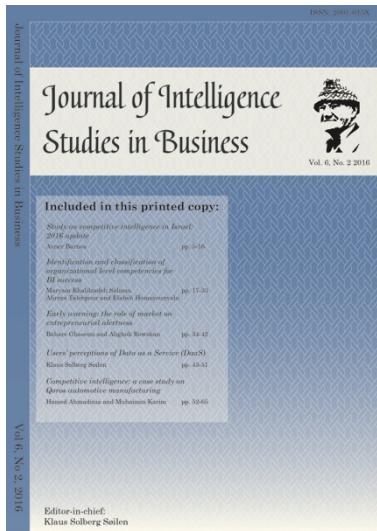


# Journal of Intelligence Studies in Business



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Publication details, including instructions for authors and subscription information: <https://ojs.hh.se/index.php/JISIB/index>

### Early warning: the role of market on entrepreneurial alertness

Bahare Ghasemi<sup>a</sup> and Aligholi Rowshan<sup>a</sup>

<sup>a</sup>University of Sistan & Baluchestan, Department of Management and Economics, Zahedan, Iran;  
*Bahare\_ghasemi1989@yahoo.com and salirowshan@yahoo.com*

**To cite this article:** Ghasemi B., and Rowshan, A. (2016) Early warning: the role of market on entrepreneurial alertness. *Journal of Intelligence Studies in Business*. 6 (2) 34-42.

**Article URL:** <https://ojs.hh.se/index.php/JISIB/article/view/158>

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## Early warning: the role of market on entrepreneurial alertness

Bahare Ghasemi<sup>a\*</sup> and Aligholi Rowshan<sup>a\*</sup>

<sup>a</sup> University of Sistan & Baluchestan, Department of Management and Economics, Zahedan, Iran

\*Corresponding authors: Bahare\_ghasemi1989@yahoo.com and salirowshan@yahoo.com

Received February 2016; accepted September 2016

**ABSTRACT** Given the growth and role of entrepreneurship today, it is becoming increasingly important to understand how new entrepreneurial opportunities get developed. Discussions of the emergence of new entrepreneurial opportunities often include “eureka” moments, but our understanding of how new opportunities get brought forward is limited. We attribute the difference to a loosely defined quality that Kirzner called “entrepreneurial alertness”. Other market actors do not have the responsibility to create innovative market opportunities although they do have an obligation to consider such opportunities once they are available in the marketplace. Consequently, understanding the opportunity identification process represents one of the core intellectual questions for the domain of entrepreneurship. So question of this paper is how are market environments represented and interpreted in the mind of the entrepreneur such that opportunity identification occurs? and what factors impress on it? To achieve this goal we distribute questionnaires between 115 M.A. students from Economics and Management college of University of Sistan & Baluchestan for the years 2012 and 2013. Analysis was done by correlation test. Results showed that there is significant relationship between market disequilibrium, accuracy vs. timeliness, schema complexity, counterfactual thinking, frame-breaking and sensitivity to profit potential and student's entrepreneurial alertness; but the relationship between ignorance of new resource and excessive optimism or pessimism about resource and student's entrepreneurial alertness was not significant.

**KEYWORDS** counterfactual thinking, early warning, entrepreneurial alertness, frame-breaking, market disequilibrium, sensitivity to profit potential

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### 1. INTRODUCTION

Entrepreneurship research is dominated by the fundamental questions of why it is that only some people see new business opportunities and only some people take actions to exploit the opportunities they do see (Shane and Venkataraman, 2000; Venkataraman, 1997). As pointed out by <https://core.ac.uk/download/pdf/6836212.pdf>

“Empirical observation suggests that individual people can differ widely in their

ability to see new business opportunities within a given situation. Some see nothing but constraint and status quo, while others see attractive new opportunities lurking everywhere. The social and economic impact of these differences is enormous, as the economic actions taken by entrepreneurs can have wide-ranging effects on the provision of valued products and services, on the creation and smooth operation of new markets, and on regional socio-economic development”.

Once spotted, the opportunity may be recognized as essentially complete in itself or requiring additional development and creative acts by the entrepreneur to become an opportunity worth exploiting. Much recent research has been devoted to better understand the diverse range of opportunity types and the corresponding entrepreneurial actions (e.g., Eckhardt and Shane, 2003; Sarasvathy et al., 2005). But these are ex post distinctions that only arise once the entrepreneur has already perceived or enacted the initial market need or underutilized resources, recognized a fit between market need and underemployed resources, and created a new fit (Ardichvili et al., 2003).

