

IMPACT OF PSYCAP ON COLLEGE STUDENTS' ENTREPRENEURIAL INTENTIONS: REPLICATION AND EXTENSION

Tim O. Peterson, North Dakota State University
Shontarius D. Aikens, Concordia College
Craig Silvernagel, South Dakota State University
Barb Heller, South Dakota State University

ABSTRACT

Psychological Capital (PsyCap) can potentially play a big role in developing future sustainable entrepreneurs. Sehora & Tantiukoskula (2011) were the first to explore the relationship between PsyCap and entrepreneurial intention. This study replicates the findings of the Sehora & Tantiukoskula (2011) study while also extending it in two ways: 1) exploring the relationship between entrepreneurial intention and the four individual dimensions of PsyCap (self-efficacy, optimism, hope, and resiliency) and 2) exploring the impact of PsyCap on effectuation entrepreneurial intent. Findings suggest that the PsyCap dimensions of resiliency, self-efficacy, and optimism are the most important dimensions when it comes to entrepreneurial intention. The PsyCap dimension of resilience also indicated that these potential entrepreneurs will be better able to sustain the challenges of a new start-up in order to create a more robust economy and vibrant society. In addition, when it comes to effectuation, the PsyCap dimension of resilience is the most important. This strengthens the potential for sustainability during the implementation of a new venture. Implications for entrepreneurship educators are provided.

Keywords: *Psychological Capital; Entrepreneurial Intentions; Resiliency; Self-Efficacy; Hope; Optimism, Sustainable Entrepreneurship*

INTRODUCTION

Over the years there has been an increased interest in offering curriculum within the discipline of entrepreneurship. Entrepreneurship educators have been tasked with creating a curriculum that helps to mold and develop future entrepreneurs who create sustainable businesses that are resilient to the permanent white water (Vaill, 1996) of new start-ups. While most curriculum focuses on the causal and effectual techniques of what entrepreneurs should do, some have suggested the need to consider personal aspects or characteristics of individuals pursuing entrepreneurial pursuits. It might be through these personal characteristics that we can create more resilient and sustainable new ventures.

It has been suggested the need and importance of having individuals start new businesses and the role that will play in future economies (Clifton, 2011). This falls directly in line with the topic and research stream of entrepreneurial intention which has grown rapidly since the early nineties (Linan & Fayolle, 2015). Entrepreneurial intention is defined as a commitment or conviction to set up or to start a new business in the future (Krueger, 1993; Thompson, 2009). There is a significant stream of research regarding entrepreneurial intent (Valliere, 2015) and sustainable entrepreneurial ecosystems (Volkman, et al., 2021). Linan and Fayolle (2015) provides the most up to date review of the subtopic of entrepreneurial intent. Thus, the concept of entrepreneurial intent is of great importance since it is essentially the first step in starting a business (Molino, et al., 2018). To assist in providing future entrepreneurs with critical information needed to be successful, entrepreneurship educators try to determine what to teach and what to share with their students as they ponder the decision to start a new business in a very turbulent economic environment which will require perseverance and resilience.

A recent area of interest to determine what makes entrepreneurial intention successful is psychological capital (PsyCap). Luthans, et al. (2007) provide a comprehensive definition of PsyCap and its four sub-components:

“PsyCap is an individual’s positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” (p. 3).

A study we found that was conducted by Sebor and Tantiukoskula (2011) stood out to us for several reasons. One, this study claimed to be the first study to explore the relationship between PsyCap and entrepreneurial intention. Two, the findings from the study suggested that a high level of PsyCap would lead to greater entrepreneurial intention. Third, given the nature of our work as management educators, conducting research with a population of college students could inform us on how to improve sustainable entrepreneurial intent for our students.

While the results of this study linked PsyCap to entrepreneurial intention were promising, we were interested in extending this research for several reasons. First, to add to the literature.

This study is one of few that we could find that has explored the role of PsyCap in connection with entrepreneurial intention. By doing an extension, we are trying to see if we can replicate the findings of the original researchers.

