


# The development of emotional intelligence, self-efficacy, and locus of control in Master of Business Administration students

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## Abstract

Successful managers must develop strong interpersonal skills alongside their ability to achieve personal and organizational goals. For educational institutions to stay relevant, courses must equip students with necessary psychological competencies in addition to technical knowledge, skills and abilities for the constantly evolving business climate. We explored whether Master of Business Administration (MBA) programs aid in the development of psychological competencies, given that MBAs are a popular management development tool. Specifically, we investigated changes in MBA candidates' emotional intelligence (EI) ability, self-efficacy (SE), and locus of control (LoC) in a pre-post survey design over the course of a 1-year MBA educational program and explored the relationship of candidate's baseline psychological status to their academic success in the MBA educational program. Participants were recruited from newly enrolled students at an international university in Asia. The study participants (53 MBA students, plus 26 psychology students, and 34 nonstudents as comparison groups) completed self-report measures of EI, SE, and LoC at the beginning and end of a 1-year MBA period. The MBA candidates showed significant improvement in EI, SE, and LoC-externality, as well as an increase in LoC-powerful others during the program. LoC-powerful others at the beginning of the program also predicted MBA students' academic

performance. The findings provide evidence that psychological competencies that may positively affect work performance are key benefits of MBA education.

**KEYWORDS**

academic performance, emotional intelligence, locus of control, MBA program, self-efficacy, training

## 1 | INTRODUCTION

One of our students, who was a Master of Business Administration (MBA) candidate at an international university in Asia, approached his lecturer about a failed final examination. His lecturer explained the weaknesses of his attempt, but the student still did not pass a supplementary examination and appealed to the Head of School, who denied the appeal. The student then filed a higher appeal to the course director who upheld the failed grade. We noted the student's tendency to appeal to higher levels of power within the university structure, seeming not to acknowledge his own level of ability or performance, instead reflecting a belief that his fate was the result of the will of more powerful others rather than his own efforts. This type of perspective is aligned with the psychological construct of *locus of control* (LoC; Levenson, 1974, 1981), which is the extent to which people believe that consequences of events are either a result of their own behavior (internal LoC) or determined by chance or by the influence of other people. This student specifically demonstrates an external LoC for *powerful others* (LoC-P), i.e., the belief that outcomes in life are determined by those more powerful than oneself. This student's story raises some important questions about LoC and the concomitant psychological competencies of *emotional intelligence* (EI), which is a person's capacity to monitor their own emotions and perceive and appropriately respond to others' emotions (Salovey & Mayer, 1990), and *self-efficacy* (SE), which is the belief about one's own capability to perform activities and achieve specific goals (Bandura, 1977). These are important qualities in a successful manager or leader (Sur & Ng, 2014). Having observed MBA candidates like this student, we ask whether the process of working toward an MBA leads to any detectable changes in MBA candidates' psychological competencies (i.e., EI, SE, and LoC). It seems likely that growth in EI, SE, and LoC would occur during an MBA education and possibly that students' baseline levels of these competencies when commencing MBA candidature may impact on their academic achievement in the MBA educational program.

The growth of the MBA degree around the world has been fueled by its widespread acceptance by many employers and its almost certain return on investment (Byrne, 2014) as top tier MBA graduates are in high demand to become future leaders of organizations (Björkman, Ehrnrooth, Mäkelä, Smale, & Sumelius, 2013). From an HRD perspective, MBAs are considered to be the choice management development tool for prospective managers in the west and in developing economies (Kuchinke, 2007; Wang & Wang, 2006). Employers value functional expertise (e.g., accounting, finance, marketing) commonly found in MBA programs (Pfeffer & Fong, 2002). However, the continually changing nature of work and organizations would render much of the functional knowledge acquired during MBA education obsolete (Allen & Van Der Velden, 2002; Burke & Ng, 2006). Success in leading people and organizations requires "sense-making, interpretation, intuition, wisdom, and experience" (Kuchinke, 2007; p. 115) which entails the development of psychological competencies such as EI, SE, and LoC. EI promotes interpersonal effectiveness (Kunnanatt, 2004; Opengart, 2005), which in turn contributes to building leadership competencies (Fambrough & Kaye Hart, 2008). The development of SE also aids in training success and knowledge transfer (see Brown & Warren, 2009; Chiaburu & Lindsay, 2008). LoC—internal and external—is related to empowerment, training transfer, and planned change (Kormanik & Rocco, 2009). However, little is known about the development of these psychological competencies, necessary for the practice of management, during MBA programs (see Kuchinke, 2007).

The development of a student's psychological competencies, although not specified as a learning outcome of the MBA, is likely to occur through the four phases of experiential learning (Kolb, 1984; Kolb, Boyatzis, & Mainemelis, 2001) throughout the MBA education program: (a) concrete experience, (b) reflective observation, (c) abstract conceptualization, and (d) active experimentation. The delivery of ideas about business practice and their application to business performance and the acquisition of collaborative and leadership skills throughout the MBA program serve to link theories with interpersonal skills required to meet concrete business needs. Table 1 shows the compulsory core subjects taken in the MBA educational program (with different majors or specialization). While this program does not include direct instruction in EI, SE, or LoC, we have identified specific activities that may lead to potential growth in EI, SE, and LoC, as well as how these core subjects contribute to different stages of Kolb's learning cycle. The utilization of cognitive resources in combination with these "soft skills" bridges logical analysis with ethical and intuitive reflection and understanding in a way that should enhance candidates' psychological competencies. Mastery experiences have been shown to predict academic performance (Bandura, 1977; Lent, Brown, & Larkin, 1987) and "mind-set" may be more important than pure academic potential to MBA candidates' suitability for completing the program (Shepherd, Douglas, & Fitzsimmons, 2008). Thus, the present study contributes to the HRD literature by exploring how MBA education may be a tool to develop psychological competencies deemed critical for management practice, and if these psychological competencies may aid in educational success in MBA programs. Our findings also have the potential to inform HRD professionals on identifying the appropriate training to improve the psychological competencies we tested in this study. Inspired by the student in our introduction, we specifically investigate whether: (a) EI, SE, and LoC would improve through enrollment in an MBA educational program, and (b) whether baseline EI, SE, and LoC are related to final MBA grade point average (GPA; i.e., predicting educational success).

