8-2023

A Pilot Study of Students' Ethical Decision Making and Emotional Intelligence

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A Pilot Study of Students' Ethical Decision Making and Emotional Intelligence

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Agricultural, Food and Life Sciences with Agricultural Education,
Communications and Technology Concentration

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August 2023
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Abstract

Demand for ethical leaders in agriculture is high to meet 21st century goals, while ethics course offerings in land-grant institutions are limited. The purpose of this case study was to establish a baseline of current University of Arkansas Bumpers College of Agriculture, Food and Life Science (Bumpers College) agriculture and natural resource program students' ethical decision making (EDM), as measured by the DIT-2, and emotional intelligence (EI), as measured by STEM-B and STEU-B, determine if EI mean scores predict EDM, and identify relationships between EDM or EI and demographic characteristics or lifespan experiences. An online survey design with probability sampling resulted in a 16% overall response rate. Postconventional and N2 scores were slightly below the average reported college student score for EDM. N2 scores indicated respondents were not able to distinguish and rate Postconventional over personal interest items. EI as measured by STEM-B and STEU-B mean scores indicated students could not select correct emotional management or understanding actions with proficiency. STEM-B was not a predictor of DIT_{-2} N2 scores, but STEU-B which indicated emotional understanding was a predictor of EDM. Only moderate or weak associations were found between demographic and lifespan experience variables and EI and EDM. Study implications and recommendations for EDM, EI and demographic and lifespan experiences are discussed.

Acknowledgements

First, I have been blessed beyond measure and am thankful for the Lord's guidance in my life. Jody, you are the one who always encourages me to go for it; no matter how crazy, late in life, or random my goals are. You are an amazing human and your support, love and encouragement make all things possible. You are our family cornerstone! To Cade and Makayla, it was fun studying together and nice to have someone to complain about homework with at times. You two are and always will be a gift of love from the Lord! May you always pursue your dreams and know Dad and I are in your corner.

To this day, the mantra "get your education" is alive in my heart. Mom thank you for planting the seed. The support you and Dad have always given in the pursuit of my dreams and professional endeavors inspires me still. I just hope Cade and Makayla feel I have done the same for them.

Dr. Don Johnson, who first recommended me for an instructor position in AECT and has provided mentorship since, a simple thank you is never enough. To my ACOM and AGLE team, Jill and Jeff, thanks for supporting me as a student and as a colleague. Your friendship is never taken for granted! To Dr. Donna Graham, my dissertation chair and mentor, thank you for believing in me and sending me encouragement and reality checks along the way. Dr. Wood, thank you for serving on my committee and investing your time to help me grow professionally and personally. To my students, you are inspiring and a constant reminder of hope for the future. You have encouraged, had grace, and celebrated this journey with me and I cannot thank you enough. I will always strive to make a positive impact on our students and the agricultural communication and leadership fields.

Contents

Chapter I

Introduction

Background

Philosophical, religious, and political reflections about agriculture, or agricultural ethics, have been documented as early as the Bible (Council for Agricultural Science and Technology [CAST], 2005). Agricultural ethics is the "systematic thinking about the values and norms associated with the food system—farming, resource management, food processing, distribution, trade, and consumption" (CAST, 2005, p. 1). Agricultural ethics are of concern to producers, consumers, policymakers, and activists due to values, priority, practice, and policy questions associated with agricultural and natural resources today (CAST, 2005). "Ultimately, a major goal of agricultural ethics is to discover or develop clear, noncontradictory, comprehensive, and universal standards for judging right and wrong actions and policies" (CAST, 2005, p. 2). Zimdahl (2020) stated, "Exploration of agriculture's moral dilemmas by ethicists and agricultural people will facilitate navigation through complex issues and serve as a guide to ways to construct common ground for resolution of agriculture's moral dilemmas" (p. 83).

Growth and progress in agriculture, since the domestication of animals and crops, have yielded complex problems and issues (Andenoro et al., 2016; CAST, 2005; Zimdahl, 2020). Further pressure on the agricultural sector exists as a result of population growth. Farm structure, animal welfare, food safety, environment and climate, trade, food security, and agricultural biotechnology have been top issues, with ethical implications, for the past two decades (Andenoro et al., 2016; CAST, 2005; Meyer, 2022). Due to the human activity associated with agriculture and the essential role of agriculture in society, ethical considerations should be a cornerstone of agriculture (Zimdahl, 2020).

The American Association for Agricultural Education (AAAE) National Research agenda identifies "key issues affecting social science perspectives in food, agriculture, and natural resource systems" (Roberts et al., 2016, p. 7). Research Priority 7: Addressing Complex Problems acknowledges the adaptive challenges resulting from the complexities of our global society. "These adaptive challenges are rich with complexity, embody the diversity and scope of human knowledge, and require multiple perspectives and systems thinking to develop and implement sustainable solutions" (Andenoro et al., 2016, p. 58). While space, agricultural production, natural resource management, energy consumption, and climate change are five agriculture and natural resources areas requiring attention, emphasis is also placed on self-awareness, social change leadership, values, and engaged citizens as essential to developing individuals who can address these challenges. "The future of the industry relies on our learners" (Andenoro et al., 2016, p. 59). Thus, the responsibility, for developing future agricultural leaders, is on our land-grant educators. These educators must develop intentional learning opportunities beyond imparting knowledge, so the learners build capacity for solving these complex problems (Andenoro et al., 2016). Andenoro et al. (2016) underscore the necessity "to create a moral foundation for addressing the complex problems facing our diverse stakeholders" (p. 60).

Ethical leaders are in high demand due to conflicts, pandemics, scandals, civil rights movements, and other prevalent misconduct in organizations, governments, businesses, and societies (Ames et al., 2017; Brown & Trevino, 2006; Demirtas, 2015; Johnson, 2018; Jones, 1991; MacDougall et al., 2014; Perry et al., 2002; Schwartz, 2016; Wilson & McCalman, 2016). One specific challenge is the proportion of unethical leaders who are categorized as toxic and using dark leadership to accomplish goals. Dark leadership concerns have emerged, and attention has been given to preventing those who use coercion, manipulation, and exploitation from

holding leadership positions (Day et al., 2021; Edwards, 2018). These unethical leader actions have yielded "emphasis on developing individuals to be virtuous, moral, and responsible leaders" (Day et al., 2021, p. 6). Ethical leadership is as complex as the process of leader development.

The National Leadership Education Research Agenda (NLERA) addresses two overarching priority areas (pedagogical and content based) with seven specific priority areas. Priority III: The Psychological Development of Leaders, Followers, and Learners is the first of the five content based priorities (Andenoro, 2013). "The psychological roots of Leadership Education proved a critical foundation for higher-level organizational development and leadership practice" (Andenoro, 2013, p. 4). The development of moral and ethical foundations for leadership practice is a recommended area related to the psychological development of leaders, followers, and learners (Andenoro, 2013). Priority IV: The Sociological Development of Leaders, Followers, and Learners focuses on developing the leader, follower, and learner addressing complex adaptive systems. Priority IV aligns with the AAAE Research Priority 7 previously described (Andenoro, 2013). Both the psychological and sociological emphases are relevant to ethical leader development.

Statement of the Problem

While scholars seek a singular definition of leadership, Cuilla (2003) states what we want is good leadership from leaders who are both morally and technically good. High demand exists for ethical and effective leaders. However, ineffective and moral leaders are not recognized at the same level as those who are highly effective but bend the rules to get ahead (Cuilla, 2003). "Kellerman (2004) highlights that despite the harm that some individuals cause, there is a tendency within the management field to glorify such leaders" (Segon & Booth, 2015, p. 794). Krishnakumar and Rymph (2012) note the absence of emotions as an ethical decision making

(EDM) factor in research and theoretical works. Research and theory have focused on moral intensity, development stages, and decision making as factors influencing EDM while these decisions create discomfort and are influenced by emotions (Krishnakumar & Rymph, 2012).

A Google Scholar database search revealed some 2.4 million results for "ethical leadership studies". Topics ranged from impacts on employees, decision-making impacts, influence on organizations, and numerous other topics. Through the review of literature, much data and research were related to various aspects of ethical leadership theory, emotional intelligence (EI), and EDM. Many studies looked at intersections of the three broader concepts, but more research is needed about EI as an ethical leader development tool.

"Agricultural leadership educators teach the foundations of leadership in the context of food and agricultural sciences, as well as rural communities" (Weeks & Weeks, 2020, p. 40). The curriculum includes theories common to non-agriculture leadership programs and attracts students from other majors in colleges of agriculture (Weeks & Weeks, 2020). An introduction to leadership, team building, capstone leadership application of discoveries, personal communication, personal leadership development, leadership in food, agriculture and natural resource sciences seminar, organizational leadership theory, and leadership ethics were identified as key courses for an undergraduate leadership degree program (Morgan et al., 2013). Weeks and Weeks (2020) noted similar course content across agricultural leadership programs including personal leadership development, leadership theory, and change theory. "Campuses with a large variety of agricultural leadership courses may offer classes in team leadership, diversity, ethics, organizational leadership, youth leadership development, and/or servant leadership" (Weeks & Weeks, 2020, p. 43).

Zimdahl (2020) notes limited offerings of ethics courses grounded in agriculture including professional expectations and applications. Feeding the world "does not absolve the agricultural community from critical, ethical examination of the totality of agriculture's effects" (Zimdahl, 2020, p. 115). Other disciplines, with human impacts, require ethics curriculum (medicine (human and animal), law, and business); however, agricultural ethics offerings are limited.

The University of Arkansas Dale Bumpers College of Agricultural, Food and Life Sciences (Bumpers College) is one of two land-grant institutions in Arkansas. Bumpers College offers 14 majors and 25 minors including the programs of the School of Human and Environmental Sciences (Dale Bumpers College of Agricultural, Food and Life Sciences, n.d.). Agricultural leadership has been offered as a concentration within the Agricultural Education, Communication and Technology major since the fall of 2017 and as a minor since the fall of 2016 (Agricultural Education, Communications and Technology, n.d.). "The agricultural leadership concentration is designed to prepare students for leadership positions in community, state and national agricultural organizations and agencies" (Agricultural Education, Communications and Technology, n.d., para. 1). Students are not required to major or minor in leadership to take the available curriculum. Available agricultural leadership courses include introduction to leadership, leadership development in agriculture, survey of leadership theory, leadership analysis through film, principles technological change, and professional growth and critical career skills (University of Arkansas, 2022a).

Graduate students in the Master of Science in Agricultural and Extension Education program or the Doctor of Philosophy in Agricultural, Food and Life Sciences Agricultural Education, Communication and Technology concentration may select agricultural leadership as a

concentration (Agricultural Education, Communications and Technology, n.d.). Current graduate courses include developing leadership in agricultural organizations, survey of leadership theory in agriculture, and leadership analysis through film at the graduate level (University of Arkansas, 2022b). Graduate level courses are available for enrollment by all University of Arkansas graduate students plus graduate students at institution affiliated through the AG*IDEA Consortium.

Students enrolled in agricultural leadership courses at the University of Arkansas receive some instruction on EDM and EI, but both topics are taught at the knowledge level. Morgan et al. (2013) and Weeks & Weeks (2020), indicated ethics curriculum was a key component of undergraduate agricultural leadership programs at land-grant institutions and Zimdahl (2020) emphasized the necessity of ethical agriculturalists. Moreover, the National AAAE Research Agenda (Roberts et al., 2016) and the NLERA underscored the need for educators to develop ethical leaders. However, no baseline data exists for Bumpers College students' EDM and EI. Data from this study will guide curriculum and experiential learning activity development.

Purpose of the Study

The NLE (Andenoro, 2013) and AAAE Research Agendas (Roberts et al., 2016) underscored the importance of ethical leader development. This study addressed two specific aspects of leadership development linked to ethical leadership: EDM and EI. This pilot study focused only on undergraduate and graduate students with degree programs in agriculture and natural resource areas enrolled in Bumpers College. Students in the School of Human and Environmental Sciences were not included in the presented results as the majors in the program are outside the scope of agriculture and natural resources. The study described EDM using the Defining Issues Test 2 ($DIT_{-2)}$ scores and EI using the brief version of the Situational Test of

Emotional Intelligence (STEM-B) and the brief version of the Situational Test of Emotional Understanding (STEU-B) scores for participants. Additionally, EI scores were examined in relation to EDM to determine if EI was predictive of EDM. Finally, relationships between student characteristics and the mean scores for EDM and EI were identified.

The following research objectives guided the study:

RO 1. To describe Bumpers College students' EDM based on mean and individual DIT-$_2$ schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores.

RO 2. To describe Bumpers College students' EI based on mean STEM-B and STEU-B scores.

RO 3. To determine if EDM, as measured by DIT-$_2$ N2 scores, is predicted by EI as measured by STEM-B and STEU-B mean scores.

RO 4. To identify relationships between EDM as measured by DIT-$_2$ N2 scores and demographic characteristics and lifespan experiences of Bumpers College students.

RO 5. To identify relationships between EI, as measured by STEM-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

RO 6. To identify relationships between EI, as measured by STEU-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

Significance of the Study

This study identified relationships between demographic characteristics, lifespan experiences, EI, and EDM. The goal of the study was to examine the aforementioned aspects of leader development to determine if these areas are valid factors in EDM leader and leadership development. The outcome of the findings will inform ethical leader and leadership development strategies in the agricultural leadership program at the Bumpers College. The findings will also inform leader and leadership development curriculum in the areas of EI and EDM.

Limitations

Limitations to this study may occur due to research design. Design limitations include the use of web-based survey. Two cited limitations by Ary et al. (2019) include limited access by some sample members due to the technology requirements or low technology literacy. Web-based surveys may also result in limited respondent cooperation impacting the response rate as it is easy to delete or ignore email requests (Ary et al., 2019). Additionally, filtering of email algorithms in the University of Arkansas Outlook system may impact student access to correspondence. The study had a limited sample size due to instrument expense.

Assumptions

The following assumptions were reflected in this study.

1. DIT_{-2} was a valid and reliable measure of EDM.
2. STEM-B and STEU-B were valid and reliable measures of branches three and four of the ability model of EI.
3. Students who completed assessments spent the needed time and responded honestly to the survey items.

Definitions of Terms

Ability model of emotional intelligence: Represents emotional intelligence as "four proposed abilities that are distinct yet related: perceiving, using, understanding, and managing emotions" (Salovey & Grewal, 2005, p. 281).

Bumpers College students: Students enrolled in the Dale Bumpers College of Agricultural, Food, and Life Sciences at the University of Arkansas Fayetteville campus. "The College offers 14 majors and 25 minors through eight departments and the School of Human Environmental Sciences" (Dale Bumpers College of Agricultural, Food and Life Sciences, n.d., para. 3). Bumpers College students in this study did not include those majoring in the School of Human Environmental Sciences.

DIT-2: "The Defining Issues Test is a validated instrument that measures an individual's moral development and moral reasoning skills" (Bebeau, 2022, para. 1). The DIT-2 assesses the same moral development and reasoning skills but is presented in a reduced question format.

Emotional intelligence: EI is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189).

Ethical decision: "Defined as a decision that is both legal and morally acceptable to the larger community (Jones, 1991, p. 367).

Land-grant institutions: Federally supported institutions of higher education that exist in all U.S. states and some territories. These include institutions connected with the Morrill Acts of 1862, 1890, and 1994 (Congressional Research Service [CRS], 2019).

Leader development: "the process by which one increases his or her ability to exercise influence in leadership situation that become increasingly more complex and varied, during the lifespan process with multiple development stages and various contexts" (Lui et al., 2020, p. 1-2).

Leadership development: "Leadership development seeks to understand, predict, and intervene effectively in addressing the questions of how individuals develop as leaders and how collections of individuals develop a capacity for leadership" (Day et al., 2021, p. 1).

Lifespan process: A process involving experiences influencing leader development starting early in life and extending beyond retirement (Liu et al., 2020).

STEM-B: STEM-B is a short-form version of the Situational Test of Emotion Management (STEM) and assesses emotional response based on provided scenarios (Allen et al., 2015).

STEU-B: The Situational Test of Emotional Understanding (STEU) assesses the understanding of emotions which "encompasses knowledge about emotions and the ability to reason about emotions on the basis of the rule-based processes underlying the elicitation and progression of emotions" (Allen et al., 2014, p. 3). The STEU-B is a reduced question version of the STEU.

Chapter II

Review of Literature

This study explored the relationships between EDM and EI among undergraduate and graduate agriculture and natural resource program students at the University of Arkansas Bumpers College. The theoretical framework for this study included EDM with emphasis on Kohlberg's stages of moral development and Rest's EDM model and the ability model of EI. Relevant research in the areas of contemporary agricultural leadership research, lifespan experiences, and the application of EI and EDM provided context for this study.

Theoretical Framework

Ethical Leadership

Leadership definitions are numerous, but agreement is found with the focus being on a person getting others to do something. Cuilla (2003) reflects leaders impressed their will in the 1920s, persuaded followers in the 1940s, influenced followers in the 1960s, and reciprocal influence between leaders and followers occurred in the 1990s. While scholars seek a singular definition, ethical leadership involves moral facets. Johnson (2018) described it as a process of behavior and influence. "Leaders must demonstrate such character traits as justice, humility, optimism, courage, and compassion; make wise choices; and master the ethical challenges of their roles" (Johnson, 2018, p. xxiii). Brown et al. (2005) and Demirtas (2015) defined ethical leadership as "the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making" (p. 120; p. 273). This definition identifies several components of ethical leadership including the credibility of the leader modeled through appropriate behavior, emphasis on ethical behavior by the leader to the followers, ethical leaders'

adherence to the standards, and consideration of outcomes and fairness of their decisions (Brown et al., 2005). Brown and Trevino (2006) reviewed ethical leadership literature and determined "ethical leaders are characterized as honest, caring, and principled individuals who make fair and balanced decisions" (p. 597). While everyone in an organization has a shared responsibility to act ethically, leaders are considered the establishers of the rules and processes for moral issues (Stouten et al., 2012). Stouten et al. (2012) indicated leaders' "values and interests shape how and what kind of decisions are made, and which role ethics play in these decisions" (p. 1).

EDM

EDM is the process of addressing ethical dilemmas (Krishnakumar & Rymph, 2011). Ethical dilemmas, situations with conflicting moral consequences, often trap decision makers in emotional conundrums…" (Krishnakumar & Rymph, 2011, p. 51). Ethical dilemmas are challenging to address and selecting an appropriate action involves navigating complex and unclear situations plus consideration of one's morals and implications for others impacted by the decision (MacDougall et al., 2014). Several models exist to address the cognitive and behavioral processes of EDM (MacDougall et al., 2014). Scholars have described five different approaches to EDM: cognitive-developmental, person-situation interactionist, issue-contingent, neurocognitive, and sensemaking.

Kohlberg's stages of moral development initiated the cognitive or rationalist approach and were the foundation for Rest's 1974 and 1986 models (MacDougall et al., 2014). Rationalist approach models follow steps or stages, "wherein an individual's moral development, or cognitions regarding what is morally right or wrong, progresses through a series of stages towards an idealized endpoint" (MacDougall et al., 2014, p. 10). Rest's expansion of Kohlberg's

work included a less structured stage progression and consideration of the self-concept of a decision-maker.

