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Exploring the relationship between media coverage and participation in entrepreneurship: Initial global evidence and research implications

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Abstract Using a set of variables measured in the Global Entrepreneurship Monitor (GEM) study, our empirical investigation explored the influence of mass media through national culture on national entrepreneurial participation rates in 37 countries over 4 years (2000 to 2003). We found that stories about successful entrepreneurs, conveyed in mass media, were not significantly associated with the rate of nascent (opportunity searching) or the rate of actual (business activities commenced up to 3 months old) *start-up* activity, but that there was a significant positive association between the volume of entrepreneurship media stories and a nation's volume of people running a *young* business (that is in GEM terminology, a business aged greater than 3 but less than 42 months old). More particularly, such stories had strong positive association with *opportunity oriented* operators of young businesses. Together, these findings are compatible with what in the mass communications theory literature may be called the 'reinforcement model'. This argues that mass media are only capable of reinforcing their audience's existing values and choice propensities but are not capable of shaping or changing those values and choices. In the area covered by this paper, policy-makers are committing public resources to media campaigns of doubtful utility in the absence of an evidence base. A main implication drawn from this study is the need for further and more sophisticated investigation into the relationship between media coverage of entrepreneurship, national culture and the rates and nature of people's participation in the various stages of the entrepreneurial process.

Keywords Mass media · Reinforcement theory · Entrepreneurship · Global Entrepreneurship Monitor (GEM)

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Mass media influence on entrepreneurship

This study sought to investigate the general proposition that mass media communications influence entrepreneurship participation rates by acting through values embedded in differing national cultures. More precisely, the objective was to investigate if a higher volume of mass media stories portraying successful entrepreneurship is associated with a higher rate of participation in (1) opportunity searching activity, (2) start-up activity and (3) young firm activity, considering the national cultural context mass media are embedded in.

Throughout the world, and in a vast array of activities, mass media communications are recognized and studied as a major influential factor in a wide range of attitudes and behaviors of people (see e.g., Macnamara, 2003; McDonald, 2004; McQuail, 2005 for comprehensive reviews). So, media communications may be expected to exercise some degree of influence upon national levels of entrepreneurship participation. Hitherto, the topic has been almost completely neglected in the entrepreneurship literature even though knowledge gained from mass media theory shows that mass media communications affect culture and social behavior (e.g., Macnamara, 2003; McDonald, 2004) and knowledge from entrepreneurial literature shows that values and culture matter for entrepreneurship (e.g., Shane, 1992; Tiessen, 1997; Thomas & Mueller, 2000).

This paper presents and analyses longitudinal population survey and key informant data (for the years 2000–2003) from the international Global Entrepreneurship Monitor (GEM) project concerning mass media, national culture and entrepreneurship. The research process has, to some degree, been 'upside-down' because our research objective and hypotheses evolved out of data already available and the existing literature was used more as a means of helping to explain findings than as a means of generating hypotheses. The GEM data on mass media in the context of a multi-national, longitudinal study, provide the opportunity to investigate some aspects of the relationship between mass media, national culture and entrepreneurship. Accordingly, this paper aimed to take the first step toward further and deeper empirical research in this neglected area.

In this study, national culture is viewed consistent with Hofstede (1980):

> 'National culture' is in this paper defined according to Hofstede (1980), as the '... collective programming of the mind which distinguishes the members of one group or category of people from those of another ... the interactive aggregate of common characteristics that influence a human group's response to its environment' (Hofstede, 1980: 25).

Further, in our study, 'Entrepreneurship participation' was restrictively viewed from a simple linear, temporal and process perspective. Entrepreneurship as it is understood in this paper consists of three ongoing phases. A country will, for each phase, experience different levels of activities. The first phase involves the nascent (opportunity search activity) component of start-up activity; the second phase involves the actual (business actually commenced up to 3 months old) stage of start-up activity, and the third (but by no means the last) phase in the entrepreneurial process involves what we call 'young' business activity (ventures, measured in the GEM study as being still in the hands of the original entrepreneur or team and aged greater than 3 but less than 42 months old). These phases will be more deeply described subsequently.

The paper starts by establishing a brief theoretical foundation of mass media's influence on social behavior and upon culture and entrepreneurship. This leads to an identified gap in the entrepreneurship literature concerning the influence of mass media through national culture on entrepreneurship. Then an empirical study is developed and presented, followed by a section discussing the limitations, interpretation and implications of our results.

Convergence: Two core literatures and a void

The 'mass communications' literature: Contending theories of the influence of media on social behavior

In this paper, we have completed a review of the massive literature pertaining in the field of mass communication theory. It is not exhaustive, but extensive enough to locate the main hypotheses developed through time. At great risk of massive oversimplification, we concatenate and summarize three broadly contending perspectives from among the great number of media models and theories produced over the past 80 or so years which have tackled the problem of 'media effects'. This is done to indicate, albeit roughly and broadly, the range of contending and unresolved theoretical perspectives still current in the complex and disputed field of mass communications studies. Each theory, in its own way, has attempted to explain within a theoretical construct—the way in which the mass media works on mass audiences. The three perspectives are summarized in Box 1 with regard to their period of time, main assumptions, hypotheses, main authors and so forth.

Box 1 Three perspectives on media effect

Theory	The bullet theory	The reinforcement theory	The agenda setting function theory
Effect	Change	Reinforcement	Shaping
Period of time	1920–	1950–	1970–
School/ paradigm	Frankfurt School Payne Fund Studies	The limited effect paradigm	Birmingham School Cultural studies
Main assumption	Audiences are passive Texts are closed The media is a very powerful social, political and cultural institution	Audiences are active Texts are open Media have little power to alter or challenge beliefs, values and idea already hold by audiences. Other social institutions like family, peer group, schools, social class and occupation are far more important influences then mass media	Audiences are active Tests are open Media has significant power to setup the agenda or terms of reference of any social, political or economic discussion
Hypotheses	The media can directly influence the behavior and thinking of audiences	Media are only capable of reinforcing existing beliefs, values and idea.	Media cannot tell audience 'what to think', but 'what to think about'.
Citations	"In 1922, Lippmann argued that mass communication	"Mass communication ordinarily does not server	"The hypothesis suggested that media set agenda for

