

## UTILIZING “TRADERS” BOARD GAME TO IMPROVE ENTREPRENEURSHIP FACTORS AMONG TEENAGERS: A QUALITATIVE STUDY

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### ABSTRACT

*This qualitative study aims to explore the changes of six elements of entrepreneurship (EE) among teenagers after they played an educational board game called Traders of Antrapre (“Traders”). The six elements are namely (1) self-esteem, (2) competitive traits, (3) resilience, (4) self-efficacy, (5) practical intelligence and (6) experience. These elements have been reported as significant contributors to opportunity pursuing skills, which can also be defined as entrepreneurship skills. Moreover, two entrepreneurship styles, namely Kirznerian (explorative) and Schumpeterian (creative-innovative) were reported to be significantly affected by the six EEs. 12 participants between 11 to 15 years old were briefed and asked to play the board game twice every week for four consecutive weeks, and their in-game behavior were video-recorded and observed. The qualitative data was analyzed in two cycles, namely in vivo and thematic analyses. It was discovered that the more the subjects played the game, the more they showed more adequacy in the six EEs. More importantly, findings of this explorative study led to the hypothesized interrelationship among the EEs as follows: experience influences self-esteem, competitive traits, resilience, and self-efficacy; however, its influence is mediated by practical intelligence. Suggestion to conduct quantitative studies in this subject is presented at the end of this paper.*

**Keywords:** board game, entrepreneurship, education, psychological traits

### INTRODUCTION

This current study is an attempt to improve entrepreneurship among teenagers by engaging them in a self-designed board game. Board game is chosen as a learning media in this current study for two reasons. First, board games expose the players to interact to each other without electronic gadgets; therefore they will not be able to hide their actual character and personality behind anonymity as in social media (Baran, 2010). Accordingly, in order to learn more effectively yet safely, one must be involved in the simulation as oneself who knows the other players as observable selves, instead of anonymous aliases with altered identity (Baran, 2010; Mehdizadeh, 2010). Second, learning through playing simulation games is a safer approach to prepare the learners’ readiness for reality (Weller, 2004), as long as the gameplay can simulate the reality as accurate as possible.

In general context of entrepreneurship, differences between entrepreneurs and non-entrepreneurs are mostly related to opportunity

(Ramoglou, 2013); furthermore, entrepreneurship can be defined as the

capability to pursue and utilize opportunities, because entrepreneurs are opportunists and creators of opportunities (Littunen, 2000). Therefore, educating teenagers to be an entrepreneur, or developing entrepreneurship among teenagers can be interpreted as developing skills to pursue and utilize opportunities.

Two kinds of opportunities have been conceptualized, namely Schumpeterian, which came from innovation as well as creation, and Kirznerian, which came from exploitation of the present demands (De-Jong & Marsili, 2011). Schumpeterian opportunities are more likely to be pursued by individuals with strong ambitions and actively search for innovative ideas and means, while individuals with a strategic focus on the exploitation of present demands are more likely to pursue Kirznerian opportunities (De-Jong & Marsili, 2011). Thereby, developing entrepreneurship can be operationally defined as developing certain psychological traits of individuals in order to be able to ‘create and innovate’ or to ‘strategize

and exploit' opportunities. In other words, psychological traits related to being innovative or exploitative should be defined and improved, in order to develop entrepreneurship skills.

Furthermore, while conceptual definition of entrepreneurial success usually is related to the business capacity and/or size, this current study defined it as the successful attempts of the participant to accumulate the simulated 'wealth' along the game. The definition was chosen because in the age as early as teens, most of individuals do not have any access to actual business, big or small; therefore, other definition such as Giessen-Amsterdam model could not be applied).

The contextual significance of this study relies on the fact that the program is addressed to younger individuals (teenagers) and is designed to improve the participants' certain psychological traits, which are theoretically related to entrepreneurial success. It covers different areas when juxtaposed to the design of most of entrepreneurship education programs that mostly focus on certain strategy to start a business organization (Shane & Nicolaou, 2013), and those that simply take a storytelling approach, in which a successful entrepreneur tells students their secrets of success (Khurana, 2010), because they are designated to adults who are already in the stage of wealth accumulation. In other words, it is expected that the application of this program will help teenagers of a nation to have their sense prepared to be educated in more advanced entrepreneurship education programs or even entrepreneurial practices.

A game called "Traders of Antrapre" ("Traders") has been developed by involving several entrepreneurship elements (EE) that is possible to simulate without sacrificing the elements of fun. The game simulates atmosphere that provides numerous opportunities to the players, and players with the most adequate EEs will be able to pursue most of them. In other words, it is assumed that the EEs that help the players to win this game are the same EEs that will provide them entrepreneurial success in the future. Each EE are discussed in this paper following the objectives of this study.

## Objectives

Thus, the overarching aim of this study is to develop a board game that provide simulated experience to the learners related to entrepreneurship, and eventually improve general entrepreneurial behavior, which is represented by opportunity pursuing effectiveness and the EEs. In order to achieve its overarching aim, five questions should be answered:

1. What is the nature of the changes in each EE after playing "Traders"?
2. How does each EE contribute to the players' opportunity pursuing effectiveness?

## Literatures related to Elements of Entrepreneurs

The first EE to be defined is self-esteem (SE), or the integrated sum of self-worth and self-competence (Mruk, 2006). Qualitative relationship between self-esteem styles and opportunity-pursuing occurred in the nature that the more dominant the self-worth of an individual, the more likely they pursue Kirnzerian opportunities, while dominant self-competence will lead them to the tendency of pursuing Schumpeterian opportunities (Prihadi, Chua, & Prihatmanti, ICONEE, 2014). In other words, individuals who perceived that they are 'worthy' tend to exploit the currently existing opportunity, while individuals who perceived that they are 'competent' are likely to innovate or create new opportunity.

