Entrepreneurial Orientation: A Psychological Model of Success Among Southern African Small Business Owners

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Abstract

This study examines the relationship of the psychological construct Entrepreneurial Orientation (EO) with business success in a sample of N=248 Southern African business owners. We reintroduce the individual in EO research and show the importance of the person of the entrepreneur for business performance: Hierarchical regression analyses revealed significant relationships between EO components (personal initiative, achievement-, and risk-taking orientation) as well as overall EO and business performance. In addition, confirmatory factor analysis supported a single factor construct of EO that consists of learning-, achievement-, and autonomy orientation, competitive aggressiveness, innovative- and risk-taking orientation, and of personal initiative.

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In this study, we develop an individual based psychological concept of Entrepreneurial Orientation (EO) and investigate the relationship between business owners' EO and business performance in Southern Africa. EO has primarily been discussed from a firm level perspective (e.g., Covin & Slevin, 1991; Lumpkin & Dess, 1996). It characterized businesses in their early years and was found to be important for firm success. In contrast, we apply a psychological approach with EO as an inter-individual difference variable. Thus, our focus is the business owner and the general relationship between individual EO and performance of Southern African small business owners.

A Psychological Concept of Entrepreneurial Orientation (EO)

The entrepreneur as an economic actor and a driving force for economic development was first emphasized by Austrian economists (Schumpeter, 1934; cf. also Kirzner, 1997). Josef Schumpeter (1934) employed an individual level approach to entrepreneurship and viewed entrepreneurs as "revolutionaries of the economy" (p.130) whose economic function is the "realization of new combinations in the course of which they are the active element" (p.111).

The currently prevalent firm level EO was originally developed with the psychological claim to distinguish between managers and business owners; yet it was abandoned in a still quasi-psychological stage before individual EO-success relationships were even investigated.

Economists have been skeptical about psychological concepts and measures. However, economists regularly use individual measurements. The widely used EO questionnaire measure by Covin and Slevin (1986) focuses on risk taking, innovation, and proactiveness and is an adaptation of Miller's and Friesen's (1982) and Khandwalla's (1976/77) work. The measure is based on self-reports by individuals, mostly owners and managing directors (Zahra, Jennings,

& Kuratko, 1999). While not emphasized explicitly, the measure is in fact a psychological assessment of individual EO. An objective measure of firm level entrepreneurial behavior would have to include a) the actual observation of behavior, b) observation on multiple levels of the organizational hierarchy, c) aggregation of the individual data on the organization level, and d) a test whether various company representatives agree on the firm level (cf. Klein & Kozlowski, 2000). These criteria had not been fulfilled and, therefore, EO was really used as an individual level concept of the firms' owners and top-managers. How important the individual is for firm level EO becomes apparent when, for example, Wiklund (1999) argues for excluding firms from his longitudinal study where the managing director was replaced ("it seems perilous to attribute outcomes of a firm to an individual no longer working there", p.41).

The psychological origin of the EO concept is obvious. Yet, to our knowledge it has not been used as an explicit psychological concept within the last 15 years — except for the Entrepreneurial Attitude Orientation Scale by Robinson, Stimpson, Huefner, and Hunt (1991). On the firm level, however, EO research accumulated a considerable body of evidence on the relationship between EO and business performance (e.g., Covin & Slevin, 1989; Miller, 1983; Venkatraman, 1989; Wiklund, 1998; Wiklund, 1999; Zahra, 1991).

Our approach differs from the current understanding of EO in two respects: First, we take up the psychological roots of EO and develop them into a fully psychological concept. Second, unlike most previous psychological approaches, we are interested in the relationship of individual EO and business performance as suggested by Lumpkin and Dess (1996) rather than distinguishing business owners from managers or the general population (cf. also Carland, Hoy, Boulton, and Carland, 1984).

The psychological perspective on EO stresses the importance of the owner/manager/ founder (all in one person; for simplification referred to as ‘owner’ in the following) of a firm. Founders determine a firm’s strategies, culture (Schein, 1983), vision, and goals. At an early stage in the business development, founders select the first employees and prearrange to a large extent whether or not the firm will perform successfully (Frese, van Gelderen, &

Ombach, 2000). The critical function of the owner probably depends on the firm size. As the firm grows, other organizational decision makers and the organizational structure become more and more influential. Hence, our research focuses on small businesses with up to 50 employees where the owner is of critical importance.

Our EO concept entails psychological orientations of the owner that relate to the owners' daily tasks and fit with the environmental requirements. Thus, we examine person variables that are more proximal to the entrepreneurial task and behavior (cf. Kanfer, 1992) than traits, for instance. While traits are dispositional and stable over time and situations (McCrae, Costa, Ostendorf, Angleitner, & co-authors, 2000), orientations are culturally-conditioned and influenced by the environment (Thomas & Mueller, 2000). Orientations include affective (e.g., enjoying risky situations), cognitive (e.g., accurate risk analysis), and behavioral (e.g., acting in a risky way) components (Eagly & Chaiken, 1993) that become apparent in, for example, an individual's orientation towards risk-taking. Attitudes, in contrast, are alterable evaluative preferences (e.g., Ajzen & Fishbein, 1977; Petty, Wegener, & Fabrigar, 1997) that are based on affect and cognitive beliefs (Ajzen, 2001, Petty et al., 1997). An orientation's main distinction from attitudes is, thus, its strong emphasis on behavior and that an evaluative preference is not necessarily required.

Individual approaches to entrepreneurship have been widely criticized as unspecific and of little explanatory value for entrepreneurial behavior (e.g., Gartner, 1989; Low & MacMillan, 1988). Since our research interest is the prediction of business performance, medium domain-specificity is required to cover the entrepreneurial task across situations and work areas. Behavior proximal (Kanfer, 1992) entrepreneurial orientations of medium domain-specificity (e.g., learning orientation) should be more predictive of entrepreneurial performance than previously employed behavior distal traits of low domain-specificity (e.g., conscientiousness) as well as affect/cognition based attitudes that do not account for behavioral aspects of the entrepreneurial process (cf. Korunka, Frank, Lueger, & Mugler, 2003; Rauch & Frese, 2000).

As a starting point for a psychological approach to EO, we drew on Schumpeter's (1934)

understanding of the entrepreneur and on Lumpkin's and Dess' (1996) concept of EO which consists of autonomy orientation, competitive aggressiveness, innovative orientation, risk-taking orientation, and proactiveness (cf. also Covin & Slevin, 1991; Miller, 1983). In order to account for the whole spectrum of the entrepreneurial task as described by Schumpeter (1934), we added learning- and achievement orientation. Figure 1 illustrates our model of the entrepreneurial orientations and their relationships with success. In the following we shall discuss each component of EO and argue why they should be related to business performance.