The second reason is for the development of future sustainable entrepreneurs and sustainable entrepreneurship. In the literature, there is discussion about different types of attributes that an entrepreneur possesses – Trait-like attributes and State-like attributes. Trait like attributes are somewhat like personality, which is viewed by some to be mostly fixed and not changeable. For example, the BP10 assessment developed by the Gallup Corporation (Clifton & Badal, 2018) is an example of this. State-like attributes, on the other hand, are items that can be developed over time. For example, Morris, Webb, et al. (2013) developed an instrument to identify 13 general entrepreneurial competencies that people can develop and improve over time. It is interesting to note that PsyCap as a whole is considered to be a state like construct (Sharma & Sharma, 2015), which suggests that a person can develop and improve their PsyCap over time. Helping to improve a student's PsyCap during their college years can shape their attitudes and intentions toward entrepreneurial ventures (Shirokava, et al., 2017).

A third reason for extending this study is that it contributes to and fits within the existing question in entrepreneurship concerning whether entrepreneurs are born vs. made. Relatively speaking, the entrepreneurship research domain is new in comparison to other domains in management. It is following the same kind of development that the field of leadership did. At the beginning of the leadership research era, the predominant thought was that leaders were born. As a result, early research focused on leadership traits to identify leaders (Northouse, 2019). Then over time, the paradigm shifted to that leaders could be developed. As a result of that, the pendulum swung which ushered in new studies around leadership behaviors. This applies to entrepreneurship because one of the central questions in entrepreneurship has been “*Are entrepreneurs born or made?*” If one adopts the position that entrepreneurs are born, then it would make sense to choose only those traits that entrepreneurs are found to possess and just assume that nothing else can be done. However, the current dominant theme in entrepreneurship is that entrepreneurs are made. If we adopt the latter premise, then we have to figure out what can be done and taught in the classroom to make and develop new entrepreneurs.

A fourth reason for extending this research is to do a deeper dive into understanding the connection between PsyCap and sustainable entrepreneurial intention. Existing literature has looked at this relation at a surface level, assuming both as two individual constructs. As stated earlier, within the PsyCap construct, there are four subcomponents: self-efficacy, optimism, hope, and resiliency (sustainability). We were curious to know if each subcomponent played an equal role or if perhaps only a few were significant. This has implications and motivation for entrepreneurship educator to choose those things that we can do something about and that would have the greatest benefit in the classroom. However, as mentioned before, when looking at studies that examined the connection between PsyCap and entrepreneurship, they only looked at PsyCap as a single overall construct rather than a multi-dimensional construct with four separate components. Our thinking is this. We find that when all rolled together, PsyCap does have an effect. But if we were to break the PsyCap down to its multi-dimensional sub-components, would we find out that each of the sub-dimensions don't equally have an impact on someone

wanting to be an entrepreneur? This is important to know. Why? Because if we invest dollars in entrepreneurship education and training that doesn't have much significance or impact, we have potentially wasted resources.

In consideration of the above points along with guidelines provided by Block and Kuckertz (2018), we believe that a further examination of the connection between PsyCap and entrepreneurial intention is needed. Thus, our goal is to build upon entrepreneurial intention theory in two ways: 1) to see if we can replicate the results of the Sebora and Tantiukoskula (2011) study which would add to an area of entrepreneurial intention research that is essentially non-existent and 2) to extend upon Sebora and Tantiukoskula (2011) study to provide a deeper analysis as to which components of PsyCap have the biggest influence and to build theory as to why that may be the case. While the value of replication research is questioned by some, it is an essential activity needed when expanding, improving, strengthening, and validating scientific knowledge (Block & Kuckertz, 2018; Plucker & Makel, 2021; Tyson, 2014). This is especially needed given that this stream of research is scarce and inconclusive (Contreras, et al. 2017). It is our hope that these insights would provide value and direction to current and future entrepreneurs who want to build a sustainable entrepreneurial ecosystem.

LITERATURE REVIEW

As stated earlier, we understand that when considering PsyCap as a single construct, there is an overall connection with entrepreneurial intention. What is unclear is whether each of the subdimensions of PsyCap (self-efficacy, optimism, hope, resiliency) play an equal effect on entrepreneurial intention or some more than others. This would require looking at each sub-dimension of PsyCap individually. Therefore, our literature review is structured in such a manner to focus on our efforts for replication and extension.

The replication section of the literature review will discuss any new recent developments in the context of the original study. The extension section of the literature review will examine any research or studies that have determined any connections between one or more of the four sub-dimensions of PsyCap and entrepreneurial intention. These insights will be used to guide the development of hypotheses to be tested.