## 1.1 | Emotional intelligence

The EI construct reflects a person's capacity to monitor their own emotions and perceive and appropriately respond to others' emotions (Salovey & Mayer, 1990). This *ability* view of EI involves the cognitive abilities of perceiving, understanding, and utilizing emotions for emotional expression, self-motivation, and in interactions with others (Mayer, Salovey & Caruso, 2008). In contrast, the *traits and skills* view of EI reflects a noncognitive constellation of emotional and behavioral self-perceptions, including empathy, emotional expression, and self-control (Bar-On, 1997). These conceptualizations of EI vary in the extent to which EI is considered to be an element of personality, ability, or a combination of these (see Muiya, 2009 for a review of models and measurement of EI). These differing conceptualizations of EI are reflected in different approaches to measurement of EI. Performance tests of EI are direct measures of ability EI. Self-report measures assess the self-perception of EI traits and skills and thus aim to cover the entire EI construct, but are limited by the multitude of influences on self-reports. The EI construct is sometimes conceptualized as a three-factor model of appraisal of emotion, regulation of emotion, and utilization of emotion in problem-solving (Salovey & Mayer, 1990). While EI models of one-, four-, and six-factors have been suggested, Schutte et al. (1998) identified a strong single factor which included items from all branches of the model. Schutte et al. (1998) therefore recommend using total scores on the 33-item scale as a unitary construct. Several other studies have also found a single-factor solution (Brackett & Mayer, 2003), although the three-factor model has also been supported by some research evidence (Kun, Balazs, Kapitany, Urban, & Demetrovics, 2010).

Theoretically, ability EI is changeable in response to experiences, whereas trait EI may develop over time (Bar-On, 1997) but is less amenable to change through training (McCrae, 2000; Petrides, Pita, & Kokkinaki, 2007). However, improvements in trait EI as a result of training have been documented (Ashkanasy & Dasborough, 2003; Dearborn, 2002; Freshwater & Stickley, 2004; Goleman, 1998; Groves, Pat McEnrue, & Shen, 2008; Hawkins & Dulewicz, 2007; Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009), although trait EI may also be a naturally evolving phenomenon (Mayer, Salovey, & Caruso, 2004; Mayer, Salovey, & Caruso, 2008). EI has sometimes shown positive changes as a result of training. For example, Muiya and Kacirek (2009) evaluated EI changes 1 year after participants

**TABLE 1** Interventions that facilitate changes to EI, SE, and LoC

Core subjects	Context	Specific activities	Elements that may contribute to growth in LoC-I, EI, or SE	Stages of the Kolb's learning cycle
<b>Basic core:</b> Accounting and finance for managers	Cognate and noncognate degree holders work together in class. Undertake a group project on financial reporting and systems	<ol style="list-style-type: none"> <li>Cognate degree holders play a lead role in helping others from noncognate disciplines understand accounting, facilitated by experienced faculty</li> <li>In cross-cultural teams, groups work on a project to help companies set up financial systems</li> </ol>	<ol style="list-style-type: none"> <li>Social feedback (social, individual, and factual) affected performance outcome and altered locus of control orientation</li> <li>Competency-based task in a team raises self-awareness, and mastery of the subject enhances self-efficacy</li> </ol>	<p><b>Concrete experience:</b> Candidate learns a situation that serves as the basis for observation. Where another new experience arises, it creates an opportunity for learning</p>
<b>Basic core:</b> Current business issues	Candidates from different majors meet in class undertake a group negotiation exercise and individuals investigate and report contemporary business problems	<ol style="list-style-type: none"> <li>Work in a negotiating team to anticipate opposing arguments and prepare counterstrategies. Prepare a strategy for bottom-line acceptance and how to achieve a win-win situation</li> <li>Each student from different countries presents business perspectives from a cross-cultural context, facilitated by a practitioner-academic, who provides a briefing to each student's presentation in facilitating cross-learning</li> </ol>	<ol style="list-style-type: none"> <li>Requires understanding of own and others' perspectives, collaboration within a team with negotiation and influencing skills acquired enhances emotional intelligence</li> <li>Individual feedback beneficial both in terms of achievement outcomes and changes internal locus of control</li> </ol>	<p><b>Concrete experience:</b> Candidate enjoys another new experience that creates an opportunity for learning</p> <p><b>Reflective observation:</b> Candidate reflects on experience before making any judgments; reviews situation; and finds meaning behind the experience</p>
<b>Basic core:</b> Managing business in a global context	Candidates of different nationalities group together in class to undertake subject on multinational business issues	<ol style="list-style-type: none"> <li>Weekly in-class discussions of topical issues over 10 weeks in marketing, operations, finance and economic issues. Marks awarded for individual participation and contribution to discussion</li> <li>Cross-cultural teams formed to investigate multinational business problems in different countries. Groups present in lecture settings over a 10-week period, facilitated by a practitioner-academic, who provide feedback to team presentation to facilitate cross-learning</li> </ol>	<ol style="list-style-type: none"> <li>Individual feedback beneficial both in terms of achievement outcomes and changes internal locus of control. Participation and communication skills, with recognition and appreciation of others' perspectives improves emotional intelligence</li> <li>Group preparation requires interpersonal skills, "live" feedback beneficial both in terms of achievement outcomes and changes of internal locus of control (powerful others and internal)</li> </ol>	<p><b>Concrete experience:</b> Candidate shares experiences and enjoys another new experience that provides another learning opportunity</p> <p><b>Abstract conceptualization:</b> Candidate develops theories to explain their experience, giving rise to a new idea or changing a preexisting concept</p>