The second EE to be defined is competitive traits (CT) which includes hypercompetitiveness and personal development (Thornton, Ryckman, & Gold, 2013). Hypercompetitiveness is an indiscriminate need by individuals to compete and win with any cost or anyway to maintain the feeling of worthiness, with an attendant orientation of manipulation, aggressiveness, exploitation and denigration of others on various situation, while personal development is trait that focuses to obtain experience to facilitate personal development in order to win the competition (Ryckman, et al., 1997; Thornton, et al., 2013). The two types of CT significantly influence individuals orientation of opportunity pursuing in entrepreneurship (Kurniawan, 2014).

The third EE to be defined in this current study is entrepreneurship resilience (ER). Resilience defined as the ability to bounce back from adversity or a strength to survive despite difficult situations and to continue progress towards positive future (Almedom & Glandon, 2007; Zatura, 2009). In the context of this current study, ER is defined as the ability to survive, bounce back and progress after a financial loss. Resilience is also related to the fourth EE to be defined in this study: self-efficacy (SF), which is required to be maintained positive in order to face challenges in achieving entrepreneurial goals (Erikson, 2002). Adequate SF, in the context of entrepreneurship, is a result of the mastery experience, vicarious learning, and social persuasion (Bandura, 1997); therefore, absence of one of these factors might produce inadequate SF.

The fifth EE will be called practical intelligence (PI). PI is an experience-based accumulation of skills, dispositions, and tacit and explicit knowledge, plus the ability to apply it in solving familiarized problems (Sternberg, 2004). It is also defined as an experience-based accumulation of skills and explicit knowledge as well as the ability to apply that knowledge to solve every day problems or in other words, can be referred to as “know-how” or common sense (Baum, Bird, & Singh, 2011). It was discovered that PI is a very significant EE, because individuals with high practical intelligence who start and grow a company in a specific industry, who have specific experience and have learned specific things from that experience, and who have specific venture growth goals will grow their company faster and more successfully than someone who does not have the same level of practical intelligence (Baum, et al., 2011). In the context of this study, players need to play “Traders” repetitively in order to develop their PI. In other words, the more familiar they are with the gameplay, the more effective they are in pursuing opportunities provided in “Traders”. Thus, another variable called ‘experience’ (EX) is introduced. It is defined as how familiar the participant to the game, and it

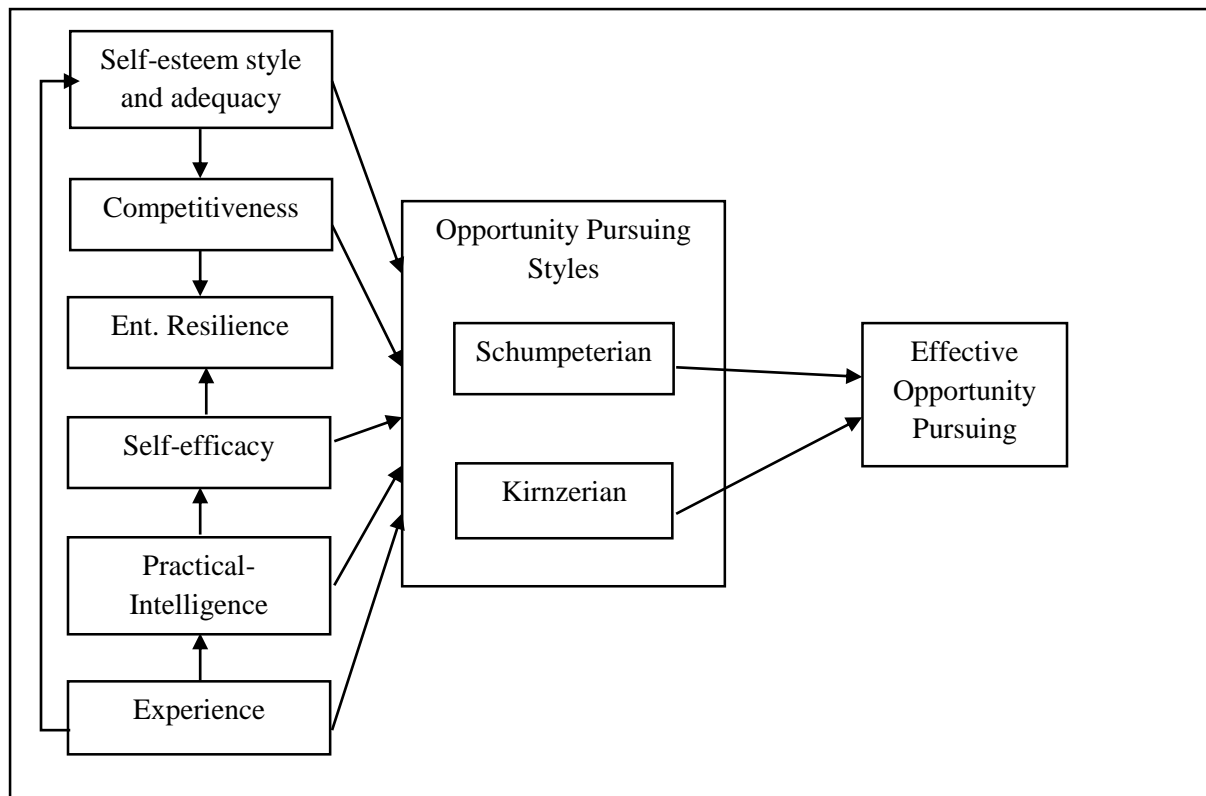
is represented by how many times the person had played. In addition, it is highly expected that their experience in playing “Traders” prepares their PI to face and solve problems in the actual setting of entrepreneurship.

