

Knowing Entrepreneurial Personalities
- A Prerequisite for Entrepreneurial Education

Vesa Routamaa
Professor, University of Vaasa
P.O.Box 700, FI-65101 Vaasa Finland, Ph. +35863248246,
Fax. +35863248195, wmr@uwasa.fi, www.uwasa.fi/~wmr/, www.mbtifinland.fi

Asko Miettinen
Professor, Tampere University of Technology
P.O.Box 541, FI-33101 Tampere, Ph. 3583311511, asko.miettinen@tut.fi

Keywords: Entrepreneurs, personality, MBTI, entrepreneurial education

Knowing Entrepreneurial Personalities - A Prerequisite for Entrepreneurial Education

ABSTRACT

In spite of the fact that anyone can start up a company, certain personal characteristics and behavior patterns may benefit running an enterprise. Entrepreneurs as individuals differ from other people, i.e. entrepreneurs' personality structure is supposed to differ from the average, at least statistically. Of course we must not forget that entrepreneurs of different fields or different forms of enterprising might be connected with different characteristics of entrepreneurs. In other words, there might be, not only one "true" personality type of an entrepreneur, but many personalities that might favor different forms of enterprising. However, entrepreneurs are often spontaneous, curious, adaptable, and open to what is new and changeable, while most people favor a planned, organized life style avoiding risks and surprises in their daily life. If about 70% of the population favor a planned, organized and predictable life style, are our institutions, especially schools capable of educating entrepreneurial people? In this paper, the psychological types most common to entrepreneurs will be illustrated in the context of more average people. The analysis is based on Jung's and Myers-Briggs typologies, and on an empirical Finnish sample of about 3000 people. Based on this analysis and experiences of training programs arranged, some suggestions for entrepreneurial education will be given.

INTRODUCTION

Since Schumpeter (1934), entrepreneurial types in general have got quite a lot of attention in previous research (e.g. Smith 1967; Stanford & Curran 1976; Carland, Hoy, Boulton & Carland 1984; Routamaa & Vesalainen 1987; Gartner 1989; Timmons 1989; Miettinen & Lehtomaa 1995). However, in spite of the dominant importance of entrepreneurship in economy, entrepreneurs as personalities have got relatively little attention. Most often, a trait approach has been used to illustrate entrepreneurial characteristics, like for example, the need for achievement, internal locus of control and the propensity to take risks (e.g. McClelland 1961; Hornaday & Aboud 1971; Timmons 1978; Welsh & White 1981; Borland 1974; Brockhaus 1982). However, empirical research has not found any trait that is consistently associated with entrepreneurship (Järnlström 2002).

Jung's and Myers-Briggs typologies are seen to be a promising method of searching for entrepreneurial types, here. Relationships between MBTI-preferences and entrepreneurship have in fact been found in some studies (see, for example, Carland 1982; Routamaa, Vesalainen & Pihlajaniemi 1996; Reynierse 1997; Routamaa & Varamäki 1998; Järnlström 2002; Routamaa & Rissanen 2004). In this paper, the basic question is, are there some typical entrepreneurial personalities to be identified taking into account that there are also different kinds of enterprising fields. Using the Myers-Briggs Indicator, entrepreneurs' personality types will be illustrated and compared with the general population, and for example with the most general manager types. More recently, the Five-Factor Model of personality has been applied in a comparison of entrepreneurs and managers (Envick & Langford 2000). It may be asked, however, whether the entrepreneurs constitute a homogeneous group such that it can be described using common traits. Are the trait tests able to identify different kinds of enterprising personalities? In addition, the 'still picture' of a person uncovered by trait approach is a very narrow view of a dynamic personality, the system of judging and perceiving.