(Continues)

TABLE 1 (Continued)

Core subjects	Context	Specific activities	Elements that may contribute to growth in LoC-I, EI, or SE	Stages of the Kolb's learning cycle
<p><b>Advance core:</b> Strategy and leadership</p>	<p>Candidates from different majors meet in class to undertake this penultimate subject involving group project on business leadership/strategy</p>	<ol style="list-style-type: none"> <li>1. Industry speakers invited to share their experiences on business strategy and leadership over a 10-week period</li> <li>2. Group analyses issues on business leadership and strategy of their choice of industry/company and present findings in a poster conference that is assessed by peers and faculty judges, together with the submission of a full consultancy report</li> </ol>	<ol style="list-style-type: none"> <li>1. Vicarious experiential learning in leadership development improves self-efficacy, while perspective taking enhances emotional intelligence</li> <li>2. Mastery experiences in integrating MBA learning to analyze business issues and presenting to external audience</li> </ol>	<p><b>Active experimentation:</b> Candidates apply what they learned to another situation. They use their theories to solve problems, make decisions and influence people and/or events</p>
<p><b>Advance core:</b> Business plan: Application of strategy</p>	<p>Capstone subject where candidates in different majors work together in teams on problem-based learning</p>	<ol style="list-style-type: none"> <li>1. Members of a newly formed team reach consensus on addressing a business problem or create an entrepreneurial business plan. Formulate a team contract and agreement as a basis to operate and elect a team leader</li> <li>2. Team maintains online discussion and regular meetings, supervised and monitored by faculty</li> <li>3. Team pitches their business ideas to an external panel of expert judges and receives feedback on ideas before submitting a final report</li> </ol>	<ol style="list-style-type: none"> <li>1. Interpersonal skills for teamwork, collaboration, leadership and problem-solving skills under pressure. Builds upon other team members' skills and perspectives. Heightened awareness of personal and professional development</li> <li>2. Verbal persuasion and influencing skills needed for pitching ideas within team and with external judges</li> <li>3. "Live" feedback beneficial both in terms of achievement outcomes and in changes of internal locus of control</li> </ol>	<p><b>Active experimentation:</b> Candidates apply what they learned to another situation. They use their theories to solve problems, make decisions and influence people and/or events</p>

had undertaken a 9-day leadership training program that included specific ability EI training. No significant changes in EI were found at the 1-year follow-up as compared to the pre-training scores in any of Bar-On's (1997) dimensions of EI, although some medium to large effect sizes were noted. It is possible that the training period was too brief, or that the power to detect effects of the training were diminished by the 1-year follow-up period introducing too much variability in outcomes. More immediate post-training measurement has shown the effect of training, for example, a group of 121 students who took a 16-week undergraduate management skills training program showed significant gains in EI (Campbell Clark, Callister, & Wallace, 2003). We therefore expect this growth should be detectable by measuring EI at the beginning and end of an MBA education program.

## 1.2 | Self-efficacy

SE is the belief about one's own capability to perform activities and achieve specific goals, and is at least partially determined by the environment (Bandura, 1977). Bandura identified four key contributors to SE: (a) mastery experiences, where having success at a task will build self-belief in that area, whereas failure will undermine efficacy belief; (b) vicarious experiences, where observation of salient role models succeeding raises beliefs that one can succeed; (c) verbal persuasion, where influential people (parents, teachers, managers) strengthen beliefs that one can succeed, thereby making sustained effort to succeed more likely; and (d) emotional and physiological arousal, where negative emotions such as stress and depression dampen confidence and increase vulnerability to poor performance, whereas positive emotions boost confidence in one's skills. Mastery experiences are considered to be the most potent contributors to SE (see Table 1 for elements of the MBA educational program where these four contributors to SE occur). A meta-analysis of 114 studies showed a significant correlation between SE and work performance which, according to the authors, translates into a 28% improvement in work performance (Stajkovic & Luthans, 1998). In entrepreneurship, SE affects motivation, perseverance and interest, with outcomes providing feedback leading to further evaluation and development of SE (Cervone, 1993; C. C. Chen, Greene, & Crick, 1998). Therefore, SE should improve in MBA candidates as students' increasing mastery of management education content potentially builds their SE (Onu, Obeta, & Asogwa, 2013).

SE was found to be the strongest correlate with university GPA of 50 measures considered in a meta-analytic study (Richardson, Abraham, & Bond, 2012) and a recent review of SE studies of university students showed that SE is strongly associated with student achievement (Bartimote-Aufflick, Bridgeman, Walker, Sharma, & Smith, 2016; Macaskill & Denovan, 2013), although these findings are not specific to students in an MBA educational program. The current study aims to take this a step further: We aim to measure the growth in SE during the MBA educational program and to evaluate the impact of SE on academic outcomes in the MBA.

## 1.3 | Locus of control

LoC (Levenson, 1974, 1981) is the extent to which people believe that consequences of events are either a result of their own behavior (internal LoC) or determined by chance or by the influence of other people (external LoC). Levenson (1981) developed the LoC model, which consists of three subscales: internality (LoC-I), chance (LoC-C), and powerful others (LoC-P). She suggests that higher LoC-I leads people to believe that they have a significant role in influencing and directing their lives to achieve their desired goals. Individuals with high LoC-C perceive the world as unpredictable and chaotic, whereas those with high LoC-P believe that their lives are ultimately determined by the influence of powerful individuals (as demonstrated by our encounter with our student).