	could become the basis for people's view of the world. About the same time, Lasswell (1927) considered mass communication as a tool for manipulation and social control" (Perse, 2001, p. 3)	as a necessary and sufficient cause of audience effects, but rather functions among and through a nexus of mediating factors and influences" (Klapper, 1960, p. 7)	public discussion of social issues by providing clues about which issues were important to think about" (McDonald, 2004, p. 193)
	"During this time media researchers thought that the media could inject values, attitudes and way of thinking and behaving directly into the heads of the defenceless public ... Many media researchers in this period thought that clever devices used by the media could make people do almost anything" (Gripsrud, 2002, p. 42)	"Social and personal characteristics of people influenced their selective approach to mass communication so much that media's main and most common impact was believed to be reinforcement" (Perse, 2001, p. 25)	"While the mass media may have little influence on the direction or intensity of attitudes, it is hypothesized that the *mass media set the agenda for each political campaign, influencing the salience of attitudes toward the political issues*" (McCombs & Shaw, 1972, p. 177)
Main authors	Lippmann (1922) Lasswell (1927) Blumer (1933) Blumer and Hauser (1933) Charters (1933) Peterson and Thurstone (1933) Lasswell (1948) Stouffer et al. (1949) Star and Hughes (1950) Bauer and Bauer (1960)	Hovland et al. (1949) Katz and Lazarsfeld (1955) Berelson (1959) Davison (1959) Klapper (1960) Trenaman and McQuail (1961)	McCombs and Shaw (1972) Noelle-Neumann (1973) Hall (1973, 1975) McCombs (1977) Glynn and McLeod (1984) McCombs and Shaw (1993) Glynn, Hayes, and Shanahan (1997) McDonald et al. (2001)

Model one: Change

Sometimes crudely called 'the bullet theory' or 'the hypodermic needle theory' is a broad school of thought arguing that the media is a very powerful institution capable not only of shaping values and attitudes but of changing them. Current from the 1920s, dominant in the 1940s and still potent in the early twenty-first century, this perspective is associated in the USA with the Payne Fund Studies and in Germany with The Frankfurt School. Major Assumptions include:

- that the media is a very powerful social, political and cultural institution;
- that media can directly influence the behavior and thinking of audiences.

It is important to note that the very idea of a mass media was very new to the world early on in the 20th Century. In the early decades of that century, mass media was a new force, a component of society that had never really existed before. The basic idea of the 'the change model' was and is that the media present messages to

members of mass audiences—who perceive them more or less uniformly (Lasswell, 1948; McQuail, 2005). This is largely because audiences were understood to be atomized. This was considered the condition of a modern impersonal and ruthless industrial society. People were living with a sense of isolation and vulnerability. The idea of old-fashioned, close-knit community (gemeinschaft) was seen to be overwhelmed by mass impersonal, industrial social arrangements (gesellschaft). Mass Audiences were thus seen as dislocated—and isolated from any sense of a community. This made them highly susceptible to mass media messages. In this theory, audiences are passive—media send out messages (like a bullet or a shot from a hypodermic needle). The audience receives the impact and its emotions, sentiments and values are directly influenced by the media message 'shot'. Media messages in this context are believed to lead individuals to respond in a more or less uniform manner, creating changes in thought and action. This is in keeping with Lasswell's model of communication (see Hindle, 1987; Lasswell, 1948, passim), which suggests that a sender sends a message to a receiver in a fairly direct manner. In this scenario we understand that media texts are seen as being closed. So, in this perspective, there is little room for different interpretations or different understandings or meanings that can be made when mass audiences see, hear or read media texts. The Frankfurt School had a lot to do with this understanding about the nature of 'mass society'. This was furthered by observations that the popular press was indeed very popular, and that film, comics and radio were immensely popular with mass audiences (Blumer, 1933; Blumer & Hauser, 1933). Also backing this view was the massive and extensive and effective use of the media for propaganda by governments on both sides during World War One (Lasswell, 1927; Stouffer et al., 1949). After the war, advertisers clearly saw the immense possibilities of furthering their own particular causes. Major concerns expressed by conservatives in the 1920s about the way movies and comics and radio would erode standards of morality still echo in today's world as they have done since concerns had been made about the danger of universal literacy by the elite educated classes of the 18th century. The 'change model' of mass communication endures to this day.

Model two: Reinforcement

Though no media theory ever really seems to die, they do proliferate and contend. In the beginning of 1950s, some experiments and empirical studies (Berelson, 1959; Davison, 1959; Hovland, Lumsdaine, & Sheffield, 1949; Trenaman & McQuail, 1961) started questioning the strong believe in media effects characterizing the bullet theory, and a scepticism about the effect of mass media emerged. Based on this scepticism, Joseph Klapper (1960) and other researchers developed what has come to be known as 'reinforcement theory'. In sharp contrast with 'change' or 'bullet' theory, the reinforcement perspective contends that audiences are active, not mere passive and unquestioning recipients of whatever is served up to them (Klapper, 1960). In reinforcement theory, the media are regarded as having very little power to alter or challenge beliefs, values and ideas already held by audiences. The media ordinarily act in ways that reinforce opinions,

ideas and values which audience members already hold. Specifically, Klapper stated that:

> Mass communication does not ordinarily serve as a necessary and sufficient cause of audience effects, but rather functions through a nexus of mediating factors. (Klapper, 1960: 7).

Klapper's empirical research had shown that other 'socializing agencies' in modern societies were far more important and influential in helping shape audience opinions, behavior and attitudes. These more influential agencies included: family, peer group, religion, school as an institution, occupational group, legal institutions and political institutions. These were real life factors and situations with which individuals were in contact on a daily basis. They were much more real—and interactive—than any media experience. So, if a person were, for instance, a racist, a bigot, sexist, homophobic or a 'greenie', chances are that if that person saw a TV program or read a newspaper which contradicted their point of view—they would reject it out of hand and that if the program confirmed their pre-existing point of view, they would accept the program as a reinforcing agent. In other words, the power of other more immediate socializing agencies would be stronger than the power of the media. It is important to understand here that, in Klapper's model, the media text is said to be 'open'. Texts are open to the various interpretations that are possible in a pluralist society—where there is a multiplicity of backgrounds to audience members.

In summary, in Klapper's model, mass media messages are only capable of reinforcing those ideas, values and attitudes which a person already possesses as a result of other, non-media socializing agencies. A person accepts the messages which already agree with his or her standpoint—and rejects those which do not. He or she then filters out those media products and personalities they do not like while tuning in to those that they do find concordant with existing values and attitudes.