PERSONALITY TYPES

There are several ways to conceptualize and assess personality. In this study, the Myers-Briggs Type Indicator (MBTI) was used. It is based on Carl Jung's theory of psychological types and it reports personality preferences on four scales: Jungian Extraversion – Introversion, Sensing – iNtuition, Thinking – Feeling, and the Judging – Perceiving preference added by Briggs and Myers (see e.g. Hautala & Routamaa 2006). According to Myers (1992) *'the MBTI is primarily concerned with the valuable differences in people that result from where they like to focus their attention, the way they like to take information, the way they like to decide, and the way they like to adopt'*. Usually one pole dominates over another. The eight preferences are identified in sixteen types, each representing a certain preference order (Myers & McCaulley 1990). Briefly illustrated the preferences or dimensions are (Myers 1992):

Extraversion (E)	Interested in people and things in the world around them.
Introversion (I)	Interested in the ideas in their minds that explain the world.
Sensing (S)	Interested in what is real and can be seen, heard and touched.
Intuition (N)	Interested in what can be imagined and seen with 'the mind's eye'.
Thinking (T)	Interested in what is logical and works by cause and effect.
Feeling (F)	Interested in knowing what is important and valuable.
Judging (J)	Interested in acting by organizing, planning, deciding.
Perceiving (P)	Interested in acting by watching, trying out, adapting.

As stated by Myers & McCaulley (1990), *"according to theory, each of the 16 types results from a preference for one pole of each of the four preferences over the opposite pole. A preference of any dimension is designed to be psychometrically independent of the preferences of the other three dichotomies, so that the preferences on the four dichotomies yield sixteen possible combinations called types, denoted by the four letters identifying the poles preferred (e.g., ESTJ, INFP). The theory postulates specific dynamic relationships between the preferences. For each type, one process is the leading or dominant process and a second process serves as an auxiliary. Each type has its own pattern of dominant and auxiliary processes and the attitudes (E or I) in which these are habitually used. Determining these dynamic relationships is enabled by the J-P dichotomy of the MBTI. The characteristics of each type follow from the dynamic interplay of these processes and attitudes"*.

In order to interpret the association between type and entrepreneurial identities, the types are next briefly illustrated (Myers 1992; Hautala & Routamaa 2006):

ISTJs Quiet and serious. Succeed through concentration and thoroughness. Practical, orderly, matter-of-fact, logical, realistic, and dependable. See to it that everything is well organized. Take responsibility. Make up their own minds as to what should be accomplished and work toward it steadily, regardless of protests or distractions.

ISFJs Quiet, friendly, responsible, and conscientious. Work devotedly to meet their obligations. Lend stability to any project or group. Thorough, painstaking, accurate. Their interests are usually not technical. Can be patient with necessary details. Loyal, considerate, perceptive, concerned with how other people feel.

INFJs Succeed by perseverance, originality, and desire to do whatever is needed or wanted. Put their best efforts into their work. Quietly forceful, conscientious, concerned for others. Respected for their firm principles. Likely to be honored and followed for their clear visions as to how best to serve the common good.

INTJs Have original minds and great drive for their own ideas and purposes. Have long-range vision and quickly find meaningful patterns in external events. In fields that appeal to them, they have a fine power to organize a job and carry it through. Skeptical, critical, independent, determined. Have high standards of competence and performance.

ISTPs Cool onlookers, quiet, reserved, observing and analyzing life with detached curiosity and unexpected flashes of original humor. Usually interested in cause and effect, how and why mechanical things work, and in organizing facts using logical principles. Excellent at getting to the core of a practical problem and finding the solution.

ISFPs Retiring, quietly friendly, sensitive, kind, modest about their abilities. Shun disagreements, do not force their opinions or values on others. Usually do not care to lead but are often loyal followers. Often relaxed about getting things done because they enjoy the present moment and do not want to spoil it by undue haste or exertion.

INFPs Quiet observers, idealistic, loyal. Important that outer life be congruent with inner values. Curious, quick to see possibilities, often serve as catalysts to implement ideas. Adaptable, flexible and accepting unless a value is threatened. Want to understand people and ways of fulfilling human potential. Little concern with possessions or surroundings.