Insert Figure 1 about here

Learning Orientation

We added learning orientation because the entrepreneurial realization of new combinations (e.g. introducing a work process that is new to the industry) is inevitably linked with an extension of one's knowledge base in order to overcome the error sources of an unexplored field (Kirzner, 1997; Schumpeter, 1934). Learning from positive as well as negative experiences is essential for successful entrepreneurial behavior (Minniti & Bygrave, 2001). Learning implies the development of more adequate mental models and is crucial to making successful decisions. Learning orientation is concerned with one's stance toward learning from experience. The positive influence of a learning culture in organizations has been emphasized repeatedly (e.g., Argyris, 1992). Recent research found that companies which foster a culture of learning from mistakes perform better than companies that do not (Van Dyck, Frese, & Sonnentag, in press). Individual learning goal orientation has been shown to have a positive relationship with the sales performance of sales representatives (VandeWalle, Brown, Cron, & Slocum, 1999). We expect that the owner's learning orientation is also related to business success in small firms (cf. Minniti & Bygrave, 2001). There are many tasks for which business owners do not receive explicit training (e.g., developing a business plan, book-keeping, marketing) before going into business — particularly so in Africa. Therefore, they depend on learning from experiences and must develop their knowledge base independently in order to

succeed.

Hypothesis 1: The owners' learning orientation is positively related to business performance.

Achievement Orientation

We added achievement orientation because an entrepreneurial business owner's main objective is to achieve the realization of "new combinations" (Schumpeter, 1934, p.116). Individuals with a high need for achievement perform better with non-routine tasks and take responsibility for their performance. They seek feedback, compare themselves with others, set themselves challenging goals, and constantly try to improve their performance (McClelland, 1961). A business owner's daily tasks include taking on challenges (e.g., acquiring a new customer) as well as setting high goals for oneself (e.g., starting to export) as well as for others (e.g., sales rates for employees). Challenging, specific goals lead to higher performance (Locke & Latham, 1990). Owners with a strong achievement orientation are growth oriented, enjoy challenging tasks and goals, and are more likely to succeed (McClelland, 1987a). Accordingly, achievement orientation of the owner was found related to customer satisfaction (Haber & Lerner, 1999) and to firm success (Koop, de Reu, & Frese, 2000; Rauch & Frese, 2000; Spencer & Spencer, 1993).

Hypothesis 2: The owners' achievement orientation is positively related to business performance.

Autonomy Orientation

Entrepreneurial business owners are driven by the vision to establish their own realm (Schumpeter, 1934). Their autonomy orientation leads to the desire to express one's individuality in the workplace, to disliking superiors' orders, and the refusal of being just a cog in an organizational machine. Autonomy orientation implies that owners value their own decision-making and dislike to receive orders. Such a position helps to succeed because decisive, self-contained decision making is an important facet of small business owners' tasks. Moreover, highly autonomy oriented business owners are also highly motivated into realizing

their own ideas and visions. Although emphasized by Lumpkin and Dess (1996), autonomy orientation has seldom been studied empirically — except for Utsch et al. (1999) who found higher autonomy orientation in business owners than in managers.

Hypothesis 3: The owners' autonomy orientation is positively related to business performance.

Competitive Aggressiveness

Entrepreneurial business owners want to assert themselves, enjoy competition, and strive for victory (Schumpeter, 1934; Kirzner, 1997). EO literature agrees that a competitive aggressive orientation is one of the basic characteristics of successful entrepreneurial firm activity (e.g., Covin & Slevin, 1991; Lumpkin & Dess, 1996). To our knowledge, competitive aggressiveness has not yet been studied from an individual level perspective.

Hypothesis 4: The owners' competitive aggressiveness is positively related to business performance.

Innovative Orientation

Entrepreneurial business owners enjoy shaping their environment and kick off processes of 'creative destruction' which unbalance the market structures and allow new players to enter (Schumpeter, 1934). In our context, an innovative orientation implies that one has a positive mind-set toward new ideas with regard to products, services, administration, or technological processes. New ideas are not necessarily absolute novelties, but should be new to the relevant group, market, and environment (West & Farr, 1990). While, for example, empowered work teams are rather common in Western firms, they are quite unusual in African societies where patriarchic structures, power distance (Kiggundu, 1988) and traditionalism (Gebert, 1992; Inkeles & Smith, 1974) are generally higher. Such teams would, therefore, be innovative in the African context.

Hypothesis 5: The owners' innovative orientation is positively related to business performance.

Risk-Taking Orientation

Being entrepreneurial and venturing into new fields unavoidably involves errors and a certain degree of risk (Schumpeter, 1934) and speculation (Kirzner, 1997). Amongst others, Lumpkin and Dess (1996) assume a relationship of risk-taking with success. Up to this point, there is little and inconsistent empirical evidence for that relationship (Rauch & Frese, 2000). Successful owners probably take calculated risks (Begley & Boyd, 1987; Timmons, Smollen, & Dingee, 1985). While taking calculated risks reduces the probability of failure, a generally positive stance towards risk-taking is mandatory in an environment where risks are inevitable. A positive orientation towards risk-taking should help the owner to take on unavoidable (and often sought for) challenges and risks.

Hypothesis 6: The owners' risk-taking orientation is positively related to business performance.

Personal Initiative

Personal initiative is a proactive, self-starting, and persistent orientation that attempts to shape environmental conditions (Frese, Kring, Soose, & Zempel, 1996). Whereas the proactive component is a well established part of the standard firm level EO measures (Covin & Slevin, 1986; Covin & Slevin, 1989; Miller, 1983; Miller & Friesen, 1983; Venkatraman, 1989) persistence in particular, has not been emphasized by entrepreneurship and proactiveness literature (except for Spencer & Spencer, 1993). However, entrepreneurial owners must also persevere in spite of obstacles and be independent of external encouragement (Schumpeter, 1934). Therefore, personal initiative is a useful extension of proactiveness in the entrepreneurial context.

Personal initiative of the person in charge has been shown to be related to entrepreneurial success in the U. S. (proactive personality, Crant, 1995), in Austria (Korunka et al., 2003), and in Uganda (Koop et al., 2000). Hence, we assume that personal initiative is correlated to business performance in Southern Africa as well.

Hypothesis 7: The owners' personal initiative is positively related to business performance.

Overall Entrepreneurial Orientation

The above Hypotheses one to seven address the relationships between each of the EO components and business performance. In the following, we will address the notion of a single factor EO construct: The components of EO are intuitively interrelated. Highly achievement oriented individuals are more interested in learning from errors (McClelland, 1987b), in working autonomously, in being competitive, in approaching challenges innovatively and with personal initiative, and in taking calculated risks. Learning- and achievement orientation imply seeking feedback and learning from experience as well as showing personal initiative in attempting to learn and achieve. Autonomy-, innovative-, achievement orientation, and personal initiative are related to an action oriented realization of opportunities which means to take a certain amount of risks. Accordingly, a large proportion of entrepreneurship studies assume EO to be a unitary concept (e.g., Covin & Slevin, 1986; Covin & Slevin, 1989; Dess, Lumpkin, & Covin, 1997; Wiklund, 1999). However, the notion of a single factor EO concept has, except for Venkatraman (1989), not been examined. Therefore, we want to investigate if EO is indeed an underlying latent construct that embodies the components learning-, achievement-, and autonomy orientation, competitive aggressiveness, innovative- and risk-taking orientation, as well as personal initiative

Research Question 1: Do the components of EO form a single factor construct?