In a review by Gaglio & Katz the authors explain: "Shaver and Scott (1991) pose the salient psychological questions: how are market environments represented and interpreted in the mind of the entrepreneur such that opportunity identification occurs? Do these representations and interpretations differ from those of other market actors? If so, in what ways?

"Kirzner (1979) asserts that the mental representations and interpretations of entrepreneurs do indeed differ because they are driven by *entrepreneurial alertness*, a distinctive set of perceptual and cognitive processing skills that direct the opportunity identification process".

The key question of this paper is how market place represents and interprets in the mind of entrepreneur and what factors impress on it?

## 2. LITERATURE REVIEW

### 2.1 Entrepreneurial alertness

Alertness has been central in the context of the recently developing area of "opportunity" in entrepreneurship research. Some of this research argues that either opportunities are discovered or they are created (Short et al., 2010). Another approach parcels it into the three areas of opportunity recognition, opportunity discovery, and opportunity creation (Sarasvathy et al., 2003). Research on entrepreneurial alertness was initially developed by Kirzner (1973, 1979), who characterized individuals who were more alert as having an "antenna" that permits recognition of gaps with limited clues.

According to Kirzner, entrepreneurial alertness refers to "the ability to notice without search opportunities that have hitherto been overlooked" (Kirzner, 1979, p. 48), "a motivated

propensity of man to formulate an image of the future" (Kirzner, 1985, p.56), "an attitude of receptiveness to available, but hitherto overlooked, opportunities" (Kirzner, 1997, p.72), or "a sense of what might be 'around the corner', i.e., the sense to notice that which has hitherto not been suspected of existing at all" (Kirzner, 2008, p.12). Building on Kirzner's work, Kaish and Gilad (1991) saw alert individuals as having a "unique preparedness" in consistently scanning the environment ready to discover opportunities. Later Kirzner argued that alertness includes creative and imaginative action and may "impact the type of transactions that will be entered into future market periods" (1999, p.10).

These various definitions, while intuitively illustrative, lack an explicit theoretical underpinning. Clearly, though, entrepreneurial alertness is presented as conceptually distinct from the subsequent development of the opportunity, and from the activities undertaken to subsequently exploit the opportunity. And, while entrepreneurial alertness may work in conjunction with explicit environmental information search behaviors, it is more generally a state of mind that is open to opportunities at all times (Busenitz, 1996, p.43).

An entrepreneur must be highly sensitive to the key characteristics of schemas, so that he can quickly and accurately activate schemas in an ambiguous scenario to notice the emergence of opportunities. The alertness is reflected by the efforts spent to gather information, or the abstraction from such information of clues indicating commercial opportunities. It is also a kind of "sharp evaluation" that enables entrepreneurs to capture the flash of insight when facing opportunities to perceive the potential opportunities quickly.

Baron (2006) makes the case that this alertness to new opportunities is based on pattern recognition. He argues that what makes an entrepreneur alert is some cognitive capacity to support the recognition that one situation is similar to another in a meaningful way, that at some abstract level the two situations both resemble some common template or cognitive framework. From this recognition of a common pattern, the entrepreneur can make reasonable predictions of the future and can use these to plan new business moves. But Baron's argument leaves open the questions of what these frameworks are and how they are developed and used.

Entrepreneurial alertness is not solely the domain of the equilibrium-seeking arbitrageur entrepreneur ascribed to Kirzner, but applies equally to the equilibrium-destroying creative-destruction entrepreneur of Schumpeter (1942). Both types of entrepreneur need to be alert to opportunities, whether in the conditions of the present or in the conditions of the hypothesized future (Kirzner, 2008).

## 2.2 Market

### 2.2.1 Recognizing events of disequilibrium

What would an alertness schema contain and how would it work if it were to lead to a more accurate or superior assessment of a market situation? Kirzner (1979, 1985) posits that the alert individual is especially sensitive to signals of market disequilibrium, which can occur at the macroeconomic and microeconomic levels.

Macroeconomic disequilibrium is the most common form at the moment and in Kirzner's theory, the less considered form. In this situation, market disequilibrium arises from disruptive changes brought about because of new technology, knowledge, demographics, or social values that, as Drucker (1985) observed, force industries to reinvent themselves through radical innovation.