INTPs Quiet and reserved. Especially enjoy theoretical or scientific pursuits. Like solving problems with logic and analysis. Interested mainly in ideas, with little liking for parties or small talk. Tend to have sharply defined interests. Need careers where some strong interest can be used and useful.

ESTPs Good at on-the-spot problem solving. Like action, enjoy whatever comes along. Tend to like mechanical things and sports, with friends on the side. Adaptable, tolerant, pragmatic; focused on getting results. Dislike long explanations. Are best with real things that can be worked, handled, taken apart, or put together.

ESFPs Outgoing, accepting, friendly, enjoy everything and make things more fun for others by their enjoyment. Like action and making things happen. Know what's going on and join in eagerly. Find remembering facts easier than mastering theories. Are best in situations that need sound common sense and practical ability with people.

ENFPs Warmly enthusiastic, high-spirited, ingenious, imaginative. Able to do almost anything that interests them. Quick with a solution to any difficulty and ready to help anyone with a problem. Often rely on their ability to improvise instead of preparing in advance. Can usually find compelling reasons for whatever they want.

ENTPs Quick, ingenious, good at many things. Stimulating company, alert and outspoken. May argue for fun on either side of a question. Resourceful in solving new and challenging problems, but may neglect routine assignments. Apt to turn to one new interest after another. Skillful in finding logical reasons for what they want.

ESTJs Practical, realistic, matter-of-fact, with a natural head for business or mechanics. Not interested in abstract theories, want learning to have direct and immediate application. Like to organize and run activities. Often make good administrators; are decisive, quickly move to implement decisions; take care of routine details.

ESFJs Warm-hearted, talkative, popular, conscientious, born co-operators, active committee members. Need harmony and may be good at creating it. Always doing something nice for someone. Work best with encouragement and praise. Main interest is in things that directly and visibly affect people's lives.

ENFJs Responsive and responsible. Feel real concern for what others think or want, and try to handle things with due regard for the other's feelings. Can present a proposal or lead a group discussion with ease and tact. Sociable, popular, sympathetic. Responsive to praise and criticism. Like to facilitate others and enable people to achieve their potential.

ENTJs Frank, decisive, leaders in activities. Develop and implement comprehensive systems to solve organizational problems. Good at anything that requires reasoning and intelligent talk, such as public speaking. Are usually well informed and enjoy adding to their fund of knowledge.

Instead of the sixteen types, different types of cognition have also been explained with the help of four temperaments (Keirsey & Bates 1984; see Routamaa & Varamäki 1998), which are **SP**, sensation perceptive **Artisan** (amiable, troubleshooter); **SJ**, sensation judging **Guardian** (driver, traditionalist); **NF**, intuitive feeling **Idealist** (catalyst, expressive)and; **NT**, intuitive thinking **Rational** (visionary, analytical). SP has often been mentioned as the typical entrepreneur - negotiates well, is good in a crisis and is a risk taker. However, SP lives for the moment and does not like theory or routine (see Keirsey & Bates, 1984). NT is a visionary who enjoys complexity and is an architect of change, sees long- and short-term implications, and focuses on possibilities (Keirsey & Bates, 1984).

STUDIES ON ENTREPRENEURIAL PERSONALITY

Concerning the MBTI preferences, Carland (1982), Barbato & Durlabhji (1989), and Carland & Carland (1992) found that entrepreneurs tended to be more often NTs whereas typical owner managers or managers were SJs. Carland, Carland & Higgs (1993) found NTs (intuitive thinking) displaying the highest entrepreneurship tendency, i.e. NTs, as distinguished from the other temperaments, fit the traditional view of entrepreneurship in that the NT preference was highly correlated with innovation (cf. also Keirsey & Bates, 1984). These results uncovered that entrepreneurs tend to be NTs but also NPs. Referring to Asikainen & Routamaa (1997), NP's were found to be most creative. Also ENFPs have been seen to be good to produce individualistic and original ideas (as illustrated above). Accordingly, Asikainen & Routamaa's (1997) view sounds logical. According to Ginn and Sexton (1988), fast-growth entrepreneurs tended to have significantly higher N, P, and NP orientations than managers. These results were in line with Routamaa et al. (1996), who found more Es, Ns, ENs, NTs but also NJs than ISs (and IJs) among internationally oriented entrepreneurs. It could also be concluded that SPs and IPs are more locally oriented entrepreneurs, and also SJs seem to prefer traditional, local fields of low risks, that is, NPs as entrepreneurs may be more suitable in global and new business areas with high risk.

