r^2) value of 0.966 explains the proportion of variation in customers satisfaction that are attributed variations in price (i.e. lower prices). The value of 0.966 shows that lower prices is a good predictor of customers' satisfaction. The r^2 often overstate the true value of explanations due to the unadjusted degrees of freedom and to eliminate such, the adjusted r^2 value of 0.951 shows the actual variation in the customers' satisfaction attributed to lower prices. The 'standard error of estimate' indicates that, on average, observed customers satisfaction deviate from the predicted regression line by a score of 0.487. The value of the intercept (β_0) indicates that the value of customers' satisfaction when all the explanatory variable are zero is -1.672. Specifically, one percent reduction in price of calls increases the level of customers' satisfaction 66.5 percent. Hence, lower price is statistically significant in explaining changes in customers level of satisfaction at the 5 percent level of significance. The t-test statistic (in

Table 3) indicates the individual significance of the parameters used in the model. Each value is compared with the table value (t_{tab} at 5% = 1.70) and they all exert a significant influence in the function of the model. The F-ratio value of 59756.625 (Table 3) compared with the table value of 3.01 shows the overall significance of the model as well as the goodness of fit through its explanatory power. This shows that the model is significant because the calculated F-ratio of 59756.625 is greater than the table value of 3.01 5 percent level of significance. To this end, hypothesis one which stated that lower pricing do not influence customers satisfaction was rejected and it was revealed that lower pricing influenced customers satisfaction.

But NCC survey for 2012 below could not link customer satisfaction to the number of customers of each of the network. The number of customers for MTN is higher than that of other network but their customer satisfaction index is lower. However, we can still trace increasing customers of other network to their customer satisfaction most especially Etisalat, Globalcom and Airtel (See Figure 2). Price is being used by these three networks as a form of competitive strategy from 2012 to date.

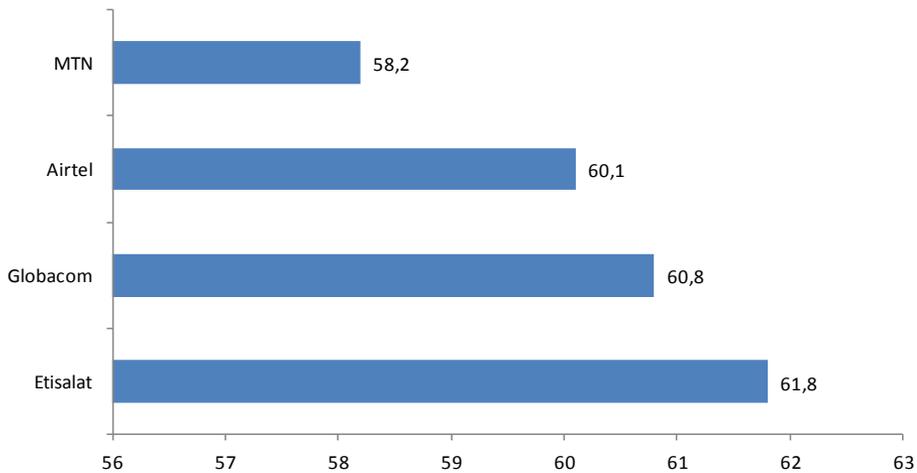


Figure 2. Customer Satisfaction Survey

Source: NCC (2012).

In order to measure the level of customer satisfaction of mobile users of the four major service providers based on the Figure 2, NCC (2012) used the following parameter:

- Mobile users were generally positive about the quality of the calls.
- The quality of off-net calls was poorer than the quality of on-net calls, and the quality of calls to fixed line networks was even poorer.

- Getting cut off during a call is regarded as the most common network reliability issue - 51% said they were sometimes cut off, while 11% said it happened often.
- 65% of respondents reported having to dial twice or more to get through
- 25% reported having to dial more than three times.
- 94% of mobile users use SMS
- Unsolicited SMS messages (spam) are a problem - Only 23% of respondents said they never or rarely received unsolicited messages.
- Problems of spam and being unable to send an SMS were felt most acutely in the South South Zone, where 46% of respondents said they often received unsolicited SMS, compared to 24% for the whole sample.
- 19% of those in the South South said they were often unable to send an SMS, compared to 11% for the whole sample.
- 28% of mobile users use their phone to access information and Value Added Services (VAS), but 88% of VAS users encountered some difficulties accessing the services.

On the issue of charging, Globacom and Etisalat registered higher scores; Etisalat had the highest scores for the correct charging of calls 65.5, closely followed by Globacom with 65.2. On the issue of whether rates aligned with service providers' advertised rates, Etisalat scored highest with 60.9, closely followed by Globacom on 59.1. MTN was the lowest on both issues of charging; it scored 60.4 for the correctness of charging and 55.3 for the whether the rates it charged agreed with advertised.

Hypothesis 2: Uninterrupted and Quality Trunk services do not influence customer loyalty.

Table 4. Model summary of the simple regression for customer loyalty

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.714 ^a	.510	.509	.535	.010

a. Predictors: (Constant), Uninterrupted and Quality Trunk Services.

b. Dependent Variable: Customer Loyalty.

To test the hypothesis two, simple regression analysis was also used to regress the independent variable against dependent variable to make our prediction. Table 4 above indicates the model summary of the simple regression equation that predicted customer loyalty. The explanation of the value is presented below.

Table 5. Coefficients of regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.229	.032		99.692	.000
1 Network Coverage	.083	.002	.714	46.959	.000

a. Dependent Variable: Customer Loyalty.

Table 6. Summary of analysis of variance (ANOVA) for customer loyalty

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	631.683	1	631.683	2205.125	.000 ^b
1 Residual	607.584	2121	.286		
Total	1239.267	2122			

a. Dependent Variable: Customer Loyalty.

b. Predictors: (Constant), Uninterrupted and Quality Trunk services.

The values presented in tables above, summarise and test the second hypothesis of this study. The Table 4 above shows that Uninterrupted and Quality Trunk services (the explanatory variable) influence customers loyalty to the sampled telecommunication companies. The correlation coefficient (r) value of 0.714 reveals the existence of strong positive correlation between Uninterrupted and Quality Trunk services and customers loyalty. The coefficient of determination (r²) value of 0.510 gives the proportion of variation in customer’s loyalty that is attributed to wider Uninterrupted and Quality Trunk services. The value of 0.510 indicates that wider Uninterrupted and Quality Trunk services are a better predictor of customer’s loyalty. The r² often overstate the true value of explanations due to the unadjusted degrees of freedom and to eliminate such, the adjusted r² value of 0.509 provides the actual variation in the customers loyalty attributed to Uninterrupted and Quality Trunk services. The ‘standard error of estimate’ indicates that, on average, observed customers loyalty deviates from the predicted regression line by a score of 0.535. This implies that an Uninterrupted and Quality Trunk service has a positive impact on customer’s loyalty and that both variables, move in the same direction.

Further analysis on the result above and to make comparisons with findings of previous studies, we discuss the explanatory powers of the Uninterrupted and Quality Trunk services on the explained variables in turn, at a significant level of 5%. The value of the intercept (β_0) indicates that the

value of customer's loyalty when all the explanatory variable are zero is 3.229. The estimated parameter for network coverage is 0.083 and the p-value is 0.000, which is less than 0.05, and this indicates that we are 100% certain that the effect of Uninterrupted and Quality Trunk services on customer's loyalty as seen in the results is true. In other words, a variation in customer's loyalty to the Telecommunication companies is explained by Uninterrupted and Quality Trunk services. This result suggests that customer's loyalty increases as network coverage increases. The t-test statistic (in Table 5) indicates the individual significance of the parameters of the model. Each value is compared with the table value (t_{tab} at 5% = 1.70) and they all exert a significant influence in the function of the model. The F-ratio value of 2205.125 (Table 6) compared with the table value of 3.01 shows the overall significance of the model as well as the goodness of fit through its explanatory power. The value indicates that the model is significant because the calculated F-ratio of 2205.125 is greater than the table value of 3.01 5 per cent level of significance. Therefore, hypothesis two which stated that Uninterrupted and Quality Trunk services do not influence customer loyalty was rejected and it was revealed that Uninterrupted and Quality Trunk services influenced customer loyalty.

The NCC (2012) states the major indicators for determining quality call of each of the four major mobile telephone operators. It indicates that the differences between Nigeria's four major mobile operators were modest across all indicators for mobile telephony. MTN registered lower scores on quality of calls to other mobile and fixed networks; it scored 58.5, compared to Etisalat's score of 63.1, which was the highest for that indicator. Etisalat also scored highest on issues concerning network reliability, but differences were modest again. For example, Etisalat scored 62.8 on the loss of service indicator, the lowest score of 60.9 was registered by MTN, closely followed by Airtel's score of 61.

Although the differences were modest, Etisalat subscribers rated VAS services highly (57.2), and MTN subscribers rated those relatively poorly (55.5). Etisalat subscribers rated all aspects of complaints handling highly. It received the highest scores for all complaints handling indicators, apart from the effectiveness of the IVR service; its score of 63.2 was just beaten by Airtel's score of 63.3.

When looking at differences between zones, mobile services appeared to be better in the North Central & FCT and South West zones. Views on the charging for SMS and VAS services were poorer in North West zone, and respondents in South South zone appeared to have greater technical difficulty in using these services (NCC, 2012). Respondents in these two zones also rated mobile recharge services poorly. Note that views on complaints handling procedures appeared to mirror views on service provision, so

respondents from the North West and South South zones rated complaints handling process highly.