Replication

When replicating a study, it is important to identify key aspects of the original study. Below, we have identified two key takeaways from the Sebora and Tantiukoskula (2011) study as it related to our research.

Identifying Entrepreneurial Talent. First, the findings of the study fit right into one of the chief objectives outlined by Clifton (2011). Sebora and Tantiukoskula (2011) state that "an individual who has a high level of PsyCap tends to have a greater intention to pursue entrepreneurship as a feasible career option" (p. 12). Given this, when trying to identify future entrepreneurs, PsyCap is an instrument or tool that can be used in the screening process.

College Students. Second, the population used in the Sebor and Tantiukoskula (2011) student consisted of college students. Hsu, et al. (2017) argue that undergraduate students are the best sample for studying entrepreneurial intentions. As with a study conducted by Gonzalez-Lopez, et al. (2019), the use of a sample population of college students was helpful in determining that one subcomponent of PsyCap (resiliency) was key in predicting entrepreneurial intention. As management educators at the college level, it is our position that while high school is a good starting point, there are a variety of factors (i.e. demographics, lack of access to education and/or training materials, etc.) that could cause a potentially budding future entrepreneur to be lost in the mix within a high school setting. Illustrating this point using a sports analogy, there are examples of future Hall of Fame athletes who excelled in college but were overlooked and under-recruited while in high school because of other factors such as not being involved in AAU sports, no access or resources to attend camps, or coming from a small town or an unknown school. We believe that college is another avenue to identify entrepreneurial talent that may have been missed at the high school level, and it would make sense to do this at the college level as well considering that most formal entrepreneurship training occurs at a college or university (Morris, Kuratko, et al., 2013).

Research studies on PsyCap and Entrepreneurial Intentions – 2011 to present

Given these two takeaways mentioned in the previous section, we deemed it necessary to replicate this study in an attempt to affirm the relationship between PsyCap and college student's entrepreneurial intentions. When replicating a study, it is good practice to determine if there have been any other studies examining PsyCap and Entrepreneurial Intentions since the publishing of the original study. In addition, it would be important to determine if any researchers attempted to replicate the original study.

To answer this, we searched for articles that were published that included PsyCap and Entrepreneurial Intentions as measures of study since 2011 and to determine if the subsequent study either mentioned or referenced Sebor and Tantiukoskula (2011) in it. Upon a review of the literature, we found one study conducted by Contreras, et al. (2017) that was as close as possible to the original Sebor and Tantiukoskula (2011) study even though it was not referenced in the original study. In that study, the findings indicated that Psychological Capital as a whole was related to entrepreneurial intention (Contreras et. al, 2017).

Thus, we believe that by conducting this replication we are contributing to this research stream. Therefore, to best replicate the Sebor and Tantiukoskula (2011) study, we adopted their original hypothesis:

Hypothesis 1: The intention to become an entrepreneur is positively associated with an individual's level of psychological capital.

Extension #1: Individual Dimensions of PsyCap

The first extension we hope to do to the Seborá and Tantiukoskula (2011) study is in regard to the individual components that make up the PsyCap construct. PsyCap consists of four separate dimensions that include resiliency, self-efficacy, hope, and optimism. An example of an inventory item for each of these dimensions is provided below:

Resiliency: “I usually take stressful things required in new business preparation in stride.”

Self-Efficacy: “I feel confident acting on a new idea for a business when others do not.”

Optimism: “I approach my preparation for a new business as if “every cloud has a silver lining.”

Hope: “At the present time, I am energetically pursuing my new business goals.”

To extend our study, we think it is important to explore the relationships between entrepreneurial intent and the four individual formative dimensions that make up PsyCap, since the original study did not do this and viewed it as a single construct. In other words, the original study only examined the relationship between entrepreneurial intent and the unidimensional nature of PsyCap. And while the Contreras, et al. (2017) study was intent and explicit on examining Psychological Capital as a whole, their findings did indicate that all dimensions of PsyCap were related to entrepreneurial intention (specifically self-efficacy and resilience), and that each dimension of PsyCap had a different relation with entrepreneurial intention. As an extension, it is our intent to look at each subcomponent of PsyCap individually in its relationship with entrepreneurial intention to explore if one or more subcomponents plays a bigger role, or if all subcomponents are equally important. It is important to acknowledge that while we agree with the position that the synergy of all four dimensions of PsyCap are important (Seborá & Tantiukoskula, 2011), from a management educator's perspective, we think it is equally important to examine the relationships between Entrepreneurial Intentions and each individual dimension of PsyCap. As a result, the following hypothesis to extend the original study was developed:

Hypothesis 2: The intention to become an entrepreneur is positively associated with each of the four dimensions of psychological capital (resiliency, self-efficacy, hope, and optimism).