Model three: Shaping

Contending with and falling between both 'change' and 'reinforcement' theory are media influence models claiming that mass media can have greater influence than mere reinforcement but have insufficient power to actually change values (McCombs & Shaw, 1972, 1993; McDonald, Glynn, Kim, & Ostman, 2001; Noelle-Neumann, 1973). Very broadly this perspective argues that media can *help to shape* people's opinions, values and attitudes. The help-to-shape theory is more formally known as 'Agenda Setting Function Theory' (McCombs & Shaw, 1972; McCombs & Shaw, 1993). It emanates from the so-called 'Birmingham School', associated with Stuart Hall (see Hall, 1975, passim) and a diverse group of researchers working on the question of media effects in the late 1960s and early 1970s. It sprang from a gap left open by Klapper (1960) in his reinforcement theory. In summary, agenda setting function theory allows us to go back to the understanding that the media does have some power in shaping our opinions attitudes and values. Theorists in this school subscribe to this view of the media: it cannot tell you what to think, but it has a big role in being able to tell you what you

could think *about*. This may seem a subtle difference—but it is in fact an immense one. The media in this light are understood to be gatekeepers. That is, certain amounts of information, on certain topics on certain occasions are given media 'permission' to be circulated. This is the selection and omission role of the media. In being able to set the terms of reference, of providing certain amounts of information from certain perspectives or points of view, media accounts and representations can then focus audience attention in certain directions.

Which theory should 'drive' hypothesis building?

As will be seen shortly, the empirical component of the research reported in this paper was deliberately not theory driven for the very reason that contending theories of mass communication are so abundant, contentious and mutually contradictory. The empirical component of this study was designed to be 'open' in the sense that it involved exploratory examination of a particular data set (relevant variables from the GEM study, see below). What follows, accordingly, is not a 'classical' piece of quantitative research because theory did not 'drive' the hypotheses. The investigation did not depend for its design on a priori subscription to any particular existing theory of the effects of mass communications upon opinions, attitudes and values. Rather, this research was designed in awareness of the abundance of contending theories of the effects and power of mass communications and in the hope that one or more of these theories might have explanatory power for the empirical results when they were obtained.

The 'national culture' literature: The influence of national culture on business and entrepreneurial behavior

The interest in the influence of culture on business behavior and especially entrepreneurship and innovation goes back to the early works of Weber (1976) and McClelland (1961) and the later work of Hofstede (1980). Studies have argued that societies stressing different cultural values will experience different levels of innovation and entrepreneurship (e.g., Begley & Tan, 2001; Ettlie, Dreher, Kovacs, & Trygg, 1993; Lee & Peterson, 2000; Morrison, 2000; Mueller & Thomas, 2000; Nakata & Sivakumar, 1996; Shane, 1992, 1993; Thomas & Muller, 2000; Tiessen, 1997). Johnson and Lenartowics (1998) argued that the relationship between culture and entrepreneurship is not causal, but that cultural values impact entrepreneurship through the agency of economic freedom—a construct that is culturally derived. Further, Schneider and de Meyer (1991) argued that national cultures influence individuals' capacities to interpret and respond to strategic issues. One consequence might result in an impact on the levels of innovation and entrepreneurial participation displayed by a population.

Irrespective of whether the relationship between culture and innovation and entrepreneurship is direct or indirect, the general argument seems to be that *individualism* (e.g., Johnson & Lenartowics, 1998; Lee & Peterson, 2000; McGrath, MacMillan, & Tsai, 1992; Morrison, 2000; Shane, 1992, 1993; Tiessen, 1997) and *masculinity* (e.g., Lee et al., 2000) has a positive association with a population's levels of innovation and entrepreneurship, whereas *uncertainty avoidance*

(e.g., Johnson & Lenartowics, 1998; Lee & Peterson, 2000; McGrath et al., 1992; Morrison, 2000; Shane, 1993) and *power distance* (e.g., Johnson & Lenartowics, 1998; Lee & Peterson, 2000; Shane, 1992, 1993) have a negative impact. Others have argued that the relationship is far more complex. Nakata and Sivakumar (1996) argued, based on a review of literature on national culture and product development, that all four dimensions provided by Hofstede (1980) vary in their impact. The impact depends on which component of product development is under investigation. According to Nakata and Sivakumar (1996), it is the *initiation* of product development that is positively related to high individualism, low power distance, masculinity, and uncertainty avoidance, whereas the *implementation* of new product development is related to low individualism, high power distance, masculinity, and uncertainty avoidance.

Regardless of the precise details of direct or indirect relationship between national culture and innovation and entrepreneurship, there is enough in the literature to indicate that culture matters. Reviewing the literature it also becomes clear that most studies are searching for a hierarchy of cultural values: an answer to the question, 'what are the *best* cultural values for promoting entrepreneurship in a nation?' The answer, explicitly or implicitly often comes back that Western cultural values and more particularly those values associated with the economic culture of the United States are highly desirable and efficacious. This answer might be partly due to cultural bias and partly due to something akin to a self-fulfilling prophesy because the very concepts of modern entrepreneurship and innovation are, to a high degree, developments of Western societies (e.g., McClelland, 1961; Schumpeter, 1934; Weber, 1976).

Innovation and entrepreneurship can still take place in some countries and among various distinct religious, ethnic and Indigenous minorities who do not esteem the mainstream values of many Western nations. This raises the obvious question with respect to a hierarchy of entrepreneurial values: "... is entrepreneurship the same across cultures" (Thomas & Muller, 2000: 289). Thus, instead of merely searching for national cultures that simulate factors that, in Western societies, are associated with entrepreneurship, studies on culture and entrepreneurship should also investigate whether the drivers of entrepreneurship differ across countries. Using this approach, Begley and Tan (2001) found that social status associated with entrepreneurship (positive) and the shame of business failure (negative) are better predictors of entrepreneurship in East Asia than in the West. They concluded that from "... a public policy perspective, the clearest implication of the findings is the potential value of improving the status of entrepreneurship in the public eye, especially in East Asian countries" (Begley & Tan, 2001: 550). From here it is but a short distance to asking how, through better understanding of the culturally sensitive employment of mass media stories, the 'public eye' might be caught.

Using the extant literature, it is legitimate to hypothesize that the development of national culture might be an effective way of promoting entrepreneurship, but the question of which cultural values actually promote entrepreneurship is unanswered and may differ across countries. Thomas and Muller (2000) put it this way:

> In the rush to stimulate entrepreneurship activity, policy makers often rely on the success stories, anecdotes, and prescriptions documented in the literature. However, the lack of research in diverse contexts has been a persistent problem in applying entrepreneurship theory internationally. (Thomas & Muller, 2000: 289)

A gap in the entrepreneurship literature

So, we have both a literature on how mass media influence values and social behavior and also a literature on how national cultures influence entrepreneurship. But the direct topic of mass media's influence through national culture on entrepreneurship is sadly neglected. In the extensive body of entrepreneurship literature, there are only a few, disjointed, conceptual indications—not based on any empirical data—to indicate that mass media might influence entrepreneurship. Henderson and Robertson (1999) argued in their paper on young adults' attitudes to entrepreneurship as a career that a "... disappointingly poor knowledge is shown of actual entrepreneurs, conditioned largely by media which often portray business people in an unflattering light" (Henderson & Robertson, 1999: 244). Duggan (1996) wrote in his paper about promoting innovation in the UK that the media "... plays a key role in forming an understanding of the necessity of change" (Duggan, 1996: 511). How key? In what ways? We are left with nothing but an empty, clichéd assertion that mass media through national culture may be an influential factor on participation rates in entrepreneurship, but until now the research community has not chosen to investigate the relationship empirically.