The aforementioned EEs are included in the gameplay of “Traders” and finding related to whether playing the game can improve each EE is important to educational stakeholders for some reasons. First of all, research on entrepreneurship education in lower school is scarce (Athayde, 2009), and the fact that successful entrepreneurs came from various background makes it difficult to pinpoint the exact required traits or skills; however, this study is going to fill the gap of literature. Findings of this study will also let educators to know how to design board games to cater the delivery of complicated subjects. Finally, this study is significant because of its implication in developing entrepreneurship at early ages.

### **Interrelationship among variables**

Based on the aforementioned theories and studies, a model of how the variables interrelated is proposed and depicted in Figure 1.

Figure 1 shows how interrelationship among variables occurs within the game. Self-esteem of the participants affects their opportunity pursuing style directly, yet it also affects the competitive traits level, which also affects the opportunity pursuing style and entrepreneurship resilience. Entrepreneurship resilience affects the way they pursue the opportunity. Furthermore, self-efficacy affects two traits, opportunity pursuing style and entrepreneurship resilience. Experience, or in the context of this study, how many times the participants have played the game affects their practical intelligence, which affects the opportunity pursuing style directly, as well as self-efficacy and self-esteem; which are both influential to the other variables.



**Figure 1** Interrelationship among variables based on the literature

Both opportunity pursuing styles, Schumpeterian and Kirnzerian, can be similarly effective in helping the participant to achieve their goal; nevertheless, the effectiveness is affected by the other aforementioned variables. In other words, when they have played the game more often, players will possess more adequate self-esteem, competitive traits, resilience, self-efficacy, and practical intelligence so that they can effectively pursue opportunities, either in Kirnzerian or Schumpeterian way.

### **The designed gameplay and entrepreneurship elements**

Gameplay is defined as the structures of player interaction with the game system and interaction with other players; this includes the possibilities, results, and reasons for players to play (Bjork & Holopainen, 2005). In the context of this study, the gameplay will expose the players to situation where they can pursue opportunities from the game system and from other players with all the possible risk they might face without losing their actual wealth. The winning requirement for this game is to build one's wealth more than other players within the given time.

#### *Getting started*

There are several required items for the "Traders" game, such as one piece of die, a game board, four pawns, a timer, a note, and printed materials in the forms of cards and money notes. The game can be played by 3 to 5 players, where one of the players should take role as the 'judge', who takes notes on certain items and administer the transactions among players. At the beginning, each player is given a \$500 of cash and a bull cart card. They will roll the die to determine their hometowns, which are represented by the number 1 to 5. Each town produces specific type of resources such as cattle, coal, etc. Each player gets free 5 cards of the resources produced by their hometown. At this point, players need to determine the length of the game between 1 and 2 hours and set the timer. When the timer goes off, the game stops and the remaining wealth is calculated; the wealthiest player comes up as the winner.

#### *Transactions of resources*

Furthermore, players take turn to roll the die in order to determine which town they will visit next. Upon their arrival to a new town, players randomly pull the 'market price' card, which

determine the resources price in that particular turn and town, with 50% discounted price for local resources. The discrepancy between the buying price and the current price provide opportunities for the players to transact and gain some profit.

Transactions of resources with the town through the judge are considered as a Schumpeterian opportunity, because the price discrepancy is obvious to the players. All EEs are required for this type of action. It was discovered previously that worthiness-based SE is required to pursue this opportunity because such type of SE leads one to pursue Schumpeterian opportunities (Prihadi, Chua, & Prihatmanti, ICONEE, 2014). Based on previous studies, it is also possible that Hypercompetitiveness type of CT is required to pursue this opportunity, because it drives one to seek for victory and avoid defeat at all cost (Thornton, Ryckman, & Gold, 2013). Referred to the previous work of Almedom and Glandon (2007) and Zatura (2009), the element of SF and ER might play their role when an effective transaction is done after a big financial loss. Furthermore, players with higher level of experience might already have developed their PI that might enable them to perform only the most effective transactions of this type (Sternberg, 2004).

#### *When the die shows six*

When the die shows the number six, the player in turn must go the desert without drawing any market price card. In the desert, they have two options namely losing half of their cash and resources to the desert mobsters or paying a large amount of money to illegally recruit the mobsters for their perusal, such as to protect their wealth when they get to the desert again, or to rob other players' wealth.

CT in the form of hyper competitiveness might be required in collecting enough money to recruit the mobsters and use it to overtake some of other players' wealth, because it is considered one of the possible ways to win the competition (Thornton, Ryckman, & Gold, 2013). Players with competence-based SE might also take their chances to do the same thing because using mobsters can be seen as a Kirznerian opportunity (Prihadi, Chua, & Prihatmanti, ICONEE, 2014). Additionally, there is a possibility that players with high PI know when and how they can utilize the

mobsters to get maximum benefits due to their experiences (Baum, et al., 2011; Sternberg, 2004).

Apart from dealing with the mobsters, players who get six on their die will also randomly draw an 'event' card. This card contains random events such as sudden changes of price for resources and properties, a sudden event where property owners must pay taxes, and a call of justice, where anyone who possesses mobsters should pay their fine, and those who robbed others should return their booty to the rightful owners. Instructions in the event cards are to be followed by all players at all cost, and the implications are discussed in the following subsections.