LoC is an important to several academic disciplines, including clinical and social psychology, adult development, education and learning theory, business and management, and human resource development, in explaining people's differential performance in personal, academic and professional environments (Kormanik & Rocco, 2009), with higher LoC-I, lower LoC-C, and lower LoC-P generally being associated with better outcomes. LoC has been noted to overlap with the other dimensions of self-evaluation, such as self-esteem, generalized SE, and emotional stability,

although it relates more to the individual's evaluation of the environment rather than themselves (Galvin, Randel, Collins, & Johnson, 2018). It has also been suggested that internality and externality should be considered (and measured) as separate constructs, and although depicted as a trait, a substantial amount of research has shown temporal variability, thus suggesting LoC is a state rather than a trait (see Galvin et al., 2018, for a review), thereby implying it is amenable to change in response to experiences.

A substantial amount of research evidence has documented the relationship between LoC and academic performance (e.g., Heckman & Kautz, 2012; Mendolia & Walker, 2014; Wang, Kick, Fraser, & Burns, 1999). For example, educators have documented improvements in students' LoC-I by showing them video testimonials of confederates that emphasize taking control of academic outcomes to succeed (Noel, Forsyth, & Kelley, 1987) and describing the importance of effort and persistence in attaining academic success (Perry, Raymond, & Penner, 1990). Boggiano, Main, and Katz (1988) found that in the absence of evaluative pressure there were no differences in the motivation of children with high and low perceptions of control. Krampen (1987) found that different kinds of feedback (social, individual, and factual) affected performance outcome and altered LoC orientation in schoolchildren. Individual (non-comparative) feedback was the most beneficial for students both in terms of achievement outcomes and in changes of LoC orientations in the direction of increased internality. LoC was related to SE and achievement in a college English course (Jones, 2008), and was a more powerful predictor than SE of first-year students' achievement (McKenzie, Gow, & Schweitzer, 2004).

#### 1.4 | EI, SE, LoC, and the MBA

To date, limited research has explored changes in EI, SE, or LoC during an MBA program (see Kuchinke, 2007 for a critique of MBA programs). One study of self-reported perceived behavioral changes found improvements in critical-thinking processes, broadened worldviews, enhanced perceptions of self and more creative and collaborative approaches to problem solving (Hilgert, 1995). Another study using a self-report measure of "interpersonal skills" found improvements in "helping skills" and "leadership skills," but no significant differences in "relationship skills" (Kretovics, 1999). However, this latter study involved different groups of entering and exiting MBA students who were combined and assessed at the same time, rather than longitudinal gain scores. A longitudinal study using the same measure found significant improvements in helping, leadership and relationship skills (Leonard, 2008). While the measure of "interpersonal skills" is not identical to the constructs of EI, SE, or LoC, this does show that psychological development can occur during such programs.

Several studies do directly demonstrate EI improvement, such as Boyatzis and colleagues (Boyatzis, 2006; Boyatzis, Stubbs, & Taylor, 2002) who showed EI improvement with a competency-based, outcome-oriented MBA program based on Intentional Change Theory. Improvements were detected across a range of cognitive and emotional competencies in several cohorts of MBA students. While the competencies assessed certainly relate to EI, they are not using any specific definition of EI or evaluating any changes in SE or LoC. In addition, no control groups were used, so it is uncertain how much the MBA educational program contributed to the development of EI, compared with being a part of any post-graduate program of study or simply the passing of time.

In summary, many of the studies to date do not focus on specific psychological changes (EI, SE, or LoC) over time or use appropriate control groups such as other students as well as nonstudents. They are typically U.S.-centric and do not account for other parts of the world (Lund Dean & Forray, 2017). However, these studies suggest that some psychological changes do indeed occur, and these changes are consistent with improvements in psychological functioning while undertaking an MBA educational program. Thus, our study aims to build on prior evidence by measuring EI, SE, and LoC at the beginning and end of an MBA educational program, to evaluate psychological growth and to explore whether these psychological competencies influence academic achievement.

We gathered data using validated pre- and post-self-report measures of EI, SE, and LoC from two consecutive cohorts of MBA candidates on an international university campus located in Asia. A group of similar-aged participants enrolled in a psychology program on the same campus and a third group of participants who were *not*

undertaking an educational program acted as comparison groups, helping ensure that any changes are specific to the MBA educational program, rather than the experience of being in a university program or simply the passing of time. The first control group of psychology honors students ensures equivalence in terms of complexity associated with a 1-year program of study. The psychology honors program is a post-graduate program of similar duration and complexity, but unlike the MBA program, it focuses on research education. Both the MBA and the psychology honors students are typically in their fourth year of tertiary education, have completed a 3-year undergraduate degree, and are admitted to their respective programs on the basis of merit. We used a third group of nonstudents of comparable age to control for the effects of time.

Given the above evidence that EI, SE, and LoC are amenable to change, combined with the reviewed evidence of this change occurring in management education and training programs, we sought to determine whether such changes were occurring in our MBA educational program despite EI, SE, and LoC not being specifically taught in the program. We first hypothesized that any improvements in EI, SE, and LoC of the MBA candidates would be significantly greater than any changes detected in the two comparison groups over the 1-year period. In addition, as our experience with students suggests (e.g., the student from the example in the introduction), we expected that initial levels of EI, SE, and LoC would predict academic achievement, thus our second hypothesis was that MBA candidates with lower LoC-P and LoC-C and higher LoC-I, EI and SE would have higher final GPAs.

## 2 | METHOD

### 2.1 | Participants

The student samples were recruited from a newly enrolled student population at the start of an academic year. All newly enrolled students were invited during their first lecture to participate in the study with participation being optional and voluntary. Similarly, volunteer nonstudents, that is, members of the public, were recruited via friends and networks of the researchers. There were 274 participants (82 men, 192 women) recruited at Time 1 from two cohorts of MBA students enrolling in first and second term of one academic year ( $n = 122$  of 131 candidates) and enrolling psychology students ( $n = 49$  of 79 candidates) starting in their respective programs. The nonstudent controls ( $n = 103$ ) were a convenience sample, not participating in any educational program while taking part in the current study.