Therefore, it seems logical to expect an alertness schema to include mental models of these kinds of changes and specifically extensive representations of the kinds of signals or cues that would indicate not just the presence of these disruptions but more importantly, to their *potential* presence.

Indeed, it is probable that an alertness schema directs attention and focus to search for anomalies, the unexpected or anything remotely new or different. Non-alert individuals are not necessarily oblivious to major disruptions in the marketplace.

When anyone encounters something different or unexpected that is signaled in a clear, unambiguous, strong and persistent way, he or she will attempt to accommodate the new information (Fiske, 1993). Weick (1995) notes that these kinds of disruptions trigger extensive "sensemaking" efforts within organizations; research suggests that the context or framework used for sensemaking may lead non-alert actors away from the conclusion that an entirely new assessment is needed.

While disruptive macroeconomic market changes are forceful and generally more easy to

discern, they are only one source of market disequilibrium. The other source is microeconomic – a less dramatic form but one that has the advantage of being ever present because it is inherent in the marketplace. Ongoing microeconomic market disequilibrium arises from the everyday mistakes market actors make in their investment, production, and distribution decisions and actions.

These mistakes create pockets of disequilibrium, which become evident as underpriced products, unused capacity, unmet needs, and so on. In more popular terms, these pockets represent market niches, the favored spawning ground of new business opportunities.

Once again, the key question is what would an alertness schema contain such that it facilitates the anticipation or detection of these mundane pockets of disequilibrium? It is entirely possible that alert entrepreneurs simply recognize the fact that misapprehension and bad judgment occur and they try to capitalize on it. We predict:

**H1:** There is a significant relationship between recognizing events of disequilibrium and student's entrepreneurial alertness.

### 2.2.2 Changing schema vs. information

Schema theory assumes that people engage in a kind of pattern matching between environmental stimuli and the information stored in the activated schema (Fiske and Taylor, 1991; Mitchell and Beach, 1990). If the pattern match is good enough, attention turns to action and developing a response. If the pattern match is not good enough – that is, when the individual detects something unusual or unexpected, then additional cognitive processing is required.

When actors are motivated to be accurate, they usually try to integrate the new information within their existing schema by creating new subcategories or new causal links that increase the differentiation and complexity of their schema (Fiske and Taylor, 1991; Sherman et al., 1989). If the actor places a higher value on quick action or if he or she feels it is socially desirable to adhere to a schema, then the actor will either discount the new information or engage in elaborate reinterpretations that maintain the structure and dynamics of the existing schema (Fiske, 1993; Kiesler and Sproull, 1982). Given the nature of this cognitive dynamic, the theory of alertness would predict:

**H2:** There is a significant relationship between changing schema vs. information and student's entrepreneurial alertness.

### 2.2.3 Cognitive error control

The failure to recognize and integrate information regarding market disequilibrium are not the only kinds of cognitive mistakes non-alert actors can make. Kirzner (1985) identified several other assessment mistakes non alert individuals may make: (a) failure to recognize that assumptions were never or no longer appropriate; (b) ignorance of new resource availability; (c) excessive optimism or pessimism about resource availability; (d) excessive optimism or pessimism regarding probable results of actions or decisions. The common thread in all these mistakes appears to be inaccuracy. The chain of inaccurate processing may begin with the non-alert individual simply following the human tendency to uncritically accept and use information only in its original form (the "concreteness principle," Slovic, 1972) or to unquestioningly accept the initial frame of reference (the "framing effect," Kahneman and Tversky, 1986). If alert individuals are not making these kinds of cognitive processing mistakes, then it seems logical to conclude than an alertness schema includes a dynamic that induces skepticism about information perceived and that questions, if not challenges, the initial frame of reference. In fact, Gunderson (1990) maintains that veridical perception simply means a willingness to challenge assumptions and perceptions, much like a good scientist. This leads to hypothesis 3:

**H3:** There is a significant relationship between ignorance of new resource and excessive optimism or pessimism about resource and student's entrepreneurial alertness.

### 2.2.4 Accuracy vs. timeliness

Kirzner examines at considerable length the theoretical proposition that alert individuals have veridical (accurate) perception and interpretation. For example, the four forms of inaccuracy discussed above represent one type of threat to veridical perception. Therefore, it would seem logical to conclude that accuracy is a major component of an alertness schema, perhaps even the driving force of the schema.