Reynierse (1997) found that entrepreneurs had significantly higher Ps and lower Js. Further, entrepreneurs were more EPs, NPs, and TPs than IJs, SJs, and FJs. In her study of business students, Järnlström (2000) found that Ns and Ps chose relatively more often creativity (entrepreneurial) and autonomous career anchors than Ss and Js. Järnlström (2002) found also that the J-P dichotomy of the MBTI played the most important role separating entrepreneurial aspirations from organizational employment aspirations. Intuitive and perceiving preferences were more associated with entrepreneurial aspirations, whereas sensing and judging were more associated with organizational employment aspirations.

Envick & Langford (2000) compared entrepreneurs and managers using the Five-Factor Model of personality. Their results indicated that managers are significantly more conscientious (planful, neat, dependable) and agreeable (team-oriented, trusting, considerate) than entrepreneurs. That is, entrepreneurs were more impulsive, careless and unorganized as well as more self-interested, cool and skeptical. Managers were also more social (warm, optimistic and talkative) than entrepreneurs, who were a little more independent, reserved and hard-to-read.

Entrepreneurs for their part were more adjusted (stable, confident and effective vs. nervous, self-doubting and moody) and open (imaginative, curious and original vs. practical, unimaginative, literal-minded) than managers, but not to a significant degree. These results support those reported above at least regarding the frequency of perceiving preference among entrepreneurs. Impulsive, careless and unorganized entrepreneurs are able to act in a flexible, spontaneous and changing environment. This corresponds with P preference of the MBTI.

METHOD

The sample of the study consists of 2960 observations from Finland. Full time students were excluded from the sample. For measuring personality, a validated Finnish research version of the MBTI Form was used. The occupation statistic is originally reported by Hautala & Routamaa 2006. Occupations of each type were ranked. Only the ranking of entrepreneurs of each type will be reported. Otherwise, the number and diversity of all occupations is so high that it is not worth listing. The percentages of the entrepreneurs in each type box will not be reported because the number of the types varies a lot, and the percentages are not commensurable.

RESULTS

Next, the ranking position of entrepreneurs in each type will be reported (see Table 1).

Table 1. Entrepreneurs' ranking position among the occupations in each psychological type

ISTJ	ISFJ	INFJ	INTJ
32.	44.	39.	33.
ISTP	ISFP	INFP	INTP
9.	19.	40.	6.
ESTP	ESFP	ENFP	ENTP
5.	3.	17.	12.
ESTJ	ESFJ	ENFJ	ENTJ
19.	24.	33.	23.

As can be seen, ESFP, ESTP, INTP, ISTP, ENTP and ENFP are the six most entrepreneurial types based on the occupation statistics of the sample. What is common to all of them? The common preference is perceiving (P), that is, they all are spontaneous, interested in acting by watching, trying out, adapting. The typical managerial types, ISTJ, ESTJ, and ENTJ (see Routamaa & Ponto 1994; Routamaa, Honkonen, Asikainen & Pollari 1997) are not among the top six entrepreneurial types.

In Table 2, the most entrepreneurial and the least entrepreneurial types are compared using some typical illustrations. Longer illustrations are presented above. It must be remembered that there is not a question of good or bad qualities, better of worse qualities, or even that some types would be unable to act as entrepreneurs.