#### *Change of transports*

After some time, players might become wealthy enough to opt for buying another type of transport with higher capacity than bull carts, such as trucks. It can be assumed that players whose CT falls into the type of self-development tend to prioritize this activity because they believe that developing their capacity will help them in the competition (Ryckman, Libby, Borne, Gold, & Lindner, 1997; Thornton, Ryckman, & Gold, 2013). This action might also be performed by players with competence-based SE, because it is considered as Kirznerian opportunities; it takes some willingness to change (innovative) to conduct (Prihadi, Chua, & Prihatmanti, ICONEE, 2014).

By improving their transports, players are enabled to carry more resources and therefore bigger values of transactions. However, when their die shows six, they might have to lose half of that bigger amount to the mobsters. They might also have to pay higher tax when a certain event card is drawn. Previous studies suggested that this risk can be seen by players with higher PI, yet they might perform different action from players with lower PI due to the discrepancy of experience (Sternberg, 2004). Additionally, players with hypercompetitive CT might wait for other players to improve their transports and then rob half of the wealth they carry with their hired mobsters. The reason is, although this is considered illegal and might have some further consequences, it is considered a way to win (Thornton, Ryckman, & Gold, 2013).

### *Long term and short term investments*

With enough amount of money, players can buy investments in the form of property, such as farmland and houses. Once a player owns a property, he or she will get an extra income every turn, few percent of the property price. In the case where someone draws an event card with instructions that all the property price increase to certain percentage, players with properties can sell their property back to the town, get their profit, and have their extra income stopped.

Based on previous study by Prihadi, Chua and Prihatmanti (2014) on SE style, investing in properties expecting for small extra income every turn might be the preference of those with worthiness-based self-esteem, while players with competence-based self-esteem might prefer to buy properties for the sake of selling it when the price gets much higher. Sternberg (2004) advocated that individuals with higher PI would likely to avoid familiar obstacles; thereby, they might buy investment so they do not have to carry their cash and got robbed by the mobsters or other players. Furthermore, chances are high for people with personal development CT to buy investment, because it will fulfill their desire to feel that they are growing (Thornton, Ryckman, & Gold, 2013).

### *Call of Justice*

Call of Justice is a random event instructed in the 'Events' cards, where all players who had committed illegal actions should pay for their action. Players who kept mobsters cards should pay certain amount to the judge and return their mobsters card to the judge. Players who robbed from another player should return the same amount of money. The judge knows the exact amount, because he or she have taken notes on illegal transactions since the game is started.

Based on the studied characteristic, chances are players who possess combination of high PI and hypercompetitive CT will perform illegal actions at the end of the game, when the timer shows few minutes left. It can be explained by the findings of Sternberg (2004) and Thornton et al. (2013), where experience told them that the 'Call of Justice' card might not be withdrawn in the small amount of time left, and they have developed an attitude that they have to do anything to win.

### *The end of the game*

When the timer gets off, no players are allowed to conduct any activities. The judge then calculates the wealth of each player based on the 'Basic price card'; the player with the highest accumulation of wealth is the winner. The accumulation of wealth along the game shows how effective the players' opportunity pursuing style is. In other words, when players are able to capture most opportunities within the given time and winning the game, it can be considered that he or she has the most effective way of pursuing opportunity.

At this moment, players might show different reaction based on their EEs. For instance, players with personal development CT might not be happy when the wealth they accumulate in the current game is lower than their previous ones, despite they won the game. Another instance is that losing players with high resilience and self-efficacy will not be able to wait for the next game to be played because they believe that they can bounce back from their lost.

## **METHODS**

### *Data collection*

Data was collected by utilizing interviews and observations on 3 groups of teenagers. Each group contains 4 samples, and each group had played the game twice every week for four weeks. Each sample is coded as S1, S2... S12. Obviously, they had been briefed about the general rules of the game before they started their first game. The game was played in a cozy environment of an ice-cream parlor at George Town, Penang, during their non-busy hours to minimize the external distraction.

Semi-structured interviews were conducted to the participants prior to the game-playing in order to obtain some knowledge about the initial level of each EE and some demographic data. Non-structured interviews in the form of informal conversation were also conducted along the game, based on the necessity, such as asking for a participant's reason to take a particular action. Observation was conducted along the game, where the data collector also participated as the judge. Video-recording was conducted under the consent of the samples in order to capture the verbatim in some games.

*Analyses of data*

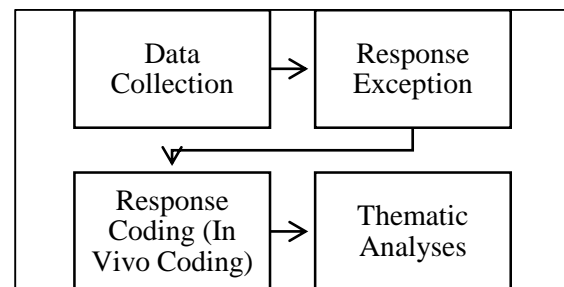
Two cycles of qualitative coding will be utilized to analyze the data. The first cycle coding is engaged in order to underline the ‘real voice’ of the participants, while the second cycle coding aims to develop a sense of conceptual, thematic, and theoretical organization from the first cycle codes (Saldaña, 2009). In Vivo coding is taken as the first cycle coding of this study, while the second cycle coding is represented by Thematic Analysis.