From a psychological perspective, the issue of accuracy is somewhat problematic because accuracy can also be considered part of an individual's motivation that triggers the

activation of a particular schema. A central tenet of cognitive psychology is that people employ information processing tactics that best facilitate their goals (Fiske, 1993; Showers and Cantor, 1985) and that one of the first decisions people must make, implicitly or explicitly, in any information processing episode is whether their goal is to be completely accurate or to act quickly.

This stark choice minimizes a crucial and distinctive element of opportunity identification, that is its time limitedness. Pockets of microeconomic disequilibrium can quickly change, be filled, or become exhausted. The window of opportunity when viewing macroeconomic changes is also limited and shrinks substantially as other actors see the opportunity and visibly exploit it. Thus there is a need to balance perceptual accuracy with time-to-action or timeliness. Even managers embedded in a corporate context recognize the time-limitedness of opportunities. Weick (1979) argues that managers need to process information in ways that are just good enough to determine the course of action. He suggests that most managers stop their sensemaking activities when they have found the first plausible explanation or framework regardless of its accuracy (Weick, 1995). Isenberg's (1986) detailed analysis of managerial decision-making appears to confirm Weick's supposition that managers feel more pressure to act than to be absolutely accurate in their analysis. In other words, what is proposed and observed in managerial decision-making is a simple application of March and Simon's (1958) satisficing concept where enough analysis is done to satisfy personal and peer expectations of adequate consideration and therefore, adequate accuracy. This leads to hypothesis 4:

**H4:** There is a significant relationship between accuracy vs. timeliness and student's entrepreneurial alertness.

### 2.2.5 Schema complexity

As noted earlier, an observable difference between experts and novices or between creative and non-creative individuals is the degree of schema elaboration, content complexity, and cross linkages with other schema.

Research into expert performance suggests that, beyond a certain level of preparation (which will vary by domain), experience and education do not inevitably lead to more elaborate and complex schema (Bonner and Pennington, 1991; Camerer and Johnson,

1991). What does lead to the increase in complexity necessary to achieve expert status are increasingly complex and hence veridical or realistic mental representations of causal patterns and interacting factors. The availability of these complex patterns as a single unit of information is the mechanism that produces comparatively more accurate, albeit very fast opportunity identification and problem solving in experts than in the novices (Chase and Simon, 1973; Chi et al., 1982). Therefore, we predict:

**H5:** There is a significant relationship between schema complexity and student's entrepreneurial alertness.

### 2.2.6 Schema change – counterfactual thinking

Counterfactual thinking (e.g., what if; if only, etc.) is a fairly normal response to unexpected events (Roese and Olsen, 1995). However, we would expect alert and non-alert people to use counterfactual thinking in different ways. Non-alert individuals most likely use the typical strategy for dealing with the unexpected which is to mentally undo the unusual circumstance that caused the unexpected outcome. Mentally undoing the unusual highlights its abnormal quality but also shifts focus back to the usual, that is, towards normalcy. This kind of counterfactual thinking may be one of the cognitive mechanisms for discounting. On the other hand, if alert individuals increase the complexity of their schema and change their schema to accommodate novel events, we would expect alert individuals to mentally maintain the unusual circumstance and use counterfactual thinking to undo other elements in the causal sequence as he or she imagines how the unusual information will affect other elements or other schema. Furthermore, it is possible that alert individuals undo several causal links, which would lead them to break the existing means-end framework. Therefore, we would predict:

**H6:** There is a significant relationship between schema change – counterfactual thinking and student's entrepreneurial alertness.

### 2.2.7 Schema change – frame-breaking

The alert individual's extraordinary abilities in discernment that lead to a conclusion about changing times and events, while necessary, do not inevitably lead to the identification or creation of entrepreneurial opportunities.

Opportunity identification at this level (that is, breakthrough or innovative) depends on the alert individual using his or her insights about disequilibrium to recognize when it becomes necessary to radically reconfigure his or her understanding of the industry, or society, or the marketplace, or more probably, all three.