Table 2. The most entrepreneurial and the least entrepreneurial types compared

Most Entrepreneurial Types	Least Entrepreneurial Types
<p>ESFP Prefers a flexible, spontaneous and changing environment Realistic adapter of human relationships Likes action and making things happen</p>	<p>ISFJ Prefers a structured, organized and planned environment Sympathetic manager of facts and details Type's interests are usually not technical.</p>
<p>ESTP Prefers a flexible, spontaneous and changing environment Realistic adapter in the world of material things Good at on-the-spot problem solving. Likes action, enjoys whatever comes along.</p>	<p>INFP Prefers a structured, organized and planned environment Imaginative, independent helper Important that outer life be congruent with inner values.</p>
<p>INTP Prefers a flexible, spontaneous and changing environment Inquistive analyzer Likes solving problems with logic and analysis.</p>	<p>INFJ Prefers a structured, organized and planned environment Peple-oriented innovator of ideas Respected for their firm principles</p>
<p>ISTP Prefers a flexible, spontaneous and changing environment Practical analyzer, values exactness Excellent at getting to the core of a practical problem and finding the solution.</p>	<p>ENFJ Prefers a structured, organized and planned environment Imaginative harmonizer Feels real concern for what others think or want, and tries to handle things with due regard for the other's feelings</p>
<p>ENTP Prefers a flexible, spontaneous and changing environment Inventive, analytical planner of change Quick, ingenious, good at many things</p>	<p>INTJ Prefers a structured, organized and planned environment Logical, critical, decisisive innovator Skeptical, critical, independent, determined</p>
<p>ENFP Prefers a flexible, spontaneous and changing environment Warmly enthusiastic planner of change Able to do almost anything that interests them. Quick with a solution to any difficulty and ready to help anyone with a problem</p>	<p>ISTJ Prefers a structured, organized and planned environment Analytical manager of facts and details Sees to it that everything is well organized.</p>

As can be seen, the most common tendency of the most entrepreneurial types is 'prefers a flexible, spontaneous and changing environment' whereas the least entrepreneurial types prefer 'a structured, organized and planned environment'. Othwise, there are extraverts, introverts, sensing, thinking, and feeling preferences on both sides of the comparative table. That is, perceiving (P) is the most distinguishable preference between entrepreneurial and less entrepreneurial types. The entrepreneurial mind seems to be entangled with Interest in acting by watching, trying out, adapting in a flexible, spontaneous and changing environment. On the

contrary, the typical managerial types prefer a structured, organized and planned environment.

DISCUSSION

The results of this study clearly indicate that there are some psychological types that tend to become entrepreneurs more probably than others. Based on a data of 2930 occupations in Finland, ESFP, ESTP, INTP, ISTP, ENTP and ENFP are the six most entrepreneurial psychological types. Except for certain types, Järilström's (2002) results of employment status choice for the sixteen MBTI types in a business student sample was quite in line with these results. In this occupation sample, the least entrepreneurial types were ISFJ, INFP, INFJ, ENFJ, INTJ and ISTJ. It must be emphasized that this result does not mean that these types could not succeed as entrepreneurs; there are many successful entrepreneurs representing these type (see e.g. Routamaa 2000).

Doubtless, perceiving (P) is the most visible personality preference of entrepreneurs. In connection with that there may be many kinds of preference combinations. As found by Routamaa et al. (1996), entrepreneurs have different kinds of orientations in terms of locality, globality, risk, growth, branch etc., and, correspondingly, the orientations are suitable for different types and combinations of preferences. Most often, the common preference is P, in spite of the fact that anyone can start up an enterprise and become an entrepreneur.

As could be seen, the most entrepreneurial types all preferred a flexible, spontaneous and changing environment. On the contrary, all the least entrepreneurial types preferred a structured, organized and planned environment. This tendency explains why some types prefer unstable, risky, not foreseeable working environments, and why some types try to avoid them. For example, the typical managerial types prefer a structured, organized and planned environment. It may be noted, however, that the global environment is not at all stable and foreseeable. That is why the managers' psychological type structure will be reshaped, soon. The continuous transition needs many kinds of managers, also that kind of transformational leaders who manage changing circumstances.