In Vivo Coding requires thorough readings of every sentence and distinguish phrases or words within the responses that may help to ‘crystallize and condense meanings’ (Charmaz, 2006). Therefore, codes must appear next to every line of data; however, depending on the research objective, In Vivo Codes can be applied with less frequency, such as one word or phrase for every three to five sentences (Saldaña, 2009). Most importantly, In vivo Codes could be used as the sole coding method for small-scale studies (Charmaz, 2006; Saldaña, 2009). In the context of this study, In Vivo data is represented by the exact observation results, such as what exactly the participants said or did during their games.

Thematic analysis, or search for themes in the data, is conducted after the In Vivo Coding done to the data. A theme might be identified at the manifest level (observable in the response) or at the latent level (underlying the phenomenon) (Boyatzis, 1998). At manifest level, a theme plays its role as a common denominator to group and organize a set of data (Auerbach & Silverstein, 2003). At a latent level, themes are interpretive and insightful discoveries of the nature or meaning of the daily life (van Manen, 1990). Overall, themes capture the phenomenon being investigated, and help the researchers to get deeper understanding.

Like coding, thematic analysis is a strategic choice as part of the research design that includes the primary questions, goals, conceptual framework, and literature review (Saldaña, 2009). It was suggested that themes can be found in the data by looking for such qualities as metaphores, expression, linguistic

connectors, shift in topics, theoretical issues suggested by the responses, and even what is not discussed before (emerging theme) (Rubin & Rubin, 1995). Calculation of the percentages of selected data to assess phenomena can also be conducted (Sandelowski & Baroso, 2003). In the context of this study, thematic analyses plays its roles as the second cycle coding. It is employed in order to categorize the ‘actual voice and behavior’ collected from the previous cycle. Because the actual voices and behavior of every participant were shown in different manners, thematic coding is employed in order to organize the data into categories that will be analyzed in order to support the quantitative findings and to answer the qualitative research question of this study. In summary, qualitative part of this mixed method study follow the steps illustrated in Figure 2.



**Figure 2** Steps to qualitative data analyses in this current study

As illustrated in Figure 2, qualitative data is collected from interviews before it is excerpted, coded, and themed. Further analyses are done based on the codes and the themes. The qualitative findings is utilized to explain or support the quantitative findings related to the research questions. Furthermore, schema, such as Table 1, is going to be utilized to code, arrange, and organize the data from the participants’ responses. The first part of the table shows the excerpts of the interview before the participant played her first game, the second part of the table shows the excerpts of the observation to the same participant when she played the game for the fourth time.

**Table 1** Example of schema used to analyze the data

<b>Date</b>	<b>Data Coll Method</b>	<b>Responses (Actual Voice / Behavior)</b>	<b>In Vivo Codes</b>	<b>Theme</b>	<b>Analyses</b>
19	Interview	I'm not really sure about my future <sup>1</sup> ... No one in my family had ever owned any businesses... so I think I might not have what it takes <sup>2</sup> .	<sup>1</sup> I'm not really sure about my future  <sup>2</sup> No one in my family had ever owned any businesses... so I think I might not have what it takes <sup>2</sup> .	<sup>1</sup> Inadequacy in self-competence  <sup>2</sup> Inadequate self-efficacy.	Sample S3 possess inadequate self-competence and self-efficacy, because she has not been exposed to entrepreneurship at all, even vicariously.
23	Observation	She keeps trying to buy the mobster cards <sup>3</sup> at the last minutes of the game <sup>2</sup> .  This is already her 4 <sup>th</sup> times playing that game <sup>11</sup> .	<sup>3,4</sup> She keeps trying to buy mobster cards at the last minute of the game.  <sup>11</sup> This is already her 4 <sup>th</sup> times playing that game.	<sup>3</sup> Practical Intelligence based on the experience  <sup>4</sup> Adequate self-efficacy  <sup>11</sup> Experience	Experience of 4 times playing affects her opportunity pursuing method. She confidently did anything possible to win, because she knows that the game will be over soon, and the 'call of justice' card might not be drawn.

As depicted in Table 1, sample of the excerpt includes the actual responses of the participant and her actual overt observed behavior. These data was coded by using In Vivo Coding method (the superscript numbers), where the actual voice of the participant is noted. Sequentially, from the in vivo codes, the theme was given in order to be analyzed. The analyses reported in the subsequent column.

After the data in the form of the one sampled in Table 1, several steps of analyses were conducted in order to achieve the research objectives. The first step is to identify whether the quality of each EE improved or decreased over the games, the second step is to identify possible relationship among variables, the last step is taken to identify whether the effectiveness of opportunity pursuing is affected by the change of each EE along the games they play.

For example, as presented in Table 1, the participant mentioned that she might not have

what it takes to be a successful entrepreneur. This verbatim was taken as an In Vivo code and was given categorized or given a thematic code (superscript number 2) which is connected to the theme of 'inadequate self-efficacy (SF)'. The way she said things (the In Vivo data) is analyzed based on the literature, and it is concluded that her inadequacy of SF is a result of no mastery experience (never try or simulate any type of business), absence of vicarious learning (no family members doing business), and social persuasion, where nobody told her that she might be able to be a good business person (Bandura, 1997).

Another example is presented in the lower row of Table 1, which was taken from the participant's fifth game. It was observed that the participant kept trying to buy the mobster cards only at the last minutes of the game, and it was taken as an In Vivo data. The fact that she behaved in such a way was themed as (3) practical intelligence based on experience and that she had played 4 times before was themed



as (11) experience. The analysis was done based on the study of Sternberg (2004), which established that the higher the experience (number of game played) predicts the practical intelligence (utilizing last minute chances). In other words, experiences in the previous 4 games let the participant know that the negative effect of buying mobster cards can only occur when the 'call of justice' card is withdrawn, and that the chance of the occurrence is smaller in the last minutes.