Kirzner (1985) refers to this as breaking the existing means-ends framework. He considers this step to represent the heart and soul of entrepreneurial alertness and to be the strongest point of difference between entrepreneurs and other market actors. Non-entrepreneurial decision-makers focus on how to work effectively within the existing framework; that is, they attempt to make good decisions about how to allocate their scarce

resources in order to maximize return. The belief that breaking the existing mean-ends framework is a necessary step for genuine innovation can also be found throughout the creativity empirical literature (Amabile, 1983; Csikszentmihalyi, 1996).

Given the central importance of frame-breaking to the theory of entrepreneurial alertness, we would predict that alert individuals would be more likely to break the existing means-ends framework and indeed, there is some preliminary evidence that this is a crucial step in the identification of entrepreneurial opportunities (Gaglio, 1997).

**H7:** There is a significant relationship between schema change – frame-breaking and student's entrepreneurial alertness.

### 2.2.8 Sensitivity to profit potential

Finally, there is one more perceptual and cognitive component to an alertness schema based on Kirzner's theory of entrepreneurial alertness: the individual's sensitivity to profit potential. This sensitivity can be reflected in the schema in at least two ways. First, the individual may direct his or her attention to find under-priced products, services, processes, and so on. Secondly, the individual may include the question "how can I make money at this" as part of the assessment process itself. This situation is analogous to the differentiation in the innovation literature between invention and innovation.

Invention may involve the identification of a new idea or opportunity but it only becomes an innovation when the invention or idea is translated into a form that demonstrates its economic potential (Kirzner, 1979; Schumpeter, 1971; Timmons, 1999). Kaish and Gilad (1991) tried to test this proposition in

their early study of alertness and found quite the contrary: founding entrepreneurs appeared to be more sensitive to downside risk while corporate managers were more attracted to the market potential. However, the data collection method used in their study (survey of past behaviors) relies on retrospection; this technique confounds the processes of opportunity identification and opportunity evaluation so, in fact, the question of sensitivity to profit potential still requires a definitive empirical test. It is entirely possible that alert individuals are more sensitive to commercial value of ideas and are able to quickly identify or create entrepreneurial opportunities but as they move on to implementation, they become more sensitive to the downside risks as it becomes more apparent that their careers are on the line with each new venture launch (Ronen, 1983).

Mindful that theory development requires making important analytical distinctions such as that between opportunity identification and evaluation, we predict that at the identification state, alert individuals will be more sensitive to the commercial value or profit potential of facts and ideas.

**H8:** There is a significant relationship between sensitivity to profit potential and student's entrepreneurial alertness.

### 3. RESEARCH METHOD

#### 3.1 Sample and procedures

The sample was composed of 115 M.A. students from the University of Sistan & Baluchestan for the years 2012 and 2013. To measure student's attitudes towards these factors we use a questionnaire that contains four items in demographic information and 43 items in Likert's methods from 1 (Very low) to 5 (Very much). To ensure validity of the scale content, the components of the attitude area were determined. Then, the researcher formulated for each section of the scale. These items were classified and arranged according to the content of each section of the attitude scale.

Before putting the scale in its final form, the researcher validated the scale by submitting it to a panel of experts in the area of research. The experts were requested to evaluate the items of the scale, and to suggest any changes they considered appropriate in terms of the objectives of the scale, item formulation, and their suitability to the level of the students. To estimate the reliability of the scale, the Cronbach alpha test was used, being one of the

most appropriate methods to measure the reliability of attitudinal scales. The result was 0.72, which is considered a high value for reliability. The analyses were conducted using SPSS 22.

#### 3.2 Analysis and results

Table 1 shows demographic information of these samples.

Table 1 Demographic data of samples.

	Type	Result
Gender	Male	40.9
	Female	59.1
Age	20-30	95.7
	30-40	4.3
Field	Management	43.5
	Economic	20
	Accounting	13
	Entrepreneurship	23.5
Year of Entrance	2012	37.4
	2013	62.6

#### 3.3 Hypothesis testing

Table 2 represents mean, variance accounted and the Pearson's correlations among all variables. All tests done on a level under 1% ( $p<0.01$ ). Results show that alertness is significantly correlated with recognizing events of disequilibrium, changing schema vs. information, cognitive error control, accuracy vs. timeliness, schema complexity, schema change – counterfactual thinking, schema change – frame-breaking and sensitivity to profit potential.

Table 2 Means, standard deviations and correlation among variables.