After establishing a latent EO factor, the next step would necessarily be to investigate the relationship between EO and business performance. In Uganda, Koop et al. (2000) found with a similar psychological EO construct (learning-, innovative-, achievement orientation and personal initiative) that business owners high on EO were more frequently successful (28%) than business owners low on EO (12%).

Hypothesis 8: The owners' EO is positively related to business performance.

Method

Sample

The sample consisted of N=248 indigenous Zimbabwean (Z; n=122) and South African (S; n=126) owner/manager/founders of firms with at least one employee. On average, the businesses had seven employees (Z: 8, S: 5). Eighty-three percent of the businesses were micro operations with less than 10 employees. Small businesses in developing countries can be distinguished into formal (registered) and informal (unregistered) sector operations. Both sectors were represented in our sample (informal: 35% in Z and 38% in S). All participants were in business for more than one year. Thereby, we excluded owners who just bridged a period of unemployment and obtained valid information on actual experiences and performance. The average firm was established in 1993. In Zimbabwe, the businesses were founded between 1971 and 1998; in South Africa between 1951 and 1998. The average starting capital was 11,051 US$ (Z: 17,066 US$, S: 5,226 US$). Fifty percent of the sample had a starting capital of less than 1,000 US$. The sample covered the industries manufacturing (52%), construction (2%), trade (28%), gastronomy (2%), service (32%), and other (5%; industry percentages do not add up to 100% because multiple answers were possible). Eighty-four percent of the participants were male (Z: 83%, S: 86%) and the average owner was 41 years old (Z: 38, S: 44).

Both the Zimbabwean and the South African sub-sample were drawn between September 1998 and April 1999. In Zimbabwe, we included the two major ethnic groups (Shona and Ndebele). The overall Zimbabwean sample size was n=122 (n=98 Shona — the ethnic majority in Zimbabwe, n=21 Ndebele, and n=3 of other African origin). We carried out interviews in the mainly urban regions of Harare, Mashonaland (Shona homeland; 82% of the population) and Bulawayo, Matabeleland (Ndebele homeland; 18% of the population). Participants received the equivalent of five US Dollars as a sign of gratitude and compensation for their time. The refusal rate of 30% was low for interviews of such length (approximately 1½-2 hours). In South Africa, all interviews were carried out in and around Cape Town, Cape Province. We included the major local ethnic groups (Xhosa, Zulu, and mixed ethnic background). The South African sample size was n=126 (n=36 Xhosa, n=2 Zulu, n=71 mixed ethnic background, and n=17 of other African origin). Participants were given a pen with our University logo as a

sign of gratitude. The rejection rate in South Africa was also low (44%).

Small scale businesses in Southern Africa are usually clustered in industrial areas. In the city, the industrial areas (called home industries or industrial hives) are mainly located near high density housing areas. In rural areas, businesses are concentrated in so called growth points. Many businesses are not registered, do not appear in any listing, and have no telephone line. Therefore, we used a random walk procedure for participant recruitment: The interviewers called on the business sites and carried out an interview on the spot or made an appointment if the owner was preoccupied. Businesses typically found in such areas include scrap metal merchants, garages, furniture manufacturers, bottle stores, grocery stalls, tailors, welders, soap manufacturers and others who produce for their immediate local markets. To include up-market businesses and those located in urban office buildings (e.g., commodity brokers, travel or advertising agencies, and telecommunication firms), we consulted business directories and made appointments. We attempted to sample listed businesses at random. However, addresses listings were often not up to date.

Procedure

We used identical, structured interviews in both countries. Where appropriate, the interviewers used prompts to clarify participants' answers. The answers were written down during the interview and subsequently typed. It was not possible to use verbatim transcripts of tape recordings because the noise level at most business sites was too loud.

Four out of five interviewers were German graduate and postgraduate students of work psychology. An additional local interviewer was employed who helped in cases where participants could not speak English (an official language in Zimbabwe as well as in South Africa). Depending on their psychological knowledge base, interviewers were thoroughly trained (minimum of two days) in the interview method, the coding scheme, and basic theoretical features. The latter was necessary to enable them to assess complex psychological states (e.g., achievement orientation and personal initiative). Throughout the study, the interviewers received feedback on their interviewing skills in feedback interviews were a second interviewer

was present who also journalized the interview. Each interview was rated by two independent raters, one of them being the interviewer. Ratings were done on the basis of typed protocols and an elaborate coding scheme that provided explicit rating anchors. (Interview and coding scheme are available from the authors.) Throughout the study, close supervision and consultative meetings minimized rating biases.

After the interview, the participants filled out a questionnaire that contained orientation variables (e.g. risk-taking). Additionally, we asked the participants for permission to administer a questionnaire on their success to a third person. Confidentiality was explicitly assured to the participant as well as to the third person. The interviewers also filled out a questionnaire directly after the interview which captured their views at a point in time when the impressions of the participants and their businesses were still vivid. We call this the interviewer evaluation.

Operationalization of the Variables

We used intraclass coefficients for factual (ICC[1,1]) and Likert (ICC[1,2]) items as reliability measures (Shrout & Fleiss, 1978). For intraclass coefficients of the interviewer evaluations, we added data from a Namibian study where the same interviewer evaluation questionnaire was used (Frese, Brantjes, & Hoorn, 2002). This was necessary because interviewer evaluations reflect personal impressions and our sample did not provide enough cases where both raters were present during the interview. Thus, the interviewer evaluation ICCs are based on N=74 Zimbabwean (n=10), South African (n=18), and Namibian (n=46) ratings.

For all composed scales, we examined statistical reliability in the overall sample as well as in both country sub-samples. A verbatim list of the items is available from the authors. Cronbach's alphas were above .70; except for number of barriers overcome in Zimbabwe (α =.68). Where only two items went into a scale, correlations were significant on a $p<.01$ level; except for achievement orientation in Zimbabwe and risk-taking orientation in South Africa where p was <.05.