These indices determine the level of customer’s patronage and therefore the competitive strategy of each of the providers. NCC (2012), market survey shows that in terms of subscriber numbers, MTN was the clear market leader followed by Airtel and Globacom. 63% used MTN as their principle phone; 13.9% used Airtel; 13.3% used Globacom and 8.1% used Etisalat (Figure 3). This shows that MTN has the highest sales growth among the telecommunication companies operating in Nigeria, which is also in line with their volume of profitability. Nigeria, Africa’s largest mobile phone market by subscribers, continues to expand albeit at a slower level than before as the industry high growth rate slows. Recent data from NCC (2013) shows that the number of active telecoms lines grew by 16percent year-on-year in June 2013 to 120.36 million.

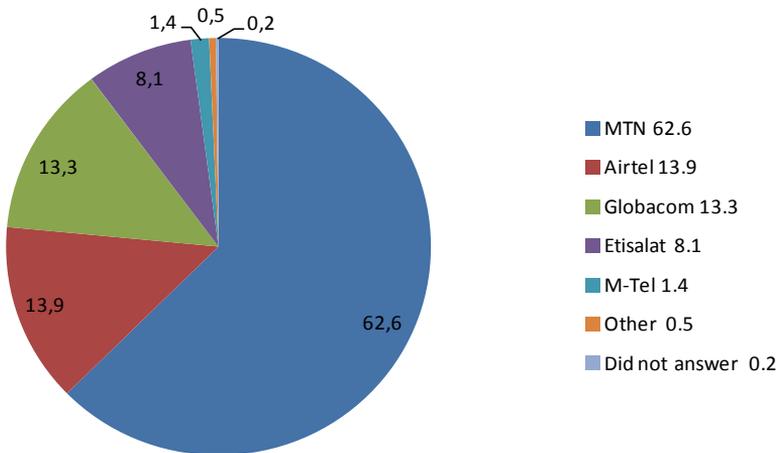


Figure 3. Service Providers Customer Satisfaction Survey based on number of customers

Source: NCC (2012).

The Nigeria consumer satisfaction survey carried out by NCC (2012) shows that in Nigeria telecommunication industry MTN and Econet (now Airtel) were the first licensed operators to provide services in Nigeria in August 2001. Today, MTN is the apparent market share leader in Nigeria, with more than twice the number of subscriptions as its nearest rivals, Globalcom and Airtel. The market share of some GSM operators are as follows: MTN 40.40%;

Globalcom 21.59%; Airtel 19.46%; Etisalat 12.83%; CDMA 3.84%; MTEL Limited 0.25% (See Figure 3). Furthermore, MTN Group's Nigerian unit is the market leader in Nigeria with 55.23 million customers, followed by Nigeria's Globacom with 25.0 million, New Delhi based Bharti Airtel with 21.59 million, and Abu Dhabi-based Emirates Telecommunications Corp, Etisalat with 15.3 million (NCC website, 2013).

Hypothesis 3: Customer Complaints Handling do not influence customer retention.

Table 7. Model summary of the simple regression for customer retention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.978 ^a	.956	.955	.313	.038

a. Predictors: (Constant), Customer Complaints Handling.

b. Dependent Variable: Customer Retention.

Table 8. Coefficients of regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.716	.029		95.097	.000
1 Quality Service	.239	.001	.978	214.333	.000

a. Dependent Variable: Customer Retention.

Table 9. Summary of Analysis of Variance (ANOVA) for customer retention.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4494.988	1	4494.988	45938.575	.000 ^b
1 Residual	207.535	2121	.098		
Total	4702.523	2122			

a. Dependent Variable: Customer Retention.

b. Predictors: (Constant), Quality Service.

The results of the regression analysis of the relationship between customer complaints handling and customer retention to test hypothesis three is presented. The findings in Table 7, shows a significant positive relationship between customer complaints handling and customer retention at $r = .978$. The co-efficient of determination (r^2) for the regression is 0.956

and the r-square adjusted for degrees of freedom for the regression is 0.955. In this study, 95.6 percent of the variability in customer retention can be explained by advancement of customer complaints handling. The remaining 4.4 percent of variability is due to other unexpected factors. This implies that customers are retained to a particular network as a result of customer complaints handling service provided. The 'standard error of estimate' indicates that, on average, observed customers retention deviate from the predicted regression line by a score of 0.313. Hence, we deduce that there is a significant relationship between customer complaints handling and customer retention in the Nigerian telecommunication industry.

To further analyze the result above and to make comparisons with findings of previous studies, we discuss the explanatory powers of the customer complaints handling on the explained variable in turn, at a significant level of 5%. The value of the intercept (β_0) indicates that the value of customer retention when the explanatory variable is zero is 2.716. The estimated coefficients for quality service is 0.239 and the p-value is 0.000, which is less than 0.05, and this indicates that we are 100% certain that the effect of customer complaints handling on customer retention as seen in the results is true. This therefore suggests that the behaviour of the explainer variable could not have occurred by chance. This suggests that customer complaints' handling has a positive influence on customer retention. That is an increase in the form of customers cares service, voice clarity, stable and fast data service etc, results in an increase in the customer retention to a network. In addition, the t-test statistic (in Table 8) indicates the individual significance of the parameters used in the model. Each value is compared with the table value (t_{tab} at 5% = 1.70) and they all exert a significant influence in the function of the model. The F-statistics and its probability shows that the regression equation is well formulated explaining that the relationship between the variables combined to performance are statistically significant (F-ratio = 45938.575; F-pro. = 0.000). Therefore, this further supported the results of strong positive relationship between customer complaints handling and customer retention. Hence, hypothesis three which stated that customer complaints handling do not influence customer retention was rejected and it was concluded that customer complaints handling influenced customer retention.

NCC (2012) survey reveals that 32% of respondents had made a complaint in the year. 90% of these usually lodged complaints by phone, while only 8% said they visited a customer care centre (Figure 5). Figure 4 shows that most complaints concerned charging, billing, and the recharging of pre-paid accounts.

- Incrrect charging /billing 17%
- Request for value added service 7%
- Black berry complaint 19%
- Paying a bill 2%
- Data complaint 4%
- Did not answer 3%
- Inability to make /receive voice calls 11%
- Time to resolve an existion complaint 4%
- Inability to recharge 19%
- SMS 5%
- Other 9%

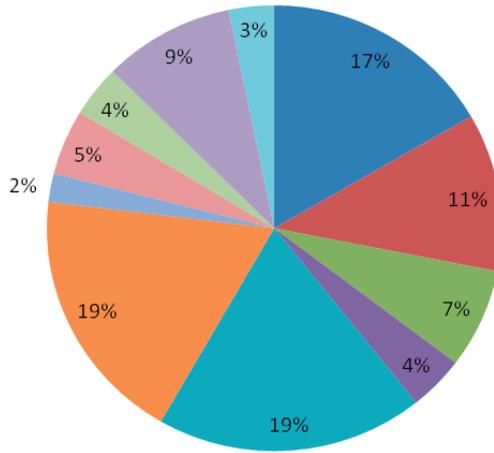


Figure 4. Breakdown of complaints – mobile phones

Source: NCC (2013).

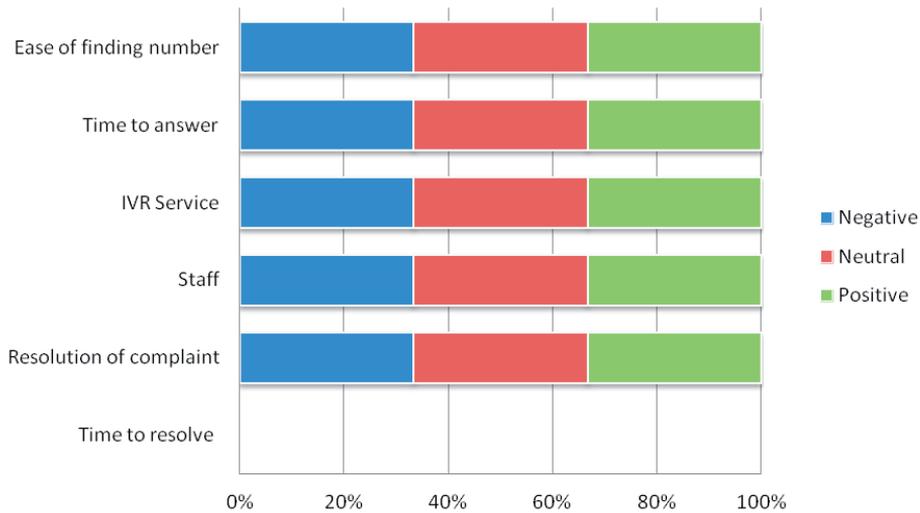


Figure 5. Customer Satisfaction Assessments Influence on Complaints

Source: NCC (2013)

CONCLUSIONS AND RECOMMENDATIONS

The study focused on the analysis of competitive strategies and improved performance in selected Nigeria telecommunication companies. The study establishes the importance of each of the competitive strategies on the crucial factors affecting the telecommunication performance indices despite local and global challenges facing the industrial business environment.