Variable	Mean	S.D.	Pearson Correlation	Sig.
<b>Market disequilibrium</b>	3.76	.91	.309	.001
<b>Ignorance of new resource</b>	2.76	1.08	.016	.867
<b>Excessive optimism or pessimism about resource</b>	2.88	1.09	.086	.381
<b>Accuracy vs. timeliness</b>	3.95	.73	.412	.000
<b>Schema complexity</b>	4.17	.75	.245	.008
<b>Counterfactual thinking</b>	3.87	.93	.306	.001
<b>Frame-breaking</b>	3.58	.99	.338	.000
<b>Sensitivity to profit potential</b>	3.98	.84	.245	.006

According to the data collected and based on assessments, six factors which have the most

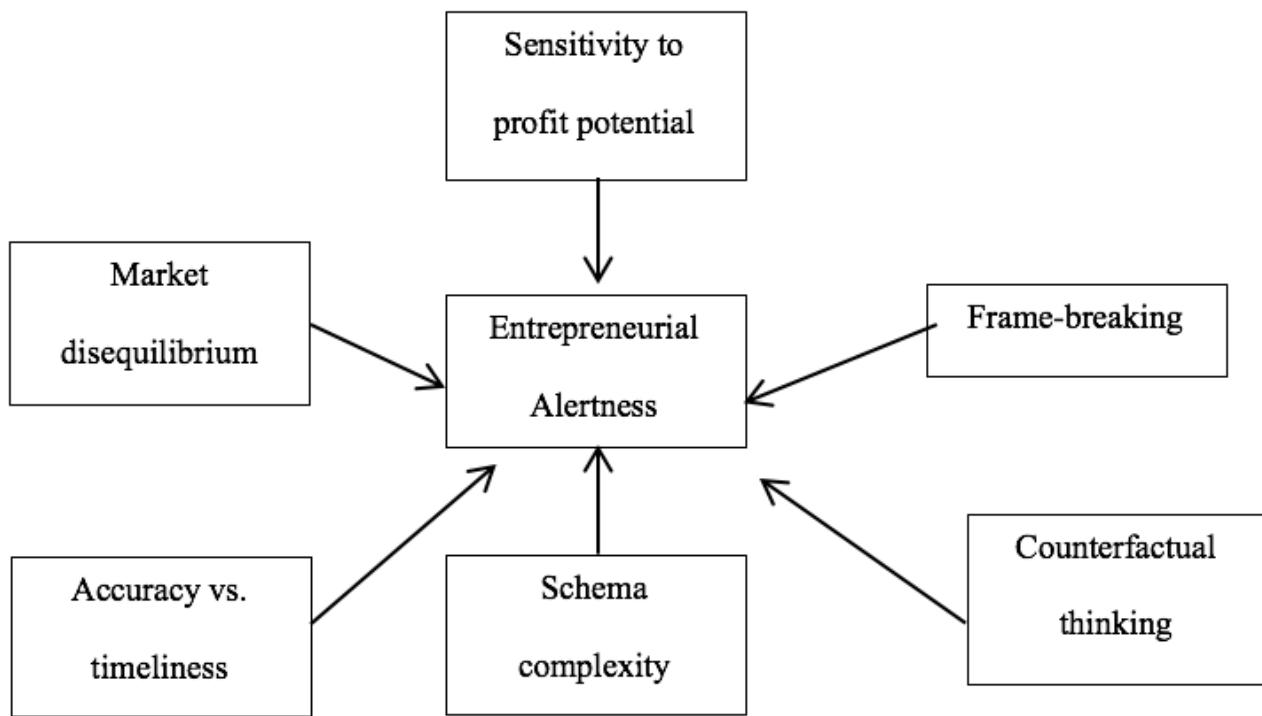


Figure 1 The role of market on entrepreneurial alertness

significant effect on the entrepreneurial alertness summarized in Figure 1.

#### 4. RESULTS AND DISCUSSION

Hypothesis 1 predicts that recognizing events of disequilibrium is significantly related to student's entrepreneurial alertness. As expected, the effect of recognizing events of disequilibrium on student's entrepreneurial alertness was positive and significant ( $r=.309$ ,  $p<0.01$ ). the results corroborate the Kirzner (1979, 1985) study that the alert individual is especially sensitive to signals of market disequilibrium, which can occur at the macroeconomic and microeconomic levels.

