



The Intersection of Emotional and Sociocognitive Competencies with Civic Engagement in Middle Childhood and Adolescence

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Abstract

Civic developmental theory anticipates connections between normative developmental competencies and civic engagement, but little previous research has directly studied such links. The current study sought to contribute to civic development theory by examining associations between emotional and sociocognitive competencies (empathy, emotion regulation, prosocial moral reasoning, future-orientation) and civic engagement (volunteering, informal helping, political behaviors and beliefs, environmental behaviors, social responsibility values, civic skills). Data came from a geographically and racially diverse sample of 2467 youth ($M_{\text{age}} = 13.4$, Range: 8–20 years, 56% female). The results indicated that empathy and future-orientation significantly predicted nearly all forms of civic engagement, whereas emotion regulation and prosocial moral reasoning were uniquely associated with specific forms of civic engagement. Exploratory multi-group models indicated that empathy and emotion regulation were more strongly associated with civic engagement among younger youth and prosocial moral reasoning and future-orientation were more strongly related to civic engagement among older youth. The findings help to advance developmental theory of youth civic engagement.

Keywords Civic engagement · Political participation · Positive youth development · Prosocial behavior · Developmental theory

Introduction

An engaged and informed populace is vital to the health of democratic societies (Flanagan and Levine 2010) and individual well-being (Hart et al. 2014). Civic engagement encompasses the prosocial values, skills, behaviors, and attitudes that orient individuals towards social and political issues and contributions to community. Thus, civic engagement is important to understand from a

developmental perspective (Flanagan 2004; Lerner et al. 2014; Sherrod and Lauckhardt 2009). The recognized importance of civic engagement has motivated a large amount of empirical work on the individual and contextual correlates of civic behavior (e.g., Albanesi et al. 2007; Duke et al. 2009; Kim and Ball-Rokeach 2006; Obradović and Masten 2007; Torney-Purta 2002). However, much of this work has focused on predicting single forms of civic engagement, investigating particular developmental correlates, or exploring associations within a narrow developmental period. Developmental research has established patterns of normative change across an extensive range of youth emotional and sociocognitive competences (e.g., Eisenberg 2000; Eisenberg et al. 2007), and these competencies are theorized to undergird youth civic development (Flanagan 2004; Sherrod et al. 2010). However, little empirical inquiry has inclusively examined the extent to which associations among multiple emotional and socio-cognitive developmental competencies map onto different dimensions of civic engagement in childhood and adolescence or whether links between different developmental capacities and civic engagement are stronger at different points in development. This article aims to redress this gap

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in knowledge by examining associations between core developmental competencies (i.e., empathy, emotion regulation, prosocial moral reasoning, future orientation) and multiple dimensions of youth civic engagement (i.e., volunteering, informal helping, environmental behaviors, political behavior and beliefs, social responsibility values, civic skills). We will also explore whether associations vary across childhood and adolescence in a large diverse cross-sectional sample.

Theorizing about Youth Civic Engagement and Normative Developmental Competencies

Civic theorists have stressed the importance of assessing multiple elements of civic behavior, beliefs, and attitudes to best understand the development of active citizenship from late childhood through adolescence and beyond (e.g., Lerner et al. 2014; Wray-Lake et al. 2016). Civic engagement involves active participation in political activities, in addition to a wide range of prosocial behaviors aimed at aiding individuals and society (Sherrod and Lauckhardt 2009; Sirianni and Friedland 2005; Youniss et al. 2002). Although age restrictions preclude younger youth from engaging in certain types of conventional political activities such as voting in state and federal elections, young people can indicate their intentions to vote and engage in other forms of political activity known to be important correlates of voting such as keeping up with current events and political news. Many youth also have the opportunity to engage in non-political civic activities including volunteering, informal helping, and environmental conservation behaviors in their schools and neighborhoods (Pancer 2015). Civic engagement is broader than just behaviors; it also includes a wide range of prosocial values, civic beliefs, and civic skills (Galston 2007; Metzger and Smetana 2010). Given that research has found distinct correlates of different forms of civic engagement, it is conceptually important to separate civic constructs in analyses (Metzger and Smetana 2009; Lerner et al. 2014; Wray-Lake et al. 2016). Consistent with a multidimensional view of civic engagement, the current study included the following measures of civic engagement: volunteering, informal helping, environmental behavior, news consumption, voting intentions, political beliefs, social responsibility values, and civic skills.

Civic engagement is conceptually distinct from emotional and sociocognitive competencies, which include a broad constellation of adaptive capabilities that characterize normative development. There is a strong body of developmental literature documenting the normative developmental progression of many socioemotional and sociocognitive competencies including both patterns of change and stability. As an example, age-relevant

increases in individuals' ability to regulate emotional responses to stressful situations and empathize with others have been documented (Eisenberg 2000; Eisenberg et al. 2007). Theory and research have also outlined patterns of developmental enhancements in individual moral reasoning and the capacity to contemplate future events and make planful decisions based on this future orientation (Eisenberg et al. 2005; Steinberg et al. 2009). In addition to mapping out developmental trajectories, research has established that the development of emotional and socio-cognitive competencies undergirds youth's ability to successfully interact with multiple dimensions of their expanding social world (Eisenberg 2009; Eisenberg et al. 2010). Thus, emotional and sociocognitive competencies are foundational to a wide array of positive developmental processes and are essential to healthy development and thriving.

However, despite calls for a theoretical approach that conceptualizes change in civic engagement in the context of youth's developmental experiences across other life domains (Lerner et al. 2014; Sherrod et al. 2010), research on civic development has often been conducted in a separate silo from research on normative emotional and sociocognitive development. In order to build on extant research and contribute to civic developmental theory, it is important to empirically examine intersections between youth civic engagement and developmental competencies. We elected to examine two emotional competencies (empathy and emotion regulation) and two sociocognitive competencies (prosocial moral reasoning and future orientation, which draw on the capacity to reason about the welfare of others and one's future self, respectively) based on previous research and our theorizing about competencies of particular import to civic development. Additionally, selection of these specific competencies was based on what is already known in the established literature on prosocial development (Eisenberg 2006; Metzger and Smetana 2010). Many forms of civic engagement are prosocial in nature, involving values and actions that help others and consider the needs of others. Thus, we contend that emotional competencies such as empathy and emotion regulation are critical components of young people's civic actions that allow them to share others' feelings and control their own reactions in order to prioritize helping others. Sociocognitive competencies such as prosocial moral reasoning and future orientation may help youth make decisions about acting morally when engaging in community and politics and envision longer-term goals and commitments that are often needed to carry out civic efforts. By examining these emotional and sociocognitive competencies in relation to multiple forms of civic engagement, this study informs theory about the competencies that enable youth to be effective civic actors.