Extension #2: Effectuation

The second extension to the Seborá and Tantiukoskula (2011) study is in regard to effectuation, which is a new and emerging area within the entrepreneurship domain. In terms of instruction and training entrepreneurs, an effectual training approach contrasts with a causal training approach. Sarasvathy (2001) discusses the underlying differences between these two processes:

“...Causation processes take a particular effect as given and focus on selecting between means to create that effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means” (p. 245).

In order to provide a practical approach for effectuation, five effectuation principles were developed: 1) Bird-in-hand, or "Start with your means"; 2) Affordable Loss, or "Set affordable loss"; 3) Lemonade, or "Leverage contingencies"; 4) Crazy-Quilt, or "Form Partnerships"; and 5) Pilot-in the-Plane, or "control the controllable" (Society for Effectual Action, nd; Sarasvathy, 2008). In many ways, these five effectuation principles speak directly to sustainable entrepreneurship. Despite the fact that effectuation has its critics (Arend, et al., 2015), entrepreneurship scholars have contributed new articles and studies to this research stream since its introduction (Sarasvathy, et al., 2014). In addition, effectuation principles have been included in various resources and textbooks in teaching entrepreneurship to college students (Clifton & Badal, 2018; Neck, et al., 2018; Read, et al., 2017).

Three reasons exist for incorporating effectuation as part of extending the Seboro and Tantiukoskula (2011) study. First, effectuation is a very action-oriented approach to entrepreneurship based on the assumption of learning through trial and error. It is having the capacity to take on challenging tasks (self-efficacy), having a positive outlook (optimism) about success, persevering toward goals (hope), and when challenges arise having the fortitude (resiliency) to sustain the effort to succeed. Is this not what sustainable entrepreneurship should look like? One could argue that this is in line with entrepreneurial intention since it involves actual steps being taken towards starting a business. Second, it relates to the instruction method used to teach the students in this study. Some approaches to teaching entrepreneurship use a primarily causal approach or an effectual approach. Others use a combination of both in training. In our study, the educational approach used to teach students was an effectual approach. Third, Valliere (2015) suggested that any measure of entrepreneurial intent must take into consideration and consider the effectual nature of entrepreneurship. As a result, Valliere (2015) developed a specific instrument to do so. As a result, two additional hypotheses have been added to explore any relationships between effectuation, PsyCap (four dimensions), and entrepreneurial intent:

Hypothesis 3: The effectuation intention to become an entrepreneur is positively associated with an individual's level of psychological capital.

Hypothesis 4: The effectuation intention to become an entrepreneur is positively associated with each of the four dimensions of psychological capital (resiliency, self-efficacy, hope, and optimism).

METHOD

Participants

The total participants in this study were 125 students studying entrepreneurship at an upper Midwest university. They were recruited by sending an email to each student asking them to participate in this study. One hundred and three (82.4%) completed at least some portion of

the survey. Of the 103 surveys, we actually collected 94 complete surveys; nine individuals started the survey but did not complete the survey. This give us a 75.2% return rate of completed surveys. To take part in the study, each participant had to be enrolled in either a major or minor in entrepreneurship at the time they completed the survey. Each subject was asked to complete an electronic survey on their entrepreneurial psychological capital dimensions, two entrepreneurial intention scales, and then to answer a few demographic questions. The subjects did not receive any incentive for their involvement in the study.

Measures

In line with a replication study (Plucker & Makel, 2021), we used the Sebor and Tantiukoskula (2011) Entrepreneurial Psychological Capital (PCQ) scale (Cronbach alpha = .93 from our study). In addition, we used the Linan and Chen (2006) eleven item Entrepreneurial Intention Questionnaire (EIQ) (Cronbach alpha = .95 for our study). In order to extend this study to include effectuation, we utilized Valliere's (2015) eight item Effectuation Entrepreneurial Intent (EEI) scale (Cronbach alpha = .94 for our study).

Procedure

The survey was developed in Survey Monkey and distributed electronically via email to the 125 potential participants. There was one follow-up email sent to the potential participants. When the data was downloaded from Survey Monkey the IP address were immediately deleted, so no participant could be identified.

Analysis

The Survey Monkey was downloaded to Excel and the text data was converted to numerical data. Next the numerical data was uploaded to SPSS. The statistical analysis was conducted using SPSS. After the SPSS data set was created, it was checked for errors. Next, consistent with Tukey's (1977) advice to get to know your data, we produced a series of descriptive and exploratory data analyses to examine the data. We used SPSS's *explore* function to determine outliers, unusual values, and peculiarities in the data set. Each finding was traced back to the original electronic questionnaire and was corrected before any further analysis was done. This process was followed to ensure the data set had no errors. In doing this we identified that nine of surveys were unusable. These data rows were eliminated to give us the 94 usable subjects.

RESULTS

The mean age of the participants in this study was 21 years with a range from 18 to 26 years of age. The median age was 21. There were 58 (62%) men, 35 women (38%) and one missing data point in the sample. The majority (67 individuals 71%) of the participants were

from the College of Arts and Sciences where the entrepreneurship program was housed. The other 24 participants were scattered throughout the other university's colleges with no other college having more than 12% of the subjects. Again, 67 participants were majoring in entrepreneurship while the other 27 were earning majors in other disciplines while seeking a minor in entrepreneurship. There were 25 sophomores (27%), 31 juniors (33%), 36 seniors (38%), and one freshman (1%) and one missing piece of data (1%).

In the Sehora and Tantiukoskula (2011) study the authors only looked at entrepreneurial psychological capital in a single scale. While we will do this too to replicate their study, we will also examine the four dimensions that make up psychological capital. Therefore, we calculated the Cronbach alphas for each of the four dimensions. The four psychological capital Cronbach alphas are as follows: Resiliency (.80; 6 items), Self-efficacy (.88; 6 items), Hope (.80; 6 items), and Optimism (.63; 6 items). All very acceptable for a stable assessment instrument.

In the Sehora and Tantiukoskula (2011) study, the authors looked at a number of control variables such as age, gender, major, college year, and entrepreneurship knowledge. Only gender and entrepreneurship knowledge (measured by the number of courses completed by the subject) were significantly correlated with entrepreneurial intention, and both of them were negatively correlated with intention. These two control variables reduce the intention to be an entrepreneur. We did not have access to the course these students had taken so we could not use this as a control variable; however, we did ask for their gender. Table 1 shows the means, standard deviations, and correlation for this replication study.

Measures	Mean	SD	1	2
1. Entrepreneurial Intention	49.35	11.18		
2. Gender	1.38	.49	-.202*	
3. Psychological Capital	101.69	16.19	.718**	-.107

* Correlations is significant at the 0.05 level (2-tailed)
** Correlations is significant at the 0.01 level (2-tailed)

Just as Sehora and Tantiukoskula (2011), we also found gender is negatively correlated with entrepreneurial intention. In other words, as our data moves from male to female the intention to become an entrepreneur goes down. This is consistent with additional studies that examined the role that gender plays in entrepreneurial intention (Zhang, et al., 2014). Next, we performed stepwise linear regression putting gender into the regression first then followed by psychological capital. Table 2 shows the results of this regression analysis.

Variable		<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
Constant		-.639	5.278	-.12	.90	
PsyCap		.492	.05	9.62	.000	.50

While we entered gender into the regression first, it did not stay in the final regression model. However, psychological capital (PsyCap) did with an R^2 of .50. This confirms the replication of the earlier study and Hypothesis 1.

As we said earlier, Seborá and Tantiukoskula (2011) did not examine the four dimensions of psychological capital. These seems to be an important next step to determine where we as entrepreneurship instructors should put our emphasis. Table 3 shows the means, standard deviations, and correlations for the four dimensions of Psychological Capital, and entrepreneurial intention.