A few research projects have investigated various aspects of the association between mass media and entrepreneurship, but no prior studies have specifically and empirically investigated the influence of mass media through national culture upon entrepreneurship *participation*. A small stream of literature is concerned with how the discourse of (female) entrepreneurs are reproduced in different media (e.g., Ahl, 2002, 2004; Lämsä & Tiensuu, 2002; Neergaard & Smith, 2004). In another vein, van Gelderen and Verduyn (2003) have evaluated a set of films in which entrepreneurship plays a lead role, studying their usefulness and learning effect in the classrooms. Thus, since no-one has investigated the relationship between mass media and entrepreneurship participation and believing that this is a relationship worth investigating, we conducted this pioneering study.

The empirical study

Research objective

The objective was to investigate if a higher volume of mass media stories portraying successful entrepreneurship is associated with a higher rate of participation in (1) opportunity searching activity, (2) start-up activity and (3) young firm activity, considering the national cultural context mass media are embedded in.

Data: Relevant variables from the global entrepreneurship monitor

The Global Entrepreneurship Monitor (Reynolds, Hay, & Camp, 1999; Reynolds, Hay, Bygrave, Camp, & Autio, 2000; Reynolds, Camp, Bygrave, Autio, & Hay, 2001; Reynolds, Bygrave, Autio, Cox, & Hay, 2002; Reynolds, Bygrave, & Autio, 2004) is an international project trying to detect whether and to what extent entrepreneurial

activity varies across countries; what makes a country entrepreneurial; and how entrepreneurial activity affects a country's rate of economic growth and prosperity. For that purpose, each participating GEM country research team undertakes a national population survey and a national key informant survey every year. The national population survey contains among other things questions asked of a random sample of a minimum of 2000 adults about their engagement in entrepreneurial activity and their attitudes towards entrepreneurship including cultural values. The national key informant survey, among other things, contains questions asked of qualitatively selected respondents whose expertise is demonstrable with respect to nine 'framework conditions'—including cultural values—assumed in the GEM research model to influence the national propensity to engage in entrepreneurial behavior (Reynolds et al., 1999, 2000, 2001, 2002, 2004).

Based on the data from the multi-national population surveys, it is possible to estimate levels of different kinds of entrepreneurial activities measured as percentage of the adult population engaged in the specific activity for each participating country. Further, it is possible from each national population survey to obtain an estimate of the percentage of adult people who agree upon different statements related to national cultures. Thus, from all the national population surveys taken together, it is possible to create a dataset that contains countries' different entrepreneurial activities and its different cultural values. (As will soon be seen the GEM survey also generates a very pertinent mass media variable).

As the GEM project is still in its early phase as a longitudinal, multi-national research project, the variables included in the national population survey are subject to evolution. In this paper we took as our starting point the relevant variables included in 2003. But as we wanted to make sure that the relations between dependent and independent variables were not only a coincidence of 2003, we also investigated data from 2000, 2001 and 2002. In cases where the empirical data in the population survey were not available for a specific year, we searched the key informant surveys to find a surrogate. Below, we first describe the dependent variables followed by the independent variables as they were composed in the international 2003 GEM data set. The full names of variables are written in italics followed by the short name in brackets, written in capitals. The short names are used in the tables. We will shortly argue (with reference to relevant publications) the relevance of the measures GEM supplies and we used as independent variables in predicting national entrepreneurial activity. Henceforth in this paper, all variable names refer to the precise descriptions given below.

Dependent variables

Opportunity search activity (OPPORT_ACT) The percentage of the adult population intending to start a business within 3 years.Start-up activity (START_ACT): The percentage of adult population trying to start an independent new business or a new venture together with their employer. This must be a business or venture they have been actively trying to start, will own all or part of, and from which they have received salary up to 3 months.

Young business activity (YOUNG_ACT) The percentage of adult population that alone or together with others currently are owner(s) of a business they help to managing, are self-employed, or from which they are selling goods or services to others. This is a business from which they have received salary for less than 42 months.

Total early-stage activity (TEA) Percentage of the adult population engaged in start-up activities, young business activities, or both.

Total early-stage opportunity based activity (TEA_OPP) Percentage of the adult population engaged in start-up activities, young business activities, or both, where the enterprise was begun, not from necessity, but in order to take advantage of a business opportunity.

Total early-stage necessity based activity (TEA_NEC) Percentage of the adult population engaged in start-up activities, young business activities, or both, and so engaged because they did not have better choices for work.

Independent variables

Networking (NETWORK) Percentage of the adult population who personally know someone who has started a business in the past 2 years. In general, networking is perceived to have a positive impact on entrepreneurship (e.g., Aldrich & Zimmer, 1986; Greve, 1995; Hoang & Antoncic, 2003), and further Dodd and Patra (2002) and Johannisson (2000) have argued that networking differs according to countries. Thus, this variable is expected to have a positive relationship with entrepreneurial activity.

Alertness (ALERT) Percentage of the adult population who think there will be good opportunities in the next 6 months for starting a business in the area where they live. Discoveries of new opportunities are crucial parts of entrepreneurship (e.g., Davidsson, 2004; Eckhardt & Shane, 2003; Shane & Venkataraman, 2000; Stevenson & Jarillo, 1990; Venkataraman, 1997), and being alert to opportunities seems to have a positive impact on entrepreneurship (e.g., Ardichvili & Cardozo, 2000; Kirzner, 1997). Thus, this variable is expected to have a positive relationship with entrepreneurial activity.

Competence (COMPET) Percentage of the adult population who perceive they have the knowledge, skills and experience required to start a new business. Within entrepreneurship literature competence or human capital are argued to have a positive impact on entrepreneurship (Bosma, van Praag, Thurik, & de Witt, 2002; Davidsson & Honig, 2003; Foss, 1994; Gimeno, Folta, Cooper, & Woo, 1997). Thus, this variable is expected to have a positive relationship with entrepreneurial activity.

Risk-willingness (RISK_WILL) Percentage of the adult population for whom fear of failure would *NOT* prevent them form starting a business. (GEM measures 'fear of failure'. *Risk- willingness* is created by changing the sign of the variable). Within entrepreneurship literature risk-willingness is usually assumed to have a positive impact on entrepreneurship (Brockhaus, 1980; Simon, Houghton, & Aquino, 1999; Warhuus, 1999), and furthermore, the variable relates to Hofstede's uncertainty avoidance dimension. Thus, this variable is expected to have a positive relationship with entrepreneurial activity.