Established Links between Civic Engagement and Competencies

There are strong theoretical arguments for positioning emotional and sociocognitive competencies as developmental precursors to civic engagement (e.g., Lewin-Bizan et al. 2010). The relational developmental systems perspective posits that the development of civic engagement derives from a series of dynamic positive interactions between individuals and their contexts (Lerner et al. 2014; Zaff et al. 2010b). Similarly, theoretical models of positive youth development argue that individual competencies underpin youth's positive contributions to community and society (e.g., Lewin-Bizan et al. 2010). However, while a wealth of research has examined the role of contextual factors that are likely to promote civic engagement (e.g., Duke et al. 2009; Torney-Purta 2002; Lenzi et al. 2012; Zaff et al. 2008), there have been fewer attempts to link civic engagement to normative emotional and sociocognitive development. Thus, it is less clear which competencies are most relevant for civic development or whether specific developmental competencies are more important for particular forms of civic engagement. Research on age-related changes in civic engagement across childhood and adolescence has advanced our understanding of civic development, with some evidence emerging for upward linear or non-linear growth in social responsibility, prosocial behavior, and composite measures of civic engagement (e.g., Eisenberg et al. 2006; Zaff et al. 2011). Explanations for these civic trajectories often note potential parallel trajectories in emotional and sociocognitive competencies such as empathy and prosocial moral reasoning, yet empirical research linking developmental competencies to specific forms of civic engagement is underdeveloped. Building on existing literature, we argue that emotional competencies of emotion regulation and empathy may be more pertinent for prosocially-oriented forms of civic engagement such as informal helping, volunteering, or environmental behaviors. Sociocognitive competencies such as prosocial moral reasoning may also support prosocial, helping action. On the other hand, other sociocognitive competencies such as future orientation may be more strongly related to political forms of civic engagement (i.e., political beliefs and actions). Developmental theory of civic engagement will be enriched by delineating the ways in which emotional and sociocognitive competencies empirically predict civic engagement at different ages.

Emotional competencies

Conceptual rationales and some empirical evidence support the notion that civic engagement is linked to empathy and emotion regulation. Empathy constitutes the capacity for individuals to have an emotional response arising out of

concern for another person (Eisenberg 2009). Even young infants exhibit evidence of empathic concern for others in pain (Roth-Hanania et al. 2011), but empathy grows and then stabilizes across childhood and adolescence due, in part, to increased sociocognitive capacities including perspective taking (Eisenberg et al. 2006). Given that multiple forms of civic engagement entail prosocial helping behaviors directed at individuals in need, it is unsurprising that empathic responding has been associated with volunteering and informal helping (Bekkers 2005). Based on this research, we suspect that children and adolescents who exhibit higher levels of empathy are more likely to be drawn to forms of civic behavior that involve directly providing assistance to others. Less research has explored associations between empathy and other forms of civic engagement such as political behavior, civic skills, civic beliefs, or civic values in children and adolescents. Social responsibility values are a facet of civic engagement that involve personal commitments to helping others and improving broader society (Wray-Lake and Syvertsen, 2011); so empathy may be particularly important for social responsibility values.

Emotion regulation, defined as the ability to be aware of one's own emotional state and regulate emotions in order to accomplish goals (Eisenberg and Spinrad 2004), may also play an important role in facilitating some forms of civic involvement. A young person's capacity to appropriately monitor and modulate emotional responses within specific contexts develops rapidly across the preschool years as children gain access to more refined effortful control strategies and then stabilizes as youth transition into adolescence (Rothbart and Bates 2006). The application of suitable emotion regulation strategies has been associated with certain types of prosocial behavior among young adults including sharing resources (when combined with high levels of moral identity; Côté et al. 2011). Additionally, self-regulation, particularly the ability to limit excessive and unsuitable emotional responses, has been theorized to be foundational to socially responsible behavior (Wray-Lake et al. 2011). Emotion regulation may be important for engagement in informal helping activities or the development of civic skills. Experiencing high levels of emotional arousal may impede and overwhelm youth's ability to effectively engage in prosocial acts. For instance, when a classmate or neighbor is in need of assistance, youth who possess effective emotion regulation strategies may have the capacity to effectively cope with potential negative emotional arousal and thus be better positioned to offer aid (Eisenberg 2000, 2009). High levels of emotional arousal can also hinder an individual's ability to achieve goals and problem solve (Metcalf and Mischel 1999), particularly goals aimed at solving social or community problems through collective action, which are central components of youth's developing civic skillset.

Sociocognitive competencies

Developmental research has documented normative increases in sociocognitive capacities including prosocial moral reasoning across childhood and adolescence (Eisenberg et al. 2006). Prosocial moral reasoning involves the ways in which individuals reason about prosocial situations such as their judgments about the suitability and mandatory nature of prosocial acts (Carlo 2014; Metzger and Smetana 2010). To assess socio-moral evaluations of prosocial acts, previous research has measured different types of criterion judgments. Based on moral philosophy, prosocial acts are thought to be moral if they are both obligatory (acts that must be done rather than “should be done;” Kohlberg 1971) and worthy of social praise (i.e., highly respected; Williams 1985). Obligation and social-praiseworthiness judgments have been found to profitably capture individual differences in youth’s moral evaluations of prosocial behavior (Kahn 1992; Metzger and Ferris 2013; Metzger and Smetana 2009). The role of prosocial moral reasoning in facilitating civic engagement is supported by several studies indicating that more developmentally advanced prosocial moral reasoning is predictive of adolescent engagement in prosocial, helping behaviors (Carlo et al. 2003; Carlo et al. 2010). Prosocial moral reasoning may also play a role in promoting more other-oriented forms of civic involvement including volunteering, as adolescents tend to view volunteering as a moral issue (Metzger and Smetana 2009). Finally, positive links between prosocial moral reasoning and social responsibility values would also be expected, as the prioritization of others’ welfare could help propagate youth’s budding personal ideals concerning helping and making positive contributions.

Developmental science has also mapped out the development of other sociocognitive capacities across childhood and adolescence that are potentially important for civic engagement, such as future orientation, a component of abstract reasoning that includes the ability to contemplate possible outcomes in the future (Markus and Nurius 1986; Nurmi 1991). Many forms of civic involvement involve actions that are meant to have long-term impacts on individuals, communities, and institutions, and thus future orientation may be an important competency for civic engagement. Indeed, children and adolescents recognize future orientation as an important attribute of individuals who are civically involved, particularly in political affairs like voting (Metzger et al. 2016). Ethnographic research on youth activists engaged in a school reform project found that future orientation was a crucial attribute of engaged youth (Kirshner 2009). As future orientation develops into adolescence, this competency may help to bolster participation in environmental or political forms of engagement. These forms of civic engagement may require extended engagement from participating youth and the positive

impact of such forms of involvement may take a long time to materialize rather than being immediately apparent.

Age-specific associations

According to the specificity principle, an individual’s experience and adjustment may vary as a function of multiple individual and contextual factors (Bornstein 2017). Similarly, it will be important to explore whether anticipated links between developmental competencies and different forms of civic engagement vary as a function of youth age. Emotion regulation and empathy grow substantially in childhood whereas growth in future orientation and prosocial moral reasoning may be more evident in middle and late adolescence (Eisenberg 2000; Eisenberg et al. 2007; Nurmi 1991). Similarly, the types of civic behaviors in which youth engage or the values they espouse may also change as youth move from childhood through early and late adolescence (Wray-Lake et al. 2016). Chances to engage in informal helping behaviors may be equally available to children and adolescents, but as youth get older, they may have more opportunities for other forms of civic engagement such as structured volunteering or political activities. These parallel changes in both civic engagement and developmental competencies may alter the synergistic relationship between individual competencies and specific forms of civic engagement from middle childhood through late adolescence. That is, certain developmental competencies (emotion regulation, empathy) may be more supportive of civic engagement earlier in development while other developmental competencies (prosocial moral reasoning, future orientation) may predict higher civic engagement later in adolescence. The current study seeks to unpack these associations by exploring whether associations between developmental competencies and civic engagement differ between middle childhood and early adolescence (grades 4–8) and late adolescence (grades 9–12).

