Original Research Article

Applying the Psychology of Working Theory for Understanding Adaptive Career Progress of Youth

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Abstract

This study extends existing research on psychology of working theory by assessing components of the model among two community samples (N = 364) of high school youth. We examined structural models linking student perceptions of external barriers to higher education to three indices of adaptive career progress, work volition, career adaptability, and school motivation. We also assessed the roles of student perceptions of proactive personality, critical motivation, and teacher social support as moderators of perceived external barriers for the three career progress indices. The findings reveal main effects, rather than moderating contributions for critical motivation and proactive personality, with only teacher support being a significant moderator for career adaptability and work volition. The moderating effect was inconsistent with theoretical expectations, however. The results are discussed with attention to further research and applicability for vocational intervention.

Keywords

psychology of working, youth, critical consciousness, proactive personality, career adaptability

Long standing inequities in the United States (US) based on race, ethnicity, and social class have been exacerbated in recent years as a result of technological and global changes in the labor market and heightened most recently by the COVID-19 pandemic (Kantamneni, 2020). Although communities of color, immigrants, and the working class/poor have been most adversely impacted by these events (Gutowski et al., 2021), some scholars (Kenny et al., 2019) also note anxiety among more privileged youth with regard to their career paths and financial security. In recognition of shifting social and economic conditions, these scholars (Blustein et al., 2019b) have

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recommended that vocational interventions go beyond career decision making and adjustment to prepare individuals to navigate and reduce systemic barriers, and be proactive in the face of challenge. Kenny et al. (2019), for example, advocated for a transformed career development education that would prepare youth to enter and advance in the changing world of work and to foster systemic equity. In this regard, Kenny et al. (2019) identified psychology of working theory (PWT: Duffy et al., 2016) as a viable framework for guiding this intervention.

Theoretical Framework

PWT espouses a broad agenda that attends to all who want to work and offers a framework for work-related intervention that facilitates well-being for individuals and communities. While vocational psychology has traditionally focused on fostering knowledge of self and of the world of work that helps individuals to make satisfying career decisions, PWT evolved based on the recognition that many individuals enter their work roles based from economic necessity, rather than choice (Blustein, 2006). In contrast with those individuals who enjoy the privilege of choosing careers and constructing their futures based upon their interests, values, and aspirations, the pathways through education to decent work are often constrained for individuals who experience substantive barriers, related to poverty, racism, sexism, heterosexism, classism, and other forms of social oppression (Blustein & Kenny, 2020).

While social oppression is widely recognized in contemporary vocational psychology as a significant obstacle to school and work access (Blustein et al., 2019a), macrolevel factors are positioned at the forefront of PWT. Adopting the lens of intersectionality (Crenshaw, 1993, 1994), PWT highlights how experiences of marginalization and economic constraints often serve to undermine the development of psychological resources, such as work volition and career adaptability, that influence access to decent work (Duffy et al., 2016). A growing body of research supports the PWT model by documenting the role of work volition and career adaptability as mediating the relationship between experiences of marginalization and decent work (Allan et al., 2019; Duffy et al., 2018; England et al., 2020).

PWT emphasizes the necessity for macrolevel change to reduce structural barriers and foster equity (Blustein et al, 2019b; Blustein et al, 2019c), but also identifies individual and microlevel resources that might facilitate access to decent work by moderating the negative effects of economic barriers and marginalization. The individual and microlevel resources proposed as moderating factors by Duffy et al. (2016) include proactive personality, critical consciousness and social support. Social support was selected based on an abundance of research (Kenny & Medvide, 2013) regarding the benefits of varied components of social support for educational and career attainment and psychological well-being across the life span. Proactive personality represents an individual level psychological trait that entails taking a proactive stance and seeking out opportunities for meaningful change (Bateman & Crant, 1993). Along with other personality attributes, proactive personality represents a form of human capital that can help individuals with lower levels of economic resources and educational opportunity to overcome barriers (Ayoub et al., 2018). Proactive personality has been examined in numerous studies focusing on career development with adults, demonstrating relationships with career adaptability and varied indices of career success (Jiang, 2017; Li et al., 2017; Seibert et al., 1999).

Critical consciousness (CC) represents an individual level factor that has been described as providing an "antidote to oppression" as individuals become aware of the systemic causes of their experienced marginalization and gain the motivation to engage in social change directed towards alleviating systemic injustice. CC has been conceptualized as a unitary construct and as encompassing two or three components. Watts et al. (2011) define CC as comprised of three components: the critical awareness of structural inequities based on race, gender, and social class;

the motivation and perceived capacity to remove barriers that lead to those inequities; and engagement in actions to reduce them. Despite variations in the conceptualization and measurement of CC, a significant body of research among marginalized adolescents has shown higher levels of critical consciousness to be positively related to school engagement and academic achievement at the high school level, enrollment in college, progress in career development, and entry into higher paying occupations over time (Diemer et al., 2016), with other research revealing a mixed pattern of effects (Heberle et al., 2020; Jemal, 2017; Tyler et al., 2019).

Although PWT aims to apply to all who want to work (Blustein, 2006), existing research, to date, focuses primarily on adults in the US and western societies, especially those who are most vulnerable to marginalization due to social class and societal biases. Research has begun to examine the components, measurement and predictors of decent work in the US and other nations (e.g., Duffy et al., 2020), and has verified positive relationships between engagement in decent work and work satisfaction and well-being. Fewer studies (Autin et al., 2021; Douglass et al., 2020; Kim & Allan, 2021; Wang et al., 2019) have focused on the role of the moderating factors postulated to foster career adaptability and work volition in the presence of economic and social barriers. Two studies focused exclusively on proactive personality. In the Douglass et al. (2020) study of employed workers in the United States, proactive personality was significantly correlated with work volition, career adaptability, and decent work, but did not serve as a moderator. In the Wang et al. (2019) study of Chinese workers, proactive personality functioned as a moderator, but in the opposite direction as hypothesized in the PWT model. It is not clear if the Wang et al. (2019) findings reflect cultural variations, measurement issues, or the possibility that proactive personality may have negative consequences in some situations (Douglass et al., 2020).

We are also aware of two studies (Autin et al., 2021; Kim & Allan, 2021) that assessed CC among adults as a moderator in the PWT model. Both studies revealed a pattern of inconsistent findings, with some findings supporting the hypothesized moderator role for CC and other findings suggesting an opposite effective or no relationship. For both studies, the CC dimension of critical awareness was assessed by perceived inequality and egalitarianism. Critical action/sociopolitical participation was also assessed in both studies, but critical motivation was not included. With regard to theoretical expectations, both studies found the hypothesized moderating effect for critical action, although Autin et al. (2021) found significant moderation only for marginalization and not for economic conditions. The findings for the moderating effects of perceived economic inequality and egalitarianism were varied across the two studies and in relation to outcome variables. These findings add to inconsistent findings about the benefits of the critical awareness component of CC (Heberle et al., 2020; Jemal, 2017; Tyler et al., 2019) and the need for further research to assess the conditions under which specific components of CC are adaptive.

Kenny et al. (2019) identified the moderating factors specified by PWT as a potential focus for a transformed career development education, aimed at fostering proactive personality, critical consciousness, and social support, as well as career adaptability and work volition. Although the moderating factors specified in the PWT model were selected based on prior related research (Duffy et al., 2016), they need to be examined as components of PWT, if the model is to serve as a basis for vocational or career development intervention. Although PWT has potential implications for the career development of youth, the model has not been examined for young people who are not yet in the workforce, with the exception of some research with young adult college students (Autin et al., 2018). From a risk and resilience perspective, career development intervention has the potential to foster promotive factors that can serve to interrupt the trajectory of risk and enable youth to overcome adversity (Zimmerman et al., 2013). Promotive factors can function as moderators of risk through an interactive or protective effect, or in a compensatory manner that counteracts risk through a direct and independent effect (Zimmerman et al., 2013). Duffy et al. (2016) postulated the

set of promotive factors in PWT as moderators, although this aspect of the model has only recently been explored through research.

The Present Study

The current research addresses gaps in the study of PWT by exploring the contributions of proactive personality, critical motivation, and social support to work volition, career adaptability, and school motivation among two samples of adolescents.

Following from the PWT model and the above discussion, we propose 12 hypotheses to assess the contribution of risk factors (*Hypotheses 1 to 3*), and the moderating roles of social proactive personality, critical motivation, and social support (*Hypotheses 4 to 12*). We include school motivation as a dependent variable in our study of high school students since school success and completion are gateways to decent work (Kenny & Walsh-Blair, 2012; Luginbuhl et al., 2016). Recognizing that teachers are an important source of social support in the school setting (Kenny & Medvide, 2013), we assess teacher social support in this study. Since contextual factors are central in PWT, we combine two samples of high school youth who reside in communities and attend schools that vary based on socioeconomic status and racial and ethnic identity. We assessed the following 12 hypotheses.

With regard to the contribution of risk factors, we hypothesize that external barriers to further education will be inversely related to work volition (*Hypothesis 1),* career adaptability (*Hypothesis 2)* and school motivation (*Hypothesis 3)*. With regard to moderators, we hypothesize that proactive personality will moderate the negative effects of external barriers on work volition (*Hypothesis 4),* on career adaptability (*Hypothesis 5),* and on school motivation (*Hypothesis 6).* We also hypothesize that critical motivation will moderate the negative effects of external barriers on work volition (*Hypothesis 7),* on career adaptability (*Hypothesis 8),* and on school motivation (*Hypothesis 9).* Finally, we hypothesize that teacher support will moderate the negative effects of external barriers on work volition (*Hypothesis 10),* on career adaptability (*Hypothesis 11),* and on school motivation (*Hypothesis 12).*

Method

Participants and Procedure

The participants were recruited from programs in two separate communities. Since one of the programs was an out-of-school program that took place in the summer, we refer to these as community samples, although we also recognize that the students in our second sample attended a parochial school that differed from the school attended by many other students in their community.

Community sample one. The participants of our first sample were 200 high school students attending a summer internship program in an affluent small city of approximately 30,000 households in the Northeastern US, with a city-wide median family income of $107, 696. Not all city residents are affluent, however, with the public school system reporting that 11% of students are eligible for free or reduced lunch. The summer internship program recruits students from the city who would benefit from an internship experience, but who would otherwise not have access to this opportunity. While the family income level of the program participants is not known, 21% of study participants reported that they were eligible for free and reduced lunch (FRL) at their school.

All 238 students enrolled in the summer program across three summers prior to COVID-19 (95 in 2017; 72 in 2018; 71 in 2019) were invited to participate in the research. The program was not held in 2020. Students and their parents were informed about the study during the program

orientation and consent forms were distributed to parents along with other program consents. Eighty-six percent of the parents and students consented/assented to study participation, with several students being absent on the day of survey completion or not fully completing the survey, yielding a total sample of 200 students (78 in 2017, 58 in 2018, and 63 in 2019). Students completed an online or paper and pencil version of the survey at a workshop held during the first week of the program before beginning the internship experience. The 200 study participants were mostly junior and seniors but included students from grade 9 through recent graduates (1.5% 9th grade, 13.5% 10th grade, 31.5% 11th grade, 44.5% 12th grade, and 8% just graduated). Students self-reported as male (49%), female (45.5%), gender non-binary (2.5%) and other (1.5%). Sample characteristics with regard to race, immigration status, parent education, and eligibility for FRL are reported in Table 1.

Community sample two. One hundred sixty four participants were recruited from our second community sample, a Catholic high school located in a medium sized city (approximately 80,000). The city is home to a large immigrant population, with a racial/ethnic composition of 77% Latinx (Dominican and Puerto Rican), 7.8% Black (Caribbean and African American), and 2.8% Asian (Cambodian and Vietnamese), and a median household income of $25,983. The school offers a college preparatory curriculum (reports 100% college acceptance) for low-income students from the immigrant city and is well-known for its work-based learning (WBL) program, which engages all students in WBL for 5 days per month across all academic years. Seventy-five percent of the student body represent the first generation to attend college, 98% are students of color, and almost all are eligible for FRL, with an average family income of $35,700. Although not all students are Catholic, being open to faith-based values is a requirement for admission.

Table 1. Demographic Characteristics of Participants.

	Sample 1		Sample 2	
Characteristic	*n*	%	n	%
Race/ethnicity				
Asian/Asian American	59	29.5	3	1.8
Black/African American	9	4.5	4	2.4
Hispanic/Latinx	19	9.5	153	93.3
White	85	42.5	3	1.8
Multiracial and other	26	13	1	.6
Highest level of parental education				
Less than high school	7	3.5	29	17.7
High school graduate	22	11	52	31.7
Some college	16	8	36	22
Four-year college degree	44	22	33	20.1
Graduate or professional degree	108	54	14	8.5
Immigration status				
Student born outside U.S.	32	21	32	19.5
Student born in U.S.; parent outside U.S.	76	38	100	61
Both student and parent born in the U.S.	77	38.5	32	19.5
Eligible for free or reduced lunch (FRL)				
Yes	42	21	128	78
No	120	60	6	3.7
Don't know	36	18	30	18.3

All 277 students enrolled in the high school were invited to participate in the study in spring 2019. A letter explaining the study and consent forms, available in English and Spanish, were sent home to parents with other school materials. One hundred and 82 parents (66%) returned parental consent. Students with consent were invited to complete an online assent and the survey during an extended home room period. Fourteen students were absent, such that 168 students were present and started the survey, with 164 completing the survey. A member of the research team was present to explain the study, to guide students in completing the assent, and to answer questions about the survey. The students who completed the survey represented all 4 years of high school (32.3% grade 9; 17.1% grade 10; 28% grade 11; 22.6% grade 12), with 62.2% self-describing as female and 37.8% as male. Additional sample characteristics are shown in Table 1.

Pooling of the Community Samples. Since structural equation modeling (SEM) and confirmatory factor analysis (CFA) are known to be increasingly trustworthy and reliable and provide more stable results if samples include more than 250 participants (Westen & Gore, 2006), we pooled the samples into a single sample of 364 cases with complete data to yield a diverse participant pool. Since research (Chetty & Hendren, 2016, 2018) suggests that the neighborhood in which one grows up can have a long lasting impact on life outcomes and social mobility over time, we maintained the identity of each community sample in order to accommodate and control for any differences that may exist between samples on the study variables based on well-known methods (Klein, 2016).

Measures

The participants completed a survey containing measures of external barriers to higher education, proactive personality, critical motivation, teacher support, work volition, career adaptability, and school motivation, as well as a demographic questionnaire. For consistency across measures, the participants responded to each item using a 5-point Likert-like response scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*, with higher scores representing higher levels of the construct.

Work volition. We used the volition subscale of the Work Volition Scale—Student Version (WVS-SV; Duffy et al., 2012) to assess high school students' work volition or their perceived capacity to make career-related decisions despite barriers. The WVS-SV has two factor analytically derived subscales, volition (i.e., "I will be able to do the kind of work that I want to, despite external barriers") and constraints (e.g., I feel that my family situation limits the types of jobs I might pursue). The volition subscale consists of seven items and has shown adequate internal reliability (alpha = .78) among college students. With regard to validity, the subscales correlated in expected directions with theoretically relevant measures, including career decision self-efficacy, core self-evaluation, and career barriers (Duffy et al., 2012). For the current study, the alpha was .80.

Career adaptability. We used the 12-item Career Adapt-Abilities Scale-Short Form (CAAS-SF; Maggiori et al., 2017), an abbreviated version of the 24-item CAAS International version (CAAS2.0; Porfeli & Savickas, 2012), to assess the capacities that individuals draw upon to cope with current and anticipated problems, transitions, or traumas in their occupational roles. The short form was developed in Switzerland and Germany to facilitate research use (Maggiori et al., 2017). The short form was strongly associated with the long form and demonstrated a four-factor structure consistent with the long form (Maggiori et al., 2017), including concern (e.g., "Thinking about what my future will be like"), control (e.g., "Sticking up for my beliefs"), curiosity (e.g. "Looking for opportunities to grow as a person"), and confidence (e.g. "Overcoming obstacles"). We piloted the short form with 78 participants in the first cohort of community sample one and

found the correlation between the long and short forms to be .97. For cohort 1, the long form yielded an alpha of .93 and the alpha for the short form was .88. Given a concern by our collaborating schools to maintain brevity in the student survey, we decided to use the short form in this study. The computed alpha was .87 for the current study.

School motivation. We used the 5-item Mastery Goal Subscale (PALS-MA) of the Patterns of Adaptive Learning Scales (PALS) (Midgley et al., 2000) to assess school motivation. Mastery goal orientation represents the adaptive motivational belief that the purpose of academic study is understanding and competence, rather than grades or other reward systems (e.g., "One of my goals is to master a lot of skills this year," "It is important to me that I thoroughly understand my class work"). The Cronbach's alpha reported in the initial validation of this scale was .85 (Midgley et al., 2000) and .81 in other research among urban high school students (Kenny et al., 2010). Research with urban high school students has also demonstrated positive relationships between mastery goal orientation and academic efficacy, belief in the relevance of school for future success, and progress in career planning, and work hope (Kenny et al., 2010). The obtained alpha for the current study was .88.

External barriers. Based on evidence that access to post high school education is important for career entry and advancement (Kenny & Walsh-Blair, 2012), we assessed students' perceptions of the likelihood that external barriers would prevent them from pursuing further education after high school as an index of perceived marginalization and economic constraints. We used 16 items (related to finances, relationships, ethnic, racial and gender discrimination, and constraints on moving away from home) from the 28-item Perceived Educational Barriers likelihood scale (PEB; McWhirter et al., 2000) These items were labeled as external barriers by McWhirter et al. (2007) through principal components analysis of the full scale and were found to be related to student gender and ethnic or racial background (McWhirter et al., 2007). Soresi et al. (2012) reported a coefficient alpha of .75 for a shortened 11-item version of the external barriers scale in a study of 762 adolescents in Italy. In support of validity. External barriers were negatively related to career adaptability and quality of life. The alpha for the 16-item version in this study was .85.

Teacher support. We used the 6-item Learning Climate subscale (LCS) of the Learning Climate Questionnaire (Black & Deci, 2000; Deci et al., 1989) to assess teacher social support. The six items on the LCS assess the extent to which students perceive their teachers as offering support within a context of choice or autonomy (e.g., "My teacher listens to how I would like to do things," and "I feel my teacher provides me with choices and options"). The LCS has demonstrated solid reliability (alpha = .84) and evidence of validity, including correlations with adaptive academic beliefs, work hope, and progress in career development in previous research among urban high school students (Kenny et al., 2010). An alpha of .88 was computed for the current study.

Critical motivation. We used the 10-item critical motivation (CM) scale (Rapa et al., 2020) to assess one of the three dimensions of critical consciousness (CC). We selected critical motivation for this study based upon evidence that critical reflection alone is not sufficient as a protective factor (Diemer et al., 2020b; Tyler et al., 2020). Scholars (Diemer et al., 2020a; Heberle et al., 2020; Jemal, 2017) point to the need for further study of critical motivation and critical action and suggest that critical motivation may serve as a link between critical reflection and critical action for young people, who have had limited opportunities to engage in social action. McWhirter and McWhirter (2016) found that critical agency, similar to critical motivation, was positively related to post-secondary college plans for Latinx high school students, but that critical action/behavior was unrelated. Among undocumented Latinx college students, Cadenas et al. (2021) found that

critical agency was positively related to student well-being and the capacity to resist everyday discrimination. For this study, CM represents the perceived capacity or moral commitment to remedy perceived inequities and contribute to social change (Diemer et al., 2020a). CM sample items include, "It is important for young people to speak out when an injustice has occurred," and "It is important to correct social and economic inequality." The measure authors report good reliability (alpha of .77), with an alpha of .83 for the current study.

Proactive personality. We used a 4-item abbreviated version of the Proactive Personality scale (Bateman & Crant, 1993) to assess students' disposition to actively influence their environments. The original 17-item measure (Bateman & Crant, 1993) was reduced to 10 items by Seibert et al. (1999) and to four items by Jiang (2017). The four items (e.g., "I am constantly on the lookout for new ways to improve my life," "If I see something I don't like, I fix it") were selected from the original 17 items because they demonstrated the highest factor loadings across multiple studies (Jiang, 2017). As with Career Adaptability, we compared the 10 and one 4-item versions with cohort 1, yielding an alpha of .90 for the 10-item scale and .78 for the four items and a correlation of .90 between the long and short forms. We elected to use the 4-item version to reduce the length of the overall survey, with an alpha of .78 for the current study.

Data Analysis Plan

Because we pooled data from two samples from differing geographical locations and which have certain differences in demographics, the plan for data analysis proceeded in stages. As a prerequisite to performing any tests of hypotheses we evaluated the factorial invariance of the seven latent variable constructs defined by the measures of the study. Using the pooled sample, we conducted tests of hypotheses 1 to 3 of the latent variable structural model predicting the designated response latent variables (work volition, school motivation, and career adaptability) from the latent variables of external barriers, controlling for sample type. We then conducted tests of hypotheses 4 through 12 examining the moderating roles of the latent variables of (a) proactive personality, (b) critical motivation, and (c) teacher support for the three latent response variables, also controlling for sample.

Results

Descriptive Statistics

Means, *SD*s, and correlations for the pooled community sample are presented in Table 2. Sample sizes range from $N = 362$ to $N = 364$ because of missing cases. Missing data were accommodated in all analyses in this manuscript by full information maximum likelihood methods (FIML) implemented in *Mplus* 8.7 (Muthén & Muthén, 1998–2017).

Tests of Factorial Invariance for the Seven Study Variables

Prior to testing the structural equation model of the two merged samples, we sought to assess whether the factorial structure of the constructs were invariant across samples (Vandenberg & Lance, 2000). Factorial invariance provides a justification for pooling samples such that any later tests of a relationship between latent variables based on pooled data is interpretable and not due differences in factorial structure within each sample.

All tests of invariance were conducted by procedures available in Mplus 8.7 (Muthén & Muthén, 1998–2017, *p*. 671). The results of tests of both metric and scalar invariance across the

Table 2. Means, Standard Deviations, and Correlations for the Pooled Samples.

	1	2	3	4	5	6	7	8
1.Work volition	—							
2. Career adaptability	0.49***	—						
3. School motivation	0.29***	0.46***	—					
4. External barriers	−0.29***	−0.17***	−0.16***	—				
5. Proactive personality	0.45***	0.57***	0.39***	−0.08***	—			
6. Critical motivation	0.06***	0.23***	0.29***	0.01***	0.23***	—		
7. Teacher social support	0.18***	0.19***	0.31***	−0.26***	0.17***	0.14**	—	
8. Community	0.15***	0.20***	0.09***	0.19***	0.19***	0.01**	−0.14**	—
Mean	24.02	42.84	20.48	38.38	15.73	40.72	21.27	1.45
SD	4.90	8.11	3.12	10.06	2.57	5.54	4.66	0.50

Note. N = 362 to 364 cases of the pooled community samples. Full information maximum likelihood (FIML) used in all analysis (Muthen and Muthen 2017–2020). Data are the original raw score total variables.
The critical values of r are: .105, .137, .162 at .05, .01, and .001, respectively.

Table 3. Tests of Invariance of the Factor Structure for Seven Study Variables.

Variable	Invariance	$\Delta\chi^2$	df	*p*-value
External barriers	Metric	26.227	15	0.036
	Metric[a]	19.780	13	0.101
	Scalar	110.119	15	0.000
Critical motivation	Metric	12.985	9	0.163
	Scalar	22.111	9	0.009
Teacher social support	Metric	7.938	5	0.160
	Scalar	10.425	5	0.064
Proactive personality	Metric	3.858	3	0.277
	Scalar	22.282	4	0.000
School motivation	Metric	6.050	4	0.195
	Scalar	8.177	4	0.085
Career adaptability	Metric	12.373	11	0.336
	Scalar	47.132	11	0.000
Work volition	Metric	4.339	6	0.631
	Scalar	31.688	6	0.000

Note. Critical values for statistical tests throughout are set to .01. Metric and scalar invariance only are evaluated as the most critical tests. Other levels are described in the literature but are less relevant to the current invariance tests.
[a]Metric invariance of external barriers without items 1 and 26.

two community samples are presented in Table 3. The tests of metric invariance show that, with the exception of external barriers, the factor loadings of the variables are invariant across community samples. Since the chi-square test of invariance can be overly critical, Cheung and Rensvold (2002) recommend that a test could be judged as invariant if the difference of CFI between configural and metric models differs by no more than .01, and the RMSEA differs by no more than .015. The CFI and RMSEA differences for the external barriers variable are .006, and .004, respectively.

An additional source of evidence of the invariance of the external barriers variable across community samples derives from the advice of Byrne et al. (1989) who suggest that partial

invariance can often be established by investigating which item, or items, are responsible for the non-invariance. Examination of the factor loadings in a multigroup CFA of the external barrier items reveals that the loadings of two items related to financial barriers ("not enough money" and "school program too expensive") are vastly different across the two community samples. Examination of the mean differences of the item related to the program expense reveals that the mean external barrier score is higher for the students from the less affluent community ($\overline{X} = 40.46$, $SD = 9.41$) than for the students from the more affluent community ($\overline{X} = 36.69$, $SD = 10.28$). Dropping those two items from the scale and re-evaluating the cross-sample invariance yields metric tests that are clearly invariant ($\Delta\chi^2_{(13)} = 19.78$, $p = .101$). Given these results we conclude that is safe to assume an invariant status for the external barrier latent variable and to consider all seven study variables as invariant across community samples. Hence, the results of any further structural equation model tests of hypotheses based on the pooled samples would not be attributable to differing factor structures of the community samples.

The Contribution of External Barriers to the Three Latent Response Variables

We first tested a baseline structural model assessing the paths from external barriers to the latent response variables of work volition, career adaptability and school motivation, controlling for community sample. Each latent variable was identified by reference variable coding using the first observed indicator variable in its item set as the reference indicator. The model of Figure 1 was estimated by robust maximum likelihood in Mplus v 8.7. The fit of the model is acceptable by some criteria (RMSEA and SRMR) but marginal by another (CFI). All of the measured indicators loaded significantly ($p < .001$) on their assigned factor, but the goodness of fit indices of the 4-factor model of Figure 1 were mixed [$\chi^2_{(771)} = 1700.31$, $p < .001$; $CFI = .78$; $RMSEA = .058$; $SRMR = .073$].

The χ^2 test is known to be overly sensitive to model fit and can be safely ignored. Among the remaining indices the RMSEA (.058 < .06) and SRMR (070 < .08) are within the Hu and Bentler (1999) guidelines of acceptable model fit, while the CFI falls short of the standard (.78 < .90–.95). The low CFI is most likely due to the fact that in simultaneously fitting the parsimonious model of Figure 1 with single factor latent variables for all four constructs, we capitalize on a source of misspecification which is known to be prime explanation for diminished CFI's. Namely, we used the single factors as explanatory and response variables in this study in order to be consistent with much of the recent research published in this domain. However, for three of the four variables a single factor mis-specifies the factor structure of the items both reported by the original scale

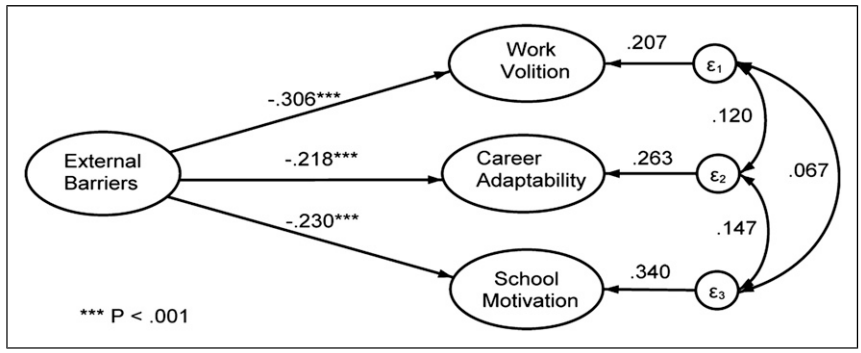

Figure 1. Path diagram of the relationship of external barriers to three response variables. Note: All paths coefficients are adjusted (controlled) for community sample; data not shown on the path diagram.

authors and by exploratory factor analysis (Asparouhov & Muthén, 2009) of the current data. The individual EFA's fitted to these variables suggests that external barriers, work volition, and career adaptability would best be modeled as multi-factor CFA's—with two to four latent variables rather than a single factor representation.

We do not, however, view the single-factor models fitted here with mixed goodness of fit, as a serious disadvantage. The primary focus of the structural model of Figure 1 is on the significance of the individual paths of external barriers to the three response variables. As seen in Figure 1, the direct effects of external barriers on all three latent response variables were all negative and statistically significant at $p < .001$.[1] The relationships indicate that in the absence of any moderation, increasing external barriers tend to be associated with decreasing values of work volition, career adaptability, and school motivation.

Moderation of External Barriers by Three Latent Variable Moderators

We next tested for moderation effects. Testing interactions[2] among latent variables is considerably more complicated than testing interactions among measured variables, with numerous methods suggested for analyzing latent variable interactions/moderation (Kenny & Judd, 1984; Marsh et al., 2004; Ping, 1996; Steinmetz et al., 2011; Wall & Amemiya, 2001). Klein and Moosbrugger (2000) introduced a method (LMS-latent moderated structural equations-) that avoids issues of nonlinearity and nonnormality, and Klein and Muthén (2007) introduced a further advanced method relying on a quasi-maximum likelihood estimation (qML) procedure.[3] The qML procedure has been incorporated into the Mplus 8.7 software (Muthén & Muthén, 1998–2017, *p*. 78) and its use has been simplified for the researcher by the | XWITH command for defining interactions or moderation effects.

Tests of moderation. The *Mplus* tests of moderation are estimated by an integration algorithm that does not produce standard structural equation model measures of model fit such as χ^2, CFI, RMSEA, or SRMR (Klein & Muthén, 2007), but focuses instead on estimating the parameters and standard errors of individual paths. We tested each of the paths representing a moderation hypothesis (i.e., interactions of external barriers by proactive personality, critical motivation, and teacher support) in a separate SEM model for each of the latent response variables of work volition, career adaptability, and school motivation. Each analysis was adjusted for the effect of the community sample as a covariate. The results of these tests of moderation are summarized in Table 4.[4] Path analytic diagrams of the fitted SEM models for the teacher support moderation of work volition and career adaptability, controlling for community sample, are shown in Figures 2 and 3.

None of the effects of external barriers moderated by proactive personality or by critical motivation were statistically significant for work volition, career adaptability, or school motivation. Significant tests of moderation of the external barriers to work volition relationship by teacher support ($Z = 2.14$, $p = .033$), and the external barriers-to-career adaptability relