

**Measuring Critical Consciousness in White Rural
Appalachian College Students**

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ABSTRACT

Critical consciousness (CC) refers to the ability to identify, analyze, and challenge systems of oppression. Recent literature has linked CC to a variety of positive career development outcomes, primarily in samples of Youth of Color (e.g., Diemer & Blustein, 2006; Diemer et al., 2010). Very few studies have explored the nuances of CC and career variables in populations who hold both privileged and marginalized identities. Thus, this study sought to explore CC in a cross-sectional sample of 227 white rural Appalachian college students. The study goals were to test the validity of the Critical Consciousness Scale (CCS; Diemer et al., 2017) and explore whether the theoretically supported relationship between CC and work volition held in this population. Results indicate that while the psychometric properties of the CCS (Diemer et al., 2017) seemed to replicate within our sample, CC as a construct did not operate as predicted. These findings contribute to the growing literature on CC and career development specifically and on the cultural validity of CC theory more broadly. Limitations and future directions are discussed, along with recommendations for practice.

Keywords: critical consciousness, work volition, psychometrics, rural Appalachian students

TABLE OF CONTENTS

Chapter I: Introduction.....	1
Conceptualizing CC and Its Core Components	1
CC and Career Development	5
Overivew of Rural Appalachia	8
Rural Appalachian Students.....	10
CC in White Rural Appalachian Students	10
Purpose of Study	12
Chapter II: Methods	14
Participants.....	14
Procedure	14
Measures	15
Demographics	15
The Critical Consciousness Scale	15
The Work Volition Scale-Student Version	16
Data Analytic Plan	17
Chapter III: Results	18
Confirmatory Factor Analysis.....	18
Regression Analysis.....	20
Chapter IV: Discussion	22
Limitations and Future Directions	25
Practice Implications.....	26
List of References	28
Appendix.....	38
Vita.....	41

CHAPTER I: INTRODUCTION

Critical consciousness (CC) is considered a developmental asset that enables individuals to identify and take action against systems of oppression (Watts et al., 2011). The concept of CC comes from Brazilian educator Freire (1973), who first articulated CC as the process by which Brazilian laborers facing inequitable social conditions could learn to read both written text and the world around them. In contemporary scholarship, CC has been described as the antidote to oppression (Watts et al., 1999) and as an increasingly relevant construct in understanding career development processes, “yielding a sea change in how we understand and implement career and work-based counseling” (Blustein et al., 2019c, p. 200). For instance, CC has been linked to a variety of positive career outcomes in marginalized populations, including increased career-search self-efficacy among female survivors of domestic violence (Chronister et al., 2006), higher intent to persist in college among Hispanic Deferred Action for Childhood Arrivals (DACA) students (Cadenas et al., 2018), and greater work role salience among poor and working-class youth from urban backgrounds (Diemer & Blustein, 2006).

Conceptualizing CC and its Core Components

As a construct, CC can be understood as an outgrowth of sociopolitical development, defined by Watts et al. (2003) as a process of moving from an uncritical perspective (e.g., “The world is just and fair for all”) to a recognition that injustices exist and impact human experiences. Thus, CC can be conceptualized broadly as the capacity to analyze, identify, and challenge systemic oppression; this capacity occurs as a result of sociopolitical development. What further distinguishes CC is its theoretical integration of

psychological empowerment (Diemer et al., 2015). That is, compared to sociopolitical development, CC places greater emphasis on an individual's transition from understanding injustice to activating the personal agency needed to counteract it. In the career development literature, CC has been operationally defined as how "oppressed or marginalized people think about and respond to inequitable sociopolitical conditions" (Diemer et al., 2015, p. 15). There appears to be consensus that CC involves three main components: critical reflection, critical motivation (also referred to as political self-efficacy), and critical action (Diemer et al., 2015).

The first element of CC, critical reflection, describes the process through which an individual recognizes the way they exist in their world (Freire, 1973). In contrast to reflective thinking, critical reflection requires not only a recounting of a prior experience but also an assessment thereof. In the career development literature, critical reflection has been operationalized as one's perception of inequality and endorsement of more equitable social conditions (Diemer et al., 2015) and connected to positive career outcomes. For example, in their seminal study on CC and the career development of urban youth, Diemer and Blustein (2006) concluded that sociopolitical analysis, the earlier conceptualization of critical reflection drawn from Pratto et al.'s (2000) Social Dominance Orientation, was moderately associated with youth's clarity of vocational identity, including interests, goals, and talents. In a qualitative study with mostly white youth, Nicholas and colleagues (2019) discovered that increased awareness of sociopolitical issues supported youth's career-decision making. Critical reflection as understood in CC thus appears to be an important component of career development.

Feeling compelled and capable to engage in social change, or critical motivation (sometimes called political efficacy), is the second element of CC. According to Diemer and Li (2011), a precursor to actual participation in sociopolitical change is having both the perceived capacity and intrinsic drive to do so. Building on this idea, some scholars have framed critical motivation as a byproduct of moral development, suggesting that critical motivation is realized when one's sense of morality is called into question and the personal cost of inaction is high (Malin et al., 2015; Mustakova-Possardt, 1998). Studies by Diemer et al. (2009) and Diemer (2012) found that parental support also influences the development of critical motivation among marginalized youth.

As applied to career development, critical motivation is especially relevant to the development of career education interventions. Along with increasing career skills, these interventions often aim to increase participants' drive to become engaged citizens who utilize their career platforms for social good (Diemer et al., 2015; Watts et al., 2011). In a qualitative assessment of an intervention informed by CC for diverse community college students pursuing entrepreneurial careers, Cadenas et al. (2020) noted that participants reported finding motivation toward their big-picture goals by harnessing awareness of their familial and cultural contexts. It appears that the activation of critical motivation can mobilize individuals forward in positive career development processes.

The development of critical reflection and motivation is presumed to facilitate one's actual involvement in sociopolitical change, known as the critical action element of CC (Diemer et al., 2015). Empirically, critical action has been understood primarily in behavioral terms, separating it from the more attitudinal and cognitive conceptualizations

of critical reflection and critical motivation. In qualitative terms, critical action describes different types of sociopolitical activities (e.g., organizing for immigration rights); quantitatively, it refers to the frequency with which one engages in such activities. As it relates to career development outcomes, critical action during adolescence has been linked to increases in adult occupational attainment (Rapa et al., 2018). This link suggests that promoting critical action among marginalized populations may help close educational and career achievement gaps.

Further, Marks and colleagues (2018) tested hypothesized relationships among variables including critical consciousness, career calling, and calling search with a sample of Women of Color. The authors found that higher levels of sociopolitical participation, or critical action, were associated with both greater sense of career calling and calling search (Marks et al., 2018). It appears that engagement in critical action to address systemic inequities may be supportive of career choice and facilitative of career curiosity. Yet as Diemer et al. (2021) recently noted, critical action remains the most understudied component of CC.

It is important to note that CC operates within the particular context of an individual's life, such that a person may demonstrate varying levels of critical reflection, motivation, and action based on their own positionalities and within specific life domains (Diemer et al., 2015). For example, a white female survivor of sexual assault may be particularly attuned to the gendered disparities related to interpersonal violence but less critically reflective of the racialized politics of career advancement in a predominately white workplace. A white LGBTQ+ person may demonstrate greater levels of CC

relative to a heterosexual white person but still lower levels of CC relative to a LGBTQ+ Person of Color whose experiences of oppression and resilience at the intersections of race, gender, and sexuality may warrant greater levels of CC. In this way, the key components of CC do not represent fixed categories but rather fluid, developmental principles that exist on a continuum.

CC and Career Development

The first study to explicitly and empirically link CC with vocational behavior was Diemer and Blustein (2006). Results indicated that higher levels of CC among urban high school students predicted more positive career development outcomes like career commitment and vocational clarity (Diemer & Blustein, 2006). Since this study, an outgrowth of research on CC has found similar benefits. McWhirter and McWhirter (2016), in their study with Latinx youth, discovered that CC was associated with increased levels of both engagement in extracurricular school activities and postsecondary planning. Similarly, among Hispanic DACA college students, CC related to political activism predicted higher intent to persist through college (Germán et al., 2018).

Perhaps the most convincing linkages between CC and career development have come from longitudinal datasets on marginalized youth. Using data from the National Educational Longitudinal Study (NELS) of 2002, Diemer and colleagues (2010) employed structural equation modeling to test the relations between sociopolitical development (SPD) and various career variables. Results indicated that SPD levels at 10th grade (Time 1) had significant indirect effects on students' work salience and vocational

expectations when assessed in 12th grade (Time 3). This finding suggests that, over time, SPD—which was conceptualized in the broader CC framework—can strengthen students’ perceived capacity to overcome structural barriers and thus act on future career goals (Diemer et al., 2010). In a similar study using the NELS of 1988, Diemer (2009) reported that higher levels of CC, again measured via SPD, directly influenced the vocational expectations of marginalized youth and indirectly influenced youths’ occupational attainment in adulthood. Youth with higher levels of SPD attained higher-status, higher-paying jobs eight years after high school (Diemer, 2009).

Based on the evidence that CC supports career development processes, greater attention has been paid to integrating CC in career education interventions. Such interventions aim to enhance career exploration, self-efficacy, and decidedness (Whiston & Blustein, 2013). One example of a CC-infused career education intervention comes from Chronister and McWhirter (2006). Their study tested the effectiveness of two group interventions for 73 battered women randomly assigned to either the standard intervention or the standard-plus intervention, which was designed to promote women’s CC around self-protection and domestic violence awareness. Posttest results indicated that participants in the standard-plus group made greater progress toward their career goals than those in the standard group (Chronister & McWhirter, 2006), offering promising evidence that integrating CC can increase the overall effectiveness of career education interventions. Ali and colleagues (2019) similarly tested whether the inclusion of SPD, a corollary of CC, would increase the effectiveness of a school-based career intervention for Latinx and white rural middle school students. However, their results

showed limited statistical difference in the outcomes of students who received the SPD components and those who did not (Ali et al., 2019). These mixed conclusions indicate a need to further explore how CC is best incorporated in career education interventions and whether the effects of doing so might differ across populations.

Very few studies have examined CC specifically among populations who hold privileged identities. To be sure, Ali and colleagues' (2019) study included white students and found no differences in outcomes among these students and those identified as ethnic minorities. Further, all other studies on CC have included self-identified males, another privileged identity. However, these studies were not designed to assess the nuances of how those who hold privileged identities (e.g., through whiteness and/or maleness) may experience CC differently than those without such privileges. Perhaps the closest example is Hershberg and Johnson's (2019) study on critical reflection among young white men from low socioeconomic backgrounds. Participants ($n=31$) were asked to share their beliefs on what causes poverty in the United States. Qualitative analyses indicated that men who had repeated exposure to people living in poverty ($n=8$) were more likely to reject notions that being poor is an individual choice (Hershberg & Johnson, 2019). Instead, these participants demonstrated the ability to frame poverty as a systemic issue, suggesting that those who hold privileged identities have the potential to develop critical reflection, an element of CC, when they have humanizing experiences with individuals directly impacted by marginalization.

Although empirical investigations of CC have made significant contributions to the career development literature, there are important limitations to consider. The bulk of

studies on CC, and the resulting measurement instruments, are largely based on samples of youth of color, often from urban and/or economically disenfranchised communities. While more recent studies have included a wider array of populations, it is unclear whether current understandings of CC are consistent across groups. Also, the current measures and definitions of CC do not incorporate notions of privilege or intersectionality, which overlooks the reality that privilege and oppression mutually shape each other across the overlapping of one's social identities (Jemal, 2017). This omission may result in the miscalculation of CC, as most people arguably experience privilege and marginalization at various intersections. Further, situating CC as an asset for those furthest at the margins runs the risk of reifying the notion that "oppression is a problem for the oppressed to solve" (Jemal, 2017, p. 618). These limitations represent opportunities for how knowledge of CC might be expanded to include populations with other social identities and geographic backgrounds.

Overview of Rural Appalachia

Like any cultural context, Appalachia is not a monolith. The Appalachian Region spans across 205,000 square miles and includes over 25 million people, with around 2.5 million living in very rural areas and 6 million living in areas adjacent to major cities (Appalachian Regional Commission [ARC], 2016; Pollard & Jacobsen, 2017).

Appalachian people come from a variety of ethnic backgrounds, including Anglo-Saxon, Scots Irish, African, European, and Native American (Obermiller & Maloney, 2016).

Scholars of Appalachian studies have identified a list of core values that seem to be shared among those with Appalachian heritage, whether they live in rural or urban areas.

Such values include familism, self-reliance, community, a religious worldview, and a deep-seated connection to place (Keefe, 2005; Tang & Russ, 2007). In many ways, these values are also viewed as the unique strengths of Appalachian people.

Popular discourse, however, tends to paint Appalachia in a negative light, depicting the region as bleak and its people as lazy and uneducated. These harmful narratives are especially disparaging of people from rural Appalachia, who may face additional layers of marginalization related to their geographic location and limited access to certain resources. By definition, rural Appalachia refers to the parts of the Appalachian Region that do not have a metro (large urban city) area and do not border any county with a metro area (ARC, 2016). The majority (85%) of people from rural Appalachia are white and, according to a 2015 study, rural Appalachians face higher unemployment rates and lower levels of education compared to urban Appalachians (Pollard & Jacobsen, 2017).

Systemic inequities add further nuance to the region. For example, Pollard and Jacobsen (2021) found that compared to other rural populations, rural Appalachians had lower levels of income, employment, education, and internet access, plus higher levels of disability and poverty. The past and present impact of coal mining is a contributing factor to these inequities. As Lewin (2017) explained, the proliferation of coal mining, which peaked in the mid-20th century, came with steep declines in agricultural production, alarming rates of absentee land ownership, and the emergence of “company towns,” areas wholly dependent on one mining employer. As a result, rural Appalachians faced economic disenfranchisement, brutal working conditions, and unsafe housing (Lewin,

2017). Meanwhile, to maintain the region's dependence on coal mining despite the increasingly adverse ramifications, public relations campaigns depicted rural Appalachia as a "sacrifice zone" (Scott, 2010), needed for the betterment of metropolitan areas, and pushed self-interested narratives underscoring the centrality of coal mining to the region's economy and cultural identity (e.g., Bell & York, 2011). Today, there are well documented environmental hazards, such as water pollution due to leaking coal impoundments (Ward, 2012), left behind by the extraction industries that exploited rural Appalachian land and labor.

Rural Appalachian Students

Research has demonstrated that rural Appalachian students face unique barriers and supports related to postsecondary education and career development (e.g., Ali & McWhirter, 2006; Gibbons et al., 2019a, 2019b). For example, some rural Appalachian communities lack basic infrastructure such as roads, which prevents access to neighboring communities and, in turn, decreases students' exposure to the full range of careers (Pollard & Jacobsen, 2017). The prioritization of familial expectations and norms over individual goals can also restrict postsecondary options, as rural Appalachian students often elect to follow their family's career trajectories without exploring other options (Gibbons et al., 2019b). Barriers related to poverty, inaccurate information about the world of work, and geographic isolation can further limit career and educational opportunities (Gibbons et al., 2019b). It is important to understand these barriers not as defects within rural Appalachian students but rather as disparities created and maintained through systems of privilege and power. As for supports, rural Appalachian students may

harness their sense of localism, community connections, and strong work ethic as strengths to help guide and achieve their future goals (Gibbons et al., 2019a).

CC in White Rural Appalachian College Students

To imagine how CC may operate among white rural Appalachian college students, the three core elements of CC must be considered in the context of rural Appalachia as a site of unique cultural factors. Regarding critical reflection, factors like geographic isolation may constrain this population's identification of their own social identities and that of others. For instance, a white rural Appalachian student living in a community with unreliable infrastructure may have fewer opportunities to interact with non-Appalachian, non-white communities. As a result, this student may critically reflect on the inequities within their rural Appalachian community (e.g., few healthcare resources) but be relatively unaware of the inequities other communities may face (e.g., racial profiling). Critical motivation and critical action among this population may conflict with rural Appalachian values of self-reliance, "pull yourself up by the bootstraps" mentality, and localism. White rural Appalachian college students may be less driven to engage in social action due to beliefs that individuals can and should combat adversity on their own terms, using internal resources. They also may be hesitant about engaging in sociopolitical change since it could be viewed as a transgression of localism, the prioritization of rural Appalachian space and community.

Still, consistent with the research on CC and career development, higher CC among white rural Appalachian college students is likely to support positive career development processes. For instance, knowledge of and exposure to health disparities in

both rural and urban communities may encourage these students to consider pursuing a healthcare profession, even if they do not have a role model for this career pathway. Being exposed to inaccurate narratives about rural Appalachian culture could further motivate these students to identify mechanisms for countering negative stereotypes and highlighting the strengths of their communities. Lastly, having CC related to white privilege might enable rural Appalachian students to learn how to use their privilege in ways that benefit other marginalized communities. This knowledge could lead to advocacy efforts related, for instance, to amplifying the experiences and history of rural Black Appalachians, a group often rendered invisible.

Purpose of Study

Exploring CC among white rural Appalachian college students, a population holding both privileged and marginalized identities, is one way to address the current limitations in how CC is operationalized and treated in the career development literature. Thus, the present study sought to examine the CC construct with a sample of white rural Appalachian college students using the Critical Consciousness Scale (CCS; Diemer et al., 2017). While other measurements of CC exist, including the Measure of Adolescent Critical Consciousness (McWhirter & McWhirter, 2016), the Critical Consciousness Inventory (CCI; Thomas et al., 2014), and more recently, the Short Critical Consciousness Scale (ShoCCS; Diemer et al., 2020), the original CCS (Diemer et al., 2017) was selected for this study as it appeared to be the instrument with the most empirical evidence in the career development literature. However, to date, studies using the CCS (Diemer et al., 2017) have focused overwhelmingly on Youth of Color, meaning

little is known about whether this measure accurately captures the construct of critical consciousness in a population holding a dominant racial identity. Indeed, the CCS was initially validated with a sample of predominantly Black/African American youth (63%), with only 7.7% of participants identified as white (Diemer et al., 2017).

Thus, the present study first sought to examine the psychometric properties of the CCS (Diemer et al., 2017) among a sample of white rural Appalachian college students. The first research question was: Is the CCS (Diemer et al., 2017) a valid measure in the selected population? Next, we sought to explore relations between CC and career development among white rural Appalachian college students. To do so, we drew upon the Psychology of Working Theory (Duffy et al., 2016), which posits that experiences of marginalization and economic constraints are primary predictors of work volition, which is predictive of decent work. Duffy et al. (2016) proposed CC as a moderating variable in PWT, hypothesizing that the ability to critically reflect on systemic influences, motivation to address inequities, and engagement in actions to disrupt such inequities would alter the strength of the relationship between one's marginalization and work volition. Thus, the second research question was: Does CC among white rural Appalachian college students moderate relations between first-generation student status and work volition as predicted in PWT (Duffy et al., 2016)? Our overarching aim was to advance the growing literature on critical consciousness and its assessment specifically within a population that exists at a unique intersection of privilege (via whiteness) and marginalization (via the systemic inequities present in Appalachia).

CHAPTER II: METHODS

Participants

Usable data were collected from 227 undergraduate students via a general psychology subject pool at a public university in the Southeastern United States. To participate in this study, all students had to be at least 18 years of age, self-identify as white, and self-identify as being from a rural home community (defined as a geographic area located outside of a major city or metropolitan area). The majority of participants identified as female (73.1%, $n = 166$), 26.4% ($n = 60$) identified as male, and .4% ($n = 1$) identified as nonbinary. Participants ranged in age from 18 to 26, with a mean age of 18.81. Most participants were not first-generation college students (defined as “the first person in your immediate family to attend college”; 80.2%, $n = 182$), with 19.8% ($n = 45$) indicating first-generation student status. Approximately 68% of participants indicated Tennessee as their home state, and the vast majority of all participants (99.93%) were from counties designated as Rural Appalachian by the Appalachian Regional Commission.

Procedure

Prior to the start of data collection, Institutional Review Board approval was obtained for this study. Convenience sampling was used to recruit participants through the psychology department’s subject pool. Eligible students completed an online survey for course credit in the Fall 2020 and Spring 2021 semesters. Participants used an anonymous link to access the survey and were required to give consent before starting it. To protect confidentiality, no identifying information was linked to participants’

responses. Participants were informed that the online survey would ask questions related to social inequality and their perceived ability to freely make career decisions. All participants could exit the survey at any time and/or skip questions if they experienced distress related to completing the survey.

Measures

Demographics

Demographic information collected for the survey included gender, age, first-generation college student status, and subjective rurality. The authors adapted the MacArthur Subjective Social Status Scale (Adler et al., 2000) to assess participants' perceptions of the rurality of their home community.

The Critical Consciousness Scale (CCS)

The CCS has shown strong evidence for reliability and validity, mostly among samples of Youth of Color (Diemer et al., 2017). The CCS consists of 22 total items, and participants indicate their level of agreement with each statement on a 6-point Likert-type scale ranging from (1) strongly disagree to (6) strongly agree. There are three subscales: Critical Reflection (Perceived Inequality), Critical Reflection (Egalitarianism), and Critical Action (Sociopolitical Participation). Higher scores on each CCS subscale indicate a greater level of critical reflection or critical action. The measure was validated with a sample of 326 students. The sample included more female (N = 178; 56.9%) than male participants (N = 135; 43.1%), and most participants self-identified as Black/African American (N = 187; 63%) or as biracial or multiracial (N = 73; 24.6%). Ages ranged from 13 to 19 years old, with a mean age of 15.47. An exploratory factor

analysis was used to test the factor structure of the CCS, resulting in three internally consistent factors with an alpha of .90 on Critical Reflection: Perceived Inequality, .88 on Critical Reflection: Egalitarianism, and .85 on Critical Action: Sociopolitical Participation (Diemer et al., 2017). A confirmatory factor analysis was then conducted with a separate sample. Results supported the three-factor structure and provided strong evidence of construct validity based on correlations in the expected direction with related constructs like sociopolitical development.

For the purpose of this study, only the first two subscales of the CCS were included. We omitted the Critical Action subscale, which assesses frequency of participation in social justice activities, for two main reasons. First, we were primarily interested in how the cognitive and attitudinal dimensions of CC hold within our sample population, given that rural white college students hold both privileged and marginalized identities. Second, there were COVID-19 related restrictions during the data collection period that likely impacted the feasibility of participants' engagement in social justice activities.

The Work Volition Scale-Student Version (WVS-SV)

The WVS-SV (Duffy et al., 2012) is a 16-item scale that is a revision of the initial Work Volition scale, which was used with working adult populations. The WVS-SV was developed specifically to test college students' perceived capacity to make decisions about their future careers despite constraints. Participants indicate their level of agreement with statements such as "Discrimination will not affect my ability to choose a job." Responses range from 1 (strongly disagree) to 7 (strongly agree). There are two

subscales—volition and constraints. Scores are averaged into a composite total score, with higher scores indicating a greater degree of work volition. The measure was developed and tested on three separate samples of undergraduate students. Results from exploratory and confirmatory factor analyses showed that the total WVS-SV scale was very internally consistent ($\alpha = .88$). Further, the constraints subscale was also highly internally consistent ($\alpha = .87$) and the general volition subscale was found to be adequately reliable ($\alpha = .70$).

Data Analytic Plan

We addressed the first research question by conducting confirmatory factor analyses, which allowed us to determine if the psychometric properties of the CCS, as first reported in Diemer et al. (2017), replicated for our sample of self-identified white Appalachian college students from rural home communities. The second question on moderation was tested using hierarchical regression analysis with interaction terms. Drawing on the Psychology of Working Theory (PWT; Duffy et al., 2016) literature, we investigated whether the two selected forms of critical consciousness (i.e., perceived inequality and egalitarianism) moderated the relations between first-generation student status and work volition. The two CC variables were centered to ensure the data were normally distributed and to aid in the interpretation of a moderating effect.

CHAPTER III: RESULTS

Confirmatory Factor Analysis

Following recommendations by Mueller and Hancock (2008), descriptive analyses on the selected 13 CCS items were generated to investigate assumptions of normality in the sample prior to conducting the maximum likelihood (ML) confirmatory factor analysis (CFA). All 8 items associated with the Perceived Inequality (PI) subscale were negatively skewed; the means ranged from 3.98 to 4.40, and the standard deviations ranged between 1.21 to 1.39. These descriptives indicate that participants generally reported average to high levels of PI. The 5 items associated with the Egalitarianism subscale were also negatively skewed; the means ranged from 4.93 to 5.42, and the standard deviations ranged between .81 to 1.2. These descriptives suggest that participants tended to endorse the concept of social equality. All items except one (item 13) demonstrated skewness of $< \pm 1.5$ and kurtosis of $> \pm 2$. In a simulation study, Lang and Liang (2013) provided evidence that the ML method of estimation is relatively robust to moderate violations of the distributional normality assumption. Therefore, we proceeded accordingly despite skewness in the data.

The two-factor model of the CCS, as identified in Diemer et al. (2017), was subjected to a ML CFA using Mplus version 8.1 (Muthén & Muthén, 2011). Per Kline (2011), we fixed the variance of each factor to 1.0, allowing all indicators to be freely estimated. Although all items showed adequate standardized factor loadings (≥ 0.49), fit indices did not indicate good fit: RMSEA = 0.156 (90% CI = 0.14, 0.17); CFI = 0.86; TLI = 0.83, chi-square = 416.621 (64); SRMR = .088.

An examination of model modification indices and the residual correlation matrix suggested that the model be revised to include estimated error covariances between several items: 1 & 2, 5 & 2, 4 & 7, 7 & 6, 8 & 2, and 8 & 5. The wording and content of these item pairings appeared conceptually similar (e.g., “Poor people have fewer chances to get ahead” and “Poor people have fewer chances to get good jobs”). In the original validation study, Diemer et al. (2017) similarly estimated error covariances between items 4 and 7; they also estimated items 1 & 3 and 10 & 11. However, the correlation matrix for our data indicated that the covariance of these two item pairs was close to 0 and thus did not share error variance.

A second CFA was conducted with the aforementioned estimated error covariances. As with the first CFA, all standardized factor loadings were high (≥ 0.48), with most loadings near or above 0.7, which Kline (2011) recommended as the cutoff for retaining items in measurement models. The exception is Item 9, which had the highest residual variance of all items (76%) and the lowest factor loading of .48. It is possible that this item does not appear to function strongly due to methodological reasons, since it is the only reverse coded item (Weems & Onwuegbuzie, 2001).

Overall, model fit indices in our second CFA indicated adequate to good fit: RMSEA = 0.092 (90% CI = 0.07, 0.10); CFI = 0.95; TLI = 0.94, chi-square = 2645.217 (78); SRMR = .080. Although traditional cutoffs have stipulated $\text{SRMR} \leq .08$, $\text{RMSEA} \leq .06$, and $\text{CFI} \geq .96$ for good model fit, scholars more recently have problematized such cutoffs for CFA modeling (Chen et al., 2008; Kenny et al., 2015), especially for studies with smaller sample sizes. Therefore, our determination of adequate to good model fit is

consistent with the “dynamic fit” approach described in McNeish and Wolf (2021), wherein model fit is determined not solely by cutoff scores but by considering the magnitude of standardized factor loadings, number of items, and degrees of freedom. Additionally, there is precedent for models deemed acceptable with RMSEA values of up to 0.10 (see Browne & Cudeck, 1993).

Regression Analysis

Before conducting the hierarchal regression analysis, assumptions of this statistical analysis were tested. Results indicated there was no extreme multicollinearity in the data; all variance inflation factors were less than 3. However, contrary to our expectations, the interrelations among each variable (work volition, CC, first-generation student status) indicated weak correlations in our data. For example, the correlation between work volition and first-generation student status was $-.11$, suggesting a negative but very weak correlation. The correlations between the two CC subscales used in this study, perceived inequality and egalitarianism, were also weakly correlated. It was determined that these results were not due to a restricted range of scale scores; all items but one appeared normally distributed and were consistent with scores reported in past research. Therefore, we proceeded with the test of moderation via hierarchal regression analysis.

The independent variables were entered into the regression model in two blocks, with work volition as the dependent variable. First-generation status, CC-perceived inequality, and CC-egalitarianism were entered first. Next, the interaction terms (perceived inequality by first-generation status and egalitarianism by first-generation

status) were added to test for potential moderating effects. Results indicated that the set of variables in the first model ($F[3, 223] = 1.867, p = >.136$) explained 2.5% of variance in work volition. The addition of the interaction terms in the second model ($F[5, 221] = 1.409, p = >.222$) was not significantly different from the first model, explaining only 0.6 additional variance in work volition. Further, as indicated by the standardized regression coefficients, no independent variables in either regression model had a significant unique relationship with the dependent variable. Thus, our second hypothesis was not supported; contrary to the predictions of PWT (Duffy et al., 2016), CC does not appear to moderate relations between first-generation status and work volition in our data.

CHAPTER IV: DISCUSSION

The purpose of this study was to explore critical consciousness among white rural Appalachian college students. We first assessed whether the psychometric properties of the CCS (Diemer et al., 2017) hold in this population. We then conducted regression analyses to test CC as a moderating variable. Results indicated some incongruence with previous findings in the CC and career development literature. Regarding the first research question, findings from the first CFA revealed poor model fit to our data. That is, without model modifications, the psychometric properties of the CCS initially reported in Diemer et al. (2017) did not replicate in our data. However, when allowing for additional error covariances among items that appeared conceptually similar, factor analysis revealed adequate to good model fit. Based on these results alone, it may appear that the CCS (Diemer et al., 2017) is a valid measure of critical consciousness among white rural Appalachian college students. However, findings related to our second research question suggest a more complicated conclusion.

Based on predictions from PWT (Duffy et al., 2016), we hypothesized that CC would moderate relations between first-generation student status (i.e., an experience of marginalization) and work volition. Hierarchical regression analyses did not support this hypothesis. In fact, our results indicated not only that CC did not moderate such relations, but that the two selected CC subscales, perceived inequality and egalitarianism, were not significantly correlated to work volition. These results were surprising given past research (e.g., Diemer et al., 2010) linking CC and positive career development outcomes. To better interpret the results from this study, we draw upon the Cultural Lens

Approach (CLA; Hardin et al., 2014) to examine the cultural validity of CC and its theoretical assumptions as it relates to white rural Appalachian identity. In short, the CLA (Hardin et al., 2014) argues for distinguishing between the cultural validity of a given theory from its operationalization. That is, rather than presuming a theory does not hold across cultural contexts, the CLA (Hardin et al., 2014) advocates for exploring how the theory's operationalization might be modified.

One possible explanation for the unexpected results from the regression analyses relates to the item content of the CCS (Diemer et al., 2017). The items refer specifically to women, poor people/children, certain racial and ethnic groups (Diemer et al., 2017), but not to geographic locations. As a result, participants may have endorsed the beliefs that inequities exist and people deserve equal rights with the aforementioned groups in mind, not with a recognition of their own potential experiences of marginalization via rural Appalachian identity. Further, the omission of geographic location on the CCS may have inadvertently stifled or rendered invisible participants' appraisal of their rural Appalachian background as a cultural and marginalized identity. In either case, perhaps the hypothesized relationships between CC and work volition did not hold in our data because the specific site of marginalization in our population (i.e., rural Appalachia identity) was not reflected in the CCS item content. Thus, the predictions related to CC and career outcomes may hinge on an implicit prerequisite: that individuals must be primed to critically reflect on their own specific marginalization, not just oppression writ large.

In this way, the results of this study add nuance to the conceptual propositions underlying the core theory of CC and its connections to career development. For example, it is unclear whether CC is meant to hold among people who hold privileged identities (e.g., whiteness) and who identify and take action against oppressive forces (e.g., racism) that structurally benefits them. Here, the following question arises: Is CC presumed to predict or strengthen career outcomes even when the site of CC does not relate to a direct experience of marginalization? In the broadest conceptualization, CC theory articulates a pathway toward liberation from systemic inequities among all people. Freire (2000) noted that true liberation, the goal of CC, is a process requiring the involvement not only of those who experience oppression but also those who benefit from inequities and receive sociopolitical privilege (i.e., the oppressors). However, the CCS (Diemer et al., 2010) does not define CC in terms of both the oppressed and the oppressors. This conceptual gap in the measure may further contextualize our divergent results.

Another possibility is that cultural values often held in rural Appalachia may have influenced participants' interpretation of the CCS items. For example, the CCS includes the following two items: "Women have fewer chances to get ahead" and "Poor people have fewer chances to get good jobs" (Diemer et al., 2017). Someone who deeply values self-reliance and independence may disagree with these statements, contending instead that through hard work or grit individuals of any group have an equal chance at obtaining their goals. This "bootstrapper mentality" was identified in Gibbons et al. (2019a) as a cultural influence on rural Appalachian high schoolers' apparent underreporting of

perceived educational and career barriers. The authors found that this population did not tend to identify such barriers, perhaps because the selected instrument did not operationally define barriers in a way that matched this population's cultural beliefs in their capacity to personally overcome any challenge they may encounter (Gibbons et al., 2019a). As applied to the current study, a revised item like "Women have to work harder than others to get ahead" may be more responsive to the "bootstrap mentality" potentially held in our sample of white rural Appalachian college students. Perhaps strengthening the cultural validity of the CCS (Diemer et al., 2017) in this way would produce results more consistent with past research on CC and career development.

Limitations and Future Directions

As with any study, there are important limitations to consider. First, our study was based on cross-sectional data, meaning there are limits to inferences than can be drawn about causation. It is possible there are other factors or hypotheses that could shed new light on our findings and whether they hold over time. That said, we consider this present study to be an initial exploration that can inform future research on CC in other populations that similarly occupy both positions of privilege and marginalization. Next, our study included only one theoretically relevant career development measure, work volition, meaning the potential connections between CC and other career variables in our sample is yet unknown. Future research could consider exploring CC and variables such as career self-efficacy or outcome expectations, following Social Cognitive Career Theory (Lent et al., 1994), or career adaptability and decent work, consistent with Psychology of Working Theory (Duffy et al., 2014). Lastly, it is possible that our results

were impacted by our operationalization of first-generation student status. A broader definition such as “the first person in your immediate family to attend *or enroll* in college” may have been more reflective of our participants’ experiences and access to college-going information.

Additionally, while the psychometric properties of the CCS (Diemer et al., 2010) appeared to hold in our sample, researchers may consider revising this scale. One possible revision, as suggested above, would be to include additional markers of group identity, including geographic location (e.g., “People from certain geographic locations have fewer chances to get ahead”). Alternatively, it may be possible to revise the CCS (Diemer et al., 2010) to include items that do not reference specific groups but rather allude to broader inequities: “Some people have to work harder than others to get ahead.” It would be interesting whether using potentially more inclusive language in the measurement items would increase the cultural validity of the CCS (Diemer et al., 2010) among more diverse populations, including those like our sample who simultaneously experience privilege and oppression.

Lastly, following recommendations from Jemal (2017), it may be useful for future research on the CCS (Diemer et al., 2010) specifically, and CC and career outcomes generally, to include qualitative aspects. For example, further study designs may include administering the CCS via an online survey then qualitatively assessing via focus groups what participants think about the measurement items, what confusion points if any they experience, and so forth. This data may provide additional insight into how individuals

think about the items relative to their own experiences and may help to increase the face validity of the CCS (Diemer et al., 2010).

Practice Implications

The results of the present study may also inform the interventions used to promote career development in white rural Appalachian college students. While there appears to be increased interest in integrating CC in career education programs to support outcomes, our findings highlight the importance of avoiding a one-size-all approach. For example, in the provision of career education with white rural Appalachian college students, practitioners may need to first provide psychoeducation on the connections between work and social inequities, specifically those embedded in rural Appalachia, while also highlighting the unique values and resilience of Appalachian communities. An example intervention might include sharing a fictional vignette of an Appalachian worker who enjoys and has formed a community at work but regularly has unreliable transportation due to financial constraints. Students could be asked to describe how financial constraints can impact work and then brainstorm or reimagine transportation options in Appalachian communities so as to increase access to work. Such an activity might prompt critical reflection of inequities and instill motivation to take action in the future. Overall, an explicit acknowledgement of rural Appalachia as a unique cultural identity that may confer specific strengths and barriers, as with other cultural identities, might promote participants' critical reflection on their own positionalities, and thus bolster the cultural responsiveness of CC integrated into career education efforts with this population.

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APPENDIX

Tables

Table 1

Correlations Among Variables

Variable	1	2	3	4	<i>M</i>	<i>SD</i>
1. WV	-				85.56	14.79
2. First Gen	-.11	-			.20	0.40
3. CC-PI	-.09	.07	-		32.77	9.42
4. CC-E	.03	.02	0.27**	-	25.64	4.34

* $p < .05$. ** $p < .01$.

Figures

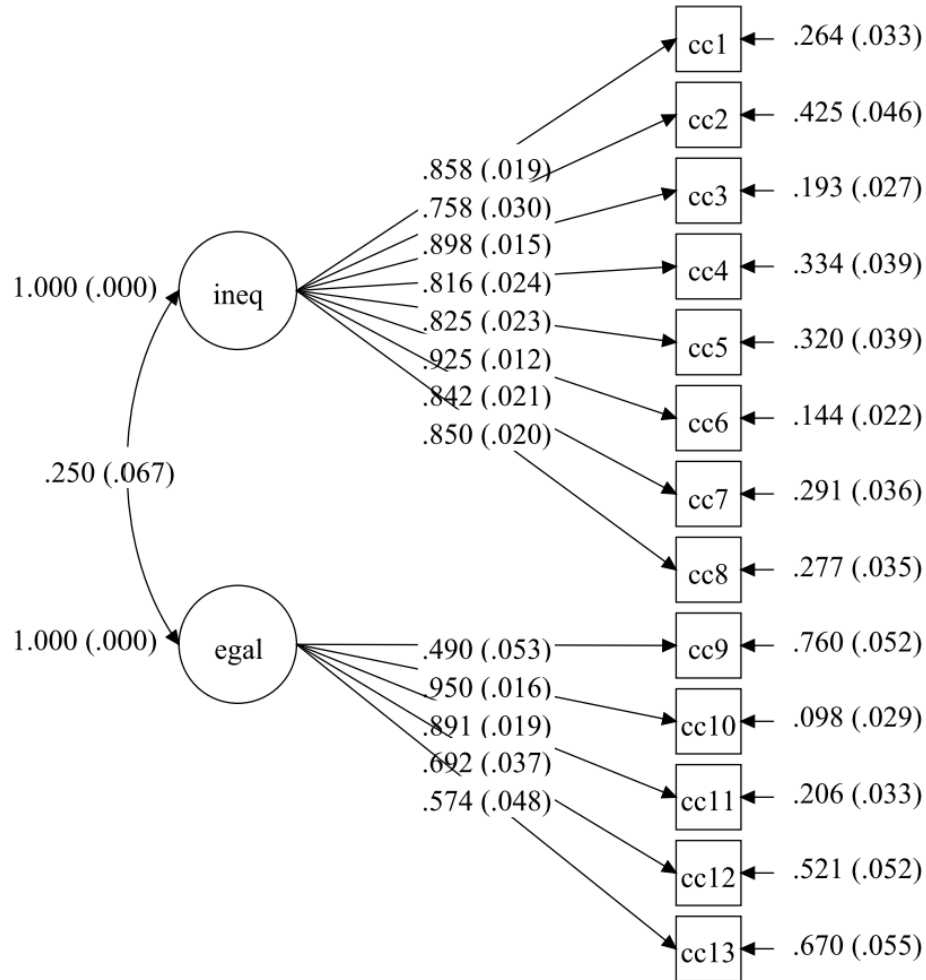


Figure 1.

Confirmatory Factor Analysis Results without Estimated Error Covariances

VITA

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