Uniform living standards (UNIFORM) Percentage of the adult population who think that most people in their country prefer that everyone had a similar standard of living. This variable is related to Hofstede's (1980) notion of 'collectivism', and therefore this variable is expected to have a negative relationship with entrepreneurial activity.

Good career choice (CAREER) Percentage of the adult population who think that most people in their country consider starting a new business a desirable career choice. This variable is related to Hofstede's (1980) individualism as well as Begley and Tan's (2001) concept of social status. Thus, this variable is expected to have a positive relationship with entrepreneurial activity.

Status perception (STATUS) Percentage of the adult population who think that those starting a successful new business in their country have a high level of status and respect. This variable is related Begley and Tan's (2001) concept of social status, and thus this variable is expected to have a positive relationship with entrepreneurial activity.

Media story prevalence (MEDIA) Percentage of the adult population who think they often see stories in the public media about successful new business. The exact wording of the question in the survey is: "In your country, do the public media often have stories about successful new businesses?"

This is the GEM variable that is at the heart of our investigation. Whether this variable may be deemed (for hypothesizing) to have a positive relationship with entrepreneurial activity (at any of the three stages of the entrepreneurial process) or not will depend upon which one of the models from the mass communications literature one chooses to have faith in. If one subscribed to the theory that positive mass media stories can only *reinforce* existing values, one would expect no statistically significant relationship between the MEDIA and OPPORT-ACT or START-ACT variables, but a positive relationship between MEDIA and YOUNG-ACT. On the other hand, if one subscribed to the theory that media stories could either help *shape* values or actually *change* existing values, one would expect a positive association between MEDIA and all three dependent entrepreneurial participation variables: OPPORT-ACT, START-ACT and YOUNG-ACT. In this study, as discussed above, we intended to use mass communications theory a posteriori, not a priori. In this open-minded vein, we did not have a preference for

any particular model, but we opted to hypothesize a positive association with all three variables on grounds of parsimony rather than conviction. The act of hypothesizing forces a choice but it cannot be stressed enough that we were here *exploring*—not *expecting*—what the data might show.

Appropriate analytical techniques

The nature of the data determines the range of analytical techniques appropriate to investigation (Knoke, Bohrnstedt, & Mee, 2002). Since both our dependent and independent variables were continuous, a range of descriptive techniques was appropriate. Inferentially, bivariate and multiple linear regression were indicated. It was appropriate to look at the differences in entrepreneurial activity as proportions of the adult population engaged in entrepreneurial activity in the different countries. For the purpose of investigating the relationship between mass media and entrepreneurial activity, bivariate regression techniques were also suitable. Bivariate linear regression estimates the linear relationship between two variables minimizing the error sum of squares (Knoke et al., 2002). However, as we know from the entrepreneurship literature, national entrepreneurial activity is dependent on a large number of variables. This calls for a more sophisticated analytical technique that enables us to take some further variables into account beside the influence of mass media. For analyzing dependent continuous variables and independent continuous variables, such as those contained in our data set, multiple linear regression seemed to be the most appropriate analytical technique. This technique estimates the joint relationship between the dependent variable and two or more independent variables, minimizing the error sum squares (Knoke et al., 2002).

Hypotheses

From the literature on media influence we know that media might influence social behavior in different ways. Our data on mass media were based on a single question related to the concept of role models—stories about successful entrepreneurs. According to some of the literature and a good deal of policy-making[1] it might be initially hypothesized that stories on successful entrepreneurs are useful because they create role models stimulating people in the society to imitate. On this theory, stories of successful entrepreneurs would therefore influence people's vocational decision, and it might be expected that such stories might encourage more people to engage in entrepreneurial activities. Thus, societies with a high level of media coverage on successful entrepreneurs might be expected to experience a higher level of entrepreneurial activity in all stages of the entrepreneurial process. Bearing all considerations in mind—and conscious that we were exploring for possibilities not testing for likelihoods—we hypothesized as follows.

[1] The governments of several countries participating in the GEM study have policies or actual programs to create media stories designed at putting role-models in front of designated audiences in the hope that the media coverage will induce certain pro-entrepreneurial attitudes and behaviors. An example is the Australian Government's 'Young Entrepreneur' program (see the website at Industry.gov.au).

Hypothesis 1 There is a positive relationship between level of media coverage on successful entrepreneurs and opportunity search activity.

Hypothesis 2 There is a positive relationship between level of media coverage on successful entrepreneurs and start-up activity.

Hypothesis 3 There is a positive relationship between level of media coverage on successful entrepreneurs and young business activity.

Hypothesis 4 There is a positive relationship between level of media coverage on successful entrepreneurs and total early-stage activity.

We earlier divided the total early-stage activity into the categories of opportunity based and necessity based. People engaged in necessity entrepreneurship are engaged because they see no other possibilities of economically surviving and are therefore not substantially influenced by the media—they are dominatingly influenced by the personal economic situation and the need to survive. On the other hand opportunity-based entrepreneurs may be more open to influence by media coverage of successful entrepreneurs. So, we hypothesized:

Hypothesis 5 There is a positive relationship between level of media coverage on successful entrepreneurs and total early-stage opportunity based activity.

Hypothesis 6 There is no relationship between level of media coverage on successful entrepreneurs and total early-stage necessity based activity.

Findings

Table 1 shows the correlations between the dependent variables and the independent variables for the years 2000–2003. In 2003, data on media coverage were available both from the population survey and from the key informant questionnaires, whereas data were only available from the key informant questionnaires for the earlier years

Table 1 Correlation between different entrepreneurial activities at the national level and media story prevalence

	Opportunity searching activity	Start-up activity	Young business activity	Total early-stage activity	Total early-stage opportunity based activity	Total early-stage necessity based activity
2003 population	0.329*	0.273	0.432**	0.354*	0.374*	0.258
2003 key informant	−0.111	−0.132	−0.009	−0.083	−0.033	−0.147
2002 key informant	0.108	−0.022	0.127	0.052	0.121	−0.045
2001 key informant	–	−0.293	−0.145	−0.288	−0.256	−0.230
2000 key informant	–	−0.153	−0.092	−0.160	−0.022	−0.255

Source: International GEM data from population survey and key informant surveys pooled across the years 2000, 2001, 2002, and 2003
*$p<0.05$; **$p<0.01$

2000–2002. No correlations in any of the 4 years were significant between key informants' assessment of the media coverage and any of the dependent variables, and the directions of the correlations were also in many cases in contrast to our hypotheses.