Time 2 is defined as 10 months after Time 1, that is, one academic calendar year later. At Time 2, we retained 118 participants (53 MBA candidates:  $M_{\text{age}} = 24.77$ ,  $SD = 3.91$ , 69.8% female; 27 psychology honors students:  $M_{\text{age}} = 23.65$ ,  $SD = 3.31$ , 65.5% female; and 38 nonstudents:  $M_{\text{age}} = 25.56$ ,  $SD = 2.65$ , 79.4% female). There were no significant differences (all  $ps > .05$ ) between participants who completed Time 2 measures and those who withdrew after Time 1 on any of the five dependent variables (SE, LoC-I, LoC-P, LoC-C, and EI). There were also no significant differences among the final three groups in terms of age,  $F(2, 110) = 2.26$ ,  $p > .05$ , or gender,  $\chi^2 = 1.60$ ,  $p > .05$ . However, the country of origin for the MBA students differed significantly from the control groups,  $\chi^2 = 112.15$ ,  $p < .05$ . The majority of the participants in the control groups were from Singapore ( $n = 52$ ) and the MBA students were mostly made up of students from India ( $n = 18$ ), China ( $n = 9$ ), and Indonesia ( $n = 9$ ) with the remainder from other parts of Asia and Europe.

### 2.2 | Measures

#### 2.2.1 | Emotional intelligence

We measured EI using the Assessing Emotions Scale (AES; Schutte, Malouff, & Bhullar, 2009), a 33-item self-report ability EI measure. Statements such as “*I know when to speak about my personal problems to others*” are rated on a five-point Likert scale from “Strongly disagree” to “Strongly agree,” yielding total scores ranging from 33 to 165, with



higher scores indicating higher EI. The AES has been used widely across numerous studies of EI and cited in over 200 publications. It has excellent reliability, yielding Cronbach's alphas in our study at Time 1 and Time 2 of .90 and .91, respectively.

### 2.2.2 | Self-efficacy

The New General Self-Efficacy Scale (NGSE; G. Chen, Gully, & Eden, 2001) is an eight-item instrument measuring work-related SE. The items (e.g., *I will be able to achieve most of the goals that I have set for myself*) are rated on a five-point Likert scale from "Strongly disagree" to "Strongly agree," then averaged to produce an overall SE score ranging from 1 to 5, with higher scores indicating higher SE. This instrument has shown strong evidence of convergent construct validity with a strong positive correlation between NGSE and occupational task-specific SE (G. Chen et al., 2001). Cronbach's alphas for Time 1 and Time 2 were .87 and .88, respectively.

### 2.2.3 | Locus of control

The Internality (I), Powerful Others (P), and Chance (C) Scales (IPCS; Levenson, 1981) are a 24-item measure of the extent to which a person perceives events as being either contingent on his or her own behavior (internal control) or due to chance or powerful others (external control). The instrument consists of three subscales: Internality (e.g., *Whether or not I get to be a leader depends mostly on my ability*); Powerful Others (e.g., *I feel like what happens in my life is mostly determined by powerful people*); Chance (e.g., *To a great extent my life is controlled by accidental happenings*). All items are rated on a six-point scale from "Strongly disagree" to "Strongly agree." Scores for each subscale range from 0 to 48. Higher scores for I indicate a higher internal LoC, and higher scores for P and C indicate higher external LoC. Levenson (1974) found the internal consistency to be moderately high even when the items were sampled across diverse situations. Cronbach's alphas for Time 1 and Time 2 were .81 and .78, respectively.

## 2.3 | Procedure

We obtained Human Research Ethics Committee approval and participants' informed consent before any data collection. Participants completed all measures at the beginning (Time 1) and end (Time 2) of the 1-year MBA educational program or equivalent period. Qualtrics was used as a tool to collect the survey in the classroom. This was supplemented by a paper survey for any participants who preferred this. We used student identification numbers to match participants at Time 1 and Time 2 and retrieved grades for MBA students from school records.

## 2.4 | Design and analysis

We collected data from the three groups (MBA students, psychology students, and nonstudents) across two timepoints corresponding to the beginning and the end of the MBA or psychology program. By having both psychology students and nonstudent comparison groups, we aim to identify observed changes in the outcome variables as occurring in the MBA students only, or in all students compared to nonstudents. In this way, we seek to clarify whether any changes are related to the MBA specifically, or related to an educational experience but not exclusively to the MBA. Total or average scores were calculated in accordance with each test manual. Assumption testing showed no outliers or violations of normality, linearity or multicollinearity.

A confirmatory factor analysis testing for the three-factor structure of the AES was conducted using principal components extraction with oblimin rotation for the 33 AES questionnaire items. Initial eigenvalues indicated the three-factor solution explained 37.98% of the variance, however, consistent with Schutte et al. (1998), a strong unitary factor was also identified in Factor 1, which included items from all branches of the model. The factor loadings

above .250 are shown in Table 2. Based on these CFA results and the recommendation of Schutte et al. (1998), we have analyzed the AES data as a unitary construct.

Correlations for EI, SE, and LoC for each group and for the entire sample at Time 1 and Time 2 appear in Table 3. Given the large number of significant correlations between EI, SE, and LoC at each timepoint, we chose MANOVA to control for experiment-wise type-1 error in the analysis. We therefore tested our first hypothesis, that EI, SE, and LoC improve during the course of an MBA educational program, using a  $3 \times 2$  mixed multivariate analysis of variance (MANOVA), with the between-groups independent variable of Group (MBA candidates, psychology students, non-students) and the within-group independent variable of Time (Time 1 and Time 2, at the beginning and end of the program, respectively) with the five dependent variables of SE, LoC-I, LoC-P, LoC-C, and EI. Age, gender, and local/international student status served as covariates. The MANOVA was followed by group comparisons for each dependent variable in turn. We evaluated the second hypothesis, that lower LoC-P and LoC-C and higher LoC-I, EI, and SE at baseline (Time 1) would be predictive of better academic outcomes, with hierarchical multiple regression, using the MBA students' demographics and baseline data as predictors of their final GPA.