Since their establishment, the four major telecommunication companies had made significant profit from their investment. But despite all the efforts made through the provision of competitive strategies to improve customer satisfaction, retention and loyalty, the customers have not sufficiently enjoyed improved services. Most of them still rendered epileptic services to their customers in spite of their huge amount of charges. Their poor services ranges from call blockage, bad system coverage, poor voice quality, network failure, dropped call rate all at the expense of their customers. Telecommunication companies embarked on a series of competitions among themselves in order to make abnormal profit. Problems of trunk failure, poor services, incorrect charging/ billing among others have made it difficult for the customers to enjoy better services.

The study recommends that telecommunication companies should tailor their strategies towards customer satisfaction and improvement in the quality of their services for sustainable profit and competitiveness.

This study provides a useful basis upon which further studies in the industry could be conducted. There is a need to undertake similar studies in other sectors to ascertain how different sectors deal with the competitive strategies to achieve sustained performance. The study also contributes to the existing literature in the area of strategies that academicians could use as a basis of further research.

Despite all the aforementioned problems there has been tremendous improvement in the performance of telecommunication industry in Nigeria.

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Abstrakt (in Polish)

Wpływ globalizacji na firmy telekomunikacyjne znacząco zwiększył poziom konkurencji w branży, ponieważ firmy te, aby przeżyć, zmuszone są ze sobą konkurować. Aby zapewnić sobie rentowność i konkurencyjność firmy te stosują rozmaite strategie. Wszystkie te strategie skierowane są na przyciągnięcie i utrzymanie klientów w celu zapewnienia ciągłej rentowności. Jednakże większość z nich nie mierzy wpływu strategicznych innowacji na klientów. Nasza praca próbuje zbadać wpływ strategii konkurowania, stosowanych przez wybrane firmy telekomunikacyjne z Nigerii, na ich efektywność. Artykuł ten bada również, w jaki sposób strategie konkurowania można by wdrożyć w celu podniesienia satysfakcji klienta, oraz utrzymania go i zapewnienia jego lojalności. Przyjęto trzy hipotezy mające sprawdzić relacje między niższymi cenami i satysfakcją klienta, nieprzerwanymi usługami a lojalnością klienta, oraz rozpatrywaniem skarg klienta a utrzymaniem klienta. Tylko klienci korzystający z usług telefonicznych ze Stanu Lagos zostali wybrani jako respondenci. Stan podzielono na 20 administracyjnych okręgów, kwestionariusze rozdano 125 respondentom w każdym obszarze. Stopa zwrotu wyniosła od 103 do 110 kwestionariuszy w każdym okręgu. Następnie przeprowadzono badanie. Zaprojektowano i przyjęto kwestionariusz ustrukturyzowany, dokonując walidacji przy zastosowaniu miary adekwatności próbki KMO. Zweryfikowano także rzetelność kwestionariusza stosując test alfa Cronbacha. Wyniki badań pokazały relacje między strategiami konkurowania a satysfakcją klienta, utrzymaniem i lojalnością. Badania ujawniły, że istnieje związek między strategiami konkurowania, ich składnikami, a efektywnością firm telekomunikacyjnych. Zaleca się, aby operatorzy usług UMTS zastosowali strategie konkurowania, ponieważ mogą one wpływać na ich efektywność w osiągnięciu przewagi konkurencyjnej.

Słowa kluczowe: strategia konkurowania, efektywność, niższe ceny, satysfakcja klienta.

Appendix

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.870
Bartlett's Test of Sphericity	Approx. Chi-Square	30275.461
	df	28
	Sig.	.000

Reliability Statistics

Cronbach's Alpha	N of Items
.971	8

Research survey on the competitive strategies and improved performance of selected Nigeria telecommunication companies

Dear Respondents,

This questionnaire is designed to obtain data on the competitive strategy and improved performance of selected telecommunication companies in Nigeria. This research is purely for academic purpose and no respondent shall be implicated. Also all responses shall be treated in strict confidentiality. The researcher therefore, strongly solicits your support and objective responses.

Thank you.

Researcher.

Demographic characteristics of the respondents

- 1) Sex: Male () Female ()
- 2) Marital Status: Married () Single () Divorced ()
- 3) Local Government Area Council of Lagos State.....
- 4) Age:.....
- 5) Telephone Provider: MTN () Airtel () Globacom () Etisalat ()
- 6) Years of customer with the telephone provider: Less than a year () 1-5years ()
- 7) 6-10years () More than 10 years ()
- 8) 7. Educational Qualification: SSCE () OND/NCE () B.Sc/HND () M.Sc/MBA()
Ph.D () Others ()

Competitive strategy and performance

This scale is designed to find out how competitive strategies improved performance of selected Nigeria telecommunication companies. Please tick the column you find appropriate to each question below. The indicators are: SA (Strongly Agree) A (Agree) UD (Undecided) and D (Disagree).

1. Hypothesis 1: Lower pricing do not influence customer satisfaction

S/N	Questions	SA	A	UD	D	SD
1	My telephone provider charges reasonable price for quality service hence my choice.					
2	I use my telephone often because my telephone provider charges lower price.					
3	I stay for a long time for conversation because of the lower price of my telephone provider.					

- 4 Charging of lower prices attracts more customers to my telephone provider.
 - 5 Charging of lower price does not reduce customer satisfaction.
 - 6 Charging of lower price attracts me to my telephone provider.
 - 7 Charging of lower price does not undermine quality service.
 - 8 I rely on my provider because of the lower price he charges.
-

2. Hypothesis 2: Uninterrupted and Quality Trunk services do not influence customer loyalty

S/N	Questions	SA	A	UD	D	SD
1	My telephone provider ensures telephone service is available at all locations throughout the country.					
2	My telephone provider ensures uninterrupted services at all locations.					
3	My telephone provider network is excellent.					
4	My telephone provider services are available at all times.					
5	The service delivery of my provider is better than that of other network.					
6	I prefer my network provider because of its international connections.					

3. Hypothesis 3: Customer Complaints Handling does not influence customer retention

S/N	Questions	SA	A	UD	D	SD
1	I prefer my service provider because it provides uninterrupted services to its customer.					
2	Customers prefer my service provider because it makes the customer to enjoy their services.					
3	My service provider provides immediate solutions to customer complaints.					
4	My service providers does not waste customer's time.					
5	My telephone provider attends to my complaints promptly.					
6	My telephone provider rectifies any fault on their system without delay.					
7	My telephone provider's company employees treat their customers with respect.					

- 8 My telephone provider staff monitor their system to solve customers' problem without complaints.
 - 9 I do not hesitate to get another telephone because of the excellent service of my telephone provider.
 - 10 My telephone provider provides immediate solution to problems.
 - 11 Customer's complaint section employees of my telephone providers are very courteous and friendly with customer.
-

Biographical note

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The Impact of Entrepreneurial Orientation on the Performance of Internationalization

Jörg Freiling¹, Christoph Lütke Schelhowe²

Abstract

Entrepreneurial orientation has emerged as a major construct in entrepreneurship literature. However, existing definitions of entrepreneurial orientation mainly focus on explorative behavior like innovativeness, proactiveness and risk-taking. Based on the long tradition of research on entrepreneurial functions, we argue that exploitative activities are no less an entrepreneurial endeavor than explorative activities. Following this understanding, we elaborate a broader conceptualization of the entrepreneurial orientation construct. In an empirical study with 346 established companies, we explore its effect on the performance of internationalization. Entrepreneurial orientation in its broader conceptualization positively influences the international performance and the effect is by far stronger than the one observed in existing studies. The reason for this is that both explorative and exploitative dimensions matter and equally drive the international performance. Entrepreneurial orientation positively influences the growth of the international activities as well. However, its effect is much lower. Whereas the explorative dimensions tend to foster the international growth, the exploitative dimensions do not show any effect.

Keywords: *entrepreneurial orientation, entrepreneurial functions, international performance, international growth, exploration, exploitation.*

INTRODUCTION

The field of international entrepreneurship - that investigates topics at the interface of international business and entrepreneurship - has received considerable attention from scholars over the last years (e.g. McDougall and Oviatt, 2000; Acs et al., 2003; Dimitratos and Jones, 2005; Zahra et al., 2005; Kuivalainen et al., 2007; Keupp and Gassmann, 2009; Dimitratos et al., 2010; Dimitratos et al., 2012; De Clerq et al., 2012; Covin and Miller, 2014). Awareness of international entrepreneurship started with the emergence of

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the so-called 'born global' firms that internationalize instantly after inception (Oviatt and McDougall, 2005). These new ventures challenged the traditional views of internationalization theories and prompted considerable research on macro, industry and firm-specific variables that led to new internationalization patterns (McDougall et al., 1994; Rialp et al., 2005; Zahra et al., 2005). Building on a large number of studies on 'born globals', international entrepreneurship research has broadened in scope (Oviatt and McDougall, 2005) and depth and has spread to areas like opportunity recognition (Zahra et al., 2005; Acedo and Florin, 2006), technological learning (Zahra et al., 2000; Zahra et al., 2003) or organizational learning (Freiling and Zimmermann, 2014). However, international entrepreneurship as a research field still focuses to a large extent on young, newly founded firms. There are only a few studies on established companies (e.g. Birkinshaw, 1997). It is therefore not surprising that various scholars call for more research on the entrepreneurial processes of established firms (Dimitratos and Jones, 2005; Jantunen et al., 2005).