Measures	Mean	SD	1	2	3	4
1. Entrepreneurial Intention	49.35	11.18				
2. Resiliency	25.89	4.56	.686**			
3. Self-Efficacy	25.68	4.96	.675**	.820**		
4. Hope	25.44	4.73	.603**	.819**	.792**	
5. Optimism	24.68	3.80	.603**	.702**	.622**	.626**
** Correlations is significant at the 0.01 level (2-tailed)						

Table 4 shows the regression analysis using Forward method. In this way, the regression model selects the dimension that explains the most impact on entrepreneurial intention. Next the regression analysis determines if any of the remaining dimensions can be added to the equation to significantly explain more of the impact on intentions. The only dimension which did not enter the equation was Hope. The explained R^2 with the other three dimensions in the equation is .52.

Variable		<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
Constant		-1.924	5.47	-.35	.73	
Resiliency		.69	.34	2.01	.05	.47
Self-Efficacy		.71	.29	2.47	.02	.51
Optimism		.62	.30	2.07	.04	.53

This partially confirms hypothesis 2. Three of the four dimensions entered into the equation; however, hope did not enter into the regression model.

As we posited above, three of the authors use the effectuation method of teaching entrepreneurship. So, it seemed appropriate to examine psychological capital against the effectuation entrepreneurial intention scale as a further extension of this research. Table 5 is the means, standard deviations, and correlations for the effectuation entrepreneurial intention scale, the total psychological capital score, and the four dimensions of psychological capital.

Measures	Mean	SD	1	2	3	4	5
1. Effectuation Entrepreneurial Intention	26.44	9.31					
2. Total Psychological Capital	101.69	16.18	.513**				
3. Resiliency	25.89	4.56	.477**	.937**			
4. Self-Efficacy	25.68	4.96	.453**	.915**	.820**		
5. Hope	25.44	4.73	.468**	.912**	.819**	.792**	
6. Optimism	24.68	3.80	.439**	.806**	.702**	.622**	.626**

** Correlations is significant at the 0.01 level (2-tailed)

Table 6 shows the results for hypothesis 3. While hypotheses 3 is supported, it should be recognized that the R^2 is significantly lower here at .26 verses .50 for the earlier entrepreneurial intention scale.

Variable		<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
Constant		-3.57	5.30	-.67	.50	
PsyCap		.30	.05	5.73	.000	.26

Finally, Table 7 shows the results of the four dimensions being entered into the regression analysis using Forward method for effectuation entrepreneurial intentions. In this regression only resiliency entered the regression model. Again, the R² is reduced from .52 to .23.

Variable		<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
Constant		1.22	4.92	.25	.81	
Resiliency		.97	.19	5.21	.000	.23

The implications of these findings will be discussed next in the discussion section of the manuscript.

DISCUSSION

Replication

We were successful in replicating Sebora and Tantiukoskula's (2011) findings as our results also indicated that PsyCap is significantly related to entrepreneurial intent for college undergraduate students. Our results also showed a negative relationship between gender and entrepreneurial intentions. As we shifted from male participants to female participants the intention to become an entrepreneur went down. However, contrary to the earlier study, gender did not enter into the regression equation as a significant factor that explained students' intentions to become an entrepreneur. The strong R² (.50) for PsyCap provides additional support for the inclusion of PsyCap as a tool for discussion and development in entrepreneurship courses.

Extension

Hypotheses 2, 3, and 4 were in relation to our extending the Sebora and Tantiukoskula's (2011) study. There are several items of discussion from our findings, and they will be discussed in the order of the three hypotheses.

Entrepreneurial Intention and the Four Dimensions of PsyCap (Hypothesis 2). Our findings indicate that resiliency, self-efficacy, and optimism are the most important dimensions of PsyCap when it comes to sustainable entrepreneurial intention. Resiliency accounted for most of the variance (R² = .47). At the same time, both Self-efficacy ($\Delta R^2 = .04$) and Optimism ($\Delta R^2 = .02$) added significantly to the total R² of .53.

This has two implications for management and entrepreneurship educators. First, it supports our earlier position on the importance of extending the earlier study by studying the entrepreneurial intention relationship to each of the four PsyCap dimensions. Second, knowing which individual dimensions are the most important helps instructors to use their limited class time more wisely. For example, if one only viewed the overall PsyCap measure, the result would be an equal focus on all four dimensions. However, knowing that resilience accounts for the most, an entrepreneurship instructor should consider devoting a considerable amount of time on the resiliency dimension followed by self-efficacy and then optimism.