Examples in the previous two paragraphs can lead to the conclusion that before playing the game, the participant was not exposed to any business method or entrepreneurship activities; hence she was not develop any positive entrepreneurship belief (inadequate self-efficacy). Nevertheless, after she had played the game for four times, she was confident enough to take illegal actions in order to maximize her profit. In other words, the analysis led to a discovery that Experience and practical intelligence affect self-efficacy, which might lead to more effective opportunity pursuing. While the data from interviews and the observations of each participant's behavior during the game were analyzed by using scheme such as Table 1, another kind of scheme was utilized in this study in order to make it easier to identify the change of each EE in each game each participant played. Table 2 is the example of the scheme for identifying the EE changes.

In Table 2, data in each column was taken from the analyses results of the previous scheme (as sampled in Table 1). Both Table 1 and Table 2 were taken from the same participant, and it can be seen that the level of SF adequacy is different between the one in the first game and the one in the fourth game, where improvement had been shown along the way, as well as the column of "After getting number 6", where she showed consistent behavior with the one noted in Table 1.

As an example of analyses, data in the column of ER (Entrepreneurship Resilience) in Table 2 showed the participant's dynamic of ER adequacy level. In the first game, his behavior when the die showed 6 indicated inadequacy level of resilience; he looked depressed for the rest of the game and failed to accumulate high amount of wealth at the end. In the second

game, the participant managed to reduce his loss at the same situation, and accumulated more wealth. At the fourth game, he even utilized the situation that usually depressed him into opportunity by buying a mobster card, and he even accumulated much more wealth. It is indicated that his ER increased along with the experience (numbers of the game played).

## RESULTS

It is impossible to present the whole excerpt of interviews and video records in this paper; therefore only sampled parts of the whole tables are presented. Nevertheless, Table 1 and Table 2 did not only illustrate the example of how data was analyzed, they also represent most of the other tables. In other words, most of the participants showed similar development along the way.

The results shown that the during the first game, some EE, such as CT, ER, SF, and PI were shown as inadequate because the participants seemed depressed and could not accumulate wealth effectively. When the game was played more often, most participants showed some improvement in self-competence. 6 Participants showed even swift their way to see themselves from worthiness-based SE to competence-based SE, related to the game. Overall, the experience (frequency of the game played) increased their competence-based self-esteem. Furthermore, more aggressive opportunity-pursuing behaviors were shown by participants with adequate competence-based SE in their first games.

In terms of competitive traits (CT), it was shown that the increase of experience affects the way the participants think about winning the competition. In the first and second games, they opted for self-development actions, such as buying bigger transports and buying investments. At the same time, they did not pay too much attention on defeating their opponents. Nevertheless, when the experience increased, the hyper-competitiveness was getting higher. In other words, experience taught the participants to be more aggressive in the competition; they started to try to reduce others' wealth, instead of only increasing their own. It can be concluded that participants

**Table 2** Example of Observation Analyses to identify the change of each EE along the game played

<b>Exp</b>	<b>After getting number 6</b>	<b>SE</b>	<b>CT</b>	<b>ER</b>	<b>SF</b>	<b>PI</b>	<b>Wealth Accumulated</b>
1 <sup>st</sup> game	Lost half of his wealth, and looks depressed afterwards.	Inadequate worthiness-based S.Es	Dev	Inadequate	Inadequate	Inadequate	48,000
2 <sup>nd</sup> game	Lost less wealth due to transport upgrade	Improved in S.Comp	Dev improved Hyp stays	Tried to prepare	Improved	Improved	86,000
3 <sup>rd</sup> game	Lost less wealth due to investment buying	Improved in S.Comp	Dev improved Hyp improved	Better preparation	Stays	Improved	86,500
4 <sup>th</sup> game	Hired the mobs and used it to protect himself	Improved in S.Comp	Dev stays Hyp improved	Stays	Improved	Improved	108,000

became more competitive when they get more experience. In addition, the increase of CT is one of the most evident among the participant. Averagely after their sixth games, all participants had developed hyper-competitiveness and had started to focus on financially hurting their opponents. In addition, it was also discovered that participants that showed more intense hyper-competitiveness had also shown more adequate competence-based SE.

In terms of entrepreneurship resilience (ER), participants had shown that the more they understand about the potential risks, the more preparation they would make, and the more resilient they were. In the first game, the unpreparedness of the participants to lose their wealth gave them a hard time to bounce back from their position, despite still enjoying the fun of the game. When the experience increased, they started to be able to prepare themselves to face the challenging situation, and with more experience they were able to take necessary action to minimize the loss. The more prepared they feel they were, the more resilient they would be. However, when the loss came from another player (instead of from the die throw), they found harder time to bounce back to the prime mood.

Similar to ER and CT, self-efficacy (SF) was affected by experience. Participant set their expectation higher with more experience, and most of the time, in the third or fourth game, participants tend to develop some winning strategies and plan their actions. Moreover, in many participants, the increase of SF occurs at the same time as the increase of CT, both in the development and hyper competitiveness factors. Furthermore, having strategies and plans improved their SF. Thereby; it can be conceptualized that the causal relationship between experience and CT might be mediated by the perception of readiness. Same mediation effect might also happen between experience and ER. These findings are consistent with the theory and study of SF by Bandura (1989, 1997).

Opportunity pursuing styles did not seem to be affected much by all the EE in this current study, despite some previous study had mentioned so (Prihadi, et al., 2014). However, the choice of which style to be utilized in

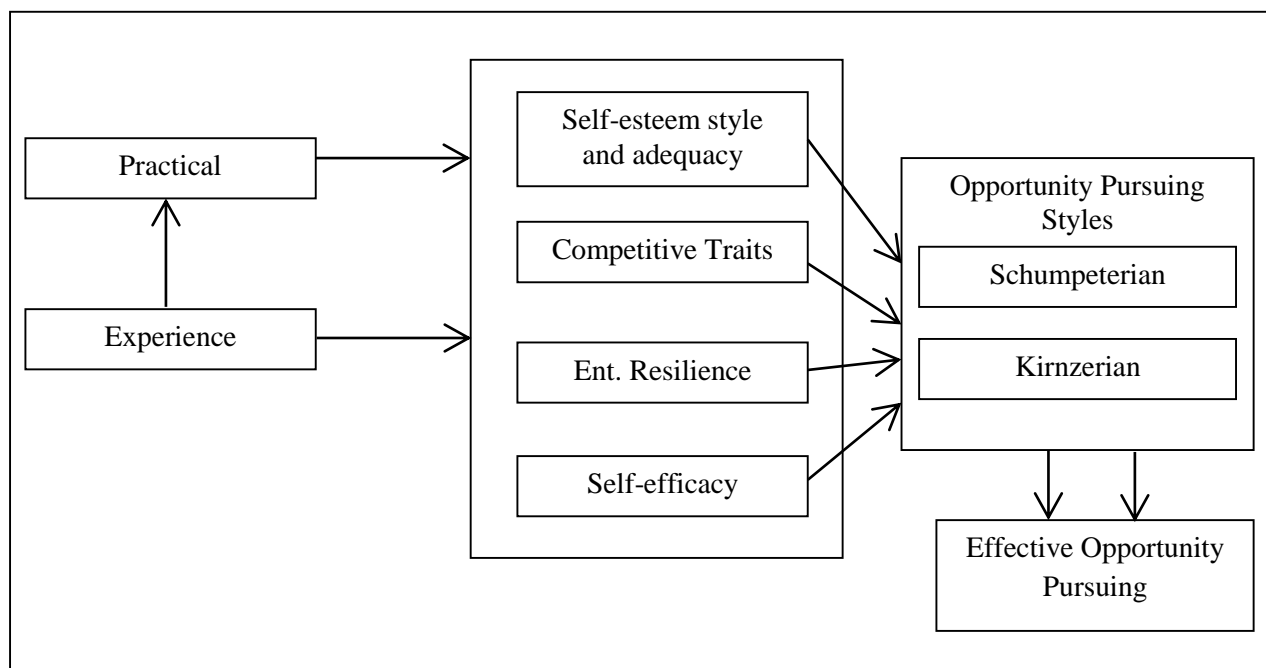
particular time is improved by other variables. Participants might pursue the opportunity by using Kirnzerian or Schumpeterian styles according to the necessity as long as the other EEs are improved. For instance, it was evident in 10 participants that after they had their hyper competitiveness (CT), SF, and competence-based SE increased, they would likely to utilize more Schumpeterian style opportunity pursuing, such as trying methods that they have never tried before. At the same time, when they felt that their victory was at stake (development CT factor, worthiness-based SE, and SF increased), they would likely to utilize more familiar ways to defend their wealth (Kirnzerian style opportunity pursuing behavior).

Practical Intelligence (PI), as represented by the skills and knowledge related to the game was highly influenced by the experience, as proven by the theories and previous studies (Baum, et al., 2011; Sternberg, 2004). It was also indicated that the improvement of the other EEs, such as the self-competence element of SE, CT, ER, and SF was highly influenced by PI, and in turn they affect the effectiveness of opportunity pursuing. Adequate PI even affected the participant to choose whether they should utilize Kirnzerian or Schumpeterian opportunity in order to be more effective. In other words, analyses of the qualitative data of this current study confirmed that PI mediates the influence of experience on SE, CT, ER, and SF. Additionally, it was discovered that among three subjects that possess much less adequate SE, SF, and CT (determined by the interview), the increase of PI occurred much later than other participants (the sixth games onwards).

In terms of opportunity pursuing effectiveness, which was represented by the wealth accumulated at the end of the game, every player showed significant increase between their first and eighth games. It supports the argument that experience (numbers of the game played in this current study) indirectly predicts the effectiveness of opportunity pursuing behavior. In other words, EX (experience) might predict SE, CT, ER, and SF, which eventually predict the effectiveness of opportunity pursuing in either Kirnzerian or Schumpeterian style. However, the causal relationship between EX and the other 4 EEs is mediated by PI.

Thus, by analyzing the qualitative interrelationship among the variables, a quantitative interrelationship can be hypothesized for further research in

quantitative nature. Figure 3 illustrate the hypothesized quantitative relationship among the variables.



**Figure 3** Conceptualized interrelationship among variables

Figure 3 illustrates the conceptualized interrelationship among variables in this current study. Thereby, the first and second research questions are answered. In order to answer the third research question qualitatively, it is important to see which variable will highly reduce the effectiveness of opportunity pursuing if it does not exist. Based on the illustration of the findings in Figure 3, it can be concluded that the most important variable is the experience. Experience affected all other variables that eventually lead to effective opportunity pursuing in the game.

## DISCUSSIONS

Generally speaking, this study had answered both of the research questions. The answer for the first research question is that playing “Traders” more frequently increased each EE of the participants. The answer for the second research question is discussed in the next paragraphs. Additionally, another finding had emerged after the analyses were done; it is the hypothesized interrelationship among variables that was illustrated in Figure 3.

The increase of SE was not measured quantitatively in this study; however, the in-game behavior of each participant showed the shift of SE from worthiness-based to competence-based, along with the improvement of their effectiveness in pursuing opportunities. Contextually, this finding is inconsistent with the finding of Prihadi, et al. (2014), who stated that individuals with worthiness-based SE tend to show Schumpeterian style while their counterparts with competence-based SE would likely to show Kirnzerian style. In this current study, it was shown that while the SE is shifting from worthiness-based to competence-based, participants would utilize any style that benefit them. This can be explained only by mentioning the involvement of other EEs such as CT, SF, and ER. Nevertheless, in term of SE, it can be concluded that when a business person had been exposed more to entrepreneurship world, they would believe more in their competence than their pride (worthiness).

While the increase of CT is shown to be related to the increase of experience, CT, SF, and ER, as well as the shift of SE from worthiness-based

to competence-based, CT has its own dynamic alteration along the game. Most of the participants showed that at the earlier stage, they prepare themselves to face the competition by preparing themselves for the worst (buying bigger transports, buying mobster cards for security, buying investments); yet in the later stage, when they had played more games, their CT was increased in the more offensive form such as buying mobster cards for attacking others and buying only local commodities when they landed in certain towns without diversification. It can be concluded that experience swiftness the competitive traits from development to hyper-competitiveness. In other words, when individuals are frequently exposed to business world, they would likely to be more competitive and more aggressive in the competition. This fact can also explain the fact that SE style might not contribute to the opportunity pursuing style (Kirznerian or Schumpeterian) because the person will just utilize any style that is effective at the moment. In this current study the values of SF and ER were not measured quantitatively, yet the increase of these traits was observable through the participants' behavior along the games. Most of the participants, regardless their previous SF adequacy, tend to be excitedly nervous in their first games, and felt vulnerable to any negative surprise they received, such as losing half of their long-accumulated wealth. The nervousness and vulnerable feeling are related to inadequate SF; furthermore, such events were followed by stressful expressions and behavior that showed inadequate ER before they had eventually learned (either the hard way or vicariously) that there are steps that can be done to avoid such losses. This relationship between SF and ER is consistent to the theories by Erikson (2002), who stated that it takes adequate SF to maintain high resilience and Bandura (1997) who advocated that it takes mastery experience, vicarious learning, and social persuasion in order to develop adequate SF.

The aforementioned discussion on SF and ER leads to a conclusion that business experience of entrepreneurs will let them learn to face obstacles, either socially or through the hard way, about the subject matter and develop mastery. Their ER will increase accordingly, and it will develop their effectiveness in opportunity pursuing.

As hypothesized and illustrated in Figure 3, Practical Intelligence (PI) holds important role in the whole entrepreneurship learning process. As referred by Baum et al. (2011) as the experience-based accumulation of skills and explicit knowledge as well as the ability to apply that knowledge to solve problems, PI is a factor that is predicted by the experience, and at the same time accumulates the skills and knowledge learned in order to face the upcoming problems. Findings of this study lead to an argument that PI will not work directly to solve problems (or in the context of this study to pursue opportunities effectively) without altering other factors such as SE, CT, ER, and SF. Thereby, because it might alter the effect of the experience on the aforementioned EEs and also affected by the experience, a mediating role can be hypothesized (Baron & Kenny, 1986).

Findings of this current study supported the previous studies and theories. Experience in playing "Traders" is essential to improve the other EEs that eventually improve the effectiveness in opportunity pursuing. However, the influence of experience is mediated by the practical intelligence. In other words, "Traders" can be utilized as a tool to support entrepreneurship education for teenagers, due to the fact that playing it improves many elements that theoretically proven to be required in a successful opportunity pursuing.

Findings of the current study also showed that playing "Traders" more often helps teenagers to have more adequate self-esteem, competitive traits, entrepreneurship resilience, self-efficacy, and practical intelligence, which are required in order to develop effective opportunity pursuing skills that leads to successful entrepreneurship. In other words, the experience they get from playing "Traders" prepares them to learn more in the actual setting of entrepreneurship. In other words, it can be confirmed that the game had served its purpose.

### **Suggestion**

The concept illustrated in Figure 3 leads to a suggestion that the quantitative version of this current study should be done in order to get more meaningful findings that can justify the significance of the game further. In other

words, studies on mediation effect of PI on the causal effect between experience and the improvement of all EEs should be conducted. Other variables that might affect the effectiveness of opportunity pursuing should be involved as well.

Larger scale studies with proper funding and a higher number of participants from various backgrounds is also highly suggested in order to obtain better understanding of what “Traders” can improve and what to be improved in “Traders”. It can also be achieved by developing the digital online version of this game in order to gather larger and more various participants. Demographic factors of the participants should be involved as moderator variables in order to obtain deeper understanding on how to adjust the game to fit different demography.

The game should also be translated to several languages in order to deliver the entrepreneurship education to teenagers from many different nations without letting language barrier distract them from learning. It will also lead to different research on whether there is any difference in the improvement of opportunity pursuing effectiveness when the rule of the game was explained in mother tongue and non mother tongue languages. Eventually longitudinal studies on the teenagers that have been playing “Traders” should be conducted in order to see the result of playing the game on their actual life in actual setting.

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