### 3 | RESULTS

Means and standard deviations for the dependent variables appear in Table 4. The results of the MANOVA, which tested the first hypothesis, whether MBA candidates would show greater improvements in EI, SE, and LoC over the course of the program than the two comparison groups, yielded a significant interaction of group with time,  $F(10, 224) = 2.14, p = .023, \eta_p^2 = .09$ .

When we considered each dependent variable separately, there was, as hypothesized, a significant interaction of group with time for EI,  $F(2, 113) = 5.83, p = .004, \eta_p^2 = .09$ . Post hoc *t*-tests for each group separately showed that the improvement in EI was significant for the MBA candidates,  $t(52) = 3.37, p = .001$ , but not for the psychology students,  $t(25) = .05, p > .05$ , or for the nonstudents,  $t(33) = 0.48, p > .05$ . There was also a significant interaction of group with time for SE,  $F(2, 113) = 2.69, p = .028, \eta_p^2 = .06$ . Post hoc *t*-tests showed significant improvements in SE for the MBA candidates,  $t(52) = 3.34, p = .002$ , and for the psychology students,  $t(25) = 2.51, p = .019$ , but not for the nonstudents,  $t(33) = .48, p > .05$ . There was also a significant interaction of group with time for LoC-I,  $F(2, 113) = 5.05, p = .008, \eta_p^2 = .08$ . Post hoc *t*-tests showed a significant increase in LoC-I for the MBA candidates,  $t(52) = 2.91, p = .005$ , but not for the psychology students,  $t(25) = 1.72, p > .05$ , or for the nonstudents,  $t(33) = 1.67, p > .05$ . There was no significant interaction between group and time for LoC-P,  $F(2, 113) = .59, p > .05$ , or for LoC-C,  $F(2, 113) = .25, p > .05$ , despite a significant increase in LoC-P across time for MBA candidates,  $t(52) = 2.05, p = .045$ , with no significant changes in LoC-P across time for the psychology students,  $t(25) = .61, p > .05$ , or for the nonstudents,  $t(33) = 1.17, p > .05$ . Essentially, the significant increase in LoC-P for MBA candidates was not significantly larger than the nonsignificant increases in LoC-P for both the psychology students and the nonstudents; thus, there was no interaction effect for LoC-P. There were no significant changes in LoC-C for any of the groups.

The hierarchical multiple regression tested the second hypothesis by entering the covariates of age, gender and international student status in the first step and LoC-P, LoC-C, LoC-I, EI, and SE in the second step as predictors of final GPA. After adding the demographic variables in the first step, the model was significant,  $R = .32, F(3, 112) = 4.12, p = .008$ , explaining 10% of the variance in final GPA, with gender being the only significant predictor in this step,  $\beta$  coefficient = .62,  $t(114) = 3.07, p = .003$ ; being female associated with higher GPA. When the psychological variables were added to the model in Step 2, the full model was again significant,  $R = .38, F(4, 111) = 4.67, p = .002$ , and explained 14.4% of the variance in GPA. LoC-P was the only additional significant predictor of GPA,  $\beta = -.21, t(111) = -2.40, p = .018$  (see Table 5). We also explored regressions for the prediction of first-semester GPA and the ability of any change in psychological variables to predict final GPA; however, these did not reveal any significant predictors (all  $ps > .05$ ).

**TABLE 2** Factor loadings of AES items on a three-factor confirmatory factor analysis

	Appraisal of emotions	Regulation of emotions	Utilization of emotions
EQ1	.375	.419	–.306
EQ2	.420		
EQ3		<b>.665</b>	
EQ4	.434		
EQ5	<b>.679</b>		
EQ6	.319		
EQ7			<b>.258</b>
EQ8		.454	
EQ9	.400		
EQ10		<b>.590</b>	
EQ11			.516
EQ12		<b>.472</b>	
EQ13			.467
EQ14		<b>.572</b>	
EQ15	<b>.403</b>		
EQ16		.305	
EQ17		.613	
EQ18	<b>.610</b>		
EQ19	.563		
EQ20		.466	<b>.329</b>
EQ21	.436		
EQ22	.599		
EQ23		.624	
EQ24		.294	<b>.265</b>
EQ25	<b>.659</b>		
EQ26			.468
EQ27			<b>.518</b>
EQ28	.360	<b>.326</b>	–.483
EQ29	<b>.463</b>		.552
EQ30		.374	
EQ31		.713	
EQ32	<b>.561</b>		
EQ33	<b>.660</b>		

Note: Bold font indicates an item loading onto a factor as expected. Italic font indicates significant loadings that are not on the expected factor.