The Current Study

The current study seeks to contribute to civic developmental theory by examining links between normative developmental competencies (empathy, emotion regulation, prosocial moral reasoning, future orientation) and different forms of civic engagement (volunteering behavior, informal helping, environmental behavior, news consumption, voting intentions, political beliefs, social responsibility values, and civic skills). In general, it was hypothesized that competencies would be positively associated with youth civic engagement. Specifically, greater empathy and prosocial reasoning were hypothesized to be associated with higher informal helping, volunteering behavior, and social

responsibility values, whereas greater future orientation was hypothesized to be associated with greater youth environmental behavior, political behavior (news consumption and voting intentions), and political beliefs. Additional analyses further explored whether competency-civic engagement links varied as a function of age. Because no previous research has directly addressed this question across the large age range utilized in the current study (ages 8–20 years), these analyses were exploratory. However, based on previous research on the normative developmental patterns of emotional and sociocognitive competencies, we anticipated that empathy and emotional regulation would be more strongly associated with civic engagement for younger youth, while prosocial moral reasoning and future orientation were expected to be more strongly associated with civic indicators for older adolescents. Previous research has found that multiple forms of civic engagement were predicted by youth gender, ethnic background, and family socioeconomic status (Cicognani et al. 2012; Syvertsen et al. 2011; Torney-Purta et al. 2007); therefore, current analyses controlled for these demographic characteristics.

Method

Participants

Study hypotheses were tested using self-report survey data from 2467 youth (56% female) ages 8 to 20 years ($M = 13.4$, $SD = 2.7$) enrolled in grades 4 through 12 from 17 schools in metropolitan California (42%), urban Minnesota (25%), and rural West Virginia (33%). Youth self-identified as 51% White, 30% Hispanic or Latinx, 10% Black or African American, 7% Asian, 4% American Indian or Alaska Native, 2% Native Hawaiian or other Pacific Islander, and 9% identified as another race-ethnicity. Youth also reported on parent/guardian education: college or a higher level of education (Mothers: 35%; Fathers: 33%; Other Parenting Adult: 20%), completed some college (Mothers: 15%; Fathers: 14%; Other Parenting Adult: 14%), or completed high school or below (Mothers: 27%; Fathers: 31%; Other Parenting Adult: 21%). As a proxy for family financial strain (Galinsky 1999), youth were asked whether their families had: enough money to buy almost anything they wanted (9%), no problem buying the things they need and can also sometimes buy special things (48%), just enough money for the things they need (34%), or a hard time buying the things they need (10%).

Procedure

Participants for the current study were recruited as part of the Roots of Engaged Citizenship project (Syvertsen et al.

2015). All children and adolescents enrolled in grades 4 through 12 at the selected schools were eligible to participate. Prior to participation, parent consent was obtained for all youth under age 18 and all participants were assented. Surveys were administered during school. To reduce participant burden, survey administration incorporated a three-form planned missing design (Graham 2012). Within planned missingness designs, missing data are controlled by the researchers and thus missing completely at random (MCAR). For greater details about this design, see (Wray-Lake et al. 2016). Survey versions were equally distributed across age, gender, race-ethnicity, parent education, and study site.

Measures

All measures in the current study were derived as part of the Roots of Engaged Citizenship project (Syvertsen et al. 2015). Measures of civic engagement were both derived and adapted from previous research based on extensive measurement development work, which included cognitive interviews and analysis of pilot data of youth in grades 4–12. Developmental competency measures were specifically included in the broader project due to their theorized links to youth civic development and were also extensively piloted. All measures derive from youth self-report survey data. Additional detail about these, and other measures that were included in this study, can be found in (Syvertsen et al. 2015).

Social responsibility values

Social responsibility values were measured with 4 items ($\omega = .78$) in which youth rated how important it is to consider the needs of other people, help those who are less fortunate, make sure that all people are treated fairly, and think about how their actions affect people in the future (Wray-Lake et al. 2016). Responses ranged from 1 (*not at all important*) to 5 (*extremely important*); higher values indicated more social responsibility.

Informal helping

Informal helping was measured with 6 items (adapted from Wray-Lake and Sloper 2016; $\omega = .73$). For these items, youth were asked how frequently they perform various behaviors, including standing up for a classmate that was being picked on, helping a classmate with homework, doing household chores, sharing school supplies with peers, helping a neighbor with projects for no pay, and babysitting for no pay. Responses ranged from 1 (*never*) to 5 (*very often*), with higher values indicating more informal helping behavior.

Political beliefs

Political beliefs were measured with 2 items ($r = .45$) which assessed beliefs about whether people should keep up with current events and whether people should take part in a protest or rally (Metzger and Smetana 2009). Responses ranged from 1 (*doesn't matter*) to 5 (*definitely should*), with higher values indicating more positive beliefs about political involvement.

Civic skills

Civic skills were measured with self-rated ability to perform six civic actions adapted from Flanagan et al. (2007; $\omega = .87$) including creating a plan to address a problem, getting other people to care about a problem, expressing views to others, contacting someone in a leadership position about a problem, forming attitudes after listening to conflicting viewpoints, and summarizing what another person said. Responses were scored on a 5-point scale from 1 (*I definitely can't*) to 5 (*I definitely can*), with higher values indicating greater civic skills.

Environmental behavior

Environmental behavior was measured with three items loosely adapted from Kaiser et al. (2007; $\omega = .71$) assessing whether youth turn off electronics after use, limit paper use, and conserve water by taking shorter showers. Responses ranged from 1 (*never*) to 5 (*very often*), with higher values indicating greater environmental behavior.

Volunteering

Volunteering was measured with a single item in which youth reported the number of hours they spend volunteering in a typical month. Responses were scored on 6-point scale and ranged from 1 (*0 h*) to 6 (*5+ hours*).

Voting intentions

Voting intention was measured with a single item assessing whether youth had ever voted or planned to vote in national elections. Responses were 1 (*I will not do this*), 2 (*probably won't do this*), 3 (*unsure*), 4 (*probably will do this*), and 5 (*will do this or have already done this*).

News consumption

News consumption was measured with a single item assessing how often youth access political information on the TV, radio, newspaper, or websites in a typical week. Responses ranged from 1 (*never*) to 5 (*very often*).

Empathy

Empathy was measured with three items adapted from Davis (1996; $\omega = .76$) assessing youth's report of whether it bothers them when bad things happen to other kids, they feel sad when seeing someone being treated unfairly, and feel upset when they see another person hurt. Responses were scored on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher values indicating greater empathy.

Emotion regulation

Emotional control and awareness was measured with three items (Gratz and Roemer 2004; Gross and John 2003; MacDermott et al. 2009; $\omega = .60$) assessing youth's report of whether they have control over their feelings, try to understand what they are feeling inside, and can keep emotions to themselves when they want to. Responses were given on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher values indicating more emotional regulation.

Prosocial moral reasoning

Prosocial moral reasoning was assessed via responses to a vignette describing a situation where engaging in a prosocial behavior (helping another student with a stuck locker) conflicts with fulfilling a social convention or expectation common in American schools (arriving to class on-time). Exact wording for this vignette is available in the appendix. Consistent with moral philosophy and prior research examining prosocial civic behaviors (Carlo et al. 2010; Kahne 1992; Metzger and Smetana 2009), youth rated whether (1) it was right or wrong for the character in the vignette helped the student with their locker instead of going to class on time and (2) how much respect youth would have for the character if they decided to help instead of going to class on time ($r = .52$). Responses were given on a 5-point scale from 1 (*very wrong/none*) to 5 (*very right/complete*), with higher values indicating greater prosocial moral reasoning.

Future orientation

Future orientation was measured using three items adapted from Betts and colleagues (2010) or written for the present study ($\omega = .73$). Items assessed whether youth were hopeful about the future, consider the impact decisions will have on their future, and think about who they will be when they are older. Responses were given on a 5-point scale from 1 (*not at all like me*) to 5 (*very much like me*) with higher values indicating greater future orientation.