The entrepreneurial orientation (EO) has emerged as a major construct in entrepreneurship literature when it comes to understanding entrepreneurial processes. In fact, EO is one among the few areas in entrepreneurship research where a cumulative body of research is evident (Lyon et al., 2000; Covin et al., 2006; Rauch et al., 2009; Covin and Miller, 2014). The construct of EO captures the methods, practices, and decision-making styles that managers or owners use to act entrepreneurially. It reflects how a firm operates in value creation regardless of what entrepreneurial activities (such as new market entry) it undertakes (Lumpkin and Dess, 1996). In a first attempt to model firm-level entrepreneurial processes, Miller and Friesen (1982) identified three key processes: the willingness to engage in product innovation, to take risks to try out new products, and to be more proactive than competitors in taking advantage of new market opportunities. On this basis, several researchers have argued that EO, as a composite construct (Covin and Lumpkin, 2011; Covin and Miller, 2014), has three dimensions: innovativeness, proactiveness and risk-taking (e.g. Covin and Slevin, 1989; Wiklund and Shepherd, 2003; Zhang et al., 2012). Even if some researchers add additional dimensions (Lumpkin and Dess, 1996; Knight, 2001; Jantunen et al., 2005) to a multi-dimensional construct (Covin and Miller, 2014), it is striking that existing concepts of EO almost solely focus on *explorative activities*. Following March's (1991) understanding, exploration refers to the pursuit and acquisition of radically new resources whereas exploitation alludes to the efficient use and incremental refinement of the existing resource base.

The focus of the EO construct on explorative activities may be plausible at first glance as they tend to provide a base for setting up new ventures: there are no new ventures without entrepreneurs engaging in innovations

and willing to take risks. However, these rather explorative activities are often not sufficient for establishing ventures successfully. New ventures and initiatives may fail due to missing managerial skills that allow exploitative activities like setting up and orchestrating efficient value-added processes or coordinating marketing, finance and accounting. Besides that, the long tradition of entrepreneurship research of the last three centuries reminds us of considering exploitative entrepreneurial functions, such as Kirzner's (1973) arbitrage (similarly Sundqvist et al., 2012) or Casson's (1982) coordination function, as well (e.g. Hébert and Link, 1988). This leads to the question whether the EO construct needs to be extended to reflect all entrepreneurial challenges, in particular those of established firms. Building on the whole body of entrepreneurship research and, in particular, on entrepreneurship theory, we argue that exploitative activities are not less a part of entrepreneurial behavior than explorative activities—with the decisive difference that they are rather under-estimated in debates on entrepreneurship. Insofar, we do not intend to re-conceptualize the established EO concept but to accompany it by a more comprehensive understanding based on entrepreneurship theory. This allows to consider empirical findings on the relationship between entrepreneurial orientation and performance measures as for the explorative facets of our understanding of entrepreneurship.

We define *entrepreneurship* in a *both explorative and exploitative manner* as the *integrated execution of the innovation, risk management, internal coordination and arbitrage function*. The two former functions are predominantly exploratory, the latter two exploitative in nature. The idea of this paper is to use these entrepreneurial functions as a starting point to re-conceptualize entrepreneurship and to empirically explore its impact on the internationalization process of established companies. Against this background, we raise two *research questions*. (1) How can we re-conceptualize the entrepreneurship to address all entrepreneurial challenges in value creation processes? (2) How does the entrepreneurship affect the performance of internationalization and the growth of the firm?

The article is structured as follows. The next section lays the theoretical foundations of this paper by developing entrepreneurship theory. In the follow-up section, we develop a conceptual model for the empirical study. The next section contains the empirical research methodology and the sample data. In the follow-up section, we present the empirical findings. This article ends with a discussion of the theoretical and empirical results in one section and their limitations as well as their implications for future research in the last section.

THEORETICAL FOUNDATIONS

One important stream of entrepreneurship theory of the last three centuries responds to the question of what functions an entrepreneur has to perform to remain successful and ensure organizational survival over time. The research on entrepreneurial functions goes back to the seminal work of Cantillon (1755) who considered the entrepreneur a person willing to take risks and manage uncertainty. Since then, many follow-up publications have enriched the initial thoughts and proposed additional entrepreneurial functions, as Hébert and Link (1988) outline in overview. However, the various concepts of the entrepreneurial functions differ significantly by the chosen focus. Most articles suggest that the execution of one particular function matters. According to Freiling (2008), we can characterize them as *mono-functional approaches*. Kirzner's (1973) arbitrage function is one example among others. *Meta-functional approaches*, by contrast, refer to a conglomerate that is made of various sub-functions. Casson (1982), for example, argues that the coordination function consists of three sub-functions: taking opportunities of coordination, making judgmental decisions, and market-making. The shift from mono-functional to meta-functional approaches indicates that the multitude of entrepreneurial challenges can hardly be described by a single function. In the end, this leads to *multi-functional approaches*. They respond to the heterogeneous managerial challenges. Barreto (1989) introduces a multi-functional catalogue by pointing to innovation (Schumpeter, 1934), arbitrage (Kirzner, 1973), coordination (Casson, 1982) and risk taking (Cantillon, 1755; Knight, 1921). However, the Barreto literature-based catalogue forms no cohesive framework.

We argue that multi-functional approaches should consist of entrepreneurial functions that are ideally mutually exclusive and collectively exhaustive and that are aligned within an overarching framework capturing all entrepreneurial challenges, a firm is confronted with. Freiling (2008; 2009) developed a system of four interrelated entrepreneurial functions. The idea of relating the execution of entrepreneurial functions to organizational development builds on Schneider (1987). Freiling (2008; 2009) distinguishes three aspects of organizational evolution: (1) the emergence and/or renewal of a system like a firm, (2) its protection from internal and external threats, and (3) the efficient and effective exploitation of the firm's potential. By extending the work of Barreto and Schneider, Freiling assigns four entrepreneurial functions to the three different aspects of organizational evolution. Since these aspects are relevant to the explanation of performance, we build on this multi-functional approach that we introduce in more detail below.

The *innovation function*, understood in terms of Schumpeter (1934), is instrumental for the first aspect of organization evolution: system emergence

and/or renewal. It explains how start-up firms emerge and how established firms renew themselves to stay ahead of competition. The execution of this function implies multiple modes of innovation: product, process, organizational or business model innovations. Once being aligned, the different modes of innovation may trigger processes of 'creative destruction' in the Schumpeterian sense. However, innovation activities are typically associated with risks. Firms need to protect their organizations from the possibly negative consequences of those risks. The *risk management function*, based on the broad understanding of Knight (1921), corresponds to the second aspect of organizational evolution: system protection. It includes identifying and evaluating potential risks, taking appropriate risks and safeguarding against them in case of need. Even if the innovation and risk management function are different tasks, they go hand in hand by *exploring* new business opportunities.

Exploration is necessary, but not sufficient to achieve sustainable impact. Firms need to tap the potential created by the explorative functions. This requires exploitation as the third aspect of organizational evolution. Two entrepreneurial functions refer to system exploitation and are mutually exclusive: the *coordination function*, in this understanding, focuses the *internal* potential of the firm whereas the *arbitrage function* addresses the *external* market potential. Notably, the coordination function differs from Casson's (1982) understanding by only addressing those coordination issues that refer to internal affairs of the firm. The coordination function has mainly two objectives. First, it includes setting up and orchestrating efficient value-added processes as well as allocating available resources. Secondly, the coordination function implies sense making activities enabling and motivating employees to fully unfold their capacities. This requires numerous efforts of training, mentoring, and motivating people inside the firm. Contrary to the coordination function, arbitrage focuses transactions in the market(s)—and therefore external affairs in connection with bargaining. Close to the understanding of Kirzner (1973), it consists of identifying and taking the chance of new business opportunities. Both activities are largely dependent on available market knowledge. When firms develop market knowledge and use their alertness, they can identify and seize new business opportunities more easily. In this sense, the arbitrage function exploits the sales potential created by former exploration activities, in particular by innovative moves.

What does this imply? The entrepreneurial functions are interrelated and form a cohesive whole. Continuously neglecting some or only one function will most likely lead to shrinking competitiveness and, finally, to bankruptcy: firms that do not focus on innovation may find themselves outpaced by the competition, particularly in volatile markets. Firms, that do

not execute the coordination and arbitrage function comprehensively, may be unable to exploit the potential enabled by innovation. The discussion of entrepreneurial functions thereby stresses the necessity of balancing explorative and exploitative activities. Hence, we define *entrepreneurship* here as the *integrated execution of both explorative (innovation and risk management) and exploitative (internal coordination and arbitrage) entrepreneurial functions*. This definition does not solely focus on start-ups and includes entrepreneurial activities within established organizations (Venkataraman, 1997; Shane and Venkataraman, 2000).

CONCEPTUAL MODEL

This section builds and discusses a conceptual model that analyzes the effect of entrepreneurship on the performance of internationalization and the growth of firms. As our theoretically-based conceptualization of entrepreneurial orientation differs substantially from existing ones and since we investigate a rather complex phenomenon in the Hayekian sense (Hayek, 1964), this model is of explorative nature. Even if the theoretical foundations suggest that all entrepreneurial functions have a positive impact on the organizational performance of firms, it is still part of ongoing research how well these functions jointly and individually influence the dependent variables. To the best of our knowledge, the new conceptualization of entrepreneurship and the interplay of its explorative and exploitative dimensions have never been empirically explored—neither in general nor particularly in the international context. We therefore believe that it is too early to test well-grounded hypotheses but to develop research propositions instead. Hence, we aim at advancing the measurement model of entrepreneurship and identifying general relationships between the new construct and the two dependent variables. In this respect, the conceptual model is a guideline for the empirical study.