Business Performance. In order to get a differentiated picture (cf. Murphy, Trailer, & Hill, 1996) from multiple sources we used performance measures that refer to the businesses'

growth as well as to their size (number of employees) and included an outside opinion (external success evaluation). The business growth scale included interview items (percentages) on profit (ICC=.98), customers (ICC=1.00), and sales growth (ICC=.99) compared to the previous year. Example: "Compared to last year, has the number of your customers increased or decreased or did it stay the same? By what percentage has it in/decreased?" There were missing data (n=223) because some participants refused to provide business data which is a common problem in African research settings (Daniels, 1999). To reduce missing data we allowed one out of three possible missings to be mean substituted (Roth, 1994). All growth items were z-standardized before scale composition. The number of employees was a single item interview measure (ICC=1.00). The external success evaluation was a third person's questionnaire assessment of how successful the owners were in comparison to their direct competitors (2 items; 5-point Likert scale). In South Africa, industrial centers (hives) employ hive managers. Although hive managers are not directly involved in the businesses, they allocate stands, make contacts with support organizations, organize hive meetings, and generally overlook the hives' business activities. Hence, they have a good insight in how the businesses are performing. Therefore, we relied on hive managers' external success evaluations. Missing data in this variable occurred because hive managers are uncommon in Zimbabwe and only n=106 South African participants had a hive manager and/or gave us permission to approach them. We do not collapse the success variables into an overall success scale because they capture different aspects of business performance that are not necessarily interrelated (Meyer & Gupta, 1994).

Entrepreneurial Orientation. The EO measurement was a three step procedure. In the first step we measured each component with different methods in the sense of multiplism (Cook, 1985) or multiple operationism (Webb, Campbell, Schwartz, & Sechrest, 1966). Learning- and autonomy orientation, competitive aggressiveness, and innovative orientation were measured in both the interview (5-point Likert scales, ICC .77 to .94) and in the interviewer evaluation (5-point Likert scales, ICC .84 to .90). The interview measure of learning orientation was the question: 'If you could start your business again as you did in the year ..., what

would you do differently?' The answers were rated subsequently. The sample size for this variable was reduced because a rating was only possible if participants wanted to do something differently (n=168). For autonomy orientation we asked: 'What would happen if somebody would pay you good money to take over your firm and would make you the manager of the firm. You would have the same income as now. Would you accept it? Why?' The interview measure for competitive aggressiveness was based on questionnaire items by Covin and Covin (1990). ('What is your relationship to your competitors? — Do you want to beat them or are you nice to them? Do you attempt to push them out of your way or do you think of your competitors more in terms of the saying 'live and let live'?') The transformation of the questionnaire measure into an interview measure was necessary because African participants were reluctant to fill out questionnaires in pilot studies. Moreover, participants had difficulties understanding some questionnaire items, which could be clarified during the interview. The two interview items of innovative orientation were ratings of how innovative the owners' business ideas and competitive edges were (r=.39, p<.01). Since not all owners reported ideas or a competitive edge, missing data occurred (n=217). Achievement- and risk-taking orientation were measured with questionnaires and the interviewer evaluation (5-point Likert scales, ICC .81 to .93). The achievement orientation questionnaire was a self-developed growth goal orientation measure of two items (4-point forced choice scale; r=.45, p<.01). Sample item: 'I want my business to grow as much as possible.' The measure had missing data (n=223) because the questionnaire was only introduced one month into the data collection period. Risk-taking was measured with a two item questionnaire (r=.41, p<.01) after Gomez-Mejia and Balkin (1989; adapted to the entrepreneurial context by Norton & Moore, 1998). Since some participants felt unable to make statements on their risk taking orientation, missing data occurred (n=239). As Interview measurement of personal initiative we used the overcoming barriers method by Frese et al. (1996). The procedure is similar to the situational interview (Latham & Saari, 1984) and had been shown to have good construct validity (Fay & Frese, 2001; Frese, Fay, Hilburger, Leng, & Tag, 1997). The interviewer presented four critical incidents relevant to the situation of the

business owners, and asked the participants to come up with feasible solutions (ICC=.92, α=.82). Whenever participants gave a solution, new barriers ('please imagine this doesn't work') were introduced until participants could not come up with further ideas or had overcome five barriers (the initial problem being the first barrier). Participants who overcame five barriers were then asked if they could think of any additional solutions. The second interview measure was an interviewer rating of how actively the barriers had been approached (5-point Likert scale, ICC=.92, α=.80). The sample sizes for the interview based personal initiative variables were reduced (n=233) because some participants felt uncomfortable with the procedure of constantly introducing new barriers. Additionally, we used an interviewer evaluation measures of personal initiative (5-point Likert scale, ICC=.87).

In the second step of EO scale composition, we combined each of the multiple measures into single measures of learning- (r=.43, p<.01), achievement- (r=.49, p<.01), and autonomy orientation (r=.57, p<.01), competitive aggressiveness (r=.52, p<.01), innovative- (r=.52, p<.01) and risk-taking orientation (r=.22, p<.01), and personal initiative (α=.82). In the third step, all seven EO components were combined into a single factor EO construct (α=.81; cf. also the confirmatory factor analysis described in the results section).

Alternatively, we could have employed questionnaire measures similar to our EO components (non-exhaustive account): VandeWalle et al. (1999) used learning goal orientation (similar to learning orientation) and performance goal orientation (similar to achievement orientation) to predict individual sales performance. Steers' and Braunstein's (1976) behavior-based Manifest Needs Questionnaire in work settings (MNQ) measures autonomy and achievement; the latter of which was fruitful in predicitng firm level EO from manager's characteristics (Entrialgo, Fernandez, & Vazquez, 2000). The Personality Research Form (PRF; Jackson, 67) was administered by Stewart, Carland, Carland, Watson, and Sweo (2003) to compare North American and Russian entrepreneurs on the variables achievement motivation and risk-taking propensity. Covin & Covin (1990) operationalized a firm's competitive aggressiveness with the proactiveness scale by Miller and Friesen (1983). Robinson et al. (1991) suc-

ceeded in distinguishing entrepreneurs from non-entrepreneurs with their Entrepreneurial Attitude Orientation (EAO) questionnaire that entails achievement and innovation. Finally, Crant (1995, 1996) found that the Proactive Personality Scale (Bateman & Crant, 1993) predicts entrepreneurial intention as well as sales performance among sales-representatives (similar to personal initiative; cf. Fay & Frese, 2001). However, all reviewed instrument had major drawbacks for our specific research setting. They are either relatively long (items per EO component range from five to 26; e.g. Robinson et al., 1991) or entail complex wording (e.g., Covin & Covin, 1990). In pilot studies with African samples (cf. Frese, 2000) we experienced that lengthy paperwork and item complexity led to participants' fatigue and biased data due to understanding problems.

Control variables. To control for artifacts, the variables year of establishment, type of industry (dummy coded), starting capital (in US$), country (Zimbabwe or South Africa), and in/formal (officially registered or unregistered business) were included in the first step of all hierarchical regression analyses (see below).

Statistical Analyses

For most calculations, we treated the two country sub-samples as one. The correlations between the dependent (performance) and the independent (EO) variables in the country subsamples were not significantly different. Only for analyses on the external success evaluation, the sample was restricted to South African participants because the questionnaire could not be administered in Zimbabwe (cf. above).

In order to gain a more favorable N to variables ratio for the hierarchical regression analyses after Cohen and Cohen (1983), we only included control variables that correlated with the respective dependent variable.

Results

Table 1 presents the intercorrelations, Cronbach's alpha (for scales with more than two variables), correlations (where two variables made up a scale), Ms, and SDs of the variables.