The correlations between the media variable pooled from the population survey in 2003 and the different dependent variables were more supportive of our hypotheses that media coverage, was significantly correlated with opportunity searching activity ($p<0.05$), young business activity ($p<0.01$), total early-stage activity ($p<0.05$), and total early-stage opportunity based activity ($p<0.05$), and not significantly related, as surmised, with early-stage necessity based activity.

A multiple linear regression is presented in Table 2 estimating the joint relationship between media coverage, the cultural control variables, and the six different dependent variables for 2003. It shows that the volume of people having the skills and knowledge to start a business is significantly associated with all dependent variables. Non-significant factors for all dependent variables were: the volume of people networking with other entrepreneurs; the volume of people being alert to opportunities and the volume of people perceiving that successful entrepreneurs receive high status. The volume of risk-willing people was positively correlated with total early-stage opportunity based activity ($p<0.05$). The volume of people perceiving 'uniform living standards' as a desirable cultural value was positively correlated with young business activity ($p<0.05$) and total early-stage activity ($p<0.05$). The volume of people who believed that 'most people perceive being an entrepreneur as a good career choice' was positively correlated with the level of opportunity search ($p<0.005$), young business activity ($p<0.05$), and total early-stage activity ($p<0.05$).

The amount of people who thought they often saw stories about successful entrepreneurs in the media was positively correlated with young business activity ($p<0.005$), total early-stage activity ($p<0.05$), and total early-stage opportunity based activity ($p<0.05$). Thus, the multiple linear regression on the empirical data from population survey in 2003 indicated that hypotheses 1 and 2 are not supported by this study, whereas hypotheses 3, 4, 5, and 6 received support. But before making any final decisions on which hypotheses to reject and which cannot be rejected, we conducted a set of multiple linear regressions, to the extent the data permitted for the years 2002, 2001, and 2000 and conducted a further regression based on the 2003 key informants' answer to the media question. The results are shown in Table 3.

As previously discussed, some variables are not available for every year, and if the 2003 variables were not available in previous years, defensible surrogates were used when possible. In 2000 and 2001, no appropriate surrogates exist for the opportunity search activity, and for 2001 and 2002 there were no appropriate surrogates for the variable on uniform living standards. Prior to 2003 the media variable was not available. For previous years, a surrogate was taken from the key informant questionnaires as the average answer on a five-point scale to the following question: "In my country, you will often see stories in the public media about successful entrepreneurs". Because of the use of a surrogate, the independent variables differ in measurement. The surrogate taken from the key informant questionnaires captured the average answer on a five point scale relating to a statement, whereas the population survey measured a percentage of the population

Table 2 Multiple linear regression predicting different kinds of entrepreneurial activities at the national level

	MODEL 1 Opportunity searching activity Opport_act (8)		MODEL 2 Start-up activity Start_act		MODEL 3 Young business activity Young_act		MODEL 4 Total entrepreneurial activity Tea		MODEL 5 Total entrepreneurial opportunity based activity Tea_opp		MODEL 6 Total entrepreneurial necessity based activity Tea_nec	
	Full	Final	Full	Final	Full	Final	Full	Final	Full	Final	Full	Final
Networking												
%Yes: You know someone personally who have started a business in the past 2 years	0.124		0.007		−0.003		0.003		0.008		−0.011	
Alertness												
%Yes: In the next 6 months there will be good opportunities for staring a business in the area where you live	−0.096		−0.012		0.004		0.003		0.024		−0.021	
Competence												
%Yes: You have the knowledge, skills and experience required to start a new business	0.425*	0.435****	0.236****	0.235****	0.123****	0.141****	0.337****	0.336****	0.222****	0.223****	0.12*	0.199****
Risk-willingness												
%No: Fear of failure would prevent you from starting a business	0.131		0.041		0.036		0.063		0.043	0.073*	−0.021	

Uniform living											
%Yes: In my country, most people would prefer that everyone had a similar living standard of living	−0.053		−0.036		0.057*	−0.059*	−0.080	0.092*	−0.022	−0.059	
Good career choice											
%Yes: In my country, most people consider starting a new business a desirable career choice	0.443**	0.415***	0.035		0.065*	0.060*	0.094	0.088*	−0.001	0.098*	0.076*
Status											
%Yes: In my country, those successful at starting a new business have a high level of status and respect	−0.024		−0.037		0.019		−0.021		−0.040	0.026	
Media											
%Yes: In my country, you will often see stories in the public media about successful new business	0.118		0.030		0.051*	0.061***	0.073	0.080*	0.044*	0.076*	0.023	
Constant	−28.819*	−28.243****	−2.848	−5.158****	−5.227*	−5.849****	−7.787*	−10.428***	−1.680	−3.063	−6.483*	−7.566****
R square	0.674	0.642	0.799	0.764	0.813	0.807	0.846	0.839	0.887	0.872	0.680	0.630

Source: International GEM data 2003
All variables are checked for multicollinearity at a 0.8 level
*p<0.05; **p<0.01; ***p<0.005; ****p<0.001 (all one-tailed)

Table 3 Different types of entrepreneurial activity at the national level upon networking, alertness, competence, risk willingness, uniform living standards, good career choice, status perception, and media story prevalence[a]

		MODEL 1 Opport_act		MODEL 2 Start_act		MODEL 3 Young_act		MODEL 4 Tea		MODEL 5 Tea_opp		MODEL 6 Tea_nec	
		Full	Final	Full	Final	Full	Final	Full	Final	Full	Final	Full	Final
Network	2003[b]	+		+		−		+		+		−	
	2003K[b]	+		+		+		+		+		−	
	2002[b]	+*	+**	+		+*	+*	+		+		+	
	2001[b]	No data		−		+		+		+	+*	−	−*
	2000[b]	No data		+	+*	+**	+***	+*	+**	+		+	+*
Alert	2003[b]	−		−		+		+		+		−	
	2003K[b]	+		+		+		+		+	+*	+	
	2002[b]	−		−		−		−		+		−*	−*
	2001[b]	No data		−		−		−		−		−	
	2000[b]	No data		−		−		−		+		−	
Compet	2003[b]	+*	+****	+****	+****	+****	+****	+****	+****	+****	+****	+*	+****
	2003K[b]	+*	+****	+****	+****	+****	+****	+****	+****	+****	+****	+***	+****
	2002[b]	+		+***	+****	+*	+*	+***	+****	+*	+****	+**	+****
	2001[b]	No data		+**	+****	+*	+****	+*	+****	+**	+****	+*	+**
	2000[c]	No data		−		+	+*	+		−		−	
Risk_will	2003[b]	+		+		+		+		+	+*	−	
	2003K[b]	+		+		+		+		+		−	
	2002[b]	+		−		−		−		−		+	
	2001[b]	No data		−		−		+		+		−	
	2000[b]	No data		+		−	−*	−		+	+*	+	
Uniform	2003[b]	−		−		−	−*	−	+*	−		−	
	2003[b]	−		−		−		−		−		−	
	2002	No data		No data		No data		No data		No data		No data	
	2001	No data		No data		No data		No data		No data		No data	
	2000[b]	No data		+	+*	+		+*		+		+*	+**
Career	2003[b]	+**	+***	+		+*	+*	+	+***	−		+*	+**
	2003K[b]	+***	+****	+		+****	+***	+***	+*	+		+***	+*
	2002[d]	−		−		−		−*	+*	−		−*	+***
	2001[d]	No data		+		−		−		+		−	−*