## 4 | DISCUSSION

We investigated changes in MBA candidates' EI, SE, and LoC, hypothesizing that these would show improvements over the course of the MBA educational program. The first hypothesis was partially supported. We found the expected pattern for EI and LoC-I; specifically, there were significant improvements only for the MBA group. We found only partial support for the hypothesis with regard to SE; specifically, there were significant improvements for

**TABLE 3** Correlations between EI, SE, and LoC at Time 1 and Time 2 for each group and the total sample

		SE	LoC-I	LoC-P	LoC-C
Time 1					
MBA students	EI	.38**	.31*	-.18	-.04
	SE	—	.08	-.23	-.18
	LoC-I	—	—	.12	.20
	LoC-P	—	—	—	.71**
Psychology students	EI	.56*	.43*	-.12	.09
	SE	—	.48*	-.32	-.37
	LoC-I	—	—	-.24	-.55**
	LoC-P	—	—	—	.12
Nonstudents	EI	.45**	.35*	-.42*	-.29
	SE	—	.27	-.23	-.33
	LoC-I	—	—	-.23	-.18
	LoC-P	—	—	—	.34
Total sample	EI	.42**	.33**	-.21*	-.08
	SE	—	.22*	-.30**	-.32**
	LoC-I	—	—	-.04	-.07
	LoC-P	—	—	—	.58**
Time 2					
MBA students	EI	.59**	.57**	-.20	-.20
	SE	—	.42**	-.29*	-.22
	LoC-I	—	—	-.06	-.06
	LoC-P	—	—	—	.74**
Psychology students	EI	.43*	.49*	-.35	.03
	SE	—	.50*	-.35	-.12
	LoC-I	—	—	-.18	-.39*
	LoC-P	—	—	—	.38
Nonstudents	EI	.22	.21	-.34*	-.44**
	SE	—	.55**	-.21	.02
	LoC-I	—	—	-.26	-.36*
	LoC-P	—	—	—	.35*
Total sample	EI	.47**	.46**	-.13	-.03
	SE	—	.48**	-.23*	-.10
	LoC-I	—	—	-.08	-.13
	LoC-P	—	—	—	.63**

\* $p < .05$ ; \*\* $p < .01$ .

both the MBA group and the psychology group. We found no support with regard to LoC-P (despite a significant increase in LoC-P across time for MBA candidates, all three groups showed small increases and thus there was no significant interaction of group and time) or LoC-C (no significant changes for any group). Thus, the evidence suggests that the MBA educational program helps candidates develop higher EI and LoC-I, while SE may simply increase with any course of study rather than being specific to the MBA program.

**TABLE 4** Means and standard deviations for EI, SE, and LoC at Time 1 and Time 2

	MBA students				Psychology students				Nonstudents			
	Time 1		Time 2		Time 1		Time 2		Time 1		Time 2	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
EI	125.17	(17.40)	133.21**	(13.46)	124.62	(11.37)	124.69	(10.36)	125.12	(13.69)	125.88	(13.04)
SE	3.59	(0.58)	3.88**	(0.57)	3.56	(0.64)	3.67*	(0.63)	3.86	(0.42)	3.84	(0.44)
LoC-I	34.94	(4.70)	37.06**	(4.47)	34.50	(5.80)	32.46	(5.46)	34.03	(7.33)	35.71	(6.10)
LoC-P	23.09	(8.35)	25.58*	(8.01)	21.35	(6.38)	21.96	(5.70)	17.06	(6.13)	18.44	(7.80)
LoC-C	26.08	(7.14)	26.96	(7.25)	22.69	(7.23)	22.58	(8.01)	16.71	(7.33)	16.76	(6.21)

Abbreviations: EI, emotional intelligence; LoC-C, locus of control-chance; LoC-I, locus of control-externality; LoC-P, locus of control-powerful others; SE, self-efficacy.

\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 5** Regression models predicting final GPA from EI, SE, and LoC

Step	Predictor	B	SE	$\beta$	t-Value	p-Value
1	(Constant)	2.68	.90			
	Age	.04	.03	.10	1.08	.282
	Gender	.62	.20	.28	3.07	.003*
	Local/international status	.76	.78	.09	0.98	.332
2	(Constant)	3.42	.93			
	Age	.04	.03	.10	1.11	.272
	Gender	.56	.20	.25	2.81	.006*
	Local/international status	.62	.77	.07	0.81	.423
	LoC-P	-.03	.01	-.21	-2.40	.018*
	LoC-C	.03			0.28	.782
	LoC-I	-.04			-0.41	.681
	SE	-.01			-0.08	.888
EI	-.03			-0.37	.710	

\* $p < .05$ .

Taken together, these results suggest that the 1-year MBA educational program enabled students to improve their interpersonal competencies and cultivate the belief that they have the power to achieve their goals and influence their life outcomes. These beliefs may in turn increase MBA candidates' volitional effort, thereby enhancing the rate of success in meeting their goals. Thus, an improved LoC-I may help cultivate a mastery of academic content (Kirkpatrick, Stant, Downes, & Gaither, 2008). These findings reflect a positive psychological impact of the MBA educational program, consistent with the previously reported research showing improvements in EI (Boyatzis, 2006) and interpersonal skills (Kretovics, 1999; Leonard, 2008). The psychology program is focused on theory and research competency rather than interpersonal competencies. Given the absence of effects on EI or LoC-I for the psychology participants, it is plausible that the specific education in the MBA program is the causative factor in the psychological changes.

The goal-setting literature provides a better understanding of the possible underlying processes that contribute to the improvements in EI, SE, and LoC-I in MBA candidates (e.g., Brown & Warren, 2009; Brown & Latham, 2006). The communication of key learning outcomes for specific assignments helps define the purpose of the tasks and

may have directed the MBA candidates' efforts and behaviors toward activities that encourage the development of emotional and social competencies (Locke, 1968). Intentional change theory recognizes that complex competencies can be nurtured and developed within a conducive learning environment (Boyatzis, 1995). The MBA educational program tends to emphasize abilities such as collaboration, teamwork and leadership, critical and creative thinking, communication, awareness of personal and professional development, and the application of business models and research to meet real organizational needs. These skills are conceivably enhanced by EI, being dependent on appraisal and expression of emotion, regulation of emotion, and utilization of emotion in problem-solving, consistent with the three-factor model of EI mentioned earlier (Salovey & Mayer, 1990), despite the absence of this clear factor structure in the data. This emphasis may be the key aspect of the MBA leading to the development of psychological competencies, given the evidence that psychological attributes must be addressed directly and self-perception does not always develop via traditional academic endeavors.