Two out of three intercorrelations of the business performance variables (business growth, number of employees, external success evaluation) were not significant (Table 1). This suggests that our performance measures represent different aspects of business success (Murphy et al., 1996).

Correlations between EO and performance variables resulted in a differentiated picture (Table 1). Learning orientation, achievement orientation, and personal initiative correlated significantly with all performance measures. Competitive aggressiveness had no significant correlation with business growth but correlated significantly with number of employees ($p<.05$) and the external success evaluation in South Africa ($p<.01$). Risk-taking orientation correlated significantly ($p<.01$) with business growth and external success evaluation South Africa but not with number of employees. Autonomy- and innovative orientation correlated only with the external success evaluation in South Africa ($p<.01$).

Insert Table 1 about here

Correlations with the country variable show that Zimbabwean business owners were more likely to create employment ($r=-.15$, $p<.05$) and showed higher EO than their South African counterparts ($r=-.29$, $p<.01$). Furthermore, formal businesses owners had more successful enterprises ($r=.28$ with number of employees and $r=.37$ with external success evaluation South Africa, $p<.01$) and showed higher degrees of EO than informal owners ($r=.33$, $p<.01$). Yet, neither country nor belonging to the in/formal sector had any significant relationship with business growth.

Insert Tables 2-4 about here

The Tables 2 to 4 describe the results of the hierarchical regression analyses of EO and its components on the performance measures business growth (Table 2), number of employees (Table 3), and external success evaluation in South Africa (Table 4).

Hypotheses 1 to 7 state that the components of EO are positively related to business

performance. With business growth as performance measure, the hypotheses were marginally supported for learning orientation (Table 2, Model 1) and significantly supported for achievement orientation, risk-taking orientation, and personal initiative (Table 2, Models 2, 6, & 7). The explained variance in the dependent variable number of employees was significantly increased by achievement orientation and personal initiative (Table 3, Model 2 & 7). Finally, all components of EO explained significant additional variance in the South African external success evaluation (Table 4, Model 1-7). Therefore, the Hypotheses 3 to 5 (autonomy orientation, competitive aggressiveness, and innovative orientation) are supported for the South African external success evaluation only. Hypotheses 1 and 6 (learning orientation, risk-taking orientation) are affirmed for the dependent variables business growth and external success evaluation in South Africa. Lastly, Hypothesis 2 and 7 (achievement orientation, personal initiative) are fully supported for all dependent performance measures.

To examine whether the EO components explained different fractions of the variance in business performance, we conducted hierarchical regression analyses where they were entered simultaneously in the second step (Tables 2-4, Model 8). Yet, condition indices were above 30, thus indicating severe multicollinearity problems (Belsley, Kuh, & Welsh, 1980). Beta weights can, therefore, not be interpreted. For the performance measure number of employees ΔR^2 was not significant (Table 3, Model 8). Increments in explained variance were significant for the dependent variables business growth and external success evaluation South Africa (Tables 2 & 4, Model 8).

Confirmatory factor analyses with LISREL 8.3 were employed to investigate Research Question 1 (Do the components of EO form a single factor construct?). In addition to the Chi-square test, we used the fit indices root-mean-square-error-of-approximation (RMSEA, Brown & Cudeck, 1993), the goodness-of-fit-index (GFI), and the adjusted-goodness-of-fit-index (AGFI, Jöreskog & Sorböm, 1989). For the RMSEA, a value below .08 is a sign of reasonable model fit (MacCallum, 1998); for GFI and AGFI, values above .90 indicate acceptable fit of the model (Schumaker & Lomax, 1996).

The one factor model appeared to fit well (χ^2[14, N=248]=25.73, RMSEA=.06, GFI=.97, AGFI=.94). The model fit was considerably better than the independence model (χ^2[21, N=248]=580.36) where each manifest variable was represented by an independent latent variable. Hence, Research Question 1 is affirmed. The highest loadings appeared for learning orientation, achievement orientation, and personal initiative (λ =.76); the lowest one for competitive aggressiveness (λ =.44).

Additionally, we examined the model in Zimbabwe, South Africa, the formal, and the informal sub-samples. A further break-down (e.g., into the South African formal sub-sample) was not possible because the sample sizes would have become unacceptably small for LISREL to produce interpretable result. For the Zimbabwean (χ^2[14, N=122]=20.50, RMSEA=.06, GFI=.95, AGFI=.91) and the informal sub-sample (χ^2[14, N=91]=17.07, RMSEA=.05, GFI=.95, AGFI=.90), confirmatory factor analyses resulted in one factor that includes all EO components except competitive aggressiveness. (In the informal sub-sample, the factor loadings of innovative- [λ =.35] and risk-taking orientation [λ =.32] were weak.) For the South African (χ^2[14, N=126]=21.25, RMSEA=.06, GFI=.95, AGFI=.91) and the formal sub-sample (χ^2[14, N=156]=24.13, RMSEA=.07, GFI=.96, AGFI=.92), the single factor included all EO components. Therefore, the notion of a single factor EO construct is in principle supported. However, the inclusion of competitive aggressiveness in EO varies across nations (Zimbabwe/ South Africa) and business sectors (in/formal), while the structure of all other EO components emerges across nations and business sectors.

Hypothesis 8 states that the owners' EO is positively related to business performance. EO entered in step two contributed 4% ($p<.05$) of explained variance in business growth, 2% ($p<.05$) in the number of employees, and 23% ($p<.01$) in the external success evaluation in South Africa (Tables 2-4, Model 9). Thus, hypothesis 8 is supported.

Discussion

This study provides insight into the relationship between small business owners' indi-

vidual entrepreneurial orientations and business performance in Southern African. Shifting perspective from the firm level to a psychological construct and using EO from an individual difference point of view was useful, not only because individual level EO was shown to be related to business performance:

First, our data provides evidence for the positive relationships between EO and its components with business performance. The most important EO components for performance are the owners' achievement orientation and personal initiative. The latter confirms firm level findings on proactiveness (Venkatraman, 1989) at the measurement level of the individual business owner. Moreover, individual level personal initiative was shown to be positively related to business success in Europe (Korunka et al., 2003), in East Africa (Koop et al., 2000), and now in Southern Africa. The body of evidence, thus, suggests that the relationship between personal initiative and business performance is valid across measurement levels (individual, firm), cultures, and economic environments. The strong correlation of the owner's achievement orientation with business success is interesting since it is not part of the currently prevalent firm level EO construct (e.g., Covin & Slevin, 1989; Lumpkin & Dess, 1996; Miller, 1983; Venkatraman, 1989). Risk-taking orientation had no effect on the number of employees but had a positive impact on business growth and the external success evaluation in South Africa. This is in line with the inconsistent results in the literature (cf. Begley & Boyd, 1987; Rauch & Frese, 2000; Venkatraman, 1989). Post hoc analyses showed that the significant relationship between risk-taking orientation (as well as the other EO components) and business performance were linear. Thus, ambiguous effects of risk-taking orientation on success are probably not due to successful business owners' medium level of risk-taking as suggested by Rauch and Frese (2000). The performance relationship of a risk-taking orientation is rather likely to be affected by other influences such as environmental hostility or richness (cf. Covin & Slevin, 1989).