	2000[d]	No data		+	+*	−		+		+	+*	+	
Status	2003[b]	−		−		+		−		−		+	
	2003K[b]	−		−		+		−		−	−*	+	
	2002[e]	+**	+**	+		+		+		+		+*	+*
	2001[e]	No data		+		+		+		+		+*	
	2000[e]	No data		+		+		+	+*	+		+	
Media	2003[b]	+		+		+*	+***	+	+*	+*	+*	+	
	2003K[f]	+		+		+	+*	+		+	+*	+	
	2002[f]	−		−		+	+*	+		+	+*	+	
	2001[f]	No data		−		−		−		−		−*	
	2000[f]	No data		−		+		−		−	−*	−	
Constant	2003	−*	−****	−	−****	−*	−****	−	−***	−	−	−*	−****
	2003K		−	−	−****	−***	−****	−**	−****	−	−*	−	
	2002	−	−*	−	−	−*	−*	−	−	−	−	−	−
	2001			+	−	−	−	+	+	+	−	+	+
	2000			−	−	−*	−*	−	−**	−	+*	−	−*
R square	2003	0.674		0.799	0.764	0.813	0.807	0.846	0.839	0.887	0.872	0.680	0.630
	2003K	0.687		0.817	0.787	0.840	0.807	0.877	0.848	0.903	0.892	0.718	
	2002	0.442		0.403	0.339	0.395	0.305	0.421	0.316	0.382	0.297	0.386	0.324
	2001			0.453	0.408	0.375	0.323	0.426	0.382	0.586	0.555	0.419	0.202
	2000			0.468	0.409	0.543	0.424	0.525	0.499	0.459	0.408	0.492	0.364

Source: International GEM data 2000, 2001, 2002, and 2003

Explanation: + indicates a positive correlation; − indicates a negative correlation

Only in 2002 and 2003 this dependent variable was measured. Thus the "No data" indicates that the data was not available for these years

All variable are checked for multicollineartity at a 0.8 level

*$p<0.05$; **$p<0.01$; ***$p<0.005$; ****$p<0.001$ (all one-tailed)

[a] 2000: N=21; 2001: N=31; 2002: N=37; 2003: N=31 (in 2003K regressions N is only 30)

[b] The variable is taken from the population survey as the percentage of adults answering yes

[c] The variable is taken from the key informant questionnaire as an aggregated average of key informant assessment of the entrepreneurial capacity potential

[d] The variable is taken from the key informant questionnaire as the average answer on a five-point scale to the following question: "In my country, most people consider becoming an entrepreneur as a desirable career choice"

[e] The variable is taken from the key informant questionnaire as the average answer on a five-point scale to the following question: "In my country, successful entrepreneurs have a high level of status and respect"

[f] The variable is taken from the key informant questionnaire as the average answer on a five-point scale to the following question: "In my country, you will often see stories in the public media about successful entrepreneurs"

who agreed or disagreed with a statement. It is therefore not reasonable to interpret the B value in this statistical model, and as a consequence only the directions are shown with + for positive correlations and − for negative correlations.

Overall, the analytical results embracing data from earlier years mostly confirmed and enhanced the likely validity of the results from 2003. Again the correlations between media coverage and opportunity searching activity and start-up activity were insignificant, whereas the correlation between media coverage and young business start-up activity was positive ($p<0.05$) in 2002 and in 2003 using the 2003 key informants' answer to the media question (2003K). In 2002 and 2003K the correlations were also positive as expected between media coverage and total early-stage opportunity based activity ($p<0.05$ in 2002; $p<0.05$ in 2003K)), whereas the same correlation in 2000 was negative ($p<0.05$). Further, in contrast to the hypotheses as framed, there was a negative correlation in 2001 in the full model between media coverage and necessity based entrepreneurial activity ($p<0.05$).

Thus, with the exception of the correlations in 2000 between media coverage and total early-stage opportunity based activity and the correlation in 2001 between media coverage and total early-stage necessity based activity, all the significant correlations confirm the results from 2003. Although it has to be taken seriously that all results from 2000 and 2001 do not confirm the 2003 results, it also has to be mentioned that the early GEM studies included fewer countries than the later years and that the diversity in cultures between countries was also smaller.

It is therefore fair to say that the results of the years before 2003 substantially support the 2003 results, with most statistically significant outcomes in agreement. Thus, based on data pooled across 4 years, hypotheses 1 and 2 can be rejected, whereas hypotheses 3, 4, 5, and 6 received partial support. Hypothesis 3 and 5 received stronger support than 4 and 6. Concerning hypothesis 4, only the 2003 study supports it, whereas hypothesis 6 is supported by all years except 2001.

Limitations, interpretation and implications

Limitations

Without being definitive or conclusive our findings are indicative of where the key associations between media coverage, national culture and entrepreneurial activity may lay. In this context, the obvious limitations of the study can serve as prominent indicators of the way forward to better future research on influence of mass media through national culture upon entrepreneurship.

Although, the data in use in this specific investigation involve a problem of longitudinality, the surrogates from the key informant questionnaires employed in the years previously to 2003 support the 2003 results.

Another issue related to the data analysis concerns the evergreen causality problem. A correlation between media coverage of successful entrepreneurs and national entrepreneurship participation has been discovered, and it is assumed that mass media, through cultural values, influence entrepreneurship participation. However, what remains unknown is if this correlation actually functions the other

way around, where a high national entrepreneurship participation rate results in high degree of media coverage on entrepreneurs?

Our study only embraced coverage involving stories of *successful* entrepreneurs in the media—because this is the question asked in the GEM survey. The question has its problems because stories featuring the success of others may not be the only or the best type of mass media coverage through which media might influence entrepreneurship participation (Begley & Tan, 2001).

Furthermore, the empirical data suffer from some degree of subjectivity as the measuring of media coverage is in the hands of the respondent, and, as respondents coming from a wide variety of countries are embedded in very diverse cultures, they might make this judgment based on different cognitive processes.

Lastly, the real relationships between media coverage, national culture and entrepreneurship participation might be very complex, whereas this study approaches the relationships in a more simple and linear manner, without considering time gap between means and ends.