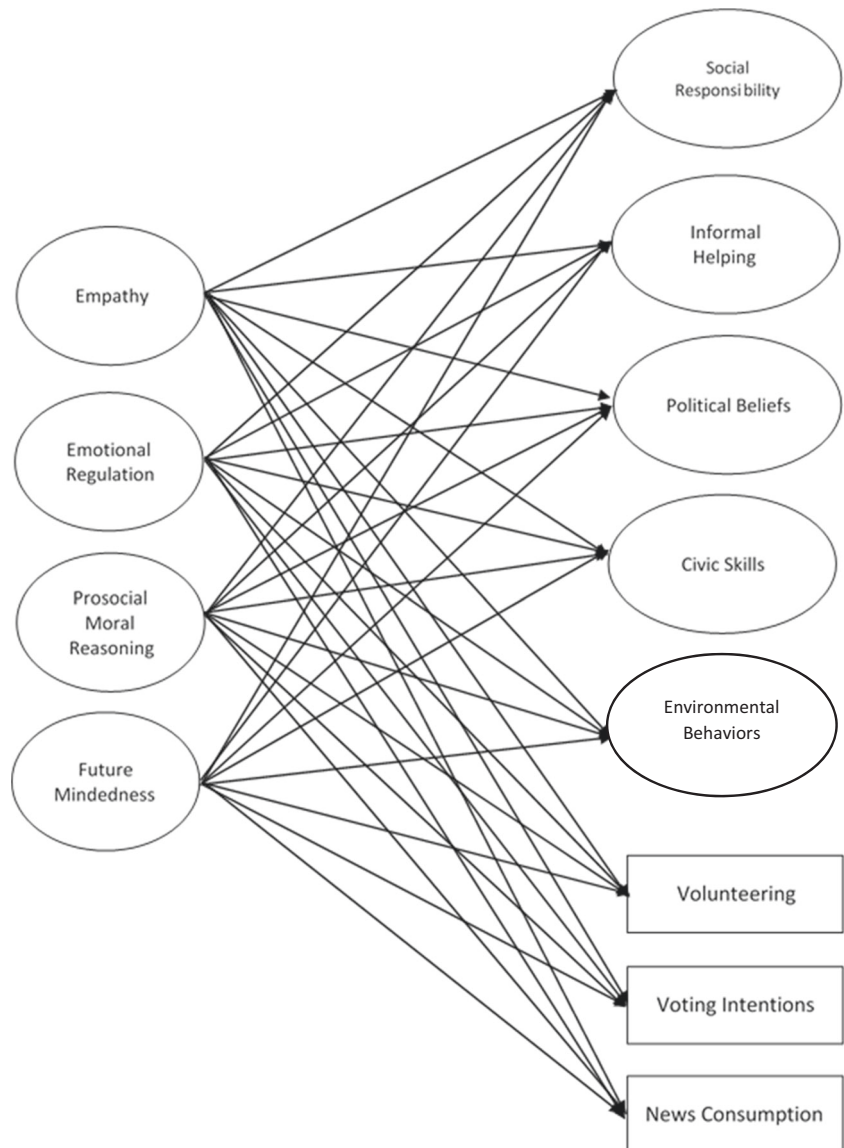
Analytic Technique

Latent variable structural equation models were used to test associations among developmental competencies and civic engagement. Standard model fit criteria were used, including chi-square tests, root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and the Comparative Fit Index (CFI). Parameters were interpreted upon achieving adequate model fit, with values of .05 or lower for RMSEA and SRMR and .90 or higher for CFI (Kline 2005). First, a measurement model was tested in which item-level indicators for each developmental competencies (emotion regulation, empathy, prosocial moral reasoning, future orientation) and the five measures of civic engagement (social responsibility, informal helping, political beliefs, civic skills, environmental behavior) were regressed onto their respective latent

variable. Multi-group analyses were then used to test for metric and scalar measurement invariance across two groups: middle childhood and early adolescence (grades 4–8) and late adolescence (grades 9–12). Given recommendations that chi-square differences tests may be too liberal when evaluating measurement invariance in large samples, we primarily relied on $\Delta CFI \leq .01$ as an indicator of measurement invariance (Cheung and Rensvold 2002).

Next, a structural model was estimated in which dimensions of civic engagement were specified as separate endogenous latent variables, and developmental competencies were specified as separated exogenous latent variables. Single-item manifest variables for volunteering, voting intentions, and news consumption were entered as separate endogenous variables (Fig. 1). Demographic characteristics (family financial strain, gender, and race-ethnicity) were entered as covariates predicting civic

Fig. 1 Proposed model for testing associations among developmental competencies and civic engagement



variables. Multi-group models were then estimated to determine if the structural paths varied across grade-level: elementary and middle school vs. high school. To our knowledge, no previous research has explored age differences in associations between competencies and civic engagement, so our multi-group tests of invariance of the structural paths were treated as an exploratory analysis.

Multiple steps were taken to account for the complex survey design. To account for non-independence introduced by nesting, a cluster variable was created which represented youth nested within grade level and school ($k = 57$). This clustering approach is consistent with previous research in educational settings (Karakos et al. 2016). Additionally, to aid in missing data estimation due to the planned missingness design, the Principal Components Method (Howard et al. 2015) was used to incorporate ten principal components as auxiliary variables in the FIML missing data model. All analyses were performed in *Mplus* version 7 and utilized maximum likelihood estimation with robust standard errors.

Results

Table 1 presents exact item wording and descriptive statistics. Prior to running primary analyses, multiple diagnostics were performed to test for variable distribution issues, outliers, and the item response characteristics of all items. This information is available within the Roots of Civic Development Measurement Toolkit (Syvertsen et al. 2015). A total of seven cases from the original collected dataset were identified as problematic multivariate outliers and were removed from the dataset, leading to the current study sample size of 2467. These seven removed cases were not found to differ significantly from the analytic sample on any demographic characteristic or study variable. Although some items and scales demonstrated moderate negative skewness, none of the variables had problematic distribution characteristics. Finally, no measures demonstrated problematic levels of multi-collinearity.

Table 2 presents bivariate correlations among demographic characteristics, developmental competencies, and civic engagement. In general, youth from families with less financial strain and adolescent females were more civically engaged. Asian and Hispanic youth reported lower levels of multiple forms of civic engagement. Higher endorsement of each developmental competency was generally associated with higher civic engagement.

Measurement Model

A measurement model was estimated which specified item-level latent variables encapsulating developmental

competencies (emotion regulation, empathy, moral reasoning, future orientation) and civic engagement (social responsibility, informal helping, political beliefs, civic skills, environmental behavior) as well as volunteering and political behavior (voting and news consumption) as manifest variables. Covariances were specified among all latent variables. The model provided a good fit to the data, $\chi^2(428) = 1122.41$, CFI = .952, TLI = .944, RMSEA = .026 [90% CI: .024, .027], SRMR = .036. Unstandardized estimates for all factor loadings ranged from .47 to .83 and R^2 ranged from .19 to .60. Covariances among latent variables ranged from .09 to .75 (Table 3).

Measurement invariance across age groups

To test metric invariance by grade group, the configural model with all parameters free to vary across elementary/middle school students vs. high school students was compared to a model with factor loadings constrained to be equal. Model fit indices for these invariance tests are reported in Table 4. The $\Delta\text{CFI} = .002$, which supports metric invariance and suggests that factor loadings did not differ by grade. The model fit comparison for scalar invariance was $\Delta\text{CFI} = .011$, indicating that constraining both the factor loadings and intercepts across grades provided a worse fit to the data compared to when they are freely estimated. To achieve partial scalar invariance, the intercept for one of the environmentalism items (*I try to limit how much paper I use*) was freed based on modification indices, yielding a $\Delta\text{CFI} = .008$. Latent mean differences indicated that high school students endorsed greater informal helping ($B = .35$, $SE = .10$, $p < .001$), greater political beliefs ($B = .30$, $SE = .08$, $p < .001$), greater civic skills ($B = .45$, $SE = .09$, $p < .001$), greater future orientation ($B = .35$, $SE = .06$, $p < .001$), and lower environmental behavior ($B = .92$, $SE = .14$, $p < .001$) relative to elementary/middle school students. Social responsibility ($B = .08$, $SE = .09$, $p = .34$), emotion regulation ($B = .14$, $SE = .08$, $p = .08$), empathy ($B = .13$, $SE = .07$, $p = .07$), and prosocial moral reasoning ($B = .12$, $SE = .09$, $p = .16$) did not significantly differ across grade.

Structural Model

A structural model was estimated to test associations among developmental competencies and civic engagement indices after accounting for family financial strain, gender, and race-ethnicity. Covariances were specified among developmental competencies and among civic engagement residual variances, respectively. The model provided a mediocre fit to the data, $\chi^2(659) = 2146.92$, CFI = .912, TLI = .892, RMSEA = .030 [90% CI: .029, .032], SRMR = .044. Based on modification indices, additional covariances were

Table 1 Item descriptions, means, and standard deviations

Label	Item	Scale	<i>M</i>	SD
Civic engagement				
SR1	It is important to me to consider the needs of other people.	1–5	3.82	0.99
SR2	It is important to me to help those who are less fortunate.	1–5	3.86	1.00
SR3	It is important to me to make sure that all people are treated fairly.	1–5	4.09	1.00
SR4	It is important to me to think about how my actions affect people in the future.	1–5	4.06	1.00
IH1	I have stood up for a classmate who was being picked on.	1–5	3.24	1.13
IH2	I have helped a classmate with homework.	1–5	3.65	1.08
IH3	I have shared school supplies with a fellow student who needed them.	1–5	4.06	0.93
IH4	I have helped out around the house by doing chores such as cleaning, cooking, or yard work.	1–5	4.11	1.02
IH5	I have helped my neighbors with projects for no pay.	1–5	2.73	1.38
IH6	I have helped baby sit kids in my neighborhood for no pay.	1–5	2.23	1.42
PB1	People should keep up with current events and politics.	1–5	3.46	1.15
PB2	People should take part in a protest or rally to help change a law that they disagree with.	1–5	3.18	1.26
CS1	Create a plan to address a problem.	1–5	3.64	1.02
CS2	Get other people to care about a problem.	1–5	3.67	0.97
CS3	Express my views to others in-person or in writing.	1–5	3.79	1.05
CS4	Contact someone in a leadership position about a problem.	1–5	3.59	1.05
CS5	Listen to conflicting viewpoints and identify where they agree and disagree.	1–5	3.74	1.03
CS6	Summarize what another person said to make sure I understood.	1–5	3.93	0.98
EB1	I turn off electronics when I'm not using them.	1–5	3.36	1.31
EB2	I try to limit how much paper I use.	1–5	3.07	1.20
EB3	I conserve water by taking shorter showers.	1–5	2.75	1.29
VO	In a typical month, about how many hours do you spend volunteering (not part of a class project, graduation requirement, or court-ordered requirement) to help other people or to help make your community a better place?	1–6	2.68	1.74
VI	Have you ever done or plan to do the following? Vote in national elections.	1–5	3.65	1.17
NC	In a typical week, how often do you access information about politics and current events on TV, the radio, in the newspaper, or on news websites?	1–5	3.11	1.27
Developmental competencies				
ER1	I try to understand what I am feeling inside.	1–5	3.84	0.93
ER2	I have control over my feelings.	1–5	3.76	0.99
ER3	I can keep my emotions to myself when I want to.	1–5	3.93	1.04
EM1	It bothers me when bad things happen to other kids.	1–5	3.97	0.92
EM2	I feel sad when I see someone being treated unfairly	1–5	4.07	0.89
EM3	When I see another person who is hurt or upset, I feel upset too.	1–5	3.58	1.05
MR1	Is it RIGHT or WRONG if Pat helps the student instead of going to class on time?	1–5	3.93	0.92
MR2	How much RESPECT would you have if Pat helps the student instead of going to class on time?	1–5	3.99	0.94
FM1	I am hopeful about my future.	1–5	4.20	0.99
FM2	I think about who I will be when I'm older.	1–5	4.05	1.06
FM3	When I make a decision, I consider the impact it will have on my future.	1–5	3.67	1.15

specified among gender, empathy, and future mindedness, between income, Black identification, and future mindedness, between Hispanic identification and income, and between Hispanic identification and each other racial/ethnic

category. The final model had an acceptable fit to the data, $\chi^2(666) = 2044.274$, CFI = .920, TLI = .901, RMSEA = .029 [90% CI: .028, .030], SRMR = .040. Table 5 displays the unstandardized estimates, standard errors, and

Table 3 Covariances among developmental competencies and civic engagement within measurement model

	2.	3.	4.	5.	6.	7.	8.	9.
1. Emotion regulation	.39	.26	.59	.47	.46	.29	.44	.32
2. Empathy		.37	.44	.75	.55	.42	.37	.27
3. Prosocial moral reasoning			.26	.45	.35	.21	.33	.11
4. Future orientation				.56	.57	.46	.49	.12
5. Social responsibility					.59	.49	.42	.29
6. Informal helping						.43	.50	.20
7. Political beliefs							.43	.23
8. Civic skills								.09
9. Environmental behavior								

Note: All values are significant at $p < .05$

effect sizes (R^2) for this model. After accounting for sociodemographic characteristics, higher levels of empathy were associated with greater social responsibility, informal helping, political beliefs, civic skills, environmental behavior, volunteering, and voting intentions. Higher levels of emotion regulation were associated with more informal helping, civic skills, and environmental behavior. Higher levels of prosocial moral reasoning were associated with greater social responsibility, informal helping, and civic skills. Higher levels of future orientation were associated with greater social responsibility, informal helping, political beliefs, civic skills, volunteering, voting intentions, and news consumption. Higher levels of future orientation were also associated lower environmental behavior.

Table 4 Model fit indices for multi-group measurement and structural models

Model	MLR χ^2 (df)	CFI	TLI	RMSEA [90% CI]	SRMR	S-B $\Delta\chi^2$ (df)	Δ CFI
Measurement model							
Configural	1687.309 (856)	.947	.938	.028 [.026, .030]	.043		
Metric	1733.622 (879)	.945	.938	.028 [.026, .030]	.045	46.347 (23)**	.002
Scalar	1935.753 (902)	.934	.927	.030 [.029, .032]	.048	179.224 (23)***	.011
Partial scalar	1892.547 (901)	.937	.930	.030 [.028, .032]	.048	140.599 (22)***	.008
Structural model							
Unconstrained	3231.401 (1377)	.902	.883	.033 [.032, .035]	.048		
Constrained	3374.285 (1457)	.900	.886	.033 [.031, .034]	.050	138.137 (80)***	.002

Notes. S-B = Satorra-Bentler corrected chi-square difference test

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5 Unstandardized estimates and standard errors of structural model testing associations among developmental competencies and civic engagement

	Civic engagement															
	Social responsibility		Informal helping		Political beliefs		Civic skills		Environmental behavior		Volunteering		Voting intentions		News consumption	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Covariates																
Income	.02	.04	.06	.05	-.04	.04	.15**	.05	-.17***	.04	.06	.05	.16***	.04	.01	.04
Gender	.07	.06	.20**	.07	-.26***	.06	.05	.07	-.17**	.07	.07	.09	-.14**	.05	-.12	.09
Black	-.28*	.11	-.40**	.13	-.13	.13	-.14	.11	-.08	.16	-.38**	.13	-.05	.09	-.01	.11
Hispanic	-.18*	.08	-.36**	.11	.10	.12	-.13	.09	-.05	.15	-.37***	.10	-.19*	.08	-.05	.09
Asian	.13	.10	-.70***	.14	.03	.14	-.07	.21	.22	.15	-.16	.21	-.22*	.11	.02	.09
Other	.05	.11	-.15	.14	.15	.10	-.21	.11	.30	.16	-.09	.15	-.14	.11	.17	.12
Competencies																
Empathy	.92***	.05	.40***	.06	.35***	.05	.14**	.05	.24***	.06	.26***	.06	.16***	.05	.08	.06
Emo. regulation	.13	.08	.15*	.07	-.05	.08	.22**	.08	.35***	.07	.01	.10	.09	.05	-.07	.10
PM reasoning	.28***	.05	.15**	.05	.05	.06	.20***	.05	.00	.06	-.03	.06	.07	.04	-.05	.06
Future orientation	.40***	.07	.46***	.07	.42***	.07	.32***	.09	-.13*	.06	.24**	.08	.21***	.05	.31***	.08
R^2	.65		.47		.28		.31		.18		.07		.15		.06	

DevD developmental, Emo emotion, PM prosocial moral reasoning

Notes: Gender coded as 1 = male, 2 = female. Race-ethnicity coded as 0 = not in group, 1 = in group

* $p < .05$, ** $p < .01$, *** $p < .001$

Multi-Group Grade Model

A multi-group model was tested to examine whether structural paths varied by group (4–8th grade vs. 9–12th grade). The ΔCFI between the constrained and unconstrained model was .002, indicating that constraining the structural paths in the model to be equal for elementary and middle vs. high school students provides a slightly worse fit to the data compared to when the structural paths are freely estimated. Exploratory follow-up analyses were performed to evaluate whether specific pathways varied across the two grade groups. Wald comparisons for these analyses are available in Table 6, and separate unstandardized estimates and standard errors for structural parameters for younger vs. older youth are presented in Table 7. Specifically, empathy was less strongly associated with political beliefs, civic skills, and voting intentions for older youth compared to younger youth. Emotion regulation was negatively associated with news consumption for older—but not younger—youth. Future orientation was more strongly associated with civic skills, voting intentions, and news consumption for older youth. Additionally, future orientation was associated with lower environmental behavior, and prosocial moral reasoning was associated with higher environmental behavior for older—but not younger—youth. In sum, though these exploratory age analyses suggest a large amount of consistency in the associations among developmental competencies and civic engagement, there were also a number of differences that hint at important and theoretically relevant developmental differences.

Sensitivity Analyses

Alternative age group models

Several sensitivity analyses were performed to examine whether our measurement and structural models were consistent across different specifications of grade. First, we examined whether the two category multi-group model (4th–8th grade vs. 9th–12th grade) provided an optimal characterization of potential grade differences in associations between developmental competencies and civic engagement by testing measurement invariance and structural differences for a three-group (4th–5th grade vs. 6th–8th grade vs. 9th–12th grade) and four-group (4th–5th grade vs. 6th–8th grade vs. 9th–10th grade vs. 11th–12th grade) specification. These analyses supported measurement invariance for the three-group (Metric: $\Delta CFI = .002$, Scalar: $\Delta CFI = .010$, Partial scalar: $\Delta CFI = .008$) and four-group models (Metric: $\Delta CFI = .003$, Scalar: $\Delta CFI = .012$, Partial scalar: $\Delta CFI = .009$). However, fit indices for both of these characterizations were poor for the unconstrained ($CFIs = .873$ and $.891$) and constrained ($CFIs = .866$ to

Table 6 Wald tests comparing group differences for structural paths among developmental competencies and civic engagement for elementary/middle school students vs. high school students

	Social responsibility	Informal helping	Political beliefs	Civic skills	Environmental behavior	Volunteering	Voting intentions	News consumption
Empathy	1.99	0.73	4.49*	7.47*	2.55	0.00	5.63*	1.69
Emotion regulation	0.10	0.00	0.78	0.04	2.80	0.99	2.30	5.12*
Prosocial moral reasoning	0.55	1.13	0.54	0.35	5.80*	0.43	0.67	0.89
Future orientation	0.07	0.75	0.83	5.14*	9.47*	1.22	6.94*	6.49*

Note Significant Wald tests indicate that the association was significantly different in the elementary/middle school vs. the high school groups

* $p < .05$

875) models (see Online Resource 1). Thus, the two-group solution was preferred over these alternative characterizations (unconstrained CFI = .947, constrained CFI = .937). However, despite the poor fit of these alternative age-group models, an examination of age-group differences in structural parameters indicated a pattern that was overall consistent with the differences that emerged from the two-group model (i.e., empathy and emotion regulation were more strongly linked to civic engagement for younger youth, prosocial moral reasoning and future orientation were more strongly linked to civic engagement for older youth). This pattern provided further evidence for the exploratory age patterns found in the two-group model presented above.

Additional measurement invariance tests

Additional analyses were performed to examine whether the measurement properties of the developmental competencies and civic engagement latent variables varied by race/ethnicity (White, Hispanic/Latinx, African American/Black) or geographical location (California, Minnesota, West Virginia). Model fit indices are reported in Online Resource 2. These models supported metric invariance for both comparisons (race/ethnicity $\Delta\text{CFI} = .001$, geographical location $\Delta\text{CFI} = .001$), but not scalar invariance (race/ethnicity $\Delta\text{CFI} = .015$, geographical location $\Delta\text{CFI} = .012$). Based on modification indices, partial invariance for the race/ethnicity model was achieved ($\Delta\text{CFI} = .01$) by freeing one intercept for a political belief item (*People should take part in a protest or rally to help change a law that they disagree with*) and one intercept for an informal helping item (*I have helped my neighbors with projects for no pay*). Relative to White and Black adolescents, Hispanic youth reported greater support for social movement involvement and relative to Hispanic and Black youth, White youth reported higher levels of informal helping. Based on modification indices for the geographic location multi-group model, partial scalar invariance was achieved ($\Delta\text{CFI} = .009$) by freeing the intercept for one informal helping item (*I have helped a classmate with homework*), as West Virginia youth endorsed greater informal helping than Minnesota or California youth. Overall, these analyses support the selection of two-group grade comparisons and indicate that measurement of the latent variables was similar across race/ethnicity and geographical location.

Discussion

Civic development theory argues that youth civic engagement is undergirded by the development of emotional and

sociocognitive skills (Lerner et al. 2014; Flanagan 2004; Flanagan et al. 2014). However, little research has comprehensively explored potential links between normative developmental aptitudes and civic behaviors, values, and skills. The current study examined associations among four developmental competencies (empathy, emotion regulation, prosocial moral reasoning, and future orientation) and multiple dimensions of youth civic engagement. Results indicated that all four developmental competencies were significantly associated with distinct forms of civic engagement in ways that align with and add specificity to existing theorizing about civic development. Although empathy and future orientation were associated with nearly all forms of civic engagement, the other competencies pointed to greater specificity with emotion regulation predicting informal helping, civic skills, and environmental behavior and prosocial moral reasoning predicting social responsibility values, informal helping, and civic skills. This pattern of findings indicates that particular aspects of emotional and sociocognitive development may play an important role in children and adolescents' civic engagement. Moreover, although the pattern of findings was mostly consistent across age groups, exploratory analyses tentatively suggest that associations between some developmental competencies and civic engagement may vary between youth in middle childhood and early adolescence compared to youth in late middle and late adolescence.

These findings contribute to civic development theory by demonstrating how civic engagement intersects with critical developmental competencies. Research on civic development has accumulated a large body of findings concerning the individual and contextual correlates of youth civic engagement (Obradović and Masten 2007; Torney-Purta 2002). Similarly, developmental patterns in emotional and sociocognitive competencies have been extensively documented (Eisenberg 1990, 2000; Eisenberg et al. 2005). Research has also demonstrated that emotional and sociocognitive competencies are integral to healthy development (Eisenberg et al. 2006; Nurmi 1991). The current study argues for the importance of competencies for multiple forms of youth civic engagement. While research on youth prosocial development provides ample evidence for the potential importance of emotional and sociocognitive competencies and youth prosocial behavior (Eisenberg 2006), the current study advances this work by showcasing how these core competencies relate to unique dimensions of youth civic engagement. Our civic constructs include both overtly interpersonally prosocial behaviors (i.e., informal helping, volunteering) as well as other civic values, skills, beliefs, and behaviors that allow for broader contributions to community and politics. Although longitudinal data will be necessary to fully elucidate sequential ordering, several potential explanations arise from the current cross-sectional

findings. These findings suggest that key developmental competencies serve as an essential foundation for the emergence of different expressions of civic engagement. The development of emotional and sociocognitive competencies may facilitate engagement in both organized and informal forms of civic action. These competencies may also spur the development of civic skills and values. Alternatively, civic experiences such as volunteering, political behavior, or civic skills and values may serve to augment normative developmental process and lead to increased empathy, prosocial moral reasoning, and future orientation. A relational developmental systems lens would anticipate such bi-directional and interactive associations between these constructs over time (Lerner et al. 2014). Whereas the current study provides an important first step toward a greater understanding of the ways in which normative developmental processes intersect with youth civic development, longitudinal follow-up studies are needed. In addition, exploratory age findings in the current study hint at a potentially important developmental narrative whereby emotional competencies (i.e., emotion regulation and empathy) are more closely linked to civic development for younger youth, while later developing sociocognitive competencies (i.e., prosocial moral reasoning and future orientation) become important predictors of civic engagement for older adolescents.

Results also contribute to a broader theoretical discussion concerning the multifaceted nature of civic engagement. Previous developmental research has taken one of two general approaches to assessing the multiple facets of youth civic outcomes: assessing separate civic factors as indicators the measure of a singular, higher-order latent construct (Zaff et al. 2010a) or operationalizing civic engagement as a multifaceted construct with distinct but correlated components (Geller et al. 2013; Metzger et al. 2014). Interestingly, the current findings also lend credence to both conceptualizations of civic engagement. Empathy and future orientation were associated with nearly all of the civic engagement dimensions (though not always positively). One potential explanation for such a pattern is that the disparate civic behavioral and psychological indicators share a common focus on helping others and making contributions that will positively impact individuals both now and in the future (Flanagan et al. 2007). Youth who empathize with others or possess the sociocognitive capacity to understand how their actions will impact the future may be able to direct these competencies toward a wide array of potential civic behaviors, skills, or cognitions. In contrast, emotional regulation and prosocial moral reasoning, net of empathy and future orientation, were more uniquely associated with specific forms of civic engagement and thus may have more specific functions in the process of civic development. Previous research has found that

adolescents apply different moral and social reasoning to community service, standard political behavior (e.g., voting), and social movements (e.g., protesting; Metzger and Smetana 2009). Youth ages 10–19 also view involvement in different forms of civic involvement to be facilitated by specific character strengths and attributes, such as ascribing future orientation to civic actors engaged in political rather than community service forms of civic engagement (Metzger et al. 2016). The current study builds on this work by indicating that certain emotional and sociocognitive competencies may be more essential for specific forms of youth civic engagement.

Only two dimensions of civic engagement were associated with all four developmental competencies: civic skills and informal helping. Potentially, this pattern indicates that a diverse array of competencies bolsters youth's civic skills or propensity for everyday helping behaviors. Empathy and prosocial moral reasoning have been consistently linked to youth prosocial behavior (Eisenberg 2009), which is not surprising given that informal helping activities are explicitly prosocial acts aimed at aiding others. Informal helping activities are feasible for most youth on a daily basis as they entail a variety of acts aimed at assisting classmates or neighbors. The ubiquity and diverse array of such daily, "micro" civic actions could potentially be boosted by an assortment of developmental competences: for example, emotional maturity could be useful in babysitting and empathic emotions or prosocial cognitions could motivate individuals to stand up for a classmate. This pattern provides some support for a "prosocial pathway" for civic development that is rooted in part in a range of emotional and sociocognitive competencies. Similarly, youth with greater civic skills possess a wide range of civic-related capabilities including communication (e.g., expressing views to others), perspective taking (e.g., forming attitudes after listening to conflicting viewpoints), and planning (e.g., creating a plan to address a problem). This range of civic skills may be undergirded by an array of essential emotional and sociocognitive competencies.

As noted above, youth who are more future-oriented reported higher levels of all measured forms of civic engagement. However, the pattern of findings also indicates that future orientation was particularly important for youth's political engagement. Specifically, youth who expressed a stronger orientation towards the future viewed political behavior as more obligatory (political beliefs) and also had greater voting intentions. Although some forms of political participation are open to young people, children and adolescents engage in fewer political activities compared to other forms of civic engagement (Jenkins et al. 1990; Jugert et al. 2013) and younger youth are legally prohibited from participating in other political activities such as voting.

Thus for many youth, politics *is* a future activity, and youth who have the sociocognitive capacity to fully visualize their future selves and behaviors are more likely to judge political participation as a priority and also express greater likelihood of participation in the political process. Interestingly, such future-oriented youth also report more frequent following of current political events, which could potentially mean future-oriented youth are motivated to pay attention to ongoing political events, even if they will not be able to fully participate until they are older. Political issues and political actions unfold over time, so being future-minded may keep youth coming back to the news to follow events over the long term. Being future-minded may also be associated with having a “big picture” view of the world or an understanding that small, incremental, and persistent action is necessary to achieve social and political goals. Exploratory analyses examining age moderation indicated that future orientation may be a more important predictor of civic engagement at older ages, especially for political activities such as news consumption and voting intentions. With age and experience (e.g., exposure to information about politics and civic participation in the classroom, increased opportunities for community involvement), youth may develop a more refined understanding that political solutions to social problems often involve prolonged and enduring action. This increased understanding among older youth may increase the importance of future orientation for facilitating political development and engagement. Surprisingly and contrary to hypotheses, future orientation was negatively associated with environmental behaviors, and this effect was stronger for older youth. However, the bivariate association between these variables was positive and significant ($r = .12, p < .05$); so potentially this effect is the result of suppression. Given that environmental preservation is a long-term goal, we would have expected environmental behavior to benefit from a future orientation, so further research is needed to support the hypothesized positive link.