While the effects of learning- and autonomy orientation, competitive aggressiveness, and innovative orientation were significant on the performance measure external success

evaluation in South Africa, they were marginal or not significant on business growth and the number of employees. This might be due to cultural differences of our sample compared to Western samples. Since Zimbabwe and South Africa are highly collective societies (Global Leadership and Organizational Behavior Effectiveness Research Program: Hanges & Dickson, 2004; Hofstede, 1980), autonomy orientation and competitive aggressiveness could be generally lower and restricted in variance. Restricted variance is unfavorable for the detection of significant correlations (Cohen & Cohen, 1983). Assertiveness is also low in both countries (Hanges & Dickson, 2004) and could affect learning orientation, competitive aggressiveness, and innovative orientation. Similarly, the degree of innovativeness is lower in Africa than in the West whereas the degree of traditionalism is relatively high (Gebert, 1992; Inkeles & Smith, 1974). Traditionalism hinders deviation from customs and promotes imitation because one sticks to the way things are generally done in one's society. Thus, the low relationships of learning orientation, autonomy orientation, competitive aggressiveness, and innovative orientation with business performance might be caused by a) low social acceptance of the orientations and b) restricted variance in the orientations variables.

Second, we established a psychological EO concept that complies with the Schumpetrian understanding of entrepreneurship and complements current comprehensions of EO (autonomy orientation, competitive aggressiveness, innovative- and risk-taking orientation, and personal initiative) by learning and achievement orientation (Schumpeter, 1934). The introduction of learning orientation to EO was theory driven. While learning orientation was one of the weaker predictors of business performance in our Southern African setting, we believe that further elaboration in other cultural settings could lead to a more elaborate understanding of the relationship (see above). The theory driven reintroduction of achievement orientation to EO was supported by the highly positive results on the construct's performance relationships. Achievement orientation appears to have previously been ignored because researchers have (at least in their theoretical reasoning) not investigated individual level EO; even though achievement orientation had been found to contribute to both individual entrepreneurial performance

(McClelland, 1987a) and national economic development (McClelland & Winter, 1971). Extending proactiveness to personal initiative (which over and above proactiveness entails approaching business issues in a persistent and self-starting manner) was in line with Austrian economists' understanding of entrepreneurship (Kirzner, 1997; Schumpeter, 1934) and proved fruitful for the prediction of small business performance.

Third, we examined the notion of a single factor EO construct. Habitually, EO had often been used as a unitary concept in EO literature and research (e.g., Covin & Slevin, 1986; Covin & Slevin, 1989; Dess, Lumpkin, & Covin, 1997; Wiklund, 1999). Empirically, however, this had rarely been addressed. Confirmatory factor analyses supported the idea of a one factor EO construct that consists of learning-, achievement-, and autonomy orientation, competitive aggressiveness (in South Africa and the formal sector), innovative-, and risk-taking orientation, and personal initiative. However, competitive aggressiveness was not part of EO in neither Zimbabwe nor in the informal sector. This suggests that EO is influenced by culture and/ or the business environment (cf. Thomas & Mueller, 2000). The concept of EO and its components was developed in Western cultures and for Western business communities. Both, South Africa as well as the formal sub-sample operate with business standards that are comparable to business conduct in Western economies (cf. Thomas & Bendixen, 2000). In Zimbabwe and in the informal sector, however, business conduct complies less with Western standards. The Zimbabwean economy continues to deteriorate since 1997. In 1999, the year of our data collection, the inflation rate reached 70% compared to the previous year and the value of the local currency, the Zimbabwe$, decreased substantially (Robertson, 2003) The hostile economic circumstances might have influenced business owners' competitive aggressiveness. Anecdotal evidence suggests that under the given economic circumstances, many of our participants view their competitors more as potential cooperators than as rivals. The owners often mentioned that they would not act too aggressively towards their competitors because they might need the competitors' help in the future. They would, for example, subcontract orders they could not

fulfill due to supply shortages to competitors. While this meant decreasing profit margins, it helped satisfying the (hopefully returning) customers. In other instances they would turn to competitors for tools that they needed for an order they would not be able to fulfill otherwise. Similar arguments hold in the informal sector. Owners of informal businesses are not protected by the law, cannot access financial support, cannot advertise freely, and are not able to develop stable relationships with suppliers or customers (Jansson & Sedaca, 2000, Mambula, 2002). Cooperative relationships with ones' competitors might be necessary in the informal sector in order to remain in business. Thus, we think that competitive aggressiveness is not part of EO in Zimbabwe and the informal sector because it is not adequate for the respective business environment. In all confirmatory factor analysis models, competitive aggressiveness had the lowest loadings while personal initiative invariably showed the highest loadings. Second and third most important components of EO were achievement- and learning orientation — both variables were hitherto not considered for the EO construct. Then follow autonomy-, innovative-, and risk-taking orientation.

Fourth, we found the latent overall EO construct's relationships to business performance to be as strong or stronger (for external success evaluation in South Africa) than the single components' relationships. This suggests that it is worthwhile investigating overall EO and not only focusing on single EO components at the expense of considering their combined effects. Furthermore, our individual level approach has produced comparable results to firm level EO studies in Western countries such as the US (e.g., Covin & Slevin, 1986) and Sweden (Wiklund, 1998). Hence, we have evidence for a generalizable EO construct across levels of investigation, cultures, and economic development.

Limitations and Strengths

First, measuring small business performance is difficult (Wiklund, 1998). In line with multiple operationism (Webb et al., 1966; cf. also Cook, 1985), we used three, partly interdependent success constructs that reflect different aspects of what constitutes business success. However, we used no truly objective measure of success such as an exact profitability ratio. Particularly

(but not only) in Africa, it is difficult to ascertain exact and valid profitability measures (Daniels, 1999). Many are interested in keeping their profit rate low for tax reasons. Other owners hesitate to disclose sensitive performance data. African business owners, specifically, often do not know their exact profit rate because they do not practice any standard book-keeping (e.g., Shinder, 1997). However, we think that the multiplicity of our measures is probably a good way to overcome the problems associated with measuring business performance (cf. Meyer & Gupta, 1994).

Second, the explained variance for the dependent business performance measures business growth and number of employees did not exceed 8%. Compared to the commonly found relationships in industrial- and organizational psychology, these are satisfactory results (cf. also Meyer, Finn, Eyde, Kay, & co-authors, 2001). EO cannot be expected to account for all the variance in business performance. Other relevant influence factors within the owner (e.g., skills and abilities) as well as within (e.g., employee commitment) and outside the business (e.g., interest rates) are likely to influence business performance. In contrast to the measures relating to business growth and number of employees, the impact of EO was notably higher and consistently significant for the ´external success evaluation.` While this result further underscores the validity of our findings, it also suggests that EO is more important for success as perceived by others. Being viewed as successful by those individuals dealing with the owners is an important characteristic and may in the long run help owners be more successful economically. Overall, we believe our findings are not only statistically significant but also a meaningful contribution to entrepreneurship research.