Trevino's interactionist model of EDM was an expansion of cognitive models and included both individual and situational factors. This model contends that outside influences will have less impact on decision makers with higher cognitive development stages (MacDougall et al., 2014). "In addition, Trevino (1986) maintains a rationalist perspective in that stage of moral development is still considered an important explanatory device concerning ethical decision making" (MacDougall et al., 2014, p. 12).

Issue-contingent approaches to EDM emphasize the characteristics of the ethical dilemma. Jones' 1991 model supplements cognitive and interactionist models. A key component of this model is moral intensity. Moral intensity includes six components: 1) magnitude of consequences, 2) social consensus, 3) probability of effect, 4) temporal immediacy, 5) proximity, and 6) concentration of effect (MacDougall et al., 2014). Moral intensity increased awareness of the individual's role "by identifying specific aspects of the situation which increase the likelihood that an actor in that situation will perceive it as having ethical implications" (MacDougall et al., 2014, p. 13).

The neurocognitive approach "calls on research from neuroanatomy, neurophysiology, and neurochemistry to put forth a neurocognitive model of EDM, which suggests that the EDM process consists of two cycles" (MacDougall et al., 2014, p. 14). This model presents how the decision maker thinks and integrates intuition as part of the model. Essentially, a stimulus is encountered, and a decision maker relies on past experiences to inform current decision making. If one does not have past experiences in decision making, the individual has to engage in active judgment. The difference between neurocognition and cognitive approach is the reliance of

neurocognition on “retrospective processes known to be essential to the ethical experience” (MacDougall et al., 2014, p. 14).

The sensemaking-intuition model (SIM) was introduced, in 2007, as a way to address the weaknesses of cognitive approaches. SIM as outlined by Sonenshein involves three phases: 1) issue construction, 2) intuitive judgment, and 3) justification (MacDougall et al., 2014). Mumford and colleagues introduced a sensemaking model in 2008, with a similar emphasis as Sonenshein’s model, but “removes emphasis on the intuitionist portions of the SIM, focusing instead on delineating specific and measurable sensemaking components” (MacDougall et al., 2014, p. 16). One shortcoming of sensemaking models is the lack of focus on individuals’ cognitive abilities.

Kohlberg’s Stages of Moral Development

Kohlberg’s theory of moral judgment development expanded the work of Piaget, who studied moral development in children. While his 1958 study of moral development and reflection did not include adults, it did expand Piaget’s work to include adolescents (Gibbs, 1979). The study presented hypothetical moral dilemmas, the most famous is the Heinz dilemma, to cross-cultural subjects. The subjects were interviewed regarding why they responded as they did to each presented dilemma (Crain, 1985; Kohlberg, 1971; Kohlberg & Hersh, 1977).

> Following Piaget, Kohlberg sought to identify age trends in moral judgment that would prove to be general and uniform across social class, culture, sex, race, and social epoch, though the structural analysis of children’s justifications and evaluations of their opinions as to the right action to take in hypothetical moral dilemmas. (Gibbs, 1979, p. 91)

Kohlberg theorized that moral development occurred over time through stages (Kohlberg & Hersh, 1977). The development was not an increase in knowledge but rather a transformation.

Kohlberg identified six stages or reasoning structures. These stages were characterized as "organized systems of thought," "movement is always forward," "individuals never skip stages," and "a tendency to function at or prefer the highest stage available" (Kohlberg & Hersh, 1977, p. 54). As shown in Table 1, these stages occur at the pre-conventional level (stages 1 & 2), conventional level (stages 3 & 4), and post-conventional level (stages 5 & 6) (Kohlberg & Hersh, 1977).

Table 1

Kohlberg's levels and stages of moral development.

Level	Stage
Pre-conventional	1: The punishment-and-obedience orientation
	2: The instrumental-relativist orientation
Conventional	3: The interpersonal concordance orientation
	4: The law and order orientation
Post-Conventional	5: The social-contract, legalistic orientation
	6: The universal-ethical-principle orientation

The pre-conventional level is defined by general cultural rules with stage 1, the punishment-and-obedience orientation, focused on consequence avoidance. "The physical consequences of action determine its goodness or badness, regardless of the human meaning or value of these consequences" (Kohlberg & Hersh, 1977, p. 54). Stage 2, the instrumental-relativist orientation, focuses on satisfying one's general needs and sometimes others' needs. "Elements of fairness, of reciprocity and of equal sharing are present, but they are always interpreted in a physical, pragmatic way" (Kohlberg & Hersh, 1977, p. 55).

At the conventional level, “maintaining the expectations of the individual’s family, group or nation is perceived as valuable in its own right, regardless of immediate and obvious consequences” (Kohlberg & Hersh, 1977, p. 55). This level includes stage 3, the interpersonal concordance orientation, where conformity yields approval and guides behavioral decisions. Stage 4, the law and order orientation, is defined by order. “Right behavior consists of doing one’s duty, showing respect for authority, and maintaining the given social order for its own sake” (Kohlberg & Hersh, 1977, p. 55). Identification with other groups or societies underscores both stages at the conventional level.

The post-conventional level is also known as the principled level as an individual no longer looks at just the authority holders but their values and principles (Kohlberg & Hersh, 1977). In the social-contract, legalistic orientation, or stage 5, “right action tends to be defined in terms of general individual rights and standards which have been critically examined and agreed upon by the whole society (Kohlberg & Hersh, 1977, p. 55). Where stage 4 relies on abiding by rules, stage 5 opens the door to changing the rules when those rules do not best represent the values and principles of people (Kohlberg & Hersh, 1977). Stage 6, the universal-ethical-principle orientation, functions as reciprocity of ethical principles. It is compared, by Kohlberg and Hersh (1977), to the Golden Rule rather than the Ten Commandments. “At heart, these are universal principles of justice, of the reciprocity and equality of human rights, and of respect for the dignity of human beings as individual persons” (Kohlberg & Hersh, 1977, p. 55).

Kohlberg’s theory of moral development was the starting point for future EDM theories and approaches (MacDougall, 2014; Rest et al., 1999). Crain (1985, p. 129) stated, “Kohlberg’s scale has to do with moral thinking, not moral actions”. Concerns for society’s rules and norms are termed macromorality which contrasts with micromorality which addresses an individual’s

rules and norms (Rest et al., 1999). “Kohlberg’s theory became popular at the time of major movements for social justice in American society (e.g., civil rights, free speech, the Vietnam war, the women’s movement); his theory is more useful for macromorality issues” (Rest et al., 1999, p. 292). Rest et al. (1999) concluded macromorality and micromorality are interrelated.

Ethical behavior components

Morality is built through fostering moral sensitivity, moral judgment, moral motivation, and moral character. Moral sensitivity involves understanding cause and effect relationships of issues. “Moral sensitivity is necessary to become aware that a moral issue is involved in a situation” (Bebeau et al., 1999, p. 22). Moral judgment involves the right and wrong outcomes of actions. This closely relates to the work of Kohlberg (Bebeau et al., 1999). Placing the greatest emphasis on moral values when compared to one’s values describes moral motivation. Finally, moral character is “having the strength of your convictions, having courage, persisting, overcoming distractions and obstacles, having implementing skills, having ego strength” (Bebeau et al., 1999, p. 22). Moral character is most important in times when outside stressors or fatigue are present because of the action of acting on one’s goals (Bebeau et al., 1999). These behavior components are “psychological processes that give rise to morality” (Bebeau et al., 1999, p. 25).

Rest’s Model of EDM

James Rest developed a model of EDM based on Kohlberg’s stages of moral development theory. Rest’s reformulation, also referred to as the Neo-Kohlbergian Approach, emerged from his dissertation work on a moral concept comprehension scoring system (Rest, 1979). Cognition remained the emphasis. Key differences between conceptualizations included less defined stage transitions where shifts occur rather than a distinct stage (Rest et al., 2000).

Rest et al. (2000) described schema usage as "more concrete than Kohlberg's stages (but are more abstract than the typical schemas of Social Cognition (e.g., person schemas, role schemas)" (p. 384-385). Cognitive operation assessment was not an outcome of Rest's model as it was for Kohlberg's model. Kohlberg viewed morality as universal whereas Rest's model viewed morality as common with different communities viewing morality differently (Rest et al., 2000). Finally, Rest et al. (2000) underscored the limitations of interview research on moral reasoning and point to the DIT assessment as able to recognize post-conventional thinking more readily. "Kohlberg placed a verbal constraint that credited people with only understanding what they could explain" (Rest et al., 2000, p. 386).

Rest et al. (2000) proposed three schemas that aligned with Kohlberg's stages while incorporating the differences. Kohlberg's second and third stages are reconceptualized as personal interest schema, stage 4 is the maintaining norms schema, and stages five and six are the post-conventional schema. "In our view, the three moral schemas are developmentally ordered ways of answering the "macro" question (how to get along with people who are not friends, kin or personal acquaintances, i.e., how to organize society-wide co-operation" (Rest et al., 2000, p. 386).

EDM Measurement

The Defining Issues Test (DIT) is the assessment used to assess Neo-Kohlbergian EDM processes (Rest et al., 1999). DIT differed from previous interview based EDM assessments as it utilized a "multiple-choice, recognition task asking participants to rate and rank a set of times" (Rest et al., 1999, p. 295). Rest et al. (1999) disagreed with the assumption that moral judgment data is only reliable when a person explained their judgments. "Using interview data assumes that participants can verbally explain the workings of their minds" (Rest et al., 1999, p. 295).

DIT is based on schema theory which describes the cognitive processing of information (Rest et al., 1999). “The DIT is a device for activating moral schemas” (Rest et al., 1999, p. 301). This activation reflects the developed moral schemas of individuals. Items receive high participant ratings when schemas are activated and make sense to the respondent, but low scores when the schemas do not exist or when a moral statement does not make sense (Rest et al., 1999). “By the patterns of ratings and rankings, we arrive at estimates of the relative strength of the preferred schema” (Rest et al., 1999, p. 302).

EDM and Emotions

The cognitive process of EDM was the primary focus of scholars. This process identified logic and reason as central to decision making (Johnson, 2018). “Researchers ignored emotions or treated them with suspicion because feelings could undermine moral reasoning (Johnson, 2018, p. 175). Neuroscience and neuroethics researchers have produced findings supporting the use of emotions and the emotion regulating parts of the brain as active during EDM. Intuition rather than reasoning produces some ethical decisions; thus, recognizing EDM as involving intuition and reasoning processes is key (Johnson, 2018). “The dual process perspective is based on the premise that both logic and emotion are essential to making good ethical decisions” (Johnson, 2018, p. 176). While feelings, intuitions, and emotions may not produce the right answer, the influence of such on decision making should be considered along with logic (Holian, 2005; Johnson, 2018).

EI Theory

EI emerged in 1990 as an initial framework for understanding emotions, the evaluation of emotions, and the selection of appropriate actions (Salovey & Mayer, 1990). Salovey and Mayer (1990) summarized the various views of EI as 1) a disrupter of mental activity that must be

controlled, 2) a focusing factor leading to adaptive cognitive function, and 3) needed in artificial intelligence. “The full expression of emotions seems to be a primary human motive, and it may therefore be worthwhile to consider from a functionalist perspective” (Salovey & Mayer, 1990, p. 186).

The purpose of the EI theory was to frame how people engaged and used emotions in problem solving (Mayer et al., 2016). “We called attention to people’s problem solving in areas related to emotion: recognizing emotions in faces, understanding the meanings of emotion words, and managing feelings, among others” (Mayer et al., 2016, p. 2). EI is an ability model with a solid body of research and consistent conceptions by researchers and scholars; moreover, EI can be measured and what it predicts is understood (Mayer et al., 2011). Forming personal relationships and achieving work success are two documented outcomes of EI (Johnson, 2018; Salovey & Grewal, 2005). “Perhaps most importantly, ability-based tests of EI reliably measure skills that are relatively distinct from commonly assessed aspects of personality” (Salovey & Grewal, 2005, p. 281).

EI was developed out of research in other disciplines including emotion, intelligence, psychotherapy, and cognition (Mayer et al., 2016). References to EI can be found in literary critiques of Jane Austen’s characters in 1953, in a German motherhood article in 1966, and in a 1986 dissertation about emotion suppression and stifled emotional growth (Mayer et al., 2011). In 1920, Carl Jung identified a “feeling function” as a way for people to make sense of the world, higher “emotional literacy” was proposed as yielding well-being in 1984, in 1990 and 1997 tracking of emotional competence in children was suggested, and in 1993 “intrapersonal intelligence” was proposed (Mayer et al., 2011). After the emergence of EI theory by Salovey and Mayer, Goleman in 1995 wrote a general audience book about human potential and EI

science. This led to a wave of media attention and publicity for EI among non-scholarly audiences (Mayer et al., 2011).

Empirical work, with focus on nonverbal perceptions, started in the late 1970s and early 1980s. The relationship between emotions and thought was researched in the 2000s. The scope of studies involving EI has been diverse. Variables included workplace managerial performance, emotional knowledge, academic performance, verbal ability, emotional regulation, intelligence, attention, and emotionality (Mayer et al., 2011). Mayer et al. (2016) published an update on the theoretical aspects of the model through principles intended to guide thinking about EI and yielded minor revisions to the Four-Branch Model. A 2008 review of EI studies concluded higher EI resulted in more appropriate social behaviors. EI "correlated positively with indices of good social relations and social competencies, and negatively with the use of destructive interpersonal strategies and indices of social deviance" (Mayer et al., 2011, p. 541). Additionally, generalizations concluded higher EI resulted in better work environments and well-being (Mayer et al., 2011).

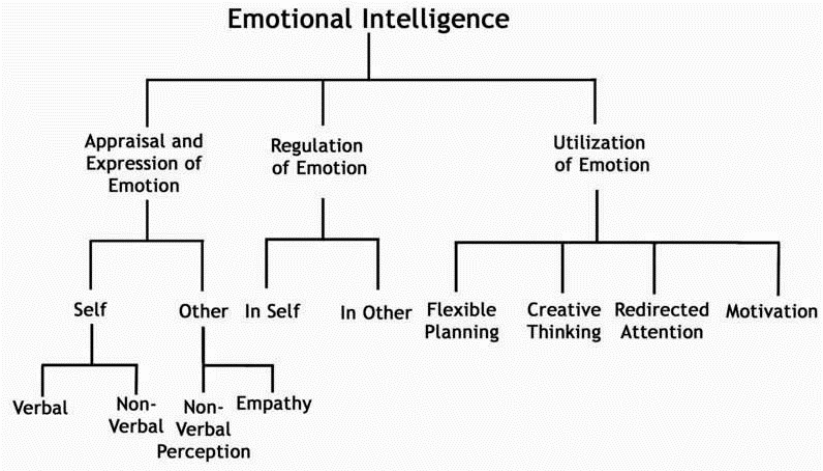
EI Model Conceptualization

Salovey and Mayer's (1990) conceptualization of EI included two aspects: 1) the existence of individual abilities to recognize, understand, and express emotions, and 2) skills may be learned to improve one's abilities in this area. Salovey and Mayer (1990, p. 190) developed a visual model of the EI processes as shown in Figure 1. When information enters the perceptual system of the self, emotional appraisal begins. This is a key component because it involves both verbal and non-verbal cues and one's ability to accurately assess the cues respond more quickly and express their own emotions more effectively (Salovey & Mayer, 1990). Non-verbal perception and empathy of others is another component of appraisal and expression of

emotion. Such skills "enable individuals to gauge accurately the affective responses in others and to choose socially adaptive behaviors in response" (Salovey & Mayer, 1990, p. 195). Regulation of emotion is the next component and includes self and others. This deals with direct and reflective experiences with mood and the skills related to regulating moods to meet goals (Salovey & Mayer, 1990). Finally, utilizing EI involves skills in flexible planning, creative thinking, mood redirected attention, and motivating emotions. Using EI provides an advantage during problem solving (Salovey & Mayer, 1990). "In the end, by recognizing the contribution of EI to a healthy personality, and how to foster it, we may come to recognize advantageous qualities or needed changes in social institutions and cultural practices" (Salovey & Mayer, 1990, p. 202).

Figure 1

Salovey and Mayer's (1990) conceptualization of EI.



Note. This diagram represents the emotion components of EI.

EI Four-Branch Model

As EI theory was further refined, the four-branch model evolved (Salovey & Grewal, 2005). The four-branch model, as shown in Table 2, identifies the four distinct and related EI abilities and specific skills for each (Mayer et al., 2016, p. 7). Perceiving emotions is the first

branch and most basic aspect which allows for the processing of all other emotional information. Abilities include recognizing and understanding emotions based on facial expressions, vocalization, cultural artifacts, and images. Self-identification of emotions is included (Salovey & Grewal, 2005). The second branch involves facilitating cognitive functions using emotions. Abilities in this branch include selecting the best mood (positive, somber, sad) to achieve a goal or complete a task (Salovey & Grewal, 2005). The third branch, understanding emotions, involves the ability to understand subtle differences and the relationships between emotions. "For example, understanding emotions encompasses the ability to be sensitive to slight variations between emotions, such as the difference between happy and ecstatic" (Salovey & Grewal, 2005, p. 282). Managing emotions, the most complex and fourth branch, addresses emotion regulation for self and others. These skills are inextricably linked to social contexts. Moreover, the Four-Branch Model of EI is useful for research interpretation where connections can be made back to one of the four branches (Salovey & Grewal, 2005).

The Four-Branch or ability-model of EI has parsimony. The Four-Branch Model presents logical explanations with each branch being singularly or globally measured. Conversely, mixed models of EI, which include personality characteristics and EI, are complicated and lack parsimony due to the inclusion of constructs beyond mental abilities associated with intelligence (Mayer et al., 2011). Testability, empirical adequacy, and pragmatic adequacy have been established for the ability-model of EI.

Table 2

The Four-Branch Model of Emotional Intelligence, with Added Areas of Reasoning[a]

4. Managing Emotions	• Effectively manage other's emotions to achieve a desired outcome[b] • Effectively manage one's own emotions to achieve a desired outcome[b] • Evaluate strategies to maintain, reduce or intensify an emotional response[b] • Monitor emotional reactions to determine their reasonableness • Engage with emotions if they are helpful; disengage if not • Stay open to pleasant and unpleasant feelings, as needed, and to the information they convey
3. Understanding Emotions	• Recognize cultural differences in the evaluation of emotions[c] • Understand how a person might feel in the future or under certain conditions (affective forecasting)[c] • Recognize likely transitions among emotions such as from anger to satisfaction • Understand complex and mixed emotions • Differentiate between moods and emotions[c] • Appraise the situations that are likely to elicit emotions[c] • Determine the antecedents, meanings, and consequences of emotions • Label emotions and recognize relations among them
2. Facilitating Thought Using Emotion[d]	• Select problems based on how one's ongoing emotional state might facilitate cognition • Leverage mood swings to generate different cognitive perspectives • Prioritize thinking by directing attention according to present feeling • Generate emotions as a means to relate to experiences of another person[c] • Generate emotions as an aid to judgment and memory
1. Perceiving Emotion	• Identify deceptive or dishonest emotional expressions[b] • Discriminate accurate vs inaccurate emotional expressions[b] • Understand how emotions are displayed depending on context and culture[c] • Express emotions accurately when desired • Perceive emotional content in the environment, visual arts, and music[b] • Perceive emotions in other people through their vocal cues, facial expression, language, and behavior[b] • Identify emotions in one's own physical states, feelings, and thoughts

[a] The bullet-points are based on Mayer & Salovey (1997) except as indicated in footnotes b and c. The bulleted items are ordered bottom-to-top within a row (very roughly) from simplest to most complex problem solving involved. Please note that the Four-Branch Model depicts the problem-solving areas of emotional intelligence and is not intended to correspond to the factor structure of the area.

[b] An ability from the original model was divided into two or more separate abilities.

[c] A new ability was added.

[d] Note that the Branch 2 abilities can be further divided into the areas of *generating emotions to facilitate thought* (bottom two bulleted items) and *tailoring thinking to emotion* (the top three bulleted items).

Note: From "The ability model of emotional intelligence: Principles and updates", by J. D. Mayer, D. R. Caruso, and P. Salovey, 2016, *Emotion Review*, *8*(4), p. 294 (https://doi.org/10.1177/1754073916639667).

EI Measurement

EI measurements initially relied on self-reporting. Such measurements yielded results correlated with personality constructs rather than skills. Two specific concerns arose from self-reporting on characteristics such as patience, quality of relationships, and stress tolerance: "whether people are sufficiently aware of their own emotional abilities to report upon them accurately, and whether people answer the questions truthfully instead of reporting in a socially desirable manner" (Salovey & Grewal, 2005, p. 282).

Ability-based tests were developed to address these issues and assessed EI through "performance-based measurements resembling standard intelligence tests" (Yan et al., 2019, p. 2). The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) was constructed to test a person's abilities in each of the EI branches (MacCann & Roberts, 2008; Salovey & Grewal, 2005). Reported scores include branches and the total EI score. Respondents scores were higher when more overlap existed between a respondent's responses and that of the sampled respondents worldwide. Expert scoring is also available; this scoring is calculated based on the overlap between an individual respondent and the responses of 21 emotion researchers. Both methods yielded similar scores (Salovey & Grewal, 2005). MSCEIT™ provided an ability-based test to address the challenges presented through self-reported assessments. Limitations of MSCEIT™ include the cost and length (141 items) (O'Connor et al., 2019).

O'Connor et al. (2019) reviewed EI assessments. The Situational Test of Emotion Management (STEM) and the Situational Test of Emotional Understanding (STEU) were

identified as alternatives to the MSCEIT™ with "strong psychometric support" (O'Connor et al., 2019, p. 6). These instruments require less time for completion and are free for academic and research use. Emotional regulation is measured using the STEM and emotional regulation is measured using STEU. These "form the Strategic EI area" (O'Connor et al., 2019, p. 8). One limitation is these assessments focus on only two of the four EI constructs (O'Connor et al., 2019).

Emotions and Intelligence

EI theory was developed as a framework to unify scholarly work that did not fit under the general intelligences umbrella. An evaluation of EI theory literature points to internal consistency. Connections between technical language of emotions and intelligence were described and how EI met intelligence criteria underscored (Mayer et al., 2011). Mayer et al. (2011) emphasized the importance of internal consistency and illustrated such in the ability-model of EI. "The theory predicts that emotional intelligence is, in fact, an intelligence like other intelligences in that it meets three empirical criteria" (Mayer et al., 2011, p. 533). Additionally, the model predicts factors influencing EI development and the skills of those with high EI (Mayer et al., 2011). EI theory includes specific ability areas as well as global areas, demonstrates alignment between theory and predictions, and has heuristic value (Mayer et al., 2011).

Leader Development

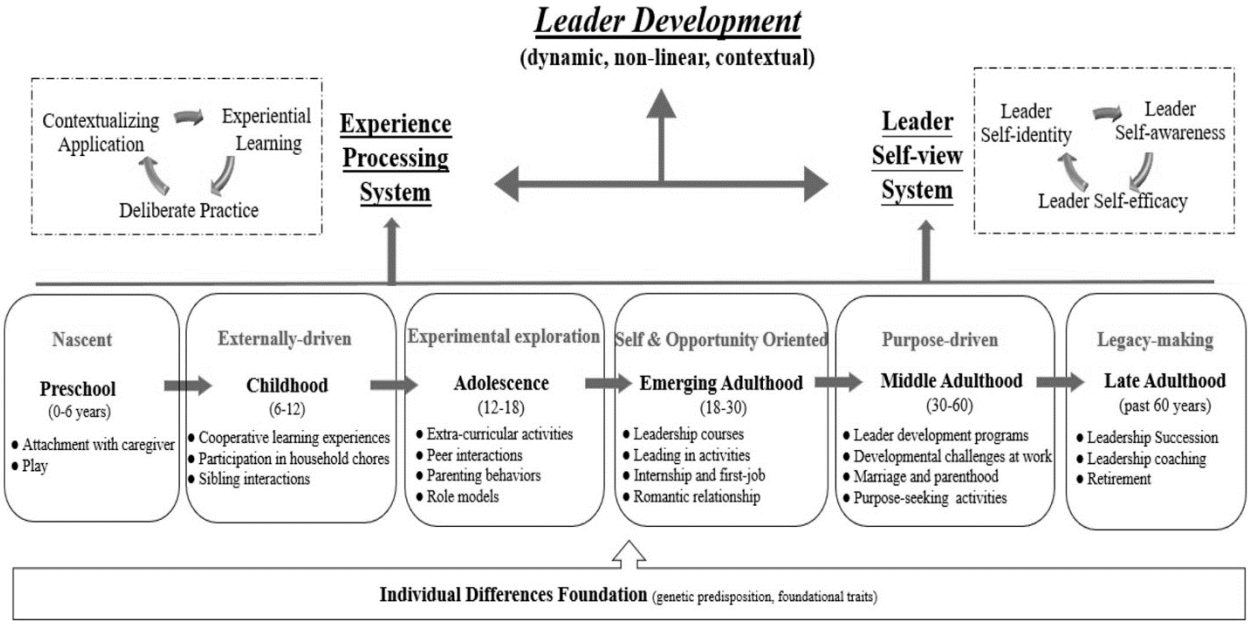
"Leadership development seeks to understand, predict, and intervene effectively in addressing the questions of how individuals develop as leaders and how collections of individuals develop a capacity for leadership" (Day et al., 2021, p. 1). Leader development is "the process by which one increases his or her ability to exercise influence in leadership

situations that become increasingly more complex and varied, during the lifespan process with multiple development stages and various contexts" (Lui et al., 2020, p. 1-2). While leadership development focuses on how development occurs to improve role effectiveness, leader development focuses on individual human capital development (Lui et al., 2020). The focus of much leadership and leader development is to improve the capacity of individuals already demonstrating potential as leaders.

Liu et al. (2020) acknowledge the process of leader development and the impacts of experiences. "Researchers have proposed that experience, especially developmental experience, is a powerful trigger for leader development" (Liu et al., 2020, p. 5). Windows for leader development include preschool (up to age 6), childhood (ages 6-12), adolescence (ages 12-18), emerging adulthood (ages 18-30), middle adulthood (ages 30-60), and late adulthood (over the age of 60) (Liu et al., 2020). Figure 2 presents the leader development process.

Figure 2

Lui et al. (2020) Development Windows Across a Leader's Lifespan



Lui et al. (2020) view leader development through a context-driven lens rather than a genetic influence lens. The nascent stage marks the first period of life and establishes a foundation for future development (Lui et al., 2020). “The nascent stage, especially the first 3 years, is the critical period for forming attachment relationships with caregivers (usually parents)” (Lui et al., 2020, p. 5). Additionally, play underscores much of the time of those in the preschool stage. The next stage is externally driven and is the period when “communicative, cognitive, and social” skill growth occurs (Lui et al., 2020, p. 6). This stage involves experiences with cooperative learning, involvement with household chores, and interactions with siblings.

The next two stages: experiential exploration and self and opportunity oriented will be the two key developmental stages of emphasis relevant to this study. The experimental exploration stage involves many changes for an individual as they explore their self-identity and the world. Opportunities to engage in independent decision making and to interact with others should be available to adolescents. Extra-curricular activities “not only play an important role in providing opportunities for adolescents’ social learning about leadership, but they also provide scenarios in which adolescents can utilize leadership-related skills in real-world situations and thus develop their leadership potential (Lui et al., 2020, p. 7). Peer interaction represents the dyadic relationships with others through friendships and adolescents’ social networks (Lui et al., 2020). “The components of friendship such as companionship, emotional support, stimulation, and belongingness, facilitate social-emotional development which is associated with certain leadership-related variables such as emotional intelligence” (Lui et al., 2020, p. 7). Parents play an important role as models of leadership during this developmental stage. Overparenting behaviors can stifle leader emergence in adolescents while authoritative and nurturing behaviors are associated with transformational leadership styles (Lui et al., 2020). Additionally, other role

models are the final component of this developmental lens. “Leader role models are individuals in adolescents’ real or virtual environments who might guide adolescents in their leadership growth process” (Lui et al., 2020, p. 7).

The self- and opportunity-oriented stage occurs during emerging adulthood and is a period when new opportunities and experiences are available and engaged (Lui et al., 2020). “At this stage, individuals start to make decisions by themselves in the face of various opportunities” (Lui et al., 2020, p. 8). This lens is marked by learning through leadership courses, serving as a leader in various activities, attaining jobs and workplace experiences, and romantic relationships. Availability of opportunities is great for leadership courses and leading in activities due to many people in this stage of life pursuing post-secondary education (Lui et al., 2020). “Internship experiences provide young adults with the necessary platforms to apply and practice leadership knowledge obtained in high school and college” (Lui et al., 2020, p. 8). Internships and first jobs also yield opportunities for engagement with supervisors who can influence future leadership development (Lui et al., 2020). “Love and work during adulthood can be functionally akin to attachment in early childhood” (Lui et al., 2020, p. 8).

Middle adulthood marks the purpose-driven stage. It is marked by engagement in leader development programs, work challenges, life experiences including marriage and parenthood, and purpose-seeking activities. Late adulthood is the legacy-making time where individuals engage in leader succession, coaching, and retirement. The purpose-driven and legacy-making development lenses are outside of the age range of this study’s participants.

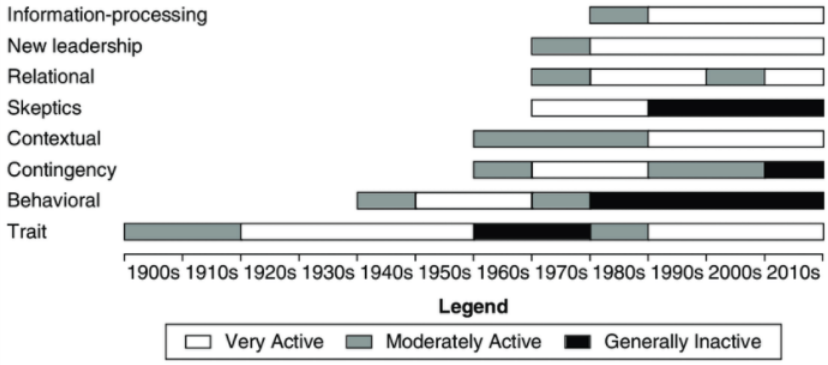
Conceptual Framework

Overview of Contemporary Agricultural Leadership Research

The evolution of leadership theories and research has been presented as a way to organize and understand the complexities of leadership. As illustrated in Figure 3, trait theories, which include EI, emerged first at the start of the 20th century, and remain actively researched today. Other theories have received mixed attention since emerging with information-processing, new leadership (of which ethical leadership is an approach), and relational leadership remaining active since the mid-1960s or mid-1970s (Day & Antonakis, 2012). The 2010s saw the last area of research emergence with biological and evolutionary leadership focus (Day & Antonakis, 2012).

Figure 3

A Brief History and Look into the Future of Leadership Research



Note. From *The Nature of Leadership*, by D. V. Day and J. Antonakis (Eds.), 2012, 2nd edition, p.7.

Samul (2020) utilized bibliometric analysis and found trait, behavioral, contingency, followers, and process as the main theories in research since 1923 among 12,235 publications with leadership or leader as keywords. Leadership research in the agricultural education discipline is presented as focus areas instead of theories as evidenced by the absence of theory

analyses in the literature. Connors and Swan (2006) reviewed the Journal of Agricultural Education (JAE) and the proceedings of National Agricultural Education Research (NAER) Meeting/ Conferences between 1988 and 2003. Major leadership focus areas were reported as Agricultural Education and FFA, collegiate leadership, Extension Education and 4-H, and community leadership (Connors & Swan, 2006).

Edgar, et al. (2009) analyzed themes of research published in the Journal of Leadership Education (JOLE) between 2002, when it was started, and 2006. The researchers identified JOLE as the primary publication outlet for leadership educators in agricultural education. The goal of the study was to identify leadership education within agricultural leadership (Edgar, et al., 2009). "The experience-base gained from this research can then be used as a framework to suggest future research strategies when compared to the NRA" (Edgar, et al., 2009, p. 151). Primary research themes included leadership development (31.1%), leadership education (24.4%), and 16 other themes that occurred 6.7% of the time or less but were presented as primary themes. This illuminates distinct differences in the content areas of leadership education research in agricultural education and non-agricultural education disciplines. Moreover, these differences underscore the importance of research priorities in agricultural education and leadership education to guide researchers in contributing meaningful discipline-based research.

EDM Applications

Craft (2013) analyzed business research conducted between 2004 and 2011 on EDM. Rest's four-component model was one of two prevalent models found through the analysis of 84 articles (Craft, 2013). "Personality received the most attention overall—43 findings across all four of Rest's dependent variables" (Craft, 2013, p. 225). Personality-related areas of study "included locus of control, Machiavellian traits, self-control, mindfulness, attitudes, and Big 5

personality traits" (Craft, 2013, p. 230). Thirty-eight findings related to gender were reported in the analyzed studies. Gender relationships with EDM were mixed which aligned with a previous study that examined findings published between 1978 and 2003 (Craft, 2013). Other findings relevant to this study included education, employment, and experience; age; personal values; emotions and mood; and cognitive moral development. One study conducted by Connelly et al. in 2004 found ethical choice variance was accounted for through negative and positive emotions (Craft, 2013).

Ethical Reasoning Skills

Ethical reasoning is a teachable and desirable skill (Ames et al., 2017). "Ethical reasoning education focuses on developing students' skills whereas traditional ethics education is recall-based, often of theories or professional codes of ethics" (Ames et al., 2017, p. 79). Studies of ethical reasoning curriculum and education indicated ethical reasoning skills can and should be taught (Ames et al., 2017). LaGrone et al. conducted an experimental design with a six-week graduate accounting course. Students ethical reasoning was measured at the beginning and end of term and after six months. The results indicated "the ethics education program fostered the students' abilities to consistently consider ethical issues in their decision-making processes" (Ames et al., 2017, p. 79).

Welton and Guffey researched a graduate ethics program integrated into a course. A version of the DIT for accounting (ADIT) was administered at the start, the end, and three years later. The findings indicated ethical reasoning, based on ADIT results, were persistent and continued after entering the workforce (Ames et al., 2017). Earley and Kelly noted only change in subject related ethical reasoning after a 14-week undergraduate ethics program was integrated into an accounting course (Ames et al., 2017). Written case studies and written case analyses

were used in a pediatric medicine program, and the researchers reported "students' recognition and assessment of ethical issues" improved (Ames et al., 2017, p. 79).

Earley and Kelly conducted a meta-analysis of 55 ethical reasoning educational programs using the DIT. The findings revealed the greatest increase in ethical reasoning when programs lasted 3-12 weeks, included discussions of dilemmas, and incorporated psychological development programs (Ames et al., 2017). Suggestions for curriculum development based on the aforementioned studies included: approaching ethical reasoning as an active process; creating an ethical reasoning framework to support the EDM; aligning educational programs with ethical reasoning conceptualization; ensuring faculty have developmental opportunities for teaching students ethical reasoning; and collecting data about students ethical reasoning using valid and reliable psychometric assessments (Ames et al., 2017).

A 2005 comparison of college freshmen and senior business students showed seniors made decisions based on "head" values such as initiative and flexibility while freshman made decisions based on "heart" values which included honesty and generosity. This resulted in questions about teaching approaches where overemphasis on logic and critical thinking paired with minimization of emotion in the process (Holian, 2005).

> Ethics programs in organisations and universities may need to assist adults to reflect on their underlying personal values, remind or reinforce them that considering the "golden rule" is not necessarily "naïve", and encourage the exercise of integrity and questioning of currently accepted rules and norms (Holian, 2005, p. 1129).

EI Applications

EI gained popularity as an effective leadership variable in the late 1990s despite little empirical data being available (Palmer et al., 2000). With over 30 years of research conducted, the theory has been connected to aspects of leadership including effectiveness, authenticity, transformational approach, and ethics. The following studies represent connections between EI and various leadership constructs.

EI and Effective Leadership

Edelman and van Knippenberg (2018) explored the relationship between EI and leader effectiveness using an ability EI test and observations of leader responses to emotions during role playing. The researchers sought to limit the impacts of outside factors, including intelligence and personality, to determine the actual relationship between EI and leadership effectiveness. The findings of this study supported the relationship between the two variables and addressed shortcomings of previous research by limiting the impacts of the aforementioned factors. "These findings suggest that leaders higher on EI use their ability to recognize and understand follower emotions to more effectively respond to follower emotion" (Edelman & van Knippenberg, 2018, p. 602). Based on these findings the researchers indicated the use of EI ability tests may be useful in selecting leaders for roles due to the support for the predictive value of such instruments based on the study findings and conclusions (Edelman & van Knippenberg, 2018).

EI and Authentic Leadership

Adiguzel and Kuloglu (2019) used the independent variables of authentic leadership and EI, and organizational identity, goal-oriented performance, and emotional commitment were the dependent variables to identify relationships between variables. The researchers studied public and private organization white collar workers. The results of this study showed authentic

leadership was positively related to organizational identity, goal-oriented performance, emotional commitment, and EI. Additionally, EI had a positive effect on organizational identity, goal-oriented performance, and emotional commitment. “However, our results show that the relationships between authentic leadership and emotional commitment variables disappear under the influence of the intervening variable of the emotional intelligence” (Adiguzel & Kuloglu, 2019, p. 26). The authors emphasized these findings as important for guiding future research with specific emphasis on emotional commitment of employees. The researchers did not provide definitive practical implications, but one can infer a leader’s EI impacts the performance of employees and the overall organizational identity based on the findings (Adiguzel & Kuloglu, 2019).

EI and Transformational Leadership

Kim and Kim (2017) examined the relationship between EI and transformational leadership as reported in 20 empirical studies. Kim and Kim (2017) classified the 20 analyzed articles into two categories: 1) EI and transformational leadership relationships existed and 2) uncertainty about the relationship between EI and transformational leadership. Fifteen studies were categorized as supporting the relationship between EI and transformational leadership. “Despite this room for continued investigation, the results of this dominant group of studies provide empirical support of leveraging EI for leadership development” (Kim & Kim, 2017, p. 387). Studies categorized as uncertain about the relationship attributed their skepticism to EI measurement validity and reliability issues. The researchers’ recommendations focused primarily on establishing consensus on the definition and key aspects of EI. Practical recommendations included human resource professionals recognizing the importance of EI in workplace outcomes of performance and culture, and the need for integrating EI trainings (Kim & Kim, 2017).

EDM & EI Application

According to the Global Business Ethics Survey strong ethical workplace culture was reported by one in five U.S. employees (Ethics & Compliance Initiative [ECI], 2021). However, in 2020 employees reported experiencing two times more pressure to compromise standards (ECI, 2021). This data underscores the need for ethical leadership within organizations, of which EI plays a role. "Given the detrimental consequences of unethical decisions, it is important for organizations to foster an ethical workplace culture and promote ethical decision making" (Hopkins & Deepa, 2018, p. 503). "Citizens who are equipped to engage in ethical reasoning and make better decisions when faced with kinds of ethical scenarios illustrated in news-making situations, and in those less publicized, are needed" (Ames et al., 2017, p. 78).

EI impacts on performance, commitment, well-being and other outcomes have been underscored as important in organizational contexts (Hopkins & Deepa, 2018). While studies about EI and ethics are limited connections between the two constructs have been established. Hopkins and Deepa (2018) examined EI in relation to moral philosophies. These moral philosophies included egoism (self-interest), utilitarianism (greatest good), relativism (societal standards), justice (equity), and deontology (obligations).

The goal was to determine if relationships existed between overall EI and EDM or specific components of both. The study respondents included MBA students in the U.S. and India. Two instruments were used to assess the EI and EDM of respondents: 1) Emotional Quotient Inventory 2.0 and 2) Multidimensional Ethics Scale (MES). The EI Inventory subscales were self-perception, self-expression, interpersonal, decision making and stress management. To determine if relationships existed, a multiple regression analysis was conducted (Hopkins & Deepa, 2018).

The results of the study revealed an absence of connections between egoism, utilitarianism, justice, and deontology. Relativism was connected to EI, and the researchers indicated that traditional business ethics trainings align with the relativism perspectives (Hopkins & Deepa, 2018). Age was a predictor of moral philosophy and relationships existed between age and EI. Hopkins & Deepa (2018) provided a practical implication related to their findings. These authors suggest those with higher EI are more likely to understand the societal implications of decisions. Thus, corporations should incorporate EI into training programs with specific focus on 360-degree assessments to enhance self-awareness. The authors also underscored the importance of EI training in educational curriculum. Special emphasis in these trainings must be placed on moving participants beyond rule and procedure adoptions and on to impacting the behaviors of participants (Hopkins & Deepa, 2018).

While this specific study does not address the four-branch model of EI directly, the EI subscales overlapped with the components of the four branches. Specifically, connections exist between self-perception and understanding emotions, self-expression and managing emotions, interpersonal and perceiving emotion, and decision making with facilitating thought using emotion (Hopkins & Deepa, 2018; Mayer et al., 2016). Additional work is needed in this area to corroborate these findings as well as to examine if those with work experience demonstrate the same relationship between EI and EDM.

Higher EI skills result in more skillful negotiation and application of one's own behavior and reactions to others' behaviors. Thus, EI would guide these individuals toward more ethical decisions (Dangmei & Pratap Singh, 2017). Dangmei and Pratap Singh (2017) studied the relationship between EI and ethical competence (exercising suitable decision making) using survey methodology with 73 undergraduate and graduate business students. The researchers

found “there is a positive role of emotional intelligence on ethical competence within the business students” (p. 242). Moreover, EI was a predictor of ethical competence among the population.

Contrary to research about positive links between EI and EDM, are real-world examples of leaders and managers portraying high levels of EI while engaging in unethical behaviors (Segon & Booth, 2015). “EI can provide managers and individuals with valuable competences, but the authors suggest that as an ethical dimension or competency is missing, the purpose to which EI is directed could be questionable” (Segon & Booth, 2015, p. 790). Specifically cited by Segon and Booth (2015) were Kenneth Lay and Bernard Madoff. Lay is cited as displaying empathy for others in meetings and demonstrating perceptiveness about the emotions of those in the room. Madoff controlled his emotions and made others the center of attention during interpersonal interactions. Martha Stewart demonstrated high EI while engaging in unethical behaviors. These examples underscore the presence of EI while their actions and decision making were unethical (Segon & Booth, 2015).

Krishnakumar and Rymph (2012) studied junior and senior business majors and minors. Experimental design was used with a control group receiving a survey with the original scenarios which measured discrete emotions. The experimental group received a modified survey intended to provoke stronger negative emotions while not altering the decision to be made. Students receiving the modified survey demonstrated less effective EDM based on assessment scores compared to those receiving the original survey (Krishnakumar & Rymph, 2012). “The results illustrate a possible “tug-of-war” between rational decision making and the motivation to minimize the feelings of discomfort associated with anger and sadness” (Krishnakumar & Rymph, 2012, p. 330).

The instrument scenarios were the same but two items were added to each scenario. These items asked students to measure how likely they were to make the same choice and the second measured their choice confidence. The results showed a stronger correlation between EI management and EDM for those receiving the modified survey with stronger negative emotions presented. Age was related to EDM for the modified scenarios while gender was not related to EDM for either survey (Krishnakumar & Rymph, 2012). The researchers conclude, "Not heeding the emotional context of EDM is to only partially understand the EDM environment" (Krishnakumar & Rymph, 2012, p. 336). Moreover, the researchers surmise high EI individuals better deal with the emotions associated with ethical dilemmas (Krishnakumar & Rymph, 2012).

Chapter III

Methodology

Purpose of the Study

The purpose of this study was to describe EDM and EI of agriculture and natural resource students in Bumpers College based on DIT$_{-2}$ scores and STEM-B and STEU-B mean scores respectively. Moreover, this study sought to determine if EI predicted EDM among the student population of this study. Finally, the study sought to identify relationships between demographic characteristics and lifespan experiences and EI and EDM. The following research objectives guided the study:

RO 1. To describe Bumpers College students' EDM based on mean and individual DIT$_{-2}$ schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores.

RO 2. To describe Bumpers College students' EI based on mean STEM-B and STEU-B scores.

RO 3. To determine if EDM, as measured by DIT$_{-2}$ N2 scores, is predicted by EI as measured by STEM-B and STEU-B mean scores.

RO 4. To identify relationships between EDM as measured by DIT$_{-2}$ N2 scores and demographic characteristics and lifespan experiences of Bumpers College students.

RO 5. To identify relationships between EI, as measured by STEM-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

RO 6. To identify relationships between EI, as measured by STEU-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

Research Design

This study followed a nonexperimental survey design (Ary et al., 2019). This design allowed researchers to "ask questions about peoples' beliefs, opinions, characteristics, perceptions, and behaviors" (Ary et al., 2019, p. 312). A survey was conducted to acquire information from a proportional stratified sample of graduate and undergraduate students enrolled in Bumpers College in agriculture or natural resources related degrees during the spring 2023 term (*N = 1334*). The proportional stratified sample did not include Bumpers College students in the school of Human and Environmental Sciences or the researcher, a student in the population. Students from the School of Human and Environmental Sciences were not included as these programs do not include majors in agriculture or natural resources. The survey included four questionnaires. Two assessed emotional intelligence (STEM-B & STEU-B), one assessed ethical decision making (DIT_{-2}), and one collected demographic characteristics and lifespan experiences.

Questionnaires one and two assessed emotional intelligence using the Situational Test of Emotion Management (STEM-B) and the Situational Test of Emotional Understanding (STEU-B) (O'Connor et al., 2019). Questionnaire three, the Defining Issues Test (DIT-2), was used to assess students' moral reasoning and development (Bebeau, 2022). The fourth questionnaire collected demographic & lifespan experience data. This study received Institutional Review Board (IRB) approval before data collection; protocol number 2302451165. IRB documentation

is provided in Appendix A. The population, sampling, and data collection procedures are described in the following sections.

Population & Sample

The population for this study was undergraduate and graduate students enrolled in agriculture and natural resource degree programs within Bumpers College at the University of Arkansas for the spring 2023 academic term. A request was made, under the Freedom of Information Act (FOIA), to secure sampling frame information for Bumpers College students. The researcher filtered and sorted the data to remove the researcher and all School of Human and Environmental Science students in the population. The sample size was calculated for Bumpers College students in agriculture and natural resources at a confidence level of 95%, with ± 5% level of precision, .5 for the proportion of hypothesized variance which resulted in a needed sample size of 299 students (Ary et al., 2019).

Despite solid planning and execution of survey research, poor response rates can and do occur which impact the usability of data (Israel, 2012; Lindner et al., 2001). Four sources of non-response are people not at the location when an instrument was delivered; refusal to respond or partial responses; inability to respond; and those who cannot be found due to them moving or ineffective survey delivery procedures (Israel, 2012). Many researchers oversample by 10% to combat non-response (Israel, 2012). The sample was increased for oversampling and 326 participants were contacted for this study.

A larger sample size does not resolve the error if the sample is not representative of the population characteristics (Johnson & Shoulders, 2017). Thus, proportional stratified sampling was used. This sampling method included random selection, but the selected sample matched the proportion of the population for sub-groups (Ary et al., 2019). For this population the sub-groups

from which students were proportionally sampled included career (graduate and undergraduate) and declared degree program. For undergraduate students with more than one major or concentration, the first declared agriculture or natural resources degree in the institutional data was used. Based on proportional stratified sampling, 261 (79%) of recruited participants were undergraduate and 68 (21%) graduate students. Additionally, the students were proportionally stratified by degree program as shown in Tables 3 & 4.

Table 3

Percentages of Undergraduate Degree Programs

Degree Program	%
Agricultural Business BS	29%
Agricultural Education, Communication and Technology BS	6%
Animal Science BS	27%
Crop Science BS	3%
Environmental, Soil and Water Science BS	15%
Exploring Agriculture	0%
Food Science BS	7%
Horticulture, Landscape and Turf Sciences BS	7%
Non-declared Undergraduate Agriculture	1%
Poultry Science BS	5%

Table 4

Percentages of Graduate Degree Programs

Degree Program	%
Agricultural and Extension Education MS	9%
Agricultural, Food and Life Sciences PHD	11%
Agricultural Economics MS	9%
Animal Science MS	6%
Animal Science PHD	3%
Crop, Soil and Environmental Sciences MS	9%

Table 4 (Cont.)

Degree Program	%
Entomology MS	4%
Entomology PHD	0%
Food Science MS	6%
Food Science PHD	7%
Food Safety MS	13%
Horticulture MS	3%
Plant Pathology MS	2%
Poultry Science MS	8%
Poultry Science PHD	6%

Instrument

STEM-B, STEU-B, DIT$_{-2,}$ and a researcher developed demographic and lifespan experience questionnaire were used for this study. This section includes descriptions of STEM-B, STEU-B, and DIT$_{-2}$ including validity and reliability data. The DIT$_{-2}$ assessment was not included in the Appendix due to copyright. Appendix B contains the STEM-B, STEU-B, and researcher developed demographic and lifespan experience questions, as presented in Qualtrics to respondents.

STEM-B & STEU-B

MacCann and Roberts developed two ability EI assessments (STEM and STEU) based on the work of Mayer, Salovey, Caruso, and Sternberg (O'Connor et al., 2019). "These tests are becoming increasingly used in academic articles; the original paper has now been cited more than 250 times" (O'Connor et al., 2019, p. 6). STEM and STEU do not measure all four branches of the ability model of EI, but the two measured branches are the most cognitively complex of the ability model (O'Conner et al., 2019; Yan et al., 2019). The branches "can be grouped into

two areas: experiential EI (encompassing the lower two branches) and strategic EI (encompassing the two higher branches)" (Yan et al., 2019, p. 2). STEM measures the regulation construct and STEU measures the understanding construct (O'Conner et al., 2019; Yan et al., 2019).

The long version STEM assessment consists of 44 items related to anger (18), sadness (14), and fear (12). "The STEM was developed to be administered in both multiple-choice and rate-the-extent formats (i.e., test takers rate the appropriateness, strength, or extent of each alternative, rather than selecting the correct alternative)" (O'Connor et al., 2019, p. 8). Allen et al. (2015) reported Cronbach's alpha of .68 with a sample of 207 and .85 with a sample of 850 for STEM. Allen et al. (2015) reported evidence of convergent and discriminant validity and correlation with MSCEIT (original emotional intelligence assessment) scores of .30.

An 18 item STEM-B or brief format was developed by Allen et al. (2015) using item response theory. STEM-B was used for this study due to the data supporting the instrument, cost, and access to the instrument. STEM-B was free and was accessed from the Center for Open Science (2023a). STEM-B requires respondents to "select the most effective response to manage an emotional situation" (Center for Open Science, 2023a, p. 2). Scoring directions were provided with the instrument and the most correct responses were determined by judgment experts. Cronbach's alpha was reported as .84 with a reliability index of .87 for STEM-B (Allen et al., 2015).

The long version STEU assessment has 42 context related items with equal item numbers for context-reduced, personal-life context, and workplace context (O'Connor et al., 2019) STEU demonstrated convergent and discriminant validity (Allen et al., 2014). STEU correlated (.44) with MSCEIT. Cronbach's alpha was reported with 207 respondents as .71 and with 850

respondents as .72. “Although there seems to be some heterogeneity with regard to reliability estimates, these findings are acceptable for a new research instrument (Allen et al., 2014).

> Roseman’s (2001) emotion appraisal theory was used as the basis for item construction and scoring of the STEU such that answers could be regarded as correct or incorrect. According to this model, the 17 most common emotions can be explained by a combination of seven appraisal dimensions. The STEU comprised 42 items with each item presenting emotional situations, and participants had to choose which emotion the situation will most likely elicit. Fourteen emotions were assessed in three separate contexts—de-contextualized, work and private life (O’Connor et al., 2019, p. 8).

A 19 item STEU-B or brief format assessment was used for this study based on cost, length of time required to complete the assessment, and data supporting the validity and reliability of the instrument (Allen et al., 2014). Respondents selected the most likely emotional result for each situational scenario provided (Center for Open Science, 2023b). Cronbach’s alpha of .63 and IRT reliability of .70 were reported for the STEU-B instrument (Allen et al., 2014). “STEU-B and STEM-B can be useful tools in cases where research time is limited and for organizational management purposes” (Yan et al., 2019, p. 3).

“Relevant experts decided the scoring system [for STEM and STEU] based on their selection for the proportion of each option” (Yan et al., 2019, p. 2). Some studies using STEM-B utilized dichotomous scoring where data was recoded as 1 for correct responses and 0 for other options. Because item response theory was used (IRT), probability calculations for respondents’ selection of item answers and ability; thus,

respondents can be differentiated for EI levels (Yan et al., 2019). STEM-B partial scoring was used in this study. Partial scoring included recoding, so response values were assigned based on the proportion of experts who identified responses as correct for each scenario (Allen et al., 2015; Center for Open Science, 2023a). For STEU-B, recoding and scoring was dichotomous, so correct answers were coded as 1 and incorrect responses as 0 (Center for Open Science, 2023b).

DIT$_{-2}$

The DIT assessment, originally developed in the 1970s, reflected Kohlberg's model of moral development and was based on moral judgment development measured through interviews (Thoma & Dong, 2014). DIT utilized "multiple-choice recognition task asking participants to rate and rank a set of items" (Rest et al., 1999). DIT was revised and renamed DIT$_{-2}$ which is based on Kohlberg's moral development theory and expanded to fit a neo-Kohlbergian position (Center for the Study of Ethical Development, 2020; Thoma & Dong, 2014). Positive characteristics of the DIT$_{-2}$ include it being up-to-date, shorter, instructions are streamlined, and purges subjects for unreliability, and has slightly stronger validity and reliability trends (Bebeau & Thoma, 2003). The assessment takes approximately 30 to 45 minutes to complete and utilizes five moral scenarios (Bebeau, 2022; Center for the Study of Ethical Development, 2020).

The complete DIT$_{-2}$ consists of five dilemmas: 1) a father contemplates stealing food for his starving family from the warehouse of a rich man hoarding food; 2) a newspaper reporter must decide whether to report a damaging story about a political candidate; a school board chair must decide whether to hold a contentious and dangerous open meeting; 4) a doctor must decide whether to give an overdose of pain-killer to a suffering

but frail patient; 5) college students demonstrate against U.S. foreign policy. (Center for the Study of Ethical Development, 2020, para. 4)

Respondents receive 12 different fragmented rationale statements for each scenario presented. The fragmented statements trigger a schema, and the respondent has to make sense of the rationale (Thoma & Dong, 2014). "Thus, DIT items which match the participant's preferred schema are rated as important and are candidates for being ranked as most important" (Thoma & Dong, 2014, p. 2). The assessment yields respondent data for three schemas: 1) personal interest, 2) maintaining norms, and 3) post-conventional. The resulting clusters connect personal interest with Kohlberg's stages 2 & 3, maintaining norms with stage 4, and post-conventional with stages 5 & 6 (Center for the Study of Ethical Development; 2020; Thoma & Dong, 2014).

"Validity for DIT has been assessed in terms of seven criteria cited in over 400 published articles" (Center for the Study of Ethical Development, 2020, para. 17). Education level, in large samples across age groups, accounts for 30% to 50% of the variance, gender DIT growth is strongest among college attenders in longitudinal studies, DIT scores are impacted by educational interventions, and DIT scores and positive decision making skills and prosocial behaviors (Center for the Study of Ethical Development, 2020). "DIT scores are significantly related to cognitive capacity measures of Moral Comprehension ($r = .60$), to the recall and reconstruction of Postconventional moral arguments, to Kohlberg's measure, and (to a lesser degree) to other cognitive-developmental measures" (Center for the Study of Ethical Development, 2020, para. 17). Cronbach's alpha is reported as upper .70s to low .80s and test-retest reliability values are consistent with Cronbach's alpha (Center for the Study of Ethical Development, 2020).

DIT-2 scoring is completed by the Center for the Study of Ethical Development at the University of Alabama. After scoring, a researcher receives a PDF report, an Excel spreadsheet with all scored data, and an SPSS compatible file for additional analysis. Additionally, the researcher received a 68-page guide with variable descriptions, scoring explanations, and benchmarks based on the 13,000 scored responses (Bebeau & Thoma, 2003).

Demographic & Lifespan Experiences

A researcher developed demographic characteristics and lifespan experiences questionnaire was administered after the completion of the EI and EDM questionnaires. This questionnaire was the final component of the survey instrument. It consisted of 12 items intended to identify demographic characteristics including gender, race, age, education level, degree program, presence on campus (time as a student), and departmental affiliation. Experiences of respondents during the self and opportunity-oriented (emerging adulthood) stages of leader development were included. These questions sought to identify leadership development or ethics courses (50% or more of the course time was spent on the topic) taken during college, extra-curricular activities, and employment (Lui et al., 2020). These questions did not address all opportunity-oriented stages identified by Lui et al. (2020) to reduce response time. Romantic relationship was the key area not addressed for the opportunity-oriented area.

Instrument Testing

Cognitive interviews were conducted for the instrument questionnaires with graduate and undergraduate students in agriculture or natural resource degrees. Cognitive interviews can address questionnaire response error through the identification of miscommunication and breakdowns in the understanding, processing, and response (Willis, 2004). Three cognitive interviews were conducted in March of 2023 with individuals not selected during sampling.

Adjustments were made based on feedback. Pilot testing was not conducted due to established use of the STEM-B, STEU-B, and DIT-2 instruments and availability of reliability and validity data.

Data Collection

Data was collected during the spring 2023 semester starting on March 9th with an initial email request to the 326 sampled Bumpers College undergraduate and graduate students. The researcher utilized marketing communication strategies for email marketing to develop the email subject line, email content, and to determine optimal times for instrument distribution (Mailchimp, 2023). Qualtrics distributions and reminders were used to increase participation. The instrument was optimized for phone or web responses which are adopted technologies among the study population (Dillman et al., 2014; Pew Research Center, 2021). The researcher followed Dillman et al.'s (2014) strategies for internet surveys including varying the message and using multiple contacts, making contacts with the population in mind, composing emails with only the essential information to reduce length, and developing a strategically selected sender name and subject line. Despite utilizing these strategies and oversampling, only 18 complete and usable responses were submitted by week three. Thus, the researcher contacted sampled students' advisors and requested assistance encouraging students to respond. While incomplete instrument responses persisted, completed responses improved after advisor requests for assistance were sent. Descriptions of the correspondence and timing are provided below. The described correspondence is available in Appendix C.

Participants were first contacted via email to their official University of Arkansas accounts based on the email address provided under the FOIA request. The email informed students of their rights and the study risks, described the incentive, included an individual link to

the questionnaire, and requested their participation. Because email links were individualized, Qualtrics reminder emails were used to contact only those recipients who had not completed the questionnaire or who had incomplete responses. The initial email was sent on a Thursday at 9:00 a.m. The first reminder email was sent on the following Monday at 11 a.m. The first reminder email contained the same survey overview content as the first email and another request to participate. The email included an individual link to the Qualtrics instrument.

Students were not emailed during the third week due to spring break but were contacted the following week on Thursday. The message text was reduced, and a closing survey date was added to increase urgency. In conjunction with the student emails, 67 individual emails were sent to advisors requesting assistance encouraging student responses. Each message contained the faculty members' advisees who had been recruited to participate in the study and each message was sent with a high importance flag and a description of the survey sender name and email subject line. A final email was sent during week five with a message indicating the end date for the questionnaire and a reminder about incentives. Each message included the personalized link to the Qualtrics instrument. Fifty-one respondents completed all four questionnaires which yielded a 16% response rate. The DIT$_{-2}$ questionnaire was the third survey component and was where the greatest attrition occurred. Data collection ended on April 11. The respondents' emails were separated from the data and random numbers generated for 10 gift cards valued at $15 each. Notifications to incentive recipients were emailed along with direct links to the digital gift cards.

Data Analysis

STEM-B and STEU-B data was scored by the researcher. DIT$_{-2}$ data was scored by the Center for the Study of Ethical Development. All data were analyzed using SPSS Version

28.0.1.1 (14). This section describes how data was handled, coded, and analyzed for the four questionnaire components. The data will be retained by the researcher for at least three years per Institutional Review Board policy (University of Arkansas Institutional Review Board, n.d.).

STEM-B & STEU-B Data

STEM-B and STEU-B data were separated from the overall data set for respondents completing all four sections of the questionnaire and saved in separate spreadsheets for scoring. STEM-B variable names were listed as STEM01, STEM02, STEM03, etc. and the responses were coded as A = 1, B = 2, C = 3, and D = 4 in the scoring spreadsheet. The data was imported into SPSS and scored using the provided instrument scoring (proportional) syntax (Center for Open Science, 2023a). STEU-B variable names were listed as STEU01, STEU02, STEU03, etc. and the responses were coded as A = 1, B = 2, C = 3, D = 4, and E = 5. The data was imported into SPSS and scored using the provided instrument scoring (dichotomous) syntax (Center for Open Science, 2023b).

Mean scores for STEM-B and STEU-B were calculated and used for analysis and reporting for RO2 (mean STEM-B and STEU-B score reporting). Individual participant STEM-B and STEU-B mean scores and standard deviations were reported. For RO 3 (EI as measured by STEM-B and STEU-B as a predictor of EDM), mean scores for STEM-B and STEU-B along with N2 Scores from DIT$_{-2}$ were input into SPSS and analyzed. Correlations, regression diagnostics, and multiple regression were reported for the analysis.

DIT$_{-2}$ Data

Responses were exported to Excel from Qualtrics. Email addresses were removed as those were only collected for incentive distribution. DIT$_{-2}$ items were downloaded and copied into a separate spreadsheet in numerical format and uploaded to a shared Dropbox Drive folder

with the Center for the Study of Ethical Development. The Center for the Study of Ethical Development staff were emailed so they knew to begin scoring per the instrument directions. A student researcher discount was applied and the scoring cost per instrument was $2.25. Scored files were returned within two weeks of the payment being received, and the returned files included the original data with all the variables, the scored file with approximately 20 variables, a PDF summary report, and a SPSS output file with the same data as the PDF summary report. During analysis, four of the 51 submitted responses were deemed unreliable and were excluded from scoring. Thus, 47 responses were scored.

DIT-2 developmental indices were reported for personal interest (Stage 2/3), maintaining norms (Stage 4), and postconventional (P score) schemas. "Personal interest schema score represents the proportion of items selected that appeal to Stage 2 and 3 considerations" (Bebeau & Thoma, 2003, p. 18). Stage 2 focuses on advantages to the acting individual and fairness (Bebeau & Thoma, 2003). Stage 3 focuses on maintaining good favor and relationships with emphasis on good or evil intentions (Bebeau & Thoma, 2003).

"Maintaining norms schema score represents the proportion of items selected that appeal to Stage 4 considerations" (Bebeau & Thoma, 2003, p. 19). Stage 4 focuses on existing rules and formal structures guiding legal decisions (Bebeau & Thoma, 2003). "Postconventional schema score [P score] represents the proportion of items selected that appeal to Stage 5 and Stage 6 considerations" (Bebeau & Thoma, 2003, p. 19). Stage 5 focuses on minimal basic rights, majority rule decisions, and due process. Stage 6 focuses on relationship structure based on "intuitively appealing ideas" (Bebeau & Thoma, 2003, p. 19). P scores reflect the sum of items representing postconventional moral thinking. These scores are converted to percentages and range from 0 to 95 (Bebeau & Thoma, 2003).

N2 scores were calculated and reported. N2 scores outperform P scores for construct validity (Bebeau & Thoma, 2003). “An N2 score has two parts: the degree to which Postconventional items are prioritized (almost identical to the P score)—plus the degree to which Personal interest items (lower stage items) received lower ratings than the ratings given to Postconventional items (higher stage items)” (Bebeau & Thoma, 2003, p. 19). N2 scores are calculated as the sum of P scores and rating data weighted by three (Bebeau & Thoma, 2003).

Additional measurements of respondents EDM were analyzed and reported. Utilizer score (U score) presents a respondents’ “degree of match between items endorsed as most important and the action choice on the story” (Bebeau & Thoma, 2003, p. 21). “A high U score represents consistency between item endorsement and action choice; a low score represents poor lack of consistency” (Bebeau & Thoma, 2003, p. 21). Humanitarian/ liberalism (HUMLIB) scores were established after data from political science and philosophy professionals consistently earned the highest and most consistent P scores on the DIT (Bebeau & Thoma, 2003). These scores range from zero to five and accounts for “the number of times a respondent’s choice matches this high scoring group” (Bebeau & Thoma, 2003, p. 23). The number of “can’t decide choices” (NUMCD) reports the number of indecisive responses recorded for each story (Bebeau & Thoma, 2003).

Central tendency as estimated by means and dispersion as measured by standard deviations were reported for the EDM as measured and presented by the respondents’ developmental indices (personal interest, maintaining norms, P score, N2 score), U score, HUMLIB, and NUMCD scores for RO 1. Individual scores for developmental indices were also reported.

Demographic and Lifespan Data

Demographic and lifespan data were copied to a new spreadsheet and coded. A codebook for demographic and lifespan data was generated. N2 scores from the DIT_{-2}, STEM-B mean scores, and STEU-B mean scores were added to the demographic data for analysis. Only completed responses were used for this analysis. Organization of all data was maintained using assigned IDs for participants and cross-references to original data to ensure all data was managed correctly.

RO 4 (relationships between N2 score from the DIT_{-2} and demographics/lifespan experiences), RO 5 (relationships between STEM-B and demographics/ lifespan experiences), and RO 6 (relationships between STEU-B and demographics/ lifespan experiences) were analyzed and score associations were described for gender, race, highest level of education, leadership courses taken during college, ethics courses taken during college, current degree program enrollment, and hours of work weekly. Eta was selected for associations due to demographic not being dichotomous and because it measures linear and non-linear relationships. Eta-square "is an estimate of effect size used in analysis of variance that indicates the percentage of variation in the dependent variable accounted for by variation in the independent variable" (Ary et al., 2019). Reported Eta values identify if associations between variables exist; Eta values range from 0 (no association) to 1 (strong association).

Lifespan experiences for questions relating to activities students have or were currently involved in during college were coded as 1 = yes or 2 = no to describe involvement. Twenty-one variables were analyzed and point-biserial coefficients reported. Point-biserial correlations are used when one variable is dichotomous (activity involvement) and another variable is continuous (assessment scores). Coefficient values range from -1 (perfect negative) to +1 (perfect positive)

with 0 indicating no association (Glass & Hopkins, 1996). For this study, greater than .7 coefficient represented a strong association, .5 to .7 a moderate association, .3 to .5 a low association, and less than .3 little or no relationship.

Chapter IV

Findings

Purpose of the Study

This study described Bumpers College students' ethical decision making as measured by the DIT-2 and their EI as measured by the STEM-B and STEU-B instruments. This study also determined if EI was a predictor of EDM among respondents. Finally, the study identified relationships between demographic characteristics, lifespan experiences, EI, and EDM. The findings are not generalizable beyond the sample. The following research objectives guided the study:

RO 1. To describe Bumpers College students' EDM based on mean and individual DIT-2 schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores.

RO 2. To describe Bumpers College students' EI based on mean STEM-B and STEU-B scores.

RO 3. To determine if EDM, as measured by DIT-2 N2 scores, is predicted by EI as measured by STEM-B and STEU-B mean scores.

RO 4. To identify relationships between EDM as measured by DIT-2 N2 scores and demographic characteristics and lifespan experiences of Bumpers College students.

RO 5. To identify relationships between EI, as measured by STEM-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

RO 6. To identify relationships between EI, as measured by STEU-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

Respondent Characteristics

Respondents were proportionally sampled for program of study and degree program. Fifty-one instruments were completed (containing responses to all four questionnaires). Of the 51 respondents, 54.9% (n = 28) were undergraduate and 43.1% (n = 22) were graduate students in Bumpers College. One respondent (7.8%) reported other for the degree program which may reflect non-declared undergraduate students sampled. Table 5 presents the number of students (n) and frequency (%) of degree seekers by department. Other options were provided for both questions because students may have made degree program changes between when the sample frame was generated, and data collection occurred. Agricultural Economics and Agricultural Business; Agricultural Education, Communication and Technology, Food Science had the highest number of respondents with 19.6% respectively.

Table 5

Respondent Degrees by Department

Department	*n*	%
Agricultural Economics and Agricultural Business	10	19.6%
Agricultural Education, Communication & Technology	10	19.6%
Animal Science	7	13.7%
Crop Science	4	7.8%
Environmental, Soil & Water Science	3	5.9%
Food Science	10	19.6%
Horticulture, Landscape & Turf Sciences	2	3.9%
Poultry Science	2	3.9%
Other	3	5.9%

Additional respondent characteristics are described in this section below. Data in this section reflects only the 47 complete cases. Females accounted for 74.5% (n = 35), males for 21.3% (n = 10), and non-binary/ third gender for 2.1% (n = 1) of respondents. One response for prefer not to say was recorded. The majority of respondents were White (n = 40, 85.1%). Hispanic/ Latino and Two or more races accounted for 4.3% (n = 2) respectively, and Asian, Other, and Prefer not to say accounted respectively for 2.1% of respondents or n = 1 each. Respondent ages ranged from 18 to 49 with age 21 having the highest reported frequency (n =9). When asked about education level, 44.7% (n =21) had a high school diploma or equivalent, 2.1% (n = 1) had an associate degree, 44.7% (n = 21) had a 4-year bachelor degree, 6.4% (n =3) had a master degree, and one respondent (2.1%) had a doctoral degree.

Research Objective 1

Research objective one sought to describe Bumpers College students' EDM based on mean and individual DIT_{-2} schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores. DIT_{-2} analysis was completed by the Center for the Study of Ethical Development and descriptive analysis for ranges completed by the researcher using SPSS. Four responses were purged due to unreliable data during the scoring process as determined by the Center for the Study of Ethical Development. Respondent data purging occurs if the new checks total score exceeds 200 and indicates random responding, missing data, selection of responses based on style rather than instruction following, and nondiscrimination (Bebeau & Thoma, 2003). Central tendency as estimated by means and dispersion as measured by standard deviations were reported for each developmental index (schema scores) listed in Table 6. Individual developmental indices (schema scores) were reported in Table 7 and minimum and maximum scores reported.

Table 6

Means and Standard Deviations for Respondent Developmental Indices for EDM

Variable	*M*	*SD*
Personal Interest (Stage 2/3)	24.67	10.42
Maintain Norms (Stage 4)	31.12	15.49
Post Conventional (P score)	37.43	15.93
N2 Score	37.41	13.73

Note. N = 47

Table 7

Individual Respondent Scores for Developmental Indices DIT-2

ID	Personal Interest (Stage 2/3)	Maintain Norms (Stage 4)	Post Conventional (P score)	N2 Score
1	23.26	60.47	16.28	17.46
2	22.00	28.00	46.00	44.77
3	14.00	34.00	42.00	33.85
4	42.00	20.00	34.00	33.60
5	26.00	36.00	34.00	41.91
6	10.00	50.00	36.00	38.97
7	24.00	8.00	64.00	58.77
8	40.00	32.00	18.00	29.12
9	12.00	22.00	60.00	59.44
10	34.00	30.00	34.00	21.20
11	42.00	40.00	16.00	21.94
12	40.00	6.00	46.00	42.29
13	16.00	44.00	38.00	44.82
14	26.00	10.00	52.00	39.68
15	12.00	36.00	46.00	31.64
16	16.00	62.00	22.00	24.79

Table 7 (Cont.)

ID	Personal Interest (Stage 2/3)	Maintain Norms (Stage 4)	Post Conventional (P score)	N2 Score
17	30.00	54.00	16.00	27.75
18	16.00	40.00	28.00	27.44
19	18.00	42.00	30.00	29.50
20	36.00	54.00	4.00	4.12
21	30.00	24.00	40.00	40.00
22	32.00	18.00	44.00	43.93
23	34.00	20.00	30.00	35.24
24	26.00	10.00	46.00	40.56
25	8.00	46.00	38.00	43.98
26	40.00	6.00	46.00	40.89
27	14.00	10.00	72.00	66.82
28	18.00	20.00	54.00	55.97
29	24.00	10.00	42.00	48.84
30	38.00	26.00	36.00	31.06
31	44.00	44.00	0.00	8.54
32	14.00	38.00	42.00	46.67
33	12.00	10.00	68.00	63.75
34	32.00	42.00	16.00	27.71
35	16.33	16.33	57.14	57.33
36	36.00	30.00	30.00	36.42
37	36.00	36.00	14.00	17.09
38	20.00	28.00	50.00	49.13
39	40.00	10.00	50.00	37.40
40	10.00	60.00	30.00	28.38
41	18.00	38.00	40.00	38.39
42	22.00	48.00	18.00	28.18
43	18.00	34.00	46.00	53.22

Table 7 (Cont.)

ID	Personal Interest (Stage 2/3)	Maintain Norms (Stage 4)	Post Conventional (P score)	N2 Score
44	20.00	24.00	50.00	52.97
45	20.00	30.00	50.00	24.21
46	16.00	38.00	36.00	32.60
47	22.00	38.00	32.00	35.98

Note. N = 47

The mean score for the personal interest schema associated with Stages 2 and 3 of moral development, which represents the proportion of items selected that appeal to personal interests, was 24.67 (*SD* = 10.42, *SE* = 1.52). Personal interest schema scores ranged from 8.0 to 44.0. The mean score for the maintain norms schema associated with Stage 4 of moral development, which represents the proportion of items selected that appeal to maintaining social laws or norms, was 31.12 (*SD* = 15.49, *SE* = 2.56). The minimum score for maintain norms was 6.0 and the maximum score was 62.0.

For items related to Stage 5 and 6 of moral development or the postconventional stage as measured by the P score, the mean was 37.43 (*SD* = 15.93, *SE* = 2.32). Postconventional scores ranged from .00 to 72.0. The P score was most widely used prior to the development of the N2 score (Bebeau & Thoma, 2003). The P score represents responses where postconventional moral thinking or considerations for society and intuitively appealing ideals were selected by respondents.

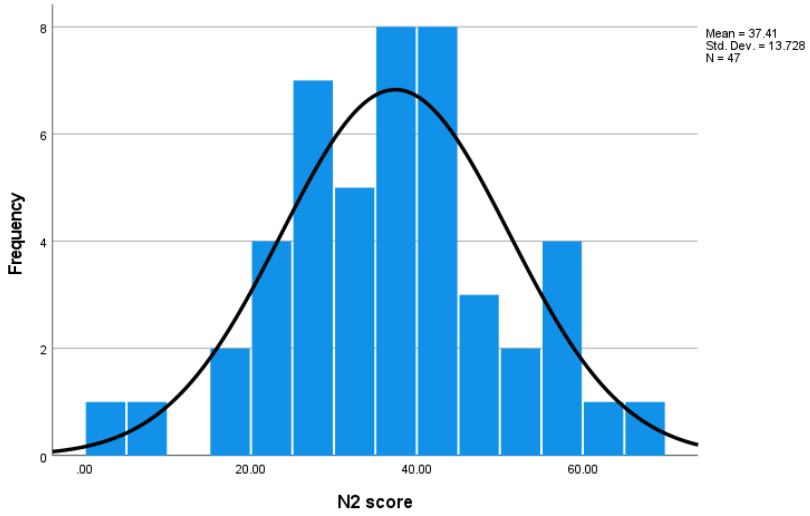
Finally, the N2 Score mean for respondents was 37.41 (*SD* = 13.73, *SE* = 2.0). The N2 score presents the proportion of lower stage items (personal interest) receiving lower ratings when compared to higher stage items (postconventional). N2 respondent scores ranged from 4.12 to 66.82. Scores for the P and N2 variables could range from 0 to 95 with the average college

student score in the 40s. Those graduating from professional school programs average in the 50s (Bebeau & Thoma, 2003).

Bumpers College students' mean P and N2 scores were slightly below average when compared to reported college student means for the DIT-2. However, 48.9% (n = 23) respondents had P scores of 40 or higher and 42.5% (n = 20) had N2 scores of 40 or higher. Seven (14.9%) respondents had P scores and six (12.8%) respondents had N2 scores in the 50s. Figure 4 presents the frequency distribution of N2 scores. Based on tests of normality, this data presents a normal distribution with heavy tails. Thus, the scores on each end show some skewness.

Figure 4.

Frequencies of N2 Scores for Respondents



Note. $p < .05$. Kolmogorov-Smirnov[a] is at the lower bound of true significance (p = .200) and Shapiro-Wilk is not significant (p = .968).

Central tendency as estimated by means and dispersion as measured by standard deviation were reported for U, HUMLIB, and NUMCD scores in Table 8.

Table 8

Means and Standard Deviations for Respondent U Score, HUMLIB, and NUMCD

Variable	*M*	*SD*
U Score	.18	.12
HUMLIB	1.87	1.17
NUMCD	1.36	1.21

Note. N = 47 for HUMLIB and NUMCD. U Score N = 37.

A mean of .18 (*SD* = .12, *SE* = .12) was reported for U Scores. U Scores represent "the degree of match between items endorsed as most important and the action choice on that story" (Bebeau & Thoma, 2003, p. 21). Respondents' U Scores ranged from -.09 to .45. "The U-score is scaled on a range of -1 (low utilization) to +1 (high utilization), though the typical range from large sample estimates is -.41 to .77" (Bebeau & Thoma, 2003, p.2). The typical ranges indicate respondents lacked consistency (*M = .18)* between their item endorsement and action choice for scenarios or stories in the DIT-2.

Humanitarian/ Liberalism (HUMLIB) scores ranged from .00 (10.6%), 1.0 (29.8%), 2.0 (31.9%), 3.0 (19.1%), 4.0 (6.4%), and 5.0 (2.1%). The mean HUMLIB score for respondents was 1.87 (*SD*=1.17, *SE* = .17). These findings support respondents' scores had limited matches with high P score groups. Only one respondent matched all six responses with high P score groups and only four respondents had five matched responses.

The Number of Can't Decides Choices (NUMCD) scores range from 0 to 5. Study respondents had a mean score of 1.36 (*SD*=1.21, *SE* = .16). Fourteen individuals (29.8%) had 0 NUMCD and 14 (29.8%) reported 1 NUMCD. Nine (19.1%) respondents had 2 NUMCD, eight (17.0%) had 3 NUMCD, and two (4.3%) had 4 NUMDC.

Research Objective 2

Research objective two sought to describe Bumpers College students' EI based on mean STEM-B and STEU-B scores. STEM-B and STEU-B responses were scored using SPSS and syntax provided by the Center for Open Science (2023a & 2023b). Mean scores were calculated in SPSS and reported in Table 9. Overall mean scores and standard deviations for STEM-B and STEU-B were calculated in SPSS and reported in Table 10.

Table 9

Individual STEM-B and STEU-B scores

ID	Score STEM-B	Score STEU-B
1	0.63	0.58
2	0.74	0.74
3	0.64	0.58
4	0.56	0.58
5	0.67	0.74
6	0.72	0.58
7	0.70	0.74
8	0.76	0.63
9	0.72	0.58
10	0.60	0.68
11	0.69	0.74
12	0.66	0.58
13	0.75	0.68
14	0.36	0.58
15	0.38	0.21
16	0.79	0.68
17	0.72	0.42
18	0.64	0.79
19	0.76	0.58
20	0.59	0.42
21	0.68	0.58
22	0.58	0.79
23	0.74	0.58
24	0.68	0.74
25	0.66	0.68
26	0.75	0.68

Table 9 (Cont.)

ID	Score STEM-B	Score STEU-B
27	0.65	0.68
28	0.69	0.79
29	0.76	0.67
30	0.75	0.63
31	0.71	0.58
32	0.44	0.26
33	0.51	0.47
34	0.74	0.74
35	0.79	0.84
36	0.75	0.79
37	0.68	0.79
38	0.73	0.58
39	0.57	0.53
40	0.23	0.42
41	0.63	0.68
42	0.67	0.68
43	0.63	0.79
44	0.73	0.58
45	0.66	0.68
46	0.54	0.74
47	0.58	0.16
48	0.76	0.74
49	0.61	0.68
50	0.33	0.26
51	0.71	0.74

Note. $N = 51$.

Table 10

Mean and Standard Deviations for STEM-B and STEU-B Overall Scores

Variable	*M*	*SD*
STEM-B Score	.648	.1220
STEU-B Score	.621	.1546

Note. $N = 51$.

STEM-B and STEU-B scores could range from .00 to 1. STEM-B scores ranged from .23 to .79. A mean score of .648 (*SD* = .122, *SE* = .02) was calculated for the overall STEM-B for all respondents. STEU-B scores ranged from .16 to .84. A mean score of .621 (*SD* = .155, *SE* = .02) was calculated for the overall STEU-B for all respondents. Respondents performed slightly better as demonstrated by the mean STEM-B score than they did on STEU-B assessment. Cronbach's alpha for STEM-B was .67 and .66 for STEU-B. STEM-B in this study reported a lower coefficient alpha than .84 as reported by Allen et al. (2013). The coefficient alpha for STEU-B was slightly higher than the .63 reported by Allen et al. (2013).

Research Objective 3

Research objective three sought to determine if EDM, as measured by DIT_{-2} N2 scores, was predicted by EI as measured by STEM-B and STEU-B mean scores. Data was analyzed using Pearson Correlation analysis for complete cases (n = 47) with 2-tailed significance. Correlations and significance levels are reported in Table 11.

Table 11

Correlations for STEM-B Mean Score, STEU-B Mean Score, and N2 Scores from DIT_{-2}

Variable	Score STEM-B	Score STEU-B	N2 Scores DIT_{-2}
Score STEM-B	-	.540**	.292*
Score STEU-B	-	-	.437**
N2 Scores DIT_{-2}	-	-	-

Note. ** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

STEM-B and STEU-B mean scores had a significant (p = .001) moderate positive correlation (r = .540, n = 47). STEM-B mean scores and N2 Scores from DIT_{-2} had a significant

(p = .046) low positive correlation (r = .292, n = 47). STEU-B mean scores and N2 Scores from DIT_{-2} had a significant (p = .002) low positive correlation (r = .437, n = 47).

Assumptions had to be met before linear multiple regression analysis could be conducted. The sample size had to be larger than 20 for each predictor or independent variable. Thus, a sample size of 40 was needed and met with 47 completed cases available for analysis. Normal distribution of the dependent variable or multivariate normality was confirmed through a descriptive analysis with histogram and normality plots with tests selected in SPSS. Interpretation of the Shapiro-Wilk showed non-statistically significant for the dependent variable, N2 Score (p = .968), which indicated normal distribution. Thus, the assumption was met.

Additional assumptions including multicollinearity, absence of auto-correlation, and homoscedasticity were checked through the linear regression analysis. N2 Scores were defined as the dependent variable and STEM-B and STEU-B were defined as independent variable. For statistics, model fit, R squared change, descriptives, part and partial correlations, case wise diagnostics and estimates (by default). For plots, *ZRESID was assigned to the y-axis and *ZPRED was assigned to the x-axis with normal probability plot selected. Cook's was turned on under the save menu and distances sub-menu.

Multicollinearity did not exist because correlations between the predictor variable were less than .7 as presented in Table 11. Predictor variables should correlate with the outcome (dependent variable) at a value greater than .3. STEM-B did not meet this requirement with a r = .292. STEU-B did meet the requirement with a r = .437. The Normal P-Plot of regression standardized residual for the dependent variable of N2 Score as presented in Figure 5, showed a mostly linear relationship. The N2 Score Scatterplot for regression standardized residual (y-axis)

and regression standardized predicted value (x-axis) (Figure 6) showed one data point outside of the -3 to +3 criteria.

Figure 5

Normal P-P Plot of Regression Standardized Residual Dependent Variable: N2 Score

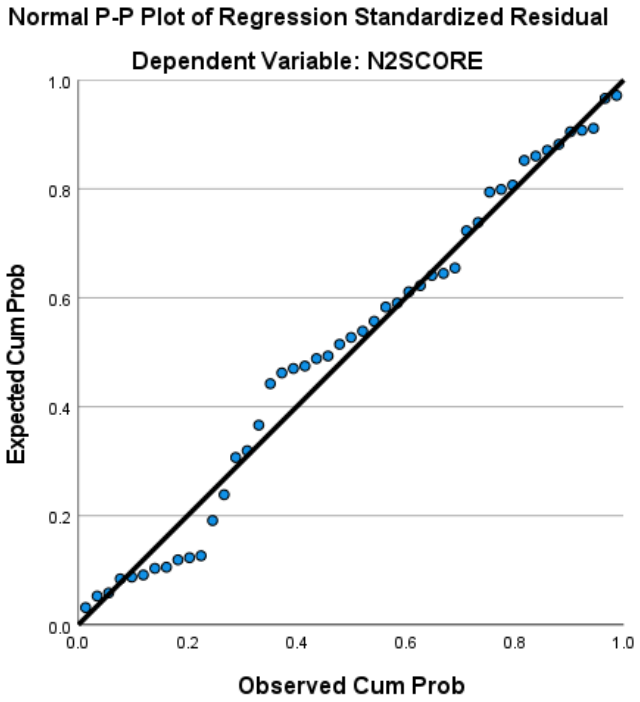
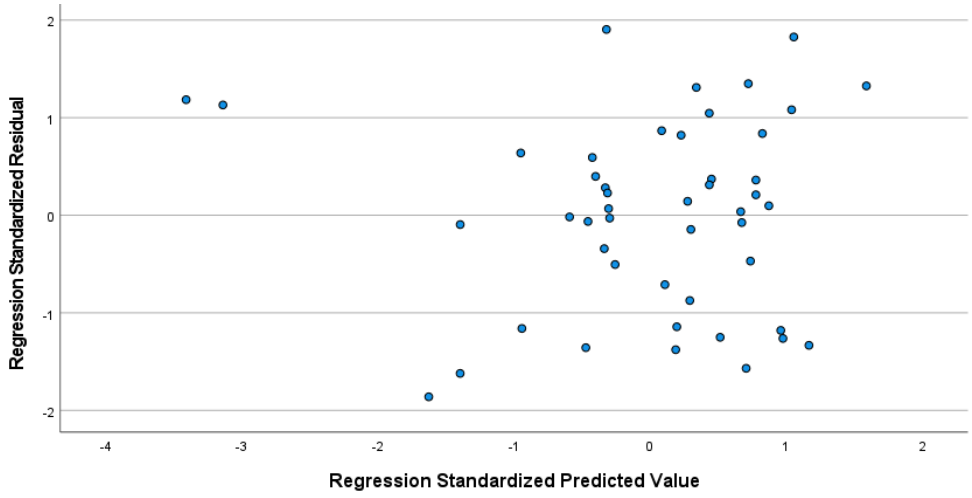


Figure 6

Scatterplot Dependent Variable: N2 Score



Residual statistics were checked as part of the next assumption and a range of -3 to +3 is acceptable. The minimum for standard residual with the data was -1.860 and the maximum 1.905, which were within the required range. Finally, Cook's distance values were a minimum of .000 and maximum of .253 which met the required value of < 1. Based on the assumptions, STEM-B did not meet the assumptions for linear regression. STEU-B did meet the assumptions and showed contribution of .394 when compared to STEM-B at just .080. STEU-B was statistically significant at .05 level with a $p = .018$ (Table 12). Thus, one would select the STEU-B as an assessment when looking to predict EDM based on N2 Scores from the DIT_{-2}.

Table 12

Regression results using STEM-B and STEU-B mean scores

Predictor	Standardized coefficients *beta*	sr^2	*p*
STEM-B	.080	.067	.622
STEU-B	.394*	.332	.018

Note. sr^2 represents the semi-partial correlation squared. *indicates $p < .05$

Research Objectives 4, 5, & 6

Research objectives four through six sought to identify relationships between demographic characteristics and lifespan experiences and DIT_{-2} N2, STEM-B, and STEU-B scores. Eta values and Eta-squared values were reported in Tables 13-15 respectively for gender, race, highest level of education, leadership courses taken during college, ethics courses taken during college, current degree program enrollment, hours of work weekly and DIT_{-2} N2 scores, STEM-B scores, and STEU-B scores, respectively. Tables 16-18 present the point-biserial correlations for the assessment scores and activity involvement (current or past) in college.

Table 13

DIT-2 N2 Scores and Demographic Characteristics and Lifespan Experiences Associations

Variable	η	η^2
Gender	.476	.226
Race	.324	.105
Highest level of education	.320	.102
Leadership development course completion	.370	.137
Ethics course completion	.395	.156
Degree program	.152	.023
Weekly work hours	.453	.205

Gender (η = .476) showed weak association and accounted for 22.6% of the variance in N2 scores. Additionally, weekly work hours (η = .453) showed weak association and accounted for 20.5% of variance in N2 scores. Degree program showed a very weak association (η = .152) and accounted for 2.3% of variance in N2 scores. Race, highest level of education, leadership development course completion, and ethics course completion had weak associations with N2 scores. Race accounted for 10.5% of variance, highest level of education accounted for 10.2% of variance, leadership development course completion accounted for 13.7% of variance, and ethics course completion accounted for 15.6% of variance between the respective variable and N2 scores from the DIT-2 assessment. "In heterogeneous samples, the level of formal education (Junior high, Senior high, college, graduate) accounts for 30% to 50% of the variance in DIT scores" (Bebeau & Thoma, 2003, p. 8). The findings in this study were much lower than the standard variance for level of formal education.

Table 14

Associations STEM-B Mean Scores and Demographic Characteristics and Lifespan Experiences

Variable	η	η^2
Gender	.531	.282
Race	.540	.292
Highest level of education	.206	.042
Leadership development course completion	.403	.162
Ethics course completion	.408	.196
Degree program	.380	.144
Weekly work hours	.459	.211

Gender (η = .531) showed moderate association and accounted for 28.2% of the variance in STEM-B mean scores. Additionally, race (η = .540) showed moderate association and accounted for 29.2% of variance in STEM-B mean scores as did weekly work hours (η = .459) accounting for 21.1% of variance. Leadership development course completion and ethics course completion showed weak association with (η = .403) and (η = .408) respectively. Leadership development course completion accounted for 16.2% of the variance in STEM-B scores and ethics course completion accounted for 19.6% of the variance. Highest level of education (η = .206) showed a low association and accounted for 4.3% of variance in STEM-B mean scores. Degree program showed weak association (η = .380) and accounted for 14.4% of variance in STEM-B mean scores.

Table 15

Associations STEU-B Mean Scores and Demographic Characteristics and Lifespan Experiences

Variable	η	η^2
Gender	.536	.287
Race	.618	.382
Highest level of education	.151	.023
Leadership development course completion	.348	.121
Ethics course completion	.236	.056
Degree program	.504	.254
Weekly work hours	.369	.136

Race (η = .618) showed moderate association with STEU-B mean scores and accounted for 38.2% of the variance in mean scores. Gender (η =.536) showed moderate association and accounted for 28.7% of the variance in STEU-B mean scores. Degree program (η = .504) showed moderate association and accounted for 25.4% of variation in STEU-B mean scores. Highest level of education (η = .151) had a little association and accounted for 2.3% of the STEU-B mean score variation. Ethics course completion (η = .236) also had a weak association and accounted for 5.6% of variation in STEU-B mean scores. Weekly work hours (η = .369) and leadership development course completion (η = .348) had higher association but were still weak and accounted for 13.6% and 12.1% of variance in STEU-B mean scores, respectively.

Table 16 presents the correlations for 19 of the 21 involvement activities and DIT_{-2} N2 scores. For the involvement activities, 1 = yes and 2 = was equal to no. Thus, scores closer to 1 indicate greater involvement and scores closer to 2 indicate less involvement in the activity. ROTC and Collegiate athletics/ spirit squads were not marked for involvement by any respondents, so those items were not reported. Intermural sport activity was the only

involvement with a significant ($p < 0.05$) low to weak positive association (r =.296) with N2 Scores. This means for study respondents, an increase in response to score or involvement increased the other score, but the relationship is not strong.

Table 16

Correlations for DIT-2 N2 Scores and Activity Involvement Lifespan Experiences

Variable	M	SD	N2 Score *r*
1. N2 Score	37.41	13.73	1
2. Campus affiliated organizations (RSOs)	1.32	.471	-1.88 [-.451, .105]
3. Honorary societies	1.62	.471	-.261 [-.510, .029]
4. Social fraternities/ sororities	1.79	.414	-.179 [-.444, .114]
5. Student government	1.94	.247	-.059 [-.340, .232]
6. Intramural sports	1.89	.312	.296* [.008, .536]
7. Church/ religious organizations	1.55	.503	.203 [-.90, .463]
8. Commodity Organizations	1.87	.337	-.193 [-.455, .100]
9. Professional organizations	1.74	.441	-.003 [-.290, .284]
10. Professional academic organizations	1.70	.462	-.038 [-.321, .252]
11. Ambassador or REPS teams	1.87	.337	-.142 [-.413, .151]
12. Band	1.98	.146	-.201 [-.462, .091]

Table 16 (Cont.)

Variable	M	SD	N2 Score *r*
13. On-campus job	1.55	.503	-.133 [-.405, .160]
14. Off-campus job	1.45	.503	.028 [-.261, .312]
15. Study tours (in US)	1.98	.146	.052 [-.239, .334]
16. Student-led fundraisers	1.79	.414	-.278 [-.524, .010]
17. Internships	1.53	.504	-.114 [-.389, .179]
18. School sponsored travel abroad	1.94	.247	-.247 [-.499, .043]
19. Judging teams	1.83	.380	.022 [-.267, .308]
20. National conventions or conferences	1.64	.486	-.030 [-.314, .260]

Note. * indicates $p < 0.05$ level (2-tailed). ** indicates $p < .01$ (2-tailed). Values in square brackets indicate the lower and upper range at 95% confidence interval for each correlation.

Table 17 presents the correlations for 19 of the 21 involvement activities and STEM-B mean scores. For the involvement activities, 1 = yes and 2 = was equal to no. Thus, scores closer to 1 indicate greater involvement and scores closer to 2 indicate less involvement in the activity. ROTC and Collegiate athletics/ spirit squads were not marked for involvement by any respondents, so those items were not reported. Campus affiliated organizations (RSOs) and U.S. study tours showed significant ($p < .01$) low negative correlations ($r = -.460$) with STEM-B mean scores. Additionally, church/ religious organizations a showed significant ($p < .05$) low negative correlation ($r = -.346$) with STEM-B mean scores. This indicates as one goes up the other goes down, but the connection is weak.

Table 17

Correlations for STEM-B Mean Scores and Activity Involvement Lifespan Experiences

Variable	M	SD	STEM-B *r*
1. STEM-B	.684	.1220	1
2. Campus affiliated organizations (RSOs)	1.32	.471	-.460** [-.660, -.199]
3. Honorary societies	1.62	.471	-.161 [-.429, .132]
4. Social fraternities/ sororities	1.79	.414	-.097 [-.374, .196]
5. Student government	1.94	.247	-.212 [-.470, .080]
6. Intramural sports	1.89	.312	.005 [-.283, .292]
7. Church/ religious organizations	1.55	.503	-.346* [-.576, -.065]
8. Commodity Organizations	1.87	.337	-.180 [-.444, .113]
9. Professional organizations	1.74	.441	-.192 [-.455, .100]
10. Professional academic organizations	1.70	.462	-.032 [-.316, .258]
11. Ambassador or REPS teams	1.87	.337	-.151 [-.420, .142]
12. Band	1.98	.146	-.137 [-.408, .156]
13. On-campus job	1.55	.503	-.067 [-.348, .224]
14. Off-campus job	1.45	.503	-.099 [-.375, .194]

Table 17 (Cont.)

Variable	M	SD	STEM-B *r*
15. Study tours (in US)	1.98	.146	-.468** [.208, .665]
16. Student-led fundraisers	1.79	.414	-.145 [-.415, .148]
17. Internships	1.53	.504	-.168 [-.434, .126]
18. School sponsored travel abroad	1.94	.247	-.173 [-.439, .120]
19. Judging teams	1.83	.380	-.192 [-.454, .101]
20. National conventions or conferences	1.64	.486	-.010 [-.296, .278]

Note. * indicates $p < 0.05$ level (2-tailed). ** indicates $p < .01$ (2-tailed). Values in square brackets indicate the lower and upper range at 95% confidence interval for each correlation.

Table 18 presents the correlations for 19 of the 21 involvement activities and STEU-B mean scores. For the involvement activities, 1 = yes and 2 = was equal to no. Thus, scores closer to 1 indicate greater involvement and scores closer to 2 indicate less involvement in the activity. ROTC and Collegiate athletics/ spirit squads were not marked for involvement by any respondents, so those items were not reported. Study tours in the U.S. had a significant ($p < .01$) low positive correlation ($r = .430$) with STEU-B mean scores. Thus, the variables moved in the same direction, but the association was weak.

Table 18

Correlations for STEU-B Mean Scores and Activity Involvement Lifespan Experiences

Variable	M	SD	1
1. STEU-B	.621	.1546	1
2. Campus affiliated organizations (RSOs)	1.32	.471	-1.87 [-.450, .106]
3. Honorary societies	1.62	.471	-.113 [-.387, .180]
4. Social fraternities/ sororities	1.79	.414	-.151 [-.420, .142]
5. Student government	1.94	.247	.020 [-.269, .305]
6. Intramural sports	1.89	.312	.222 [-.070, .479]
7. Church/ religious organizations	1.55	.503	-.002 [-.289, .285]
8. Commodity Organizations	1.87	.337	-.179 [-.443, .115]
9. Professional organizations	1.74	.441	-.029 [-.313, .261]
10. Professional academic organizations	1.70	.462	-.153 [-.421, .141]
11. Ambassador or REPS teams	1.87	.337	-.153 [-.421, .141]
12. Band	1.98	.146	-.029 [-.313, .260]
13. On-campus job	1.55	.503	-.031 [-.316, .258]
14. Off-campus job	1.45	.503	-.038 [-.322, .252]

Table 18 (Cont.)

Variable	M	SD	1
15. Study tours (in US)	1.98	.146	.430** [.163, .639]
16. Student-led fundraisers	1.79	.414	-.193 [-.455, .099]
17. Internships	1.53	.504	-.034 [-.318, .256]
18. School sponsored travel abroad	1.94	.247	-.145 [-.415, .148]
19. Judging teams	1.83	.380	-.173 [-.438, .120]
20. National conventions or conferences	1.64	.486	.170 [-.123, .436]

Note. * indicates $p < 0.05$ level (2-tailed). ** indicates $p < .01$ (2-tailed). Values in square brackets indicate the lower and upper range at 95% confidence interval for each correlation.

Summary of Findings

Of the 51 total study respondents, 54.9% were undergraduate students and 43.1% were graduate students with all Bumpers College agriculture and natural resources degree programs sampled represented in the collected responses. Respondent ages ranged from 18 to 49 with 74.5% being female, 21.3% male, and 2.1% nonbinary/third gender. Respondents were predominantly White (85.1%). The presented findings provided needed baseline data about the EDM and EI of students, STEU-B as a predictor of EDM, and provided baseline data about relationships between demographic characteristics and lifespan experiences. Conclusions and recommendations based on these findings will be presented in the next chapter.

Chapter V

Conclusions, Discussion, and Recommendations

This study described Bumpers College students' EDM as measured by the DIT$_{-2}$ and EI as measured by the STEM-B and STEU-B instruments. This study also determined if EI was a predictor of EDM among the sample students. Finally, the study identified relationships between demographic characteristics, lifespan experiences, EI, and EDM. The following research objectives guided the study:

RO 1. To describe Bumpers College students' EDM based on mean and individual DIT$_{-2}$ schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores.

RO 2. To describe Bumpers College students' EI based on mean STEM-B and STEU-B scores.

RO 3. To determine if EDM, as measured by DIT$_{-2}$ N2 scores, is predicted by EI as measured by STEM-B and STEU-B mean scores.

RO 4. To identify relationships between EDM as measured by DIT$_{-2}$ N2 scores and demographic characteristics and lifespan experiences of Bumpers College students.

RO 5. To identify relationships between EI, as measured by STEM-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

RO 6. To identify relationships between EI, as measured by STEU-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

Conclusions

Rest's EDM model and the ability model of EI served as the theoretical framework for this study. STEM-B and STEU-B, which measure the two most advanced cognitive stages of the ability model of EI, were used to assess EI abilities among respondents. STEM-B assessed the emotional regulation and STEU-B assessed the understanding of emotions of respondents. Overall mean scores and individual mean scores were reported for STEM-B and STEU-B. The DIT$_{-2}$ instrument was used to measure the EDM of respondents. The DIT$_{-2}$ assessed the personal interest, maintaining norms, and post-conventional (P score) schemas of respondents. Respondents' developmental indices were reported for the three schemas along with N2 scores (post-conventional scores in relation to rating data). Additionally, U (item endorsement compared to action choice), HUMLIB (match between P score and political science and philosophy professionals), and NUMCD (number of can't decide) mean scores were reported for respondents. Conclusions from this non-experimental survey study are presented below.

RO 1. To describe Bumpers College students' EDM based on mean and individual DIT$_{-2}$ schema scores (personal interest, maintaining norms, P score, N2 score) and mean U, HUMLIB, and NUMCD scores.

Ethical leadership definitions emphasize appropriate actions, decision-making, and outcome consideration (Brown et al., 2005; Demirtas, 2015). Agricultural leaders face complex issues and problems, and navigation of such requires leaders to effectively apply values and norms to make decisions about what is right and wrong within the food system (CAST, 2005; Zimdahl, 2020). Ethical dilemmas are addressed through EDM. Ethical dilemmas are complicated due to moral conflicts and consequences. Moreover, selecting an appropriate action is a complex process (Krishnakumar & Rymph, 2011; MacDougall et al., 2014). Postconventional EDM involves the

decision maker considering their values and principles and the decision maker having openness to modifying social rules when the values and principles of current rules do not represent the majority (Kohlberg & Hersh, 1977).

Rest's Neo-Kohlbergian Approach recognized shifts rather than stages of moral development (Rest et al., 2000). These shifts were termed schemas. The second and third stages of Kohlberg's moral development were reframed as a personal interest schema. The maintaining norms schema reflects stage five, and postconventional schema encompassed stages five and six (Rest et al., 2000). These are reflected in the DIT_{-2} as personal interest, maintaining norms, and P score. Low scores indicted schemas did not exist or a moral statement did not make sense where high ratings indicated schemas were activated (Rest et al., 1999).

For this study, respondents' personal interest schema scores ranged from 8 to 44 with a mean score of 24.67. These scores represent the proportion of items selected with focus on direct advantages, fairness of exchanges, maintaining relationships, and good or evil intentions of those acting in a scenario (Bebeau & Thoma, 2003). The maintaining norms schema scores ranged from 6 to 62 with a mean score of 31.12. These scores represent the proportion of selected items with focus on roles, the legal system, and organizational structure (Bebeau & Thoma, 2003). The post-conventional schema scores ranged from 0 to 72 with a mean score of 37.43. These scores represent the proportion of items with focus on minimal basic rights and due process (Bebeau & Thoma, 2003).

The mean P and N2 scores in this study were slightly below the average college student scores which is documented as being in the 40s (Bebeau & Thoma, 2003). The standard error was measured with a 95% confidence interval. P score standard error was 2.3 meaning with 95% probability scores would be 35.46 to 39.46 in the population. N2 score standard error was 2.0

meaning there is a 95% probability the population score would be between 35.41 and 39.41. The highest possible N2 score was 95 and the mean N2 score for respondents was 37.41 with scores ranging from 4.12 to 66.82. The N2 scores indicated respondents were not able to distinguish and rate Postconventional (higher stage items) over personal interest (lower stage items).

The U score described the amount of unity between the factor respondents rated most important compared to the action choice selected for the DIT-2 scenarios. Respondents first rated issues on a 5-point Likert scale from "Great" to "No". Then respondents ranked the top four items from "Most", "Second most", "Third most", and "Fourth most" important items. Finally, respondents read a story and selected the most favorable action to take for the story. U scores range from -1 (low unity) to +1 (high unity). Thus, the mean U score of .18 reflects low consistency between the top ranked item and the favorable action among respondents.

It is clear ethical reasoning is a desirable skill, but it is also teachable and focuses on skill development versus traditional curriculum focused on ethical theory recall (Ames et al., 2017). Previous study findings indicated positive outcomes of ethical issue consideration and improved decision making because of focused ethics education and instruction for students in undergraduate and graduate programs (Ames et al., 2017). Program recommendations using the DIT were developed from a meta-analysis of 55 ethical reasoning education programs. Recommendations include instruction lasting 3-12 weeks, integration of dilemma discussion and psychological development programs (Ames et al. 2017). Curriculum development should approach ethical reasoning actively, creating and utilizing an ethical reasoning framework supportive of EDM, aligning learning outcomes with the conceptualization of ethical reasoning, and collecting data on program participants (Ames et al., 2017). Teaching approaches should

have a balanced instructional approach for the use of logic and emotions in the decision making process (Holian, 2005).

RO 2. To describe Bumpers College students' EI based on mean STEM-B and STEU-B scores.

EI theory framed the engagement and use of emotions in problem solving (Mayer et al., 2016). The ability model of EI is measurable and can be used to predict outcomes. STEU-B relates to the third branch of EI and assesses how one understands and differentiates between emotions (Salovey & Grewal, 2005). Research has linked higher ability in EI with the ability to form personal relationships and work success. STEM-B focused on the fourth branch where skills are linked to social settings and involve the complex cognitive process of regulating the emotions of oneself and others (, O'Conner et al., 2019; Salovey & Gewal, 2005; Yan et al., 2019). Edelman and van Knippenberg (2018) suggest EI ability tests as a leader selection tool for organizations. This study indicates EI mean score performance should be improved as EI is a leader selection tool, is linked to personal relationship formation, and is linked to work achievement.

STEM-B and STEU-B mean scores can range from .0 to 1.0. The mean STEM-B scores of respondents was .648 and mean STEM-B scores were .621. Standard error for each mean score was .02 meaning there is a 95% probability population mean scores would be between .628 and .668 for STEM-B and .601 and .641 for STEU-B. This provided a baseline for comparison with other studies utilizing STEM-B and STEU-B. Based on the comparison, the current study respondents have room for improvement in emotional management and emotional understanding.

RO 3. To determine if EDM, as measured by DIT$_{-2}$ N2 scores, is predicted by EI as measured by STEM-B and STEU-B mean scores.

Connelly et al. found negative and positive emotions caused variance in ethical choices made (Craft, 2013). In a study by Hopkins and Deepa (2018), the researchers suggested higher EI was equated to understanding implications of decisions on society. It was recommended workplaces utilize EI training with 360-degree assessments to develop self-awareness and educational curriculum to move people beyond rule and procedures to behavioral impacts (Hopkins & Deepa, 2018). Dangmei and Pratap Singh (2017) suggested ethical decisions were guided by EI among graduate and undergraduate students. Dangmei and Pratap Singh's 2017 study concluded EI was a predictor of ethical competence. Finally, Krishnakumar and Rymph (2012) studied junior and senior business major and minors and found age was related to EDM, but gender was not. The researchers concluded high EI scoring individuals dealt with ethical dilemma emotions better than low EI scoring individuals.

This study showed the STEM-B and STEU-B assessments had a moderate positive correlation as indicated by r =.540 (p < .01), STEM-B and DIT$_{-2}$ had a low positive correlation as indicated by r = .292 (p < .05), and STEU-B and DIT$_{-2}$ had a low positive correlation as indicated by r = .437 (p < .05). Regression analysis indicated emotional understanding as measured by the STEU-B could be a predictor of EDM as measured by DIT$_{-2}$ N2 scores. STEM-B did not meet the requirements, so emotional management as measured by the STEM-B is not a predictor of EDM as measured by DIT$_{-2}$ N2 scores.

RO 4. To identify relationships between EDM as measured by DIT-2 N2 scores and demographic characteristics and lifespan experiences of Bumpers College students.

A meta-analysis of 38 studies revealed mixed relationship results between gender and EDM. Other variables previously studied in connection with EDM included education, employment, experience, age, personal values, emotions and moods, and cognitive moral development. Bebeau and Thoma (2003) emphasized findings for heterogeneous samples and relationships with demographic and lifespan experience variables.

For this study, EDM as measured by DIT-2 N2 scores, and demographic and lifespan experiences had weak to very weak associations. Only intermural sports involvement had a significant correlation (low negative). This study produced mixed results based on demographic and lifespan experiences, but the data was homogeneous for gender and race.

RO 5. To identify relationships between EI, as measured by STEM-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

For this study, EI as measured by STEM-B had a moderate association for gender, race, and weekly hours of work. Weak associations with leadership and ethics course completion variables were found. Student organizations/clubs (RSOs), U.S. study tours, and church/religious organizations had low negative correlations with EI as measured by STEM-B.

To identify relationships between EI, as measured by STEU-B mean scores, and demographic characteristics and lifespan experiences of Bumpers College students.

For this study, EI as measured by STEU-B and demographic and lifespan experiences had moderate associations with race, gender, and degree program. Weak associations were found for weekly work hours, leadership course completion, and ethics course completion. Only the U.S.

study tours involvement activity had a correlation to EI as measured by STEU-B; the correlation was positive but weak.

Leader development focuses on individual development where leadership development focuses on how development occurs to improve overall performance. Liu et al. (2020) indicated developmental experience as a key trigger in leader development. Participants in this study fit Liu et al.'s categories of emerging adulthood (18-30) and middle adulthood (30-60). Experiential exploration and self and opportunity oriented developmental stages were represented in the life experience questions in this study. Extra-curricular activities provide developing leaders opportunities to practice skills. Interactions with others also supports socio-emotional development which is key in EI. This study did not support the literature on lifespan experiences and EI or leader development being connected as associations between the variables had only moderate to weak associations.

Recommendations for Practice

Agriculture and natural resource leaders must be prepared to address the complex issues facing the industry through ethical means (CAST, 2005; Zimdahl, 2020). This study indicated Bumpers College agriculture and natural resource students could benefit from educational programming to move their decision making past personal interest and maintaining schemas to the Postconventional schema. EDM specific curriculum should be developed and taught to increase Postconventional decision making over personal interest decision making. An increase in P scores and N2 scores on the DIT_{-2} which indicate EDM has been an outcome of previous educational interventions (Ames et al., 2017; Holian, 2005).

Curriculum is also needed to help undergraduate and graduate students build congruence between identifying the appropriate ethical issue in a situation and an action that aligns with the

issue. This should increase the DIT-2 U scores and improve students' abilities to make appropriate ethical decisions. Curriculum and instruction focusing on emotional management and understanding should be incorporated into collegiate classes. Additionally, if the goal is to improve EDM greater emphasis should be placed on emotional understanding curriculum as it was a predictor of EDM in this study. Curriculum development should follow the recommendations of Ames et al. (2017) based on the meta-analysis of 55 intervention programs. These recommendations include 3-12 weeks of instruction, dilemma discussions, active ethical reasoning, developing and using ethical reasoning frameworks that align with EFM, and aligning learning outcomes and ethical reasoning conceptualization (Ames et al., 2017). Holian (2005) emphasized the need for an instructional approach to decision making using logic and emotion.

Recommendations for Research

The need for curriculum development and delivery was underscored in the recommendations for practice. Additionally, those integrating ethical decision making curriculum should assess participants and evaluate the effectiveness of the educational approach. This will provide support for future curriculum development. This should be a primary focus for those in agricultural and natural resources, since educational program and intervention data is primarily focused on medical and business settings.

Based on the findings of this study, future inquiry related to EDM and EI is needed. Study replication is needed with a larger sample to ensure the baseline data collected represents the population to better understand students' EDM and EI. Future study replication should focus on determining if relationships exist between STEM-B, STEU-B, and DIT$_{-2}$ variables along with other measurements of EDM and the ability model of EI. Because STEM-B was not established as a predictor of EDM in this study, replication is needed to verify this finding.

Additional studies should take a longitudinal approach so results are collected over time and comparisons of findings with previous studies indicating education and life experiences can impact EDM can be made (Bebeau & Thoma, 2003).

This study indicated homogeneity in the demographics for age and race of respondents which have shown relationships with EDM and EI in some studies. Thus, additional heterogeneous data is needed to explore these variables in relation to the DIT-2. Replicating the study with a larger, more diverse sample would increase the heterogeneity of the sample and provide a better understanding of relationships between EDM, EI, and demographics and life experiences.

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Appendix A

IRB Approval

UNIVERSITY OF ARKANSAS

To:	Casandra K Cox
From:	Douglas J Adams, Chair IRB Expedited Review
Date:	03/09/2023
Action:	**Exemption Granted**
Action Date:	03/09/2023
Protocol #:	2302451165
Study Title:	A pilot study of Bumpers College students emotional intelligence and ethical decision making.

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

Appendix B

Qualtrics Questionnaire

A Pilot Study of Students' Ethical Decision Making and Emotional Intelligence

Welcome and thank you for participating in this survey!

Please read this consent document carefully before you decide to participate.

Participation in this study is entirely voluntary. The purpose of this study is to assess undergraduate and graduate students, studying agriculture, food and natural resources in Bumpers College, ethical decision making and emotional intelligence to develop future curriculum.

If you agree to be in the study, you will be asked to answer a series of questions and provide some demographic information. The entire instrument will take 45 minutes or less. If at any point you need to revisit a question, click the "back" button. We do not anticipate any risks for you participating in this study, other than those encountered in daily life. Participation is voluntary, and participants may stop participation at any time. If you come to a question you prefer not to answer, you may skip it and proceed to the next question.

Participants, who meet the criteria and complete all four parts of the questionnaire, will be entered into a drawing for a chance to receive a $15 gift card. Ten gift cards will be awarded at the end of the data collection period. All information collected will be kept confidential to the extent allowed by law and University of Arkansas policy. Your name will not be collected, but your email address is needed to contact recipients of the incentives. Your email address will not be linked to your individual answers in any data reports.

Should you have questions, comments, or concerns, please contact Casandra Cox at ccrumle@uark.edu. Approval has been granted for this project (Protocol number: 280423) and you may contact Ro Windwalker, the University's IRB Coordinator, at 479-575-2208 or irb@uark.edu.

Your help with my dissertation project is appreciated!

By selecting yes, you provide consent to participate in this study about ethical decision making and emotional intelligence.

- ○ Yes, I consent to participate in the study.
- ○ No, I do not consent to participate in the study.

In this section, you will be given a statement and will select the most effective action for each scenario.

Wai-Hin and Connie have shared an office for years but Wai-Hin gets a new job and Connie loses contact with her. *What action would be most effective for Connie?*

- ○ Just accept that she is gone and the friendship is over.
- ○ Ring Wai-Hin and ask her out for lunch or coffee to catch up.
- ○ Contact Wai-Hin and arrange to catch up but also make friends with her replacement.
- ○ Spend time getting to know the other people in the office, and strike up new friendships.

Manual is only a few years from retirement when he finds out his position will no longer exist, although he will still have a job with a less prestigious role. *What action would be the most effective for Manual?*

- ○ Carefully consider his options and discuss it with his family.
- ○ Talk to his boss or the management about it.
- ○ Accept the situation, but still feel bitter about it.
- ○ Walk out of that job.

Surbhi starts a new job where he doesn't know anyone and finds that no one is particularly friendly. *What action would be the most effective for Surbhi?*

- ○ Have fun with his friends outside of work hours.
- ○ Concentrate on doing his work well at the new job.
- ○ Make an effort to talk to people and be friendly himself.
- ○ Leave the job and find one with a better environment.

Andre moves away from the city his friends and family are in. He finds his friends make less effort to keep in contact than he thought they would. *What action would be the most effective for Andre?*

- ○ Try to adjust to life in the new city by joining clubs and activities there.
- ○ He should make the effort to contact them, but also try to meet people in his new city.
- ○ Let go of his old friends, who have shown themselves to be unreliable.
- ○ Tell his friends he is disappointed in them for not contacting him.

Clayton has been overseas for a long time and returns to visit his family. So much has changed that Clayton feels left out. *What action would be the most effective for Clayton?*

- ○ Nothing - it will sort itself out soon enough.
- ○ Tell his family he feels left out.
- ○ Spend time listening and getting involved again.
- ○ Reflect that relationships can change with time.

Daniel has been accepted for a prestigious position in a different country from his family, who he is close to. He and his wife decide it is worth relocating. *What action would be the most effective for Daniel?*

- ○ Realize he shouldn't have applied for the job if he didn't want to leave.
- ○ Set up a system for staying in touch, like weekly phone calls or emails.
- ○ Think about the great opportunities this change offers.
- ○ Don't take the position.

Mei Ling answers the phone and hears that close relatives are in hospital critically ill. *What action would be the most effective for Mei Ling?*

- ○ Let herself cry and express emotion for as long as she feels like.
- ○ Speak to other family to calm herself and find out what is happening, then visit the hospital.
- ○ There is nothing she can do.
- ○ Visit the hospital and ask staff about their condition.

Shona has not spoken to her nephew for months, whereas when he was younger they were very close. She rings him but he can only talk for five minutes. *What action would be the most effective for Shona?*

- ○ Realize that he is growing up and might not want to spend so much time with his family any more.
- ○ Make plans to drop by and visit him in person and have a good chat.
- ○ Understand that relationships change, but keep calling him from time to time.
- ○ Be upset about it, but realize there is nothing she can do.

Mina and her sister-in-law normally get along quite well, and the sister-in-law regularly baby-sits for her for a small fee. Lately she has also been cleaning away cobwebs, commenting on the mess, which Mina finds insulting. *What action would be the most effective for Mina?*

- ○ Tell her sister-in-law these comments upset her.
- ○ Get a new babysitter.
- ○ Be grateful her house is being cleaned for free.
- ○ Tell her only to baby-sit, not to clean.

Juno is fairly sure his company is going down and his job is under threat. It is a large company and nothing official has been said. *What action would be the most effective for Juno?*

- ○ Find out what is happening and discuss his concerns with his family.
- ○ Try to keep the company afloat by working harder.
- ○ Start applying for other jobs.
- ○ Think of these events as an opportunity for a new start.

Mallory moves from a small company to a very large one, where there is little personal contact, which she misses. *What action would be the most effective for Mallory?*

- ○ Talk to her workmates, try to create social contacts and make friends.
- ○ Start looking for a new job so she can leave that environment.
- ○ Just give it time, and things will be okay.
- ○ Concentrate on her outside-work friends and colleagues from previous jobs.

A demanding client takes up a lot of Jill's time and then asks to speak to Jill's boss about her performance. Although Jill's boss assures her that her performance is fine, Jill feels upset. *What action would be the most effective for Jill?*

- ○ Talk to her friends or workmates about it.
- ○ Ignore the incident and move on to her next task.
- ○ Calm down by taking deep breaths or going for a short walk.
- ○ Think that she has been successful in the past and this client being difficult is not her fault.

Blair and Flynn usually go to a café after the working week and chat about what's going on in the company. After Blair's job is moved to a different section in the company, he stops coming to the café. Flynn misses these Friday talks. *What action would be the most effective for Flynn?*

- ○ Go to the cafe or socialize with other workers.
- ○ Don't worry about it, ignore the changes and let Blair be.
- ○ Not talk to Blair again.
- ○ Invite Blair again, maybe rescheduling for another time.

Michelle's friend Dara is moving overseas to live with her partner. They have been good friends for many years and Dara is unlikely to come back. *What action would be the most effective for Michelle?*

- ○ Forget about Dara.
- ○ Spend time with other friends, keeping herself busy.
- ○ Think that Dara and her partner will return soon.
- ○ Make sure she keeps in contact through email, phone or letter writing.

Hannah's access to essential resources has been delayed and her work is way behind schedule. Her progress report makes no mention of the lack of resources. *What action would be the most effective for Hannah?*

- ○ Explain the lack of resources to her boss or to management.
- ○ Learn that she should plan ahead for next time.
- ○ Document the lack of resources in her progress report.
- ○ Don't worry about it.

Reece's friend points out that her young children seem to be developing more quickly than Reece's. Reece sees that this is true. *What action would be the most effective for Reece?*

- ○ Talk the issue over with another friend.
- ○ Angrily confront her friend about making such statements.
- ○ Realize that children develop at different rates.
- ○ Talk to a doctor about what the normal rates of development are.

Jumah has been working at a new job part-time while he studies. His shift times for this week are changed at the last minute, without consulting him. *What action would be the most effective for Jumah?*

- ○ Refuse to work the new shifts.
- ○ Find out if there is some reasonable explanation for the shift changes.
- ○ Tell the manager in charge of shifts that he is not happy about it.
- ○ Grumpily accept the changes and do the shifts.

Julie hasn't seen Ka for ages and looks forward to their weekend trip away. However, Ka has changed a lot and Julie finds that she is no longer an interesting companion. *What action would be the most effective for Julie?*

- ○ Cancel the trip and go home.
- ○ Realize that it is time to give up the friendship and move on.
- ○ Understand that people change, so move on, but remember the good times.
- ○ Concentrate on her other, more rewarding friendships.

In this section, you will read a scenario and select a response based on the question posed.

Xavier completes a difficult task on time and under budget. *Xavier is most likely to feel?*

- ○ Surprise
- ○ Pride
- ○ Relief
- ○ Hope
- ○ Joy

If the current situation continues, Denise's employer will probably be able to move her job to a location much closer to her home, which she really wants. *Denise is most likely to feel?*

- ○ Distress
- ○ Joy
- ○ Surprise
- ○ Hope
- ○ Fear

Song finds out that a friend of hers has borrowed money from others to pay urgent bills, but has in fact used the money for less serious purposes. *Song is most likely to feel?*

- ○ Anger
- ○ Excitement
- ○ Contempt
- ○ Shame
- ○ Horror

Charles is meeting a friend to see a movie. The friend is very late and they are not in time to make it to the movie. *Charles is likely to feel?*

- ○ Depressed
- ○ Frustrated
- ○ Angry
- ○ Contemptuous
- ○ Distressed

Someone believes that another person harmed them on purpose. There is not a lot that can be done to make things better. *The person involved is most likely to feel?*

- ○ Dislike
- ○ Rage
- ○ Jealousy
- ○ Surprise
- ○ Anxiety

Jim enjoys spending Saturdays playing with his children in the park. This year they have sporting activities on Saturdays and cannot go to the park with him any more. *Jim is most likely to feel?*

- ○ Angry
- ○ Sad
- ○ Frustrated
- ○ Distressed
- ○ Ashamed

Megan is looking to buy a house. Something happened and she felt regret. *What is most likely to have happened?*

- ○ She didn't make an offer on a house she wanted, and now she is trying to find out if it is too late.
- ○ She found a house she didn't think she would find.
- ○ She couldn't make an offer on a house she liked because the bank didn't get her the money in time.
- ○ She didn't make an offer on a house she liked and now someone else has bought it.
- ○ She made an offer on a house and is waiting to see if it is accepted.

Mary was working at her desk. Something happened that caused her to feel surprised. *What is most likely to have happened?*

- ○ Her work-mate told a silly joke.
- ○ She was working on a new task she hadn't dealt with before.
- ○ She found some results that were different from what she thought they would be.
- ○ She realized she would not be able to complete her work.
- ○ She had to do a task she didn't normally do at work.

Someone thinks that another person has deliberately caused something good to happen to them. *They are most likely to feel?*

- ○ Hope
- ○ Pride
- ○ Gratitude
- ○ Surprise
- ○ Relief

By their own actions, a person reaches a goal they wanted to reach. *The person is most likely to feel?*

- ○ Joy
- ○ Hope
- ○ Relief
- ○ Pride
- ○ Surprise

An unwanted situation becomes less likely or stops altogether. *The person involved is most likely to feel?*

- ○ Regret
- ○ Hope
- ○ Joy
- ○ Sadness
- ○ Relief

Hasad tries to use his new mobile phone. He has always been able to work out how to use different appliances, but he cannot get the phone to function. *Hasad is most likely to feel?*

- ○ Distressed
- ○ Confused
- ○ Surprised
- ○ Relieved
- ○ Frustrated

Dorian's friend is ill and coughs all over him without bothering to turn away or cover his mouth. *Dorian is most likely to feel?*

- ○ Anxiety
- ○ Dislike
- ○ Surprise
- ○ Jealousy
- ○ Rage

Someone believes another person has deliberately caused something good to stop happening to them. However, they feel they can do something about it. *They are most likely to feel?*

- Angry
- Contemptuous
- Distress
- Depressed
- Frustrated

Matthew has been at his current job for six months. Something happened that caused him to feel regret. *What is most likely to have happened?*

- He did not apply for a position he wanted, and has found out that someone else less qualified got the job.
- He did not apply for a position he wanted, and has started looking for a similar position.
- He found out that opportunities for promotion have dried up.
- He found out that he didn't get a position he thought he would get.
- He didn't hear about a position he could have applied for and now it is too late.

In this section, you will be given a scenario and task and asked to rate and then rank items related to the scenario. An example with specific directions is provided to help you understand this process.

- Sad
- Angry
- Distressed
- Frustrated

Leila has been unable to sleep well lately and there are no changes in her life that might indicate why. *Leila is most likely to feel?*

- Angry
- Scared
- Sad
- Distressed
- Guilty

This section is where the DIT-2 instrument was presented to respondents.

In this section, you will respond to demographic and experience questions.

What is your gender?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

What is your race?

- ○ American Indian or Alaska Native
- ○ Asian
- ○ Black or African American
- ○ Hispanic/ Latino
- ○ Native Hawaiian or Pacific Islander
- ○ White
- ○ Two or more
- ○ Other
- ○ Unknown
- ○ Prefer not to say

What is your current age?

_____

What is your highest level of completed education?

- ○ High school or GED
- ○ Associate's degree
- ○ 4-year bachelor's degree
- ○ Master's degree
- ○ Doctoral degree

In which degree program are you currently enrolled?

- ○ Undergraduate degree in Bumpers College of Agricultural, Food and Life Sciences
- ○ M.S. degree program in Bumpers College of Agricultural, Food and Life Sciences
- ○ Ph.D. degree program in Bumpers College of Agricultural, Food and Life Sciences
- ○ Other

If you are an undergraduate degree seeking student, please select the option that best describes your presence on campus.

- ○ First year completing UofA courses immediately following high school graduation
- ○ Second year completing UofA courses immediately following high school graduation
- ○ Third year completing UofA courses immediately following high school graduation
- ○ Fourth year or more completing UofA courses immediately following high school graduation
- ○ First year on campus immediately after attending a community or junior college
- ○ Second year or more completing UofA courses immediately after attending a community or junior college
- ○ Other

Select the department in which your current degree is associated from the list. *If you have more than one program declared, select just one.*

- ○ Agricultural Business
- ○ Agricultural Education, Communication & Technology
- ○ Animal Science
- ○ Crop Science
- ○ Environmental, Soil & Water Science
- ○ Food Science
- ○ Horticulture, Landscape & Turf Sciences
- ○ Poultry Science
- ○ Other

Have you taken any leadership development courses while in college? *More than 50% of class time was spent on leadership theory or approaches.*

- ○ Definitely not
- ○ Probably not
- ○ Might or might not
- ○ Probably yes
- ○ Definitely yes

Have you taken any ethics courses while in college? *More than 50% of class time was spent on ethics topics.*

- ○ Definitely not
- ○ Probably not
- ○ Might or might not
- ○ Probably yes
- ○ Definitely yes

Select all of the following activities in which you currently or have previously participated in during college.

- [ ] Campus affiliated organizational clubs (RSOs)
- [ ] Honorary societies
- [ ] Social fraternities/ sororities
- [ ] Student government
- [ ] Intramural sports
- [ ] Church/ Religious Organizations
- [ ] Commodity Organizations (Cattleman's groups, Row Crop Groups, The Poultry Federation, etc.)
- [ ] Professional Organizations (State Farm Bureau, State Women in Ag, Livestock Breed groups, etc.)
- [ ] Professional Academic Organizations (affiliated with your academic area)
- [ ] Ambassador or REPS teams

Select all of the following in which you currently or have previously participated in during college.

- [ ] Band
- [ ] ROTC
- [ ] Collegiate Athletics/ cheerleading/ mascots/ spirit squads
- [ ] On Campus Job
- [ ] Off Campus Job
- [ ] Study tours in the US
- [ ] Student-led fundraisers
- [ ] Internships
- [ ] School sponsored study abroad
- [ ] Judging Teams
- [ ] National Conventions or Conferences

Please select the option that best describes your current employment as a student.

- ○ I currently do not work.
- ○ I work less than 10 hours.
- ○ I work 10 to 19 hours weekly
- ○ I work at 20 hours weekly.
- ○ I work 21 to 29 hours weekly.
- ○ I work 30 to 39 hours weekly.
- ○ I work 40 hours weekly.
- ○ I work more than 40 hours weekly.

Please provide your email address, so you may be included in our incentive drawing.

_____

Appendix C

Correspondence

Mrs. Cox needs your input

CC Casandra Cox <noreply@qualtrics-survey.com>
To Casandra Kay Cox

Thu 3/9

Hello!
My name is Casandra Cox, instructor and doctoral candidate in Bumpers College, and I am emailing to ask for your participation in a survey of Bumpers College undergraduate and graduate students, who are majoring in agriculture, food, and natural resources. The purpose of my research project is to describe students' emotional intelligence and ethical decision-making using assessments and determine if there is a predictive relationship between the constructs.

Click the link to provide consent to participate in the study and begin the questionnaire.
Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://uark.qualtrics.com/jfe/preview/previewId/50ed454e-894a-4ec3-9862-f1c2761ac9c7/SV_9S9NiLj3KVMqPqu?Q_CHL=preview

Participation is voluntary, but participants meeting the criteria and completing all four sections of the questionnaire will be entered for a chance to win one of 10 gift cards valued at $15 each. You need 30-45 minutes to complete the questionnaire.

You may contact the principal researcher, Casandra Cox at ccrumle@uark.edu with any questions. Approval has been granted for this project (Protocol number: 280423) and you may contact Ro Windwalker, the University's IRB Coordinator, at 479-575-2208 or irb@uark.edu.

Your response is greatly appreciated!

Casandra Cox, Instructor & Doctoral Candidate

Follow the link to opt out of future emails:
Click here to unsubscribe

Mrs. Cox needs your input

CC Casandra Cox <noreply@qualtrics-survey.com>
To Casandra Kay Cox

Reply | Reply All | Forward

Wed 3/15/2023 10:05 AM

Hello!
My name is Casandra Cox, instructor and doctoral candidate in AECT, and last week I sent an email asking for your participation in a study I am conducting. I need your help to complete my dissertation study, as a Bumpers College undergraduate or graduate student majoring in agriculture, food, and natural resources. The purpose of my research project is to describe students' emotional intelligence and ethical decision-making using assessments.

Click the link to provide consent to participate in the study and begin the questionnaire.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://uark.qualtrics.com/jfe/preview/previewId/50ed454e-894a-4ec3-9862-f1c2761ac9c7/SV_9S9NiLj3KVMqPqu?Q_CHL=preview

Participation is voluntary, but participants meeting the criteria and completing all four sections of the questionnaire will be entered for a chance to win one of ten gift cards valued at $15 each. You need 30-45 minutes to complete the questionnaire.

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Your response is greatly appreciated!

Casandra Cox, Instructor and Doctoral Candidate

CC

Casandra Cox <noreply@qualtrics-survey.com> | Casandra Kay Cox | Thu 3/30

Mrs. Cox needs your input

Follow up. Completed on Wednesday, April 5, 2023.

Hello!
I am still seeking your input for my dissertation study before it closes on 4/7. I am asking for your help, as a Bumpers College student. The purpose of my research project is to describe students' emotional intelligence and ethical decision-making using assessments and determine if there is a predictive relationship.

Click the link to provide consent to participate in the study and begin the questionnaire.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://uark.qualtrics.com/jfe/preview/previewId/50ed454e-894a-4ec3-9862-f1c2761ac9c7/SV_9S9NiLj3KVMqPqu?Q_CHL=preview

Participation is voluntary, but participants meeting the criteria and completing all four sections of the questionnaire will be entered for a chance to win one of ten gift cards valued at $15 each. You need 30-45 minutes to complete the questionnaire.

You may contact the principal researcher, Casandra Cox at ccrumle@uark.edu with any questions. Approval has been granted for this project (Protocol number: 280423) and you may contact Ro Windwalker, the University's IRB Coordinator, at 479-575-2208 or irb@uark.edu.

Your response is greatly appreciated!

Casandra Cox, Instructor and Doctoral Candidate

Follow the link to opt out of future emails:
Click here to unsubscribe

CK Casandra Kay Cox [redacted] Thu 3/30

Dissertation | help needed

This message was sent with High importance.

Hi [redacted],

I am collecting my dissertation data and only 18 of 326 students have responded. I am desperate for your help getting advisees to respond! I sampled Bumpers College students and sent individual survey links to each randomly selected student using Qualtrics distributions.

Please ask your advisees, listed below, to locate the email (Sender: Casandra Cox; Subject: Mrs. Cox needs your input) and complete the questions about emotional intelligence and ethical decision making. These are students who have not completed the instrument yet. It is only taking respondents 20 to 30 minutes and I am giving away ten $15 gift cards for those completing the entire questionnaire.

[redacted]

Thank you in advance,
Casandra

Casandra Cox | Instructor & Doctoral Candidate
Agricultural Education, Communications and Technology
University of Arkansas
D04 AFLS Building | Fayetteville, AR 72701
(479) 575-2040 | ccrumle@uark.edu |aect.uark.edu
Ag | Food | Life

Wed 4/5/2023 10:40 AM

CC

Casandra Cox <noreply@qualtrics-survey.com>

Mrs. Cox's dissertation research | closes Sunday

To Casandra Kay Cox

Please consider completing the questionnaire linked below. I first contacted you on March 9, 2023, requesting your voluntary participation in my study about emotional intelligence and ethical decision-making. Your help is greatly appreciated with my study!

If you complete the questionnaire by April 9, you will still be entered in the $15 gift card drawing (10 will be given away).

Click the link to provide consent to participate in the study and begin the questionnaire.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://uark.qualtrics.com/jfe/preview/previewId/50ed454e-894a-4ec3-9862-f1c2761ac9c7/SV_9S9NiLj3KVMqPqu?Q_CHL=preview

You need 20-30 minutes to complete the questionnaire.

You may contact the principal researcher, Casandra Cox at ccrumle@uark.edu with any questions. Approval has been granted for this project (Protocol number: 280423) and you may contact Ro Windwalker, the University's IRB Coordinator, at 479-575-2208 or irb@uark.edu.

Best regards,
Casandra Cox, Instructor and Doctoral Candidate