The Impact of PsyCap on Effectuation Entrepreneurial Intent (Hypotheses 3 and 4).

Our findings support that PsyCap does support effectuation entrepreneurial intent. While the R^2 does drop from .50 to .26, PsyCap still provides a significant impact on effectuation entrepreneurial intent. Specifically, as it relates to the four dimensions of PsyCap, we found that resiliency was the only dimension that had an impact on effectuation entrepreneurial intent.

There are two main implications for management educators here. The first implication is that whether the educator is using an effectuation teaching philosophy or a more traditional causal teaching philosophy, resilience should be a key factor to incorporate into entrepreneurship training as it relates to entrepreneurial intent. It should be noted that resilience would be important both before and after a business is started. Since the nature of this study is focused on entrepreneurial intent, we stress the importance of resilience before a business is started.

For example, a guiding heuristic is that there is a big difference between the idea of something and the reality of it. Let's use the example of a nascent entrepreneur. They might be really excited with the idea of being their own boss and being independent, but during the process of taking the first steps to actually start the business, they might learn about additional obstacles or regulations needed to officially start the business. When the student entrepreneur experiences this reality, the educator needs to recognize that this is the time to assist in developing the student's resilience. By developing a student's resilience, the educator expands the student's capacity to sustain the challenges of a new start-up and build the potential for a more sustainable entrepreneurial ecosystem.

The second implication is that our findings give some support to the inclusion of effectuation principles in entrepreneurship education to improve entrepreneurial intent. One could suggest that effectuation actually supports or reinforces the resiliency dimension of PsyCap and by so doing increases sustainability. It could be suggested that since the nature of effectuation is to start small and to be action-oriented, this could help with developing resilience in students. In other words, effectuation helps to influence or improve resilience and as a result, effectuation should be part of the process of training and developing entrepreneurial college students.

LIMITATIONS AND FUTURE RESEARCH

While the original study was successfully replicated using the similar population and region of the country for college students (Midwest), future research should examine if this

would be replicated in different regions of the United States (South, Western, or Eastern parts of the United States). In addition, while both our study and the original study were conducted at large public universities, future research should determine if these results hold when changing the nature of the institution in terms of size (large vs. small), type (four year degree or two year community colleges), and public vs. private. Finally, since this study was based in the United States, future studies should be conducted in other countries.

Another limitation would be in the size of the sample. Our goal was to have a sample of at least 100 that contained complete records, and we fell slightly short of this goal. Collecting a sample across the United States would add significantly to this line of research. Another area of future research is to determine if anything can be done to affect the relationship between PsyCap and Entrepreneurial Intention when it comes to gender. Similar to Sebor and Tantiukoskula's (2011) findings, entrepreneurial intention is lower in females than in males. Future research should look into any possible factors or intervention strategies that could be implemented in entrepreneurship courses to encourage and support more entrepreneurial intention among women entrepreneurs.

Another limitation or criticism is that the models in this study are extremely simple, and that they don't test for other relationships or consider other factors (e.g. mediation/moderation). Given that this is a new area of study, our focus is still exploratory at this point. Researchers who attempt to replicate and/or extend based on our study should consider more complex models.

As mentioned earlier, the subdimension of Hope didn't enter the regression model. Our assumption at this point is that hope is less important to entrepreneurial intention than the other dimensions. A friendly read of this manuscript by an entrepreneurship scholar asked if hope as measured by Sebor and Tantiukoskula (2011) is the same as entrepreneurial passion as measured by Cardon, et al. (2009). Cordon, et al. (2013) define entrepreneurial passion as an intense positive feelings to invent, to found, or to develop. On the other hand, Snyder (2000) defines hope a positive motivational state based on two factors: goal-directed energy or willpower and plans to achieve a goal or a waypower to goal achievement. We do not think these two constructs are the same. However, future research could include both scales and empirically address this interesting question.

CONCLUSION

In summary, all educators know that they have a limited amount of time in which to assist students in the learning process. Entrepreneurship is no exception to this situation. In fact, it might be even more difficult since almost all topics have to start from scratch. Our study coupled with the earlier work done on Psychological Capital and students' entrepreneurial intention assists entrepreneurship educators and trainers in determining where to put their limited resources in order to get the biggest payback for their efforts.

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