Third, the interviewers' full knowledge of the theory and their involvement in the measurement of both independent and dependent variables is a potential limitation. We were very concerned about this issue. The interviewers were trained to separate their judgments of the EO components from their knowledge of business success. We also tried to use multiple sources for the measurement of business performance as well as the EO components (cf. Cook, 1985; Webb et al. 1966). For EO, however, this was not always possible because we had to

keep the number of questionnaires to a minimum. Therefore, most EO measures are based on the interview as main source. Both the interviewer evaluation and the subsequent interview ratings are prone to be influenced by the interview as such. Yet, this was not true where questionnaire measures were employed (achievement- and risk-taking orientation) because the interviewers were not aware of the questionnaire answers when they filled out the evaluation forms. Thus, two independent sources were used. Furthermore, there was still a certain independence between the interviewer evaluations and ratings of the interview content. While the interviewer evaluation form reflected the interviewers' overall impression, the interview ratings were judgments based on particular statements by the participants. Even more important, all interview measures were calculated on the basis of two independent ratings (only one of the raters was present during the interview) with good interrater reliabilities. We especially value the results from the South African sub-sample on the relationship between EO and the external success evaluation by hive managers. EO and its components explained highly significant portions of variance in the hive managers' success evaluation, who had no knowledge of our hypotheses or the theoretical background of our study (no percept-percept problem). Furthermore, the two interview based success measures (business growth and number of employees) were not influenced by the interviewers. The interviewers merely wrote down figures given by the participants; no judgments were required.

Fourth, our operationalization of the EO components differs from previous operationalizations. This is mainly due to the sample's reluctance to fill in questionnaires (see above). Hence, we developed interview measures for learning-, autonomy, and innovative orientation and a short questionnaire measure for achievement/growth goal orientation which we administered during the interview. All measures during the interview allowed for participants' enquiries whenever understanding problems occurred and reduced the participants' fatigue. For personal initiative, we enlarged the concept of proactiveness by persistence and measured it with the validated overcoming barriers method (Frese et al., 1997). These modifications do not prohibit the comparison of our findings with results from other studies. A content based inter-

pretation and comparison is indeed reasonable. Moreover, a different yet also interview based operationalization of EO components was used in an Ugandan study (Koop et al., 2000) and lead to similar results: Among highly entrepreneurial oriented (learning, innovative-, achievement orientation and personal initiative) business owners were significantly more successful ones than among business owners low on EO. While this is not a true validation of our measurement, it does indicate a robustness of the findings using different measures.

Fifth, as our study is a cross-sectional one, no causal conclusions can be drawn. All statistical relationships could be due to reverse causation. We think that probably both causal paths are operative: From EO and its components to success and as well as from success to EO. The relationship between EO and business performance is, in addition, likely to be influenced by third variables. For example, business process variables such as action strategies and environmental variables could play a role.

Lastly, our sample consisted of small businesses with one up to fifty employees. This implies that our results cannot be generalized to one-person enterprises which constitute a large proportion of the African small businesses sector (Mead & Liedholm, 1998).

Conclusion and Practical Implications

Our findings indicate that EO and its components are valuable predictors for business success. The individual approach offers a promising starting point for further theoretical development and practical application in the form of selection and training instruments. If our findings hold in longitudinal studies, high-potential business owners could be identified (e.g., for the allocation of capital). This is especially interesting for developing countries where collateral securities are virtually nonexistent while local business development is of utmost importance for sustainable economic development, the creation of employment, and societal prosperity. Furthermore, the results on the strong performance relationships of the EO components achievement orientation and personal initiative open up new perspectives on training for micro- and small business owners: Psychological training methods can enhance individual achievement orientation (Miron & McClelland, 1979) as well as personal initiative (Frese, Garman, Gar-

meister, Halemba, & co-authors, 2002).

Finally, our findings show that an individual level EO conceptualization is useful for the prediction of small business performance and deserves further (re-)consideration, investigation, and development by the entrepreneurship research community.

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TABLE 1

Intercorrelations

Variables and Scales	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Business growth [a]	.00	.83	(.77)										
2. Number of employees	6.13	9.23	-.01	—									
3. External success evaluation [b]	3.05	1.45	.10	.36**	(.90**)								
4. Entrepreneurial Orientation [a]	2.72	.68	.22**	.23**	.61**	(.81)							
5. Learning orientation	3.22	1.00	.15*	.20**	.47**	.78**	(.43**)						
6. Achievement orientation	3.87	.92	.28**	.25**	.49**	.77**	.57**	(.49**)					
7. Autonomy orientation	3.77	1.11	.13	.12	.32**	.68**	.42**	.50**	(.57**)				
8. Competitive aggressiveness	2.83	1.13	.06	.13*	.40**	.57**	.34**	.33**	.26**	(.52**)			
9. Innovative orientation	2.50	1.06	.10	.09	.44**	.65**	.45**	.35**	.28**	.18**	(.52**)		
10. Risk-taking orientation	2.85	.89	.19**	.09	.40**	.63**	.43**	.40**	.33**	.18**	.41**	(.22**)	
11. Personal initiative [a]	-.02	.78	.19**	.29**	.61**	.81**	.63**	.66**	.46**	.40**	.51**	.40**	(.82)

Note. n ranged from 211 to 294. [a] z-standardized data. [b] South Africa (n ranged from 102 to 106). Figures in parentheses are Cronbach's alphas or correlations for scales with less than three items.

*p<.05. **p<.01.

TABLE 2

Hierarchical Regression Analyses of EO and Its Components on Business Growth

		Business growth								
		Model 1 β	Model 2 β	Model 3 β	Model 4 β	Model 5 β	Model 6 β	Model 7 β	Model 8 β [a]	Model 9 β
Step 1	Year of establishment	.13*	.12†	.13†	.15*	.15*	.14*	.13*	.12†	.12†
Step 2	Learning orientation	.13†							-.03	
	Achievement orientation		.26**						.27**	
	Autonomy orientation			.10					-.06	
	Competitive aggressiveness				.04				-.04	
	Innovative orientation					.09			-.01	
	Risk-taking orientation						.18*		.10	
	Personal initiative							.17*	.02	
	Overall EO									.19**
	R^2	.04	.09	.03	.03	.03	.05	.05	.10	.06
	ΔR^2	.02†	.07**	.01	.00	.01	.03*	.03*	.08*	.04**

Note. Controls were only included in step one if they had been shown to correlate with business growth. n=248. [a] Due to multicollinearity the betas of Model 8 may not be interpreted.

†p<.10. *p<.05. **p<.01.