A current problem in Finland and most countries is how to activate and add start-ups and make the entrepreneurial career more attractive to young as well as elder people. Concerning entrepreneurial education, more and more entrepreneurial education has been designed for school teachers of different school levels. However, the voluntary enthusiasm for participating in the education and applying entrepreneurial education has not been sufficient. Although the school system has changed from the times of absolute dominance of one-way teacher's desk teaching, the (Finnish) school system, where order and memorizing knowledge have been most important, favor 'law-abiding' judging types more than perceiving, spontaneous types. The well-organized and egalitarian educational system does not favor original or creative pupils who want to behave differently (cf. Routamaa, Vesalainen & Mahlberg 1995). Education emphasizing knowledge instead of applied activities, little by little represses inborn creativity and risk taking. The spontaneous types do not necessarily feel at home sitting 45 minutes listening to theoretical tuition. Spontaneous Ps may be disorderly and break the rules more often than Js who stand, even favor, a structured, organized and planned environment. Also the Finnish feminine culture favors judging types more than perceiving types. That may be why many entrepreneurs have quite low education, or have not been happy to work as salary workers in hierarchical and structured big organizations. It may be supposed that often the school system with all its rules and exact time schedules favor Js, and

maybe the detailed tuition given, also Ss. In order to treat the pupils more equally according to their differences, the school system should be changed a little bit more toward entrepreneurial and intrapreneurial courses. Further, regardless of the teachers' own psychological types, the teachers should have good self-knowledge and ability to recognize and understand different personalities, and they should have an ability to act as good situational leaders taking into account pupils' different psychological types when they plan teaching methods and arrangements. A good mixture of subjects and teaching methods is needed to satisfy the variety of psychological types in the class in order to allow individual growth and development of the attitudes, knowledge and skills needed in entrepreneurship or intrapreneurship.

REFERENCES

- Asikainen, V. & Routamaa, V. (1997). The relationship between the MBTI and the creativity orientations of managers. Proceedings of the Leadership and the Myers-Briggs Type Indicator, Second International Conference, Washington.
- Barbato, R.J. & Durlabhji, S. (1989). Budding entrepreneurs: Business students and dislocated workers. *Journal of Business and Entrepreneurship*, 1: 1, 49-57.
- Brockhaus, R.H. (1982). The psychology of the entrepreneur. In C.A. Kent, D.L. Sexton, & K.H. Vesper (Eds.), *Encyclopedia of entrepreneurship*, Englewood Cliffs: Prentice-Hall, 39-57.
- Carland, J. W. (1982). Entrepreneurship in a small business setting: An exploratory study. Doctoral dissertation. University of Georgia, GA.
- Garland, J.C. & Garland J.W. (1992). managers, small business owners and entrepreneurs: The cognitive dimension. *Journal of Business and Entrepreneurship*, 4: 2, 55-66.
- Carland, J.W., Hoy, F., Boulton, W.R. & Carland, J.C. (1984). Differentiating entrepreneurs from small business owners: A conceptualization. *Academy of Management Review*, 9, 354-359.
- Ginn, C. & Sexton, D.L. (1988). psychological types of Inc. 500 founders and their spouses. *Journal of Psychological Type*, 16, 3-12.
- Envick, B.R. & Langford, M. (2000). The Five-factor Model of Personality: Assessing Entrepreneurs and Managers. *Academy of Entrepreneurship Journal*, 6: 1, 6-17
- Gartner, W. B. (1989). "Who Is an Entrepreneur?" Is the Wrong Question. *Entrepreneurship: Theory & Practice*, 13: 4, 47-68.
- Ginzberg, E. (1955). *What makes an executive*. New York: Columbia University Press.
- Hautala, T. & Routamaa, V. (forthcoming 2006). *Katse naamion taa. Itsetuntemuksesta voimaa*. Leadeo Publications.
- Hornaday, J. A. & Aboud, J. (1971). Characteristics of successful entrepreneurs. *Personnel Psychology*, 24, 141-153.
- Järilström, M. (2000). Personality preferences and career expectations of Finnish business students. *Career Development International*, 5: 3, 144-154.
- Järilström, M. (2002). Organizational employment versus entrepreneurship: The personality approach to business students' career aspirations. *Journal of Business and Entrepreneurship*, 14: 1, 103-123.
- Keirse, D. & M. Bates (1984). *Please Understand Me*. Prometheus Nemes Books, Del Mar, CA.
- McClelland, D.C. (1961). *The achieving society*. Princeton, N.J.: Von Nordstrand.
- Miettinen, A. & Lehtomaa, A. (1995). Onko yrittäminen henkilöstä kiinni : erilaisten sahayrittäjätyyppien menestyminen. *Puumies* 40: 1, 35-37, 39.
- Mill, J. S. (1848). *Principles of political economy with some of their applications to socialpsychology*, London: John W. Parker.
- Myers, I. (1992). *Introduction to Type*. CA: Consulting Psychologists Press, Inc.