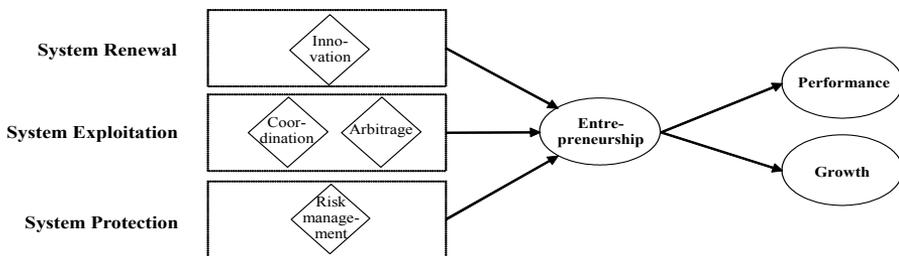


Figure 1. Conceptual model

Source: Own illustration based on Freiling (2008, p. 16).

Before examining the model empirically, we discuss it on the basis of existing literature. Previous strategy and entrepreneurship research suggests that the EO construct is positively related to firm performance (Lumpkin and Dess, 1996; Rauch et al., 2009). Most studies found empirical support for this (e.g. Zahra and Covin, 1995; Jantunen et al., 2005; Wiklund and Shepherd, 2005; Keh et al., 2007; De Clercq et al., 2010), while only a few studies found weak or no evidence at all for a positive relationship to performance (Slater and Narver, 2000; Lee et al., 2001; Frank et al., 2010). In their recent meta-analysis among 51 studies, Rauch et al. (2009) found a moderately strong correlation between EO and performance ($r = .242$). Similarly, both studies that examined the performance effect of EO in the international context identified a positive relationship (Dimitratos et al., 2004; Jantunen et al., 2005).

As for the individual dimensions, previous research on the entrepreneurial functions believes that each dimension has a positive performance impact (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). However, as basically all dimensions show high inter-correlations with each other, nearly all existing studies treat EO as a joint construct (Covin and Slevin, 1989; Knight, 1997; Lee et al., 2001; Wiklund and Shepherd, 2003; Walter et al., 2006), i.e. the dimensions are regarded as reflective, interchangeable construct items, which makes it impossible to determine the performance impact for individual dimensions. The reflective specification is astonishing as arguments have been raised early that the dimensions of the EO construct may vary independently (Lumpkin and Dess, 1996; Kreiser et al., 2002). The dimensions of EO may be, but do not necessarily need to be, closely related. This is considered in our model.

As for the impact of entrepreneurship on the growth of international firms, several studies suggest that entrepreneurship positively influences sales growth (Covin et al., 2006; Mueller, 2007; Moreno and Casillas, 2008) but there are only very few comparable studies in international business research (e.g. Autio et al., 2000; Oviatt and McDougall, 2005). We believe it is too early to draw conclusions on the relationship between entrepreneurship and growth. Previous conceptualizations merely built on explorative dimensions. It is completely unknown how these new exploitative dimensions have an impact on growth. E.g., they may prevent firms from expanding too fast which may ultimately lead to a lower performance.

METHODS

Data

The empirical data used in this study are drawn from a joint research project on the internationalization process of firms and collected in 2004 and 2005. First, 15 in-depth structured interviews with company representatives were conducted to develop an understanding of the partly new constructs and to select a realistic set of items. Second, we used a structured questionnaire to generate the quantitative dataset.

The initial study population included all German manufacturing companies with a turnover from 50m. to 3bn. EUR. This business segment, as an in-between group between small and big business, seems to be particularly promising for this study as it contains established companies whose internal management and governance structures resemble those of SMEs and are likely to be rather homogeneous. For bigger companies with diversified business units it is virtually impossible to define one common corporate EO given their organizational complexity. Start-ups are deliberately not included in the initial study population due to our focus on established companies. In addition, we focus only on manufacturing companies as the international expansion is particularly important for this sector.

A total of 3,997 manufacturing companies with the respective target size have been identified in the German Hoppenstedt database (NACE code "D"). Like various researchers, we relied on single key informants in our data collection. The questionnaire was sent by postal mail to the CEO who is considered to be the best person to assess corporate strategies and practices (Zahra and Covin, 1995) and whose name was available in the Hoppenstedt database. It was left open to the addressee to let somebody else answer the questionnaire. Overall, 346 manufacturing companies responded to the survey, resulting in a response rate of 8.7%.

The quality of the sample data was analyzed following standard literature suggestions (Kline, 1998; Hair et al., 2006; Mullen et al., 2009). We tested the data representativeness by comparing the distribution of the turnover categories and industry sectors between study and sample population. Since the chi-square test of homogeneity does not show a significant difference between the two datasets, we concluded that our sample is representative for the overall study population (chi-square of 11.01 shows that there is no significant difference between sample and population). In addition, the non-response bias was assessed on all indicators by splitting all respondents into three groups based on their response and by comparing early and late respondents (first and third group). As the Mann-Whitney test does not

identify any significant differences between both groups, we concluded that our sample was not biased (Armstrong and Overton, 1977). We can also assume based on the Kolmogorov-Smirnov test that the data do not fully show a normal distribution (Hair et al., 2006). We thus tried to use methods in our data analysis that do not require a dataset following a normal distribution. Finally, the dataset is checked for missing data. 5.7% of all data points are missing; however, no systematic missing pattern can be identified. Missing data can thus be estimated by means of multiple imputation (Kline, 1998).

Measure development

Entrepreneurship (independent variable)

Entrepreneurship is conceptualized as described above. The new conceptualization requires the development of a specific measurement approach. This approach partly builds on prior conceptualizations of sub-constructs whenever possible. All indicators are documented in the Tables 1-4. There is a detailed account of references from which we derived existing items. As we used data from a joint research project, we take into account that this approach may lead to limitations in the items selection and may compromise the content validity of constructs. All indicators are subjective and follow a 5-point Likert scale.

Innovativeness is an important facet of existing entrepreneurship measures. The available items mainly focus product innovations. Given the wider perspective, we added new items on process and organizational innovations. In addition to the scale of innovativeness, we focus on internal factors for innovativeness as well: the resources allocated for innovation and the willingness of the top management to experiment (cf. Table 1).

Table 1. Items of the innovation dimension (translated from German by the authors)

Code	Items
INNOV01	Our firm has sufficient resources to develop new products and processes.
INNOV02	Our firm has sufficient technological capabilities to develop new products and processes.
INNOV03	Our firm has sufficient management capabilities to develop new products and processes.
INNOV04	Our firm continuously tests new international market entry forms (e.g. joint venture).
INNOV05	Our firm continuously tests new ideas in the internationalization of new functions (e.g. R&D).
INNOV06	Our firm continuously tests new ideas in the internationalization of new countries.
INNOV07	Our top management encourages employees to develop new ideas on strategies and organizational processes of the internationalization.
INNOV08	Our top management openly discusses new ideas on the internationalization with employees.

As for the arbitrage function, we chose a set of items similar to what other papers call ‘proactiveness’ (Covin and Slevin, 1989; Jantunen et al., 2005) which is close to Kirzner’s (19723) alertness as core of arbitrage. However, our set is more comprehensive compared to the typical items in literature (cf. Table 2). To discover or even shape business opportunities, firms have to be alert to customer trends and competitive forces in international markets. Market knowledge is not only important for identifying business opportunities but also for engaging in efficient bargaining processes that require an understanding of local supply and demand conditions. Therefore, most items measure the willingness to observe market trends and competitive behavior. In addition, another item measures top management’s commitment to continue internationalization since the arbitrage function is also about the willingness to seize upcoming market opportunities.

Table 2. Items of the arbitrage dimension (translated from German by the authors)

Code	Items
ARBIT01	Our firm strives to expand geographically.
ARBIT02	There are employees that observe international market trends.
ARBIT03	Our firm frequently conducts a customer survey to identify customer needs.
ARBIT04	Our firm regularly measures the customer satisfaction level.
ARBIT05	Our firm intensely uses CRM.
ARBIT06	Our firm is always up to date when competitors use new internationalization forms.
ARBIT07	Our firm is always up to date when competitors internationalize new functions.
ARBIT08	Our firm is always up to date when competitors expand to new countries.

As the coordination function was not yet part of conceptualizations, we derive items from the theoretical understanding of the coordination function. As most firms have locations around the world, they have to align internal activities and to share knowledge for a smoothly running value-added process and knowledge exploitation (Gupta and Govindarajan, 2000). Several items concern the closeness of communication between different hierarchical levels and teams, the diversity of new teams, and the extent to which key findings from former projects are documented. In addition, firms need to have a professional human resource management to exploit their internal potential. Further items are related to personnel development, training and incentive schemes of employees (cf. Table 3).