Hypothesis 2 indicates that changing schema vs. information is significantly related to student's entrepreneurial alertness. As expected, the effect of changing schema vs. information on student's entrepreneurial alertness was positive and significant ( $r=.412$ ,  $p<0.01$ ). Fiske (1993), Kiesler and Sproull (1982) assert that if the actor places a higher value on quick action or if he or she feels it is socially desirable to adhere to a schema, then the actor will either discount the new information or engage in elaborate re-interpretations that maintain the structure and dynamics of the existing schema.

Hypothesis 3 predicts that ignorance of new resource and excessive optimism or pessimism about resource is significantly related to student's entrepreneurial alertness. As expected, the effect of ignorance of new resource and excessive optimism or pessimism about resource on student's

entrepreneurial alertness was not positive and significant ( $r=.016$ ,  $p<0.01$ ;  $r= .086$ ,  $p<0.01$ ). the results corroborate Kirzner (1985) study that identified several other assessment mistakes non alert individuals may make: (a) failure to recognize that assumptions were never or no longer are appropriate; (b) ignorance of new resource availability; (c) excessive optimism or pessimism about resource availability; (d) excessive optimism or pessimism regarding probable results of actions or decisions.

Hypothesis 4 predicts that accuracy vs. timeliness is significantly related to student's entrepreneurial alertness. As expected, the effect of accuracy vs. timeliness on student's entrepreneurial alertness was positive and significant ( $r=.412$ ,  $p<0.01$ ). A central tenet of cognitive psychology is that people employ information processing tactics that best facilitate their goals (Fiske, 1993; Showers and Cantor, 1985) and that one of the first decisions people must make, implicitly or explicitly, in any information processing episode is whether their goal is to be completely accurate or to act quickly.

Hypothesis 5 predicts that schema complexity is significantly related to student's entrepreneurial alertness. As expected, the effect of schema complexity on student's entrepreneurial alertness was positive and significant ( $r=.245$ ,  $p<0.01$ ). the results corroborate Chase and Simon (1973) and Chi et al. (1982) study that the availability of these complex patterns as a single unit of information is the mechanism that produces comparatively more

accurate, albeit very fast opportunity identification and problem solving in experts than in the novices.

Hypothesis 6 predicts that schema change – counterfactual thinking is significantly related to student's entrepreneurial alertness. As expected, the effect of schema change – counterfactual thinking on student's entrepreneurial alertness was positive and significant ( $r=.306$ ,  $p<0.01$ ).

Hypothesis 7 predicts that schema change – frame-breaking is significantly related to student's entrepreneurial alertness. As expected, the effect of schema change – frame-breaking on student's entrepreneurial alertness was positive and significant ( $r=.338$ ,  $p<0.01$ ). Kirzner (1985) and Gaglio (1997) predicted that alert individuals would be more likely to break the existing means-ends framework and indeed, there is some preliminary evidence that this is a crucial step in the identification of entrepreneurial opportunities.

Hypothesis 8 predicts that sensitivity to profit potential is significantly related to student's entrepreneurial alertness. As expected, the effect of sensitivity to profit potential on student's entrepreneurial alertness was positive and significant ( $r=.245$ ,  $p<0.01$ ). Kaish and Gilad (1991) tried to test this proposition in their early study of alertness found that entrepreneurs appeared to be more sensitive to downside risk while corporate managers were more attracted to the market potential.

As noted earlier, in the question of paper, anyone claiming an interest in the opportunity identification process among entrepreneurs would have to address the essential issues of how market environments are represented in the minds of entrepreneurs and whether these representations differed from those of other market actors in any substantial way. This article has detailed a conceptual model and research agenda designed to answer these questions based on a comprehensive and cognitive approach to the theory of entrepreneurial alertness.

Logic and expediency dictate that compelling answers to the first and last issues should be formed before pursuing the remaining questions. Furthermore, the issue of motivation for both alert and non-alert actors will require more consideration than time and space permit here. It is our hope that this article prompts a fruitful line of research and debate that will lead to improvements in theories about alertness, opportunity identification, and entrepreneurship.

Ultimately results showed that there is significant relationship between market disequilibrium, accuracy vs. timeliness, schema complexity, counterfactual thinking, frame-breaking and sensitivity to profit potential and student's entrepreneurial alertness; but the relationship between ignorance of new resource and excessive optimism or pessimism about resource and student's entrepreneurial alertness was not significant.

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