- Myers, I. & McCaulley, M.H. (1990). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. CA: Consulting Psychologists Press, Inc.
- Reynierse, J.H. (1997). An MBTI model of entrepreneurship and bureaucracy: The psychological types of business entrepreneurs compared to business managers and executive. *Journal of Psychological Type*, 40, 3-19.
- Robinson, P., Stimpson, D.V., Huefner, J. C. & Hunt, H.K. (1991). An attitude approach to the prediction of entrepreneurship. *Entrepreneurship: Theory & Practice*, 15: 4, 13-32.
- Routamaa, V. (2000). Finland. In C. Ginn (Ed.), *Leadership, Type, and Culture*. CAPT: Gainesville, FL. (2000).
- Routamaa, V. & Heinäsuo, K. (2006). Type and Values over Generations. *Psychological Type and Culture, East and West Conference*, Honolulu Jan 6-8, 2006. Electronic Proceedings.
- Routamaa, V. & Rissanen, A-L. (2004). Entrepreneurial Identity and Personality Types. *Proceedings of The 8th International Conference on Global Business & Economic Development Guadalajara, Mexico, January 7-10, 2004*
- Routamaa, V. & Varamäki, E. (1998) Entrepreneurs' personality and networking attitudes. *Proceedings of the 25th ISBC Conference, Sao Paulo, Brasil 11.-14.10.1998*
- Routamaa, V. & Vesalainen, J. (1987). Types of entrepreneur and strategic level goal setting. *International Small Business Journal*, 5:3, 19-29
- Routamaa, V., Vesalainen, J. & Mahlberg, T. (1995). Developing entrepreneurship by training school teachers - the case of the province of Vaasa. *Proceedings of the ENDEC Conference Entrepreneurship in Transitional Economics, Shanghai, China*.
- Routamaa, V., Vesalainen, J. & Pihlajaniemi, E. (1996). Meeting the Challenges of Export Markets: Entrepreneurs' Personality and International Orientation. *Proceedings of the seventh ENDEC World Conference, Singapore*.
- Schumpeter, J. A. 1934. *The Theory of economic development*. Cambridge, Mass.: Harvard University Press.
- Smith, N. R. (1967). *The Entrepreneur Man and Type of Company*. Michigan State University.
- Stanford, M. I. K. & Curran, J. (1976) Growth and the small firm – an alternative view. *Journal of Management Studies*, 13 (May), 95-110.
- Timmons, J.A. (1978). Characteristics and role demands of entrepreneurship. *American Journal of Small Business*, 3, 5-17.
- Timmons, J.A. (1989). *The Entrepreneurial Mind*. Brick House Publishing, Andover, MA.
- Welsh, J.A. & White, J.F. (1981). Converging on characteristics of entrepreneurs. In K.H. Vesper (Ed.), *Frontiers of entrepreneurship research*, Wellesley, MA: Babson Center for Entrepreneurial Studies, 504-515