TABLE 3

Hierarchical Regression Analyses of EO and Its Components on The Number of Employees

		Number of employees								
		Model 1 β	Model 2 β	Model 3 β	Model 4 β	Model 5 β	Model 6 β	Model 7 β	Model 8 β [c]	Model 9 β
Step 1	Industry: Manufacturing textile	.20**	.19**	.19**	.20**	.20**	.19**	.20**	.20**	.20**
	Industry: Construction	.24**	.23**	.24**	.24**	.24**	.25**	.23**	.24**	.24**
	Starting capital (US$)	.06	.06	.07	.06	.07	.06	.06	.05	.07
	Country [a]	-.11†	-.10	-.12*	-.12*	-.15*	-.14*	-.09	-.06	-.10†
	In/formal [b]	.23**	.22**	.24**	.24**	.24**	.25**	.19**	.18**	.21*
Step 2	Learning orientation	.10							.00	
	Achievement orientation		.14*						.07	
	Autonomy orientation			.08					-.02	
	Competitive aggressiveness				.09				.04	
	Innovative orientation					.06			-.04	
	Risk-taking orientation						.03		-.04	
	Personal initiative							.19**	.18†	
	Overall EO									.14*
	R^2	.20	.21	.20	.20	.19	.19	.22	.23	.21
	ΔR^2	.01	.02*	.01	.01	.00	.00	.03**	.04	.02*

Note. Controls were only included in step one if they had been shown to correlate with the number of employees. n=248. [a] 0=Zimbabwe, 1=South Africa. [b] 1=informal, 2= formal. [c] Due to multicollinearity the betas of Model 8 may not be interpreted.

†p<.10. *p<.05. **p<.01.

TABLE 4

Hierarchical Regression Analyses of EO and Its Components on The External Success Evaluation in South Africa

		External success evaluation (South Africa)								
		Model 1 β	Model 2 β	Model 3 β	Model 4 β	Model 5 β	Model 6 β	Model 7 β	Model 8 β [b]	Model 9 β
	Industry: Service	-.19*	-.17*	-.23**	-.19*	-.21**	-.16†	-.18*	-.12	-.16*
	Starting capital (US$)	.03	.09	.11	.08	.06	.14	.09	.07	.07
	In/formal [a]	.32**	.34**	.35**	.33**	.34**	.36**	.22**	.25**	.27**
Step 2	Learning orientation	.36**							.01	
	Achievement orientation		.40**						.14	
	Autonomy orientation			.26**					-.14	
	Competitive aggressiveness				.28**				.08	
	Innovative orientation					.38**			.17†	
	Risk-taking orientation						.34**		.10	
	Personal initiative							.50**	.32*	
	Overall EO									.51**
	R^2	.35	.39	.30	.31	.37	.35	.47	.52	.47
	ΔR^2	.12**	.16**	.06**	.07**	.14**	.11**	.22**	.28**	.23**

Note. Controls were only included in step one if they had been shown to correlate with the external success evaluation. n=106.

[a] 1=informal, 2= formal. [b] Due to multicollinearity the betas of Model 8 may not be interpreted.

†p<.10. *p<.05. **p<.01.

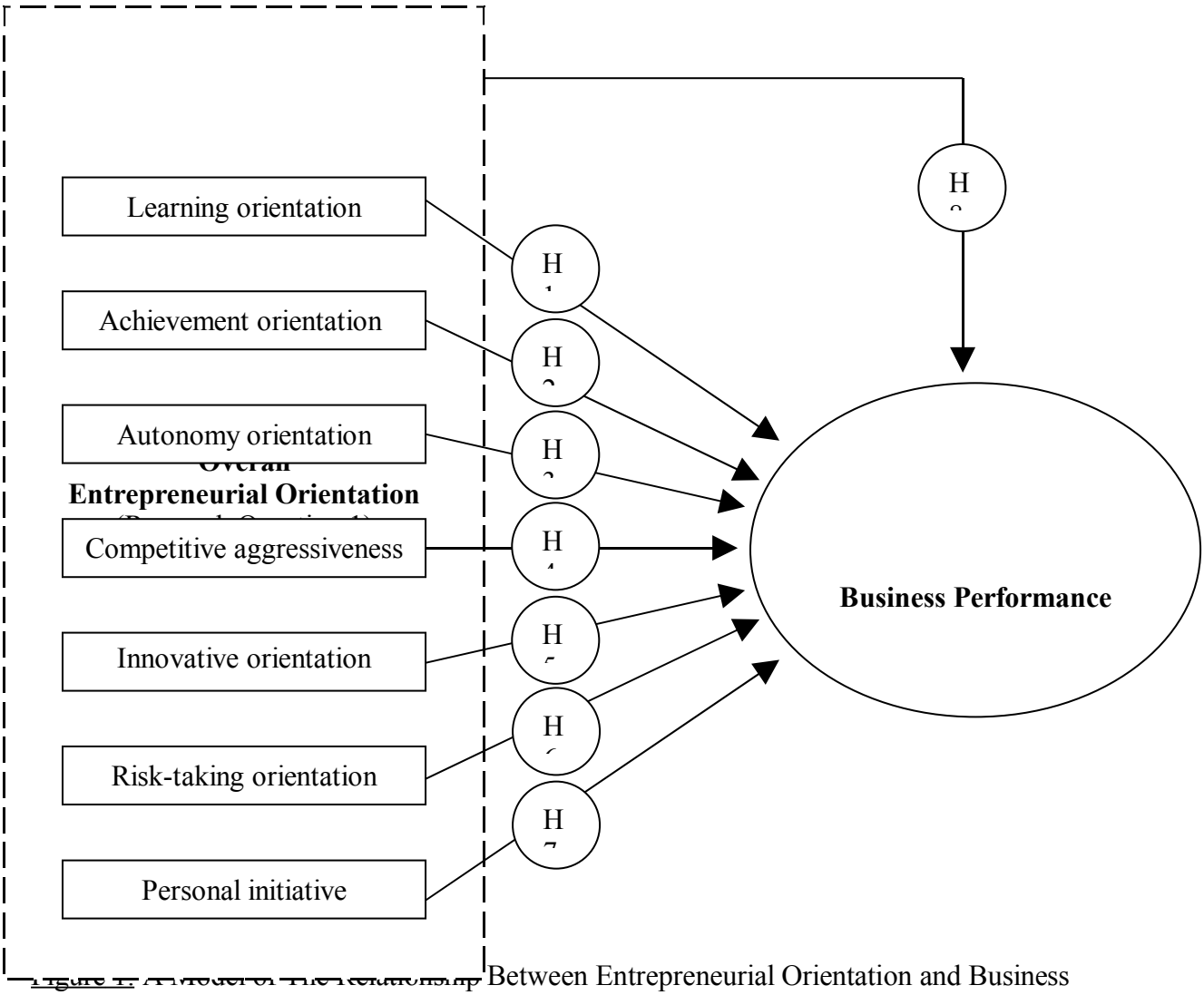

Figure 1: A Model of The Relationship Between Entrepreneurial Orientation and Business Performance.