Table 3. Items of coordination dimension (translated from German by the authors)

Code	Items
COOR01	There is a regular exchange of ideas between employees of different countries (e.g. US, China)
COOR02	There is a regular exchange of ideas between employees in the headquarters and abroad.
COOR03	There is a regular exchange of ideas between the top management and team members responsible for internationalization projects.
COOR04	Team members for new internationalization projects come from different countries.
COOR05	Team members for new internationalization projects come from different functions.
COOR06	Managers with experience in managing internationalization projects are part of new project teams.
COOR07	Managers with experience in the respective target country are part of new project teams.
COOR08	Managers with experience in respective internationalization forms are part of new project teams.
COOR09	Managers with experience in the internationalization of their function are part of new project teams.
COOR10	Project teams keep records of challenges and key learnings after each internationalization project.
COOR11	Top management has a high proportion of performance-related pay.
COOR12	Executive staff (e.g. head of department) has a high proportion of performance-related pay.
COOR13	White-collar employees receive a lot of advanced training each year.
COOR14	Blue-collar worker receive a lot of advance training each year.

Most papers assume that risk taking is one important dimension of entrepreneurial orientation (Miller and Friesen, 1982; Covin and Slevin, 1989; Wiklund and Shepherd, 2005). Based on the theoretical foundations, the risk management function has a broader perspective here: it is not only about taking risks, but also about identifying, evaluating, monitoring and hedging risks (Williams, 1996). What is more, risks can only be assessed against the backdrop of return. We therefore ask whether the top management constantly monitors performance of international operations, takes risks into account in performance measurement and analyzes the reasons for not achieving planned goals (cf. Table 4).

Table 4. Items of risk management dimension (translated from German by the authors)

Code	Items
RISK01	Our firm has a solid understanding about the scale and the management options of our biggest risks.
RISK02	Our firm consolidates all risks across our corporate group.
RISK03	Our firm regularly conducts sensitivity analyses of our risks.
RISK04	Our firm systematically takes risks.
RISK05	Our firm has a contingency plan how to deal with risks.
RISK06	Our firm takes the risks assumed into account when monitoring performance.
RISK07	Our firm measures the performance of the internationalization based on KPIs.
RISK08	Our firm analyses in detail the reasons for not achieving performance objectives.

The second step of the development of measures is to assess the dimensionality of the measurement model. In accordance with literature (Lumpkin and Dess, 1996), EO is considered a multidimensional construct comprising four dimensions. Given the new development of the measurement model with a number of new items, we have to assess whether each dimension is uni- or multidimensional. Based on a KMO test, we use a principal component analysis with Varimax rotation to assess the dimensionality of each dimension. All items are evaluated following standard reliability criteria (Nunally, 1978; Hair et al., 2006). First, the factor loading of each item should be above 0.4. Second, if one item loads on more than one factor, the difference between both factor loadings should be more than 0.1. In addition, all factors are evaluated for internal consistency using Cronbach's alpha as a reliability criterion with 0.6 as a cut-off point.

In total, the principal component analyses identify 13 sub-factors for all four dimensions. The three innovation factors can be interpreted as the ability to innovate (INNOFACT1, $\alpha=0.816$), the willingness to experiment (INNOFACT2, $\alpha=0.779$) and the firm's innovation culture (INNOFACT3, $\alpha=0.760$). The three arbitrage factors are taken as the competitive orientation (ARBIFACT1, $\alpha=0.668$), the customer orientation (ARBIFACT2, $\alpha=0.839$) and the self-motivation to internationalize (ARBIFACT3, one-item factor). The coordination items comprise four factors: alignment orientation (COORFACT1, $\alpha=0.830$), experience exploitation (COORFACT2, $\alpha=0.880$), incentive orientation (COORFACT3, $\alpha=0.885$) and training orientation (COORFACT4, $\alpha=0.907$). Finally, the three risk factors can be understood as risk comprehension (RISKFACT1, $\alpha=0.714$), risk taking (RISKFACT2, $\alpha=0.653$) and performance monitoring (RISKFACT3, $\alpha=0.782$). All items and factors fulfill the above-mentioned quality criteria. The KMO values equal as the factor loadings of all items, the

eigenvalues, and the variance explained are reported in the tables (cf. Table 5-8).

Table 5. Principal component analysis of innovation dimension

Item	Factor 1 Ability to innovate (INNOFCT1)	Factor 2 Willingness to experiment (INNOFCT2)	Factor 3 Innovation culture (INNOFCT 3)
INNOV01			
INNOV02			0.226
INNOV03	0.859		
INNOV04	0.844	0.883	
INNOV05	0.819	0.865	
INNOV06		0.644	0.474
INNOV07			0.870
INNOV08		0.245	0.837
Eigen values			
Variance	3.202	1.770	1.025
explained	40.030	22.121	12.811
Cronbach's	0.816	0.779	0.760
α			
KMO test	0.784		

Table 6. Principal component analysis of arbitrage dimension

Item	Factor 1 Competitive orientation (ARBIFCT1)	Factor 2 Customer orientation (ARBIFCT2)	Factor 3 Internationalization motivation (ARBIFCT3)
ARBIT06			
ARBIT07			
ARBIT08	0.915		
ARBIT02	0.911		0.391
ARBIT04	0.842		
ARBIT05	0.557	0.849	
ARBIT03		0.794	-0.246
ARBIT01		0.660	0.928
Eigen values			
Variance	2.959	1.625	1.104
explained	36.985	20.311	13.796
Cronbach's	0.839	0.668	-
α			
KMO test		0.745	

Table 7. Principal component analysis of coordination function

Item	Factor 1 Alignment orientation (COORFCT1)	Factor 2 Experience exploitation (COORFCT2)	Factor 2 Incentive orientation (COORFCT3)	Factor 3 Training orientation (COORFCT4)
COOR03				
COOR02				
COOR01				
COOR05	0.798		0.216	
COOR04	0.794		0.257	
COOR10	0.696			
COOR06	0.686			
COOR08	0.657			
COOR09	0.652	0.859		
COOR07		0.848		
COOR11	0.250	0.832		
COOR12		0.815	0.933	
COOR14			0.904	0.949
COOR13				0.944
Eigen values				
Variance explained	4.533 32.376	2.246 16.046	1.702 12.157	1.466 10.472
Cronbach's α	0.830	0.880	0.885	0.907
KMO test		0.799		

Table 8. Principal component analysis of risk management dimension

Item	Factor 1 Risk comprehension (RISKFCT1)	Factor 2 Risk taking (RISKFCT2)	Factor 3 Performance orientation (RISKFCT3)
RISK02			
RISK01	0.850		
RISK03	0.811		
RISK04	0.573	0.476	
RISK06		0.866	
RISK05	0.358	0.684	
RISK08	0.401	0.531	0.902
RISK07			0.891
Eigen values			
Variance explained	3.069 38.358	1.461 18.267	1.010 12.623
Cronbach's α	0.714	0.653	0.782
KMO test	0.771		

The previous principal component analyses reveal that our conceptualization of entrepreneurial orientation represents a third-order construct. So it is necessary to analyze the corresponding relationships between all construct levels. Standard guidelines recommended by methodology literature are used to determine whether the respective measurement items are formative or reflective (Fornell and Bookstein, 1982; Bollen and Lennox, 1991; Jarvis et al., 2003; MacKenzie et al., 2005). The first-order constructs (e.g. ability to innovate) are regarded as reflective models. First, the items are manifestations of the construct; the direction of causality is from the construct to the items. Second, the constructs resulting as factors from principal component analyses have necessarily items that covary with each other and that are, thus, interchangeable. Dropping one of the indicators would not alter the meaning of the factor. By contrast, the relationships between first- and second-order constructs as well as between second- and third-order construct are considered to be formative. It can be assumed that all first- and second-order constructs define characteristics of the higher order construct. This should be illustrated for the third-order construct. The four dimensions of entrepreneurial orientation seem to jointly determine the conceptual meaning of entrepreneurial orientation. Losing one of the dimensions would inevitably alter the meaning of the underlying construct. Figure 2 depicts the empirically based conceptualization used in this study.

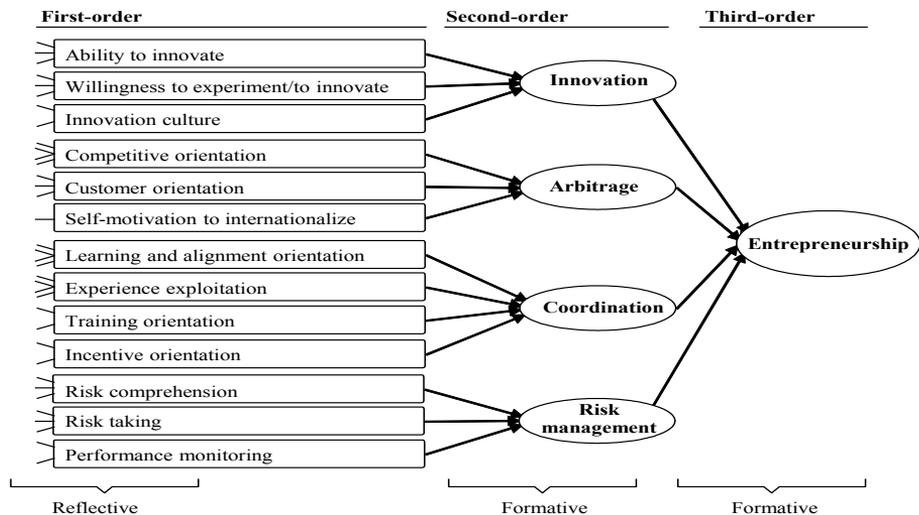


Figure 2. Measurement model of entrepreneurship

Performance (dependent variable)

Measuring the performance of international operations is particularly complex (Venkatraman and Ramanujam, 1986; Hult et al., 2008). We assess the performance of firms in a *subjective* and *relative* manner. Respondents were asked to compare the success of their international activities with their direct competitors during the previous five years and indicate their level of satisfaction on five indicators of performance. The reasons for using primary subjective and relative data in performance measurement are twofold. First, this method of measuring performance is most suitable to the specific nature of internationalization processes. It explicitly tries to capture the overall effectiveness of the internationalization process and to avoid too narrow a focus on export performance that can be observed in many previous papers (Cavusgil and Zhu, 1994; Knight, 2001; Rasheed, 2005). Second, there are practical research reasons for this measurement method. Using quantitative, presumably financial data would have been preferable to validate the qualitative data (Hult et al., 2008). However, this was not possible for our sample. Financial data are likely to be unavailable or unreliable due to accounting-based distortions. Most firms in our sample are privately held and secondary data cannot be accessed. In addition, most managers from these firms would be reluctant to provide secondary data due to competitive and proprietary reasons. All indicators are documented in Table 9.