Ideally, we would be able to identify exactly which components of an MBA educational program, and in what quantities, contribute to psychological growth. As a first step toward this, we identified specific activities that may lead to potential growth in EI, SE, and LoC (Table 1). The focus on self-reflective and interpersonal competencies during the MBA educational program may prompt MBA candidates to cultivate the emotional and social competencies examined in this study. Given the differing pattern of results for the MBA candidates compared with the other groups, it seems reasonable to conclude that the MBA educational program serves as a stimulus and provides opportunities for candidates to enhance EI, SE, and LoC-I.

The psychological development of the MBA candidates may be further explained by the four phases in the experiential learning model (Kolb, 1984) used in the MBA educational program: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The delivery of the curriculum through theory, practice, and reflection may activate the utilization of cognitive resources together with EI, combining logical thought with ethical and intuitive reflection to make good managerial decisions. The development of EI, SE, and LoC-I has obvious benefits for organizations that employ MBA graduates and managers, in which balancing business profitability and relationships requires the management of one's own emotions and behaviors. Managers' EI can also influence the emotional climate of the work environment (Joyner & Mann, 2011). From a theoretical standpoint, the findings also support the ability EI model, suggesting that EI is an ability that can be developed using targeted educational interventions.

The second hypothesis we investigated concerns the informational value of the baseline measures of LoC, SE, and EI. Our observations of the student, as described in the introduction of this article, made us question whether the psychological state of candidates at the beginning of an MBA educational program has any impact on their outcomes. The results are important for two reasons. First, we found that LoC-P levels at the beginning of the program best predicted students' final GPA, even after accounting for demographic factors. This is entirely consistent with our experience of the student, whose apparent belief in powerful others seems to underlie his determination to use every possible avenue of appeal in the quest to overturn his failed result. Second, there was a general increase in LoC-P over the study period in the MBA group. While there was a concurrent increase for the other two groups (meaning that the increased LoC-P may have been due to external events), it is concerning to us as educators that students may hold such strong beliefs in the power of others, even while cultivating a strong belief in their own ability to determine their own fate, as evidenced by the increases in LoC-I, EI, and SE. We therefore suggest that future research should target LoC-P via education, using components of the MBA educational program emphasizing self-awareness. It is also worth noting the absence of any significant correlation between LoC-I and the other LoCs, indicating that individuals may believe in personal control simultaneously with the power of others or chance.

This study is the first of its kind conducted in an Australasian setting, although the participant pool consisted of both local and international students. When compared with European or U.S. contexts in which other studies have taken place, Asian societies are considered more collectivist, with greater acceptance of external control and interdependence in the social environment (Cheng, Cheung, Chio, & Chan, 2013) and a desire to avoid interpersonal conflict (Spector, Sanchez, Siu, Salgado, & Ma, 2004). This may be an explanation for the increase in LoC-I and no reduction in LoC-P that we found in this study. Asians who believe in powerful others do not necessarily perceive

themselves as having less control over life outcomes (Weisz, Eastman, & McCarty, 1996). LoC-I may include the ability to modify one's behaviors to adapt to surroundings and ensure greater interpersonal harmony (Morling & Kitayama, 2008). In essence, this may reflect a growing awareness through education and training that one has personal responsibility for actions and outcomes, while still accepting the presence of more powerful others.

In interpreting the results of this study, a few limitations should be noted. First, we conducted this study using students from just one MBA program, which may limit generalizability of the findings. Other MBA programs may vary in length and content, which may produce different results. Second, the two comparison groups of nonstudents and psychology students, while providing an opportunity to explore whether the observed changes in MBA candidates may be attributable to any educational experience or to the passing of time alone, do not provide a true control group. The psychology program technically sits between a 3-year undergraduate program and fifth-year post-graduate specialist training, although it is the same (fourth) year of study as the MBA program and admits students of similar age and experience to the MBA candidates. Third, we had significant attrition of respondents, a common problem which threatens internal validity in longitudinal research and resulted in a small final sample size. We tested and found no significant differences between those lost to attrition and those who completed the Time 2 measures. Fourth, all measures were self-reports, so findings interpreted based on these scales should be considered tentative. Finally, the results of the study suggest that MBA education may be associated with improvements in EI, SE, and LoC-I, but this does not predict how the MBA graduates would apply these psychological competencies in their careers. This important bridge between study and practice (i.e., knowledge transfer) points to another direction for further research, which might investigate the relationship between the psychological characteristics of EI, SE, and LoC and work performance after completing the MBA, ideally using longitudinal methods to track candidates not only throughout their MBA program, but beyond graduation to evaluate whether increases in EI, SE, and LoC-I translate into more effective performance in the workplace.

Our study suggests that MBA education can play an important role in helping students develop and enhance the specific psychological attributes of SE, EI, and LoC-I. People with these attributes appear to have a higher ability to identify important social cues in their environment and benefit from incidental learning situations (Lefcourt, 1976), which in turn helps them be more adaptive in the workplace (Dollinger & Taub, 1977) with higher EI being associated with higher leadership effectiveness (Rosete & Ciarrochi, 2005) and LoC-I being related to a wide range of positive work-related outcomes (Galvin et al., 2018). Importantly, the findings show that psychological competencies in EI, SE, and LoC-I can be developed, which may help refine MBA educational programs in their continuing effort to develop key knowledge, skills and ability outcomes. From an HRD perspective, our findings suggest that EI, SE, and LoC-I can be developed to enhance individual performance. HRD professionals can utilize this information to provide the appropriate training to improve these psychological competencies to improve organizational performance. This understanding can also help educational institutions to stay relevant and competitive by equipping students with necessary competencies for a constantly evolving business climate. This study contributes to the evidence regarding the key benefits of MBA education, which is particularly important in the educational marketplace where MBAs are costly and thus must be able to demonstrate graduate competencies that are desirable outcomes.

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