Thus, in detail, the study does contain a range of limitations that have to be considered more deeply and be better addressed in future research. On the other hand, it may be argued that, in the breadth of its coverage, the study provides insights that clearly demonstrate the importance of research into a hitherto neglected area. Though the empirical data were imperfect, they were sufficient to show that there might be a very important lesson for both entrepreneurship scholars and economic policy makers about the varying relevance and influence of media coverage through culture to differing stages of the entrepreneurial process. Hopefully the article may stimulate and encourage others to perform deeper investigations in an area which this study has indicated deserves the adjective 'important'.

Interpretation

Despite expressed limitations, some results emerge quite suggestively from the investigation. We found no support for the proposition that media coverage is significantly associated with opportunity search activity and start-up activity—the first two stages in the entrepreneurial process. This is an important finding because, as discussed below, it is in such sharp contrast with many policy presumptions made by development agencies and politicians who assume that positive role models in the media can enhance start-up participation rates. In contrast, we found significant positive association between media coverage and the following stage of the entrepreneurial process, measured as the volume of young business activity (businesses in the age range of 3 to 42 months). The results also indicate that media coverage seems to play a more important role in entrepreneurship participation based on opportunity rather than entrepreneurship participation based on necessity.

Thus, the principal practical indication from this study is that media coverage through national culture may influence entrepreneurship participation when entrepreneurs are fully committed to opportunity-based businesses, but not before.

It seems possible that positive media coverage influences people who have already become business owners, but not people in the process of becoming. Positive media coverage provides reinforcement for people trying to stay in business, but it does not influence people to become a business owner. And 'good news' entrepreneurship stories would seem to influence only people who are business creators and owners because they want to pursue an opportunity, not the people who start and remain in business because they have no other choice.

The results concerning the influence (or its lack) of positive mass media coverage on opportunity and necessity based entrepreneurship participation were expected. However, the results showing that mass media communications may only influence people who have actually already become business owners were in contrast to the way we *framed* our hypotheses but not necessarily what we *expected*, because there are broadly three schools of theory on the capacity of mass media to influence behavior.

The principal theoretical implication of this study is the support it gives to one of the three main contending theories of the influence of mass media. When it comes to entrepreneurship participation, so-called 'reinforcement' theory fits the results we obtained. Our results seem to comport with and support the theory (Klapper, 1960) that media coverage can reinforce values and commitments but cannot shape or change them. The reinforcement theory of mass media perceives the media to have less power to challenge and change values and beliefs of its audiences, than other factors such as family, peer group, education background, and occupation. If values stated in the media are in contrast to the audience's own values, the audience will reject the statement. On the other hand, if the values stated in the media are similar to the ones held by the audience, the values will be reinforced. Our study certainly seems to indicate that positive media coverage reinforces those values and commitments entrepreneurs *already* believe in and the expression of those ideas and aspirations in behavior.

Thus, Klapper's reinforcement theory certainly provides a plausible explanation of our results. It helps to explain why media may not influence the opportunity searching and start-up phases of entrepreneurial activity, but may render support to people in the young business stage of activity. People engaged in young business activity are actually involved in the 'nitty-gritty' and unromantic actualities of day-to-day business: for better or worse they are committed. Media stories about successful entrepreneurs may reinforce their commitment in a manner akin to showing them 'the light at the end of the tunnel': that all the hard work can be worth the effort to the entrepreneur who perseveres. Empathy and identification are possible. On the other hand, opportunity seekers and very early start-up participants may find it harder or more remote to embed themselves in the stories and may not feel associated with the experiences, feelings, and values of protagonists featured in mass media stories of business success. So, they are therefore not as significantly influenced by the stories.

Thus, based on the reinforcement theory variant of mass communications theory (Klapper, 1960), it can at least be tentatively argued that mass media do not have the capacity to make people more desirous of becoming or more likely to become an entrepreneur in the first instance, but such stories may support the aspirations and

propensity to persevere among existing early-stage business owners. These are the entrepreneurs with the 'stars out of their eyes' but nevertheless trying to go beyond mere business survival to achieve growth and a high level of success. Perhaps the simplest explanation of our results in light of reinforcement theory is that mass media stories of successful entrepreneurs give young business owners a stronger belief that they have made the right vocational choice.

Implications

A main implication drawn from this study is the need for further and more sophisticated investigation into the relationship between media coverage of entrepreneurship, national culture and the rates and nature of people's participation in the various stages of the entrepreneurial process. As this topic within the entrepreneurship literature is still in its infancy, the research questions are many but our results may create an initial focus around three key generic questions:

- When? At what stage of the entrepreneurial process is media coverage most influential?
- What? What kinds of stories are appropriate to what kinds of audience? (Here, the context of culture is likely to be crucially important).
- How? How do media stories impact people's entrepreneurial values and choices (or lack thereof): do they reinforce, help to shape, or change them?

Conclusion

In this paper data from the international Global Entrepreneurship Monitor (GEM) research project were investigated to generate insight into the nature of possible relationships that may exist between mass media coverage, national culture and participation in the entrepreneurial process. We found that mass media coverage involving stories about successful entrepreneurs is positively and significantly associated with the volume of people running a young business (one greater than 3 but less than 42 months old), but has, in this study, no statistically significant association with either opportunity-searching activity or actual start-up activity. Furthermore we found that there was significant positive association between mass media coverage of successful entrepreneurs and participation in opportunity based entrepreneurship but not on necessity based entrepreneurship.

Superficially, it might be tempting to argue that mass media reinforces young business owners' intentions to be a business owner and stay in business, but that mass media have no capability of shaping and changing values, attitudes and behavior toward entrepreneurship among people who have not yet started their own business or are in the very early stages of start-up. The temptation to make such ambit claims at this early, pioneering stage of the research into the mass media entrepreneurship nexus must, of course, be resisted. However, we can legitimately make the claim that our results should at least be provocative of further research in this important area and that the focus of the next stage of investigation might be the issue of whether mass media

can only reinforce existing commitment rather than influencing the decision to commit in the first place. Our work seems to indicate that reinforcement theory is the mass media theory most likely to be pertinent to studying the mass media entrepreneurship relationship. To reach a deeper understanding of how mass media influences entrepreneurship, more qualitative research is recommended.

This paper presents a provocative, if tentative core finding. With respect to entrepreneurship, positive media coverage may be able to enhance the commitment of the motivated but may not be able to motivate the uncommitted. Our study provides a small beginning to a large topic that has hitherto been ignored by researchers. We hope that our tentative explorations and findings are stimulating enough to encourage other researchers—and policy makers requiring an evidential base for important decisions—to consider this topic as an area that urgently demands more and better knowledge.

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