Similar to future-orientation, youth who were higher in empathy reported higher levels of nearly all civic engagement indicators, with the exception of news consumption. Youths’ feelings of concern for others may be an important motivator underlying civic engagement, an idea consistent with research that has found links between empathy and prosocial values and behavior, such as social responsibility, informal helping, and volunteering (Bekkers 2005; Eisenberg et al. 2010). Additionally, empathy was positively related to environmental behavior and more political forms of civic engagement, including civic skills, intentions to vote, and political beliefs. Although these forms of civic engagement are not explicitly centered around helping individuals in need, concerns for others may still be an important motivator for youth to value and

engage in these activities due to the potential for civic engagement to indirectly contribute to and help others. For instance, environmentalism aims to protect the environment, which, in turn, contributes to the safety and well-being of individuals in that environment. Exploratory age-moderation analyses indicated that empathy may be an even stronger predictor of certain civic outcomes for younger youth compared to older adolescents, including social responsibility values, civic skills and beliefs, and voting intentions. The emergence of empathy as an important correlate of civic engagement for younger youth is consistent with empirical and theoretical work that has pointed to empathy as one of the earliest developmental antecedents to social responsibility and prosocial action (Hoffman 2000). It is also important to note that empathy continues to be an important predictor of civic engagement later in adolescence. However, with age, empathy’s contributions may be balanced by additional competencies, which begin to play a stronger role in enhancing civic development.

Youth who expressed higher levels of prosocial moral reasoning engaged in more informal helping behavior and also reported more civic skills and higher social responsibility values. These findings are generally consistent with research showing that greater levels of prosocial moral reasoning were associated with multiple forms of prosocial behavior (Carlo et al. 2003; Carlo et al. 2010). Although we had anticipated that youth with a greater orientation toward others’ welfare would participate in greater levels of both structured and unstructured helping activities, prosocial moral reasoning was associated with informal helping activities but not associated with organized volunteering behavior. As noted above, most youth have opportunities to provide help to classmates and neighbors, whereas opportunities for formal volunteering may be dictated by factors outside of youth’s control such as membership in organizations engaged in volunteering or access to transportation to structured volunteering sites. In addition, the volunteering measure used in the current study asked youth if they engaged in any “activity to help other people or to help make your community a better place,” which could include a wide range of activities including efforts to directly help others in need or other types of activities aimed at bettering the community (e.g., cleaning up a local park). It is possible that prosocial moral reasoning may be associated with the type of volunteering activity youth gravitate toward, such as those activities aimed at assisting others, not necessarily their level of involvement. More nuanced measures could better test this distinction. Exploratory age moderation models indicated that, with increased age, prosocial moral reasoning may be an important predictor of additional forms of civic engagement including environmental behavior. The current study measured prosocial reasoning as the degree to

which youth prioritize moral considerations (welfare of another person) over conventional rules. Older adolescents who are high in such welfare-oriented reasoning may have a greater understanding of the potential impact of environmental behavior on the lives and wellbeing of others, leading them to engage in more frequent environmental actions.

Emotional regulation was associated with youth engagement in informal helping and environmental behavior, as well as increased civic skills. Youth who are able to exercise self-control over their affective state may be less likely to be overwhelmed by emotional responses to others in need, and thus better equipped to engage in prosocial behavior (Côté et al. 2011). These associations were significant net of empathy, suggesting that, although feeling for the plight of others is a strong motivator for civic action, the ability to regulate emotions to accomplish goals may be an important predictor of civic engagement regardless of whether youth identify emotionally with those they are helping. However, consistent with findings for empathy, exploratory age-moderation analyses indicated that emotional regulation may be even more strongly connected to civic outcomes for younger youth compared to older adolescents. Similar to empathy development research, research on patterns of emotional development generally finds that emotion regulation is a competency that many youth acquire earlier in development (Rothbart and Bates 2006). Potentially, younger youth may rely on their emerging emotional and empathetic competencies as facilitators of different forms of civic action. In contrast, developmental research has generally found that prosocial moral reasoning and future orientation increase across adolescence, so it may not be until later in adolescence that sufficient individual differences in prosocial moral reasoning and future orientation emerge to be predictive of civic action. Interestingly, emotion regulation was actually negatively associated with news consumption for older youth. While this negative association was unexpected and requires further investigation in future studies, it is consistent with the other age-related findings for emotion regulation, in that emotion regulation may be more important for facilitating various forms of civic engagement among younger youth and this competency may be less important for older youth.

Limitations and Future Directions

The findings and strengths of this article need to be interpreted in light of its limitations. A key limitation is the use of a cross-sectional design, as longitudinal data will be necessary to fully explore the potential sequential developmental competencies and civic engagement. It is also

possible that unmeasured third variables may account for these associations. Although analyses examined age differences in these associations, we relied on two broad age groups, and longitudinal research would enable assessment of within-person age effects. Multi-group measurement models only achieved partial scalar invariance across our age groups due to an intercept for an environmentalism item being significantly different for older youth compared to younger youth. This intercept difference may point to mean-level differences suggesting age-related decline in environmentalism. Exploratory multi-group models examining age differences in predictive associations between developmental competencies and civic engagement located theoretically relevant differences for specific parameters. However, tests of invariance across the full model indicated only moderate differences in the aggregate, which did not meet commonly recommended cut-offs for determining variance/invariance in model parameters ($\Delta CFI = .01$). Despite the fact that other statisticians argue for less conservative assessments of invariance (e.g., $\Delta CFI = .002$; Meade et al. 2008), age differences in the current article should be interpreted with caution. With that said, these cross-sectional data provides evidence of developmentally-specific paths from youth competencies to civic engagement and an important initial step toward theory building. Although the current study examined emotion regulation, empathy, prosocial moral reasoning as individual predictors of youth civic engagement, it is important to note that these developmental competencies do not develop in isolation but instead are theorized to interact in a mutually influential way across childhood and adolescence (e.g., Eisenberg 2000; Eisenberg 1990; Williams et al. 2014). For instance, longitudinal studies indicate that empathy is positively related to emotion regulation skills and prosocial moral reasoning, both concurrently and over time in childhood and adolescence (Carlo et al. 2011; Eisenberg et al. 2002). Other developmental theory and research suggests that emotion regulation may increase the capacity for empathy, which in turn leads to more prosocial behavior (Eisenberg 2000). Future research should explore multivariate pathways linking developmental competencies to civic engagement, as well as explore potential ways in which competencies may interact with other competencies to predict specific forms of youth engagement (i.e., moderation). Finally, the current study utilizes a large sample that was socio-economically, racially, and geographically diverse, and structural models statistically controlled for these demographic differences. Measurement invariance tests indicated that both developmental competencies and civic engagement measures were stably measured across both racial groups and geographic location. However, it is possible that links between developmental competencies

and civic engagement may vary as a function of these individual youth characteristics. Future research should investigate such potential moderation in order to better understand civic development in social and cultural context. In addition, future research may want to explore alternative analytic strategies such as bi-factor modeling for assessing the shared variance across both developmental competencies and civic engagement variables

Conclusion

Civic and developmental theorists have consistently argued that civic values, skills, and behaviors are not only vital for the continuation of democratic institutions but also constitute essential aspects of individual development. The current article provides important evidence for associations between normative developmental competencies and indices of civic development in a large, racially and socio-economically diverse sample of youth from three different geographic regions of the United States. Specifically, both emotional (empathy and emotion regulation), and socio-cognitive competencies (prosocial moral reasoning and future orientation) were uniquely associated with different forms of civic engagement. These findings provide important information for civic developmental theory, which includes aspects of civic development within a broader orthogenetic narrative of development from childhood into adulthood.

Authors' Contributions A.M. conceived of the study, participated in its design and drafted the manuscript; L.A. helped to draft the manuscript, participated in acquisition of the data, performed statistical analyses and interpretation of the data; B.O. participated in acquisition of the data, performed statistical analyses and interpretation of the data, and helped draft the results; E.B. performed statistical analyses and participated in the conception of the study; A.S. and L.W.L. participated in the design and coordination of the study and were involved in revising the manuscript for critically important intellectual content. All authors read and approved the final manuscript.

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Data Sharing Declaration The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964

Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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