Table 9. Items of performance (translated from German by the authors)

Code	Items
PERF01	Compared to our direct competitors over the last five years, our firm has chosen more successful market entry forms abroad.
PERF02	... has chosen more promising countries to entry abroad.
PERF03	... was more successful in internationalizing value chain functions.
PERF04	... was quicker to learn from previous internationalization experience.
PERF05	... has better adapted its internationalization process to new countries.

Growth of international firms (dependent variable)

The second dependent variable, growth, is considered in studies on 'born globals' (Bell *et al.*, 2001; Zahra *et al.*, 2003); however, their understanding of the variable focuses only on new ventures. Oviatt and McDougall (2005) refer to three aspects. First, the time span between the foundation of a firm and its first foreign market entry; second, the pace with which a firm increases its country scope (e.g. number of entries into foreign markets and into psychologically distant regions); third, the time in which the firm increases its international commitment (e.g. revenues as a percentage of overall turnover).

We build on this conceptualization, but we leave out the first aspect ‘time to initial entry’ that is not relevant to the established firms in our sample. The four indicators are documented in Table 10.

Table 10. Items of growth of international companies

Code	Items
GRO01	Number of new foreign market entries over the last 5 years
GRO02	Number of entries into new regions (selection of 9 regions: Western Europe, Eastern Europe, North America, Japan, China, India, Middle East, South-East-Asia/Australia, Latin America)
GRO03	Level of change for the percentage of foreign employees
GRO04	Level of change for the percentage of foreign revenue

Analysis

The data analysis follows a two-step approach. First, we assess and analyze the measurement models using standard quality criteria (Fornell and Larcker, 1981; Hulland, 1999; Diamantopoulos and Winklhofer, 2001; Jarvis et al., 2003; Petter et al., 2007). For reflective constructs, we use item reliability, internal consistency, and discriminant validity as quality criteria. The factor loadings should be significant and above 0.7. Items are to be eliminated if their factor loadings are less than 0.4. The internal consistency is measured by the composite reliability ($CR > 0.7$), the average variance explained ($AVE > 0.5$), and Cronbach’s Alpha ($\alpha > 0.6$ as absolute cut-off criterion, 0.7 as desired minimum level). Discriminant validity can be assumed if the average variance explained is higher than its squared correlations with other construct scores. Formative constructs require a different approach: We assess construct validity and reliability by examining the item loadings and the variance inflation factor (VIF) for multicollinearity. Non-significant items may be eliminated, but should be kept if necessary to preserve the content validity (Bollen and Lennox, 1991). Items with a variance inflation factor of more than 3.3 are to be eliminated (Diamantopoulos and Winklhofer, 2001; Diamantopoulos and Siguaw, 2006). The nomological validity can be tested by analyzing the path coefficient of the formative construct to the endogenous reflective constructs via structure equation modeling.

Specifying and assessing a multidimensional construct like entrepreneurship requires additional steps upfront. We conduct a principal component analysis for each dimension and use the factor scores as items for the dimensions (second-order constructs). Following the two-step approach to identify higher-order formative constructs (Agrawal and Karahanna, 2000; Edwards, 2001), we take the scores of all dimensions to use it in

a second measurement model as formative indicators of the entrepreneurial orientation construct.

Second, we explore the causal effects between all latent variables by using structural equation modeling. We opted for the partial least squares (PLS) method (Fornell and Larcker, 1981; Fornell and Bookstein, 1982; Hulland, 1999) rather than the better known covariance-based structural equation modeling (CBSEM) approach that is used by popular software programs like LISREL, EQS or AMOS. The PLS method appears more appropriate here for several reasons. Even if PLS can be used for theory confirmation as well, it is especially advantageous in the initial development and assessment phase of theory building (Fornell and Bookstein, 1982). In addition, the PLS method can better accommodate formative latent variables than the CBSEM approach (Diamantopoulos and Winklhofer, 2001) and is more robust since it does not require normally distributed data (Fornell and Larcker, 1981). We use SPSS for the principal component analysis and SmartPLS (Ringle *et al.*, 2005) for the structural equation modeling.

RESULTS

First, all measurement models for latent variables are to be validated. As for entrepreneurship, we use the factor scores resulting from the principal component analyses as measurement items for the four dimensions. All items have a significant factor loadings and have a VIF score of less than 3.3 (cf. Table 5-8, 10, 11).

Table 11. Quality criteria for performance (reflective)

Latent variable	Items	Factor loadings	Significance
			T-Value Level
Performance (AVE=0.658; R ² =0.390; α=0.869)	PERF01	0.806	31.251 ****
	PERF02	0.830	38.373 ****
	PERF03	0.753	26.073 ****
	PERF04	0.793	32.875 ****
	PERF05	0.868	56.526 ****

Significance level (one-tail): * p<0.1; ** p<0.05; *** p<0.01; **** p<0.001.

Sufficient construct validity and reliability can, thus, be assumed for all dimensions. To specify the measurement model of entrepreneurship, we take the scores of all dimensions to use it as formative indicators of entrepreneurship in another structure model. Again, all items have significant factor loadings and sufficiently small VIF scores (cf. Table 12).

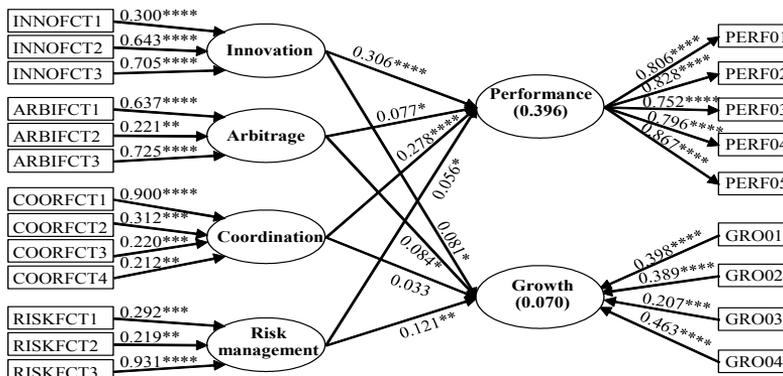
The first endogenous construct, the performance of internationalization, is a reflective construct. All items have very high and significant factor loadings, suggesting that item reliability for this measurement model is high (cf. Table 11). All quality criteria for internal consistency (CR=0.906; AVE=0.658; $\alpha=0.869$) and discriminant validity (AVE=0.658 vs. 0.341 for the highest squared correlation with another latent variable) are equally fulfilled. The second endogenous construct, growth, is a formative construct. Construct validity and reliability can be assumed since all items have significant factor loadings and small VIF scores (cf. Table 12).

Table 12. Quality criteria for growth (formative)

Latent variable	Items	Factor weights	Significance
			T-Value Level
Growth	GRO01	0.398	4.873 ****
	GRO02	0.388	3.823 ****
	GRO03	0.208	2.402 ***
	GRO04	0.463	5.821 ****

Significance level (one-tail): * p<0.1; ** p<0.05; *** p<0.01; **** p<0.001.

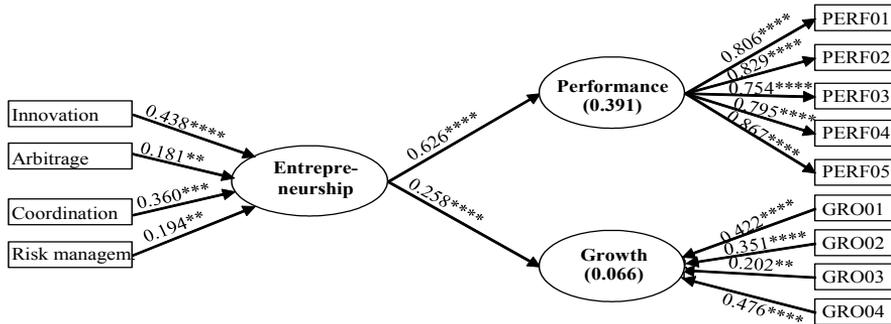
Second, we analyze the effects in two structure models. We start with analyzing how the dimensions of entrepreneurship influence the dependent variables. The structure model (cf. Figure 3 and 4) shows that all dimensions of entrepreneurship construct positively influence the firm’s performance. This holds particularly for the innovation and coordination dimension whose path coefficients and significance levels stand out. Similarly, all dimensions apart from coordination positively influence the growth, although only in a weak manner.



Significance level (one-tail): * p<0.1; ** p<0.05; *** p<0.01; **** p<0.001

Figure 3. Factor loadings

Entrepreneurship as an aggregate construct has a strong and positive influence on performance. First, it displays a highly positive path coefficient of 0.624, which is significant at the 0.001 level. Second, it explains 39% of the variance of the dependent variable, measured by R^2 . The empirical results suggest that entrepreneurship is a major performance driver. This does not apply to the second dependent variable, growth. Entrepreneurship positively influences growth ($r=0.258$), however it may only explain a tiny portion of the overall variance ($R^2=0.066$).



Significance level (one-tail): * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$

Figure 4. Entrepreneurial functions, performance and growth of international firms

DISCUSSION

The long tradition of entrepreneurship theory provides us with entrepreneurial functions as backbones of entrepreneurial behavior. However, by now little has been done to integrate these findings in a multi-functional system of entrepreneurship. Building on a few most recent publications of the conceptual kind (e.g. Freiling, 2008), we introduce a managerial framework that brings together the different aspects of the entrepreneurial functions.

The construct of EO captures methods, practices, and decision-making styles managers tend to use to act entrepreneurially (Lumpkin and Dess, 1996; Dess and Lumpkin, 2005). We use our theoretically-based understanding of entrepreneurship and, based on this, we develop a new conceptualization of entrepreneurship that reflects a broader perspective than existing definitions. When analyzing EO, existing entrepreneurship literature mainly focuses on explorative activities like innovativeness, proactiveness and risk-taking (Miller, 1983; Covin and Slevin, 1991; Zahra and Covin, 1995; Wiklund and Shepherd, 2003; Keh et al., 2007; De Clercq et al., 2010). We consider the exploitative dimensions of entrepreneurship previously raised by entrepreneurship scholars (e.g. Kirzner, 1973) explicitly in our conceptualization.

Besides this and most notably, we empirically show that the broadly conceptualized entrepreneurship construct is a very important driver of the firms' performance (*research proposition P1*) and that all dimensions—irrespective of their explorative or exploitative nature—contribute to this (*P2*). Entrepreneurship explains 39% of the overall international performance ($r=.624$). As for the second dependent variable, the entrepreneurship construct shows only a relatively small effect on growth ($r=.258$). Both the surprisingly high effect of entrepreneurship on performance and the relatively small effect on growth are new to entrepreneurship research. The reason for this may be the broader conceptualization of entrepreneurship. The performance impact of entrepreneurship may be higher than in other studies due to the additional exploitative dimensions. There are two reasons. First, the exploitative dimensions, particularly the coordination dimension with its focus on learning, alignment and experience exploitation, have a positive performance effect themselves. This is consistent with other studies that postulate that learning orientation maximizes the effect of EO on performance (Wang, 2008). When firms become bigger and more complex, the exploitative activities seem to become more important. However, this does not mean that the explorative activities like experimenting and innovating lose their importance. The innovation dimension has an equally high performance effect in our empirical study. This confirms what several studies showed for established companies (Miller, 1994). Second, the exploitative dimensions may have a positive impact on performance as well by avoiding a one-sided focus on exploration. Too much exploration may be risky and unilaterally promote growth at the cost of return. Tang et al. (2008) and Yamada and Eshima (2009) suggest that too much EO may have a negative impact on performance. Based on empirical results, they believe that the relationship between EO and performance takes an inverted u-shape form. Similarly, Zahra and Garvis (2000) argue that the EO predominantly promotes growth and only to a less extent performance. Our broader conceptualization balances exploration and exploitation, thereby bringing along the positive effects of exploitative activities (e.g. learning and alignment) and avoiding focusing solely on exploration (*P3*).

As for growth, it is surprising to see that the effect of entrepreneurship is that low. Again, the reason for this may be the new, broader conceptualization as the dimensions differ in their effect on growth: the explorative dimensions tend to foster growth, which is consistent with many studies (Zahra and Garvis, 2000; Mueller, 2007). The exploitative dimensions, by contrast, are rather indifferent in their effect (*P4*, cf. Table 13 for the set of propositions).

Table 13. Overview of research propositions

Number	Research Propositions
P1	Entrepreneurship has a positive impact on firm's performance.
P2	Both explorative and exploitative dimensions have a positive impact on performance.
P3	A balanced proportion of exploration and exploitation strengthens the positive impact of entrepreneurship on performance and growth.
P4	Entrepreneurship has a positive impact on firm's growth but to a less extent compared to performance.

To sum up, what can entrepreneurship research learn from this study? This study shows that a broadly conceptualized entrepreneurship construct may explain nearly half of the performance of established firms. Entrepreneurial processes cannot only be associated with new firms, but are important for established firms as well. Dess and Lumpkin (2005) stress that EO may stimulate effective corporate entrepreneurship. However, there may be a different understanding in existing research on what exactly the terms entrepreneurial processes and EO consist of. We argue that entrepreneurship research tends to focus too much on explorative activities and to neglect exploitative activities, which are equally important for the overall success and long-term value-creation. This view is supported by the above-average performance impact of the broadly defined entrepreneurial orientation construct in our empirical study.

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This study has certain limitations. First of all, because this field of research is in its early stages, aspects of the research design remain explorative. Our findings should be tested in further explorative and exploitative empirical studies.

As the entrepreneurship construct has to be re-conceptualized, this study uses many – mostly new – items. As we used data from a joint research project, there are limitations in the items selection which may affect the content validity of constructs. While higher-order constructs provide the ability to increase granularity and detailed understanding on different aspects of the construct, the number of items needed increases the complexity of the analysis (Petter et al., 2007). Further research may build on our results and strive to reduce model complexity by using less items and avoiding third-order constructs ('model parsimony'). In this context, future research could improve the measurement approach of the core constructs. The given dataset

of this study was only to a limited extent adaptable to the specific needs of measuring entrepreneurial functions.

The use of cross-sectional data could be seen as an additional limitation of this study. Similar to recent existing entrepreneurship studies (Jantunen *et al.*, 2005), we analyzed the relationships between all constructs over a period of five years. However, a longitudinal study would be even more desirable given the fact that there may be a time lag in the effect of entrepreneurship on performance. In addition, it is still unclear whether entrepreneurship or individual dimensions change over a firm's lifecycle and, if so, what implications this might have for the performance. The use of subjective, potentially biased quantitative data is another limitation of this study, which could not be avoided due to the nature of the companies in the sample. Other studies analyzing companies with publicly available information should strive to use quantitative data to further validate the qualitative self-assessment of companies. Moreover, the study is country dependent and it is open whether the results hold for other countries as well.

Some studies suggest that the effect of EO is dependent on internal or external moderating factors (Wiklund and Shepherd, 2005; Rauch *et al.*, 2009; De Clercq *et al.*, 2010; Frank *et al.*, 2010). Future research may indicate whether the effect of the newly formed entrepreneurship construct varies in a similar way. Our first analyses indicate that the new construct is much more resilient to moderating factors than existing constructs seem to be.

The interaction between entrepreneurship and international business is still a young research field. This article helps to shed light on the explanatory power entrepreneurship theory may have for international business. We hope that others follow up on our exploratory article and help initiating further research steps that ultimately lead to the establishment of a new school of thought within international business research (Forsgren, 2008) that is based on entrepreneurship theory. We thereby hope to stimulate further research on the nexus of entrepreneurship and international business research.

Acknowledgements

The authors gratefully acknowledge the valuable comments of two anonymous reviewers and Anna Ujwary-Gil on earlier drafts of this paper.

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Abstrakt (in Polish)

Orientacja przedsiębiorcza stała się ostatnio podstawowym zagadnieniem w literaturze zajmującej się przedsiębiorczością. Jednakże istniejące definicje orientacji przedsiębiorczej głównie skupiając się na zachowaniach eksplorujących, takich jak innowacyjność, pro-aktywność oraz podejmowanie ryzyka. W oparciu o bogatą tradycję badań nad funkcjami przedsiębiorczości, twierdzimy, że czynności eksploatacyjne stanowią takie same wysiłki przedsiębiorcze jak czynności eksplorujące. Opierając się na takim rozumieniu, rozwijamy szerszą konceptualizację konstrukcji orientacji przedsiębiorczej. W empirycznym badaniu obejmującym 346 firm badamy jej wpływ na wyniki osiągnięte przez internacjonalizację. Orientacja przedsiębiorcza w swej szerokiej konceptualizacji pozytywnie wpływa na wyniki międzynarodowe, a efekt ten jest zdecydowanie silniejszy niż efekty zaobserwowane w dotychczasowych badaniach. Dzieje się tak, ponieważ obydwa wymiary: eksplorujący i eksploatujący – mają znaczenie i w równym stopniu napędzają międzynarodowe wyniki. Orientacja przedsiębiorcza pozytywnie wpływa na wzrost międzynarodowych czynności. Jednakże jej efekt jest dużo mniejszy. Wymiar eksplorujący wydaje się powodować międzynarodowy wzrost, natomiast nie zaobserwowano żadnych efektów wymiaru eksploatującego.

Słowa kluczowe: orientacja przedsiębiorcza, funkcje przedsiębiorcze, międzynarodowe wyniki, międzynarodowy wzrost, eksploracja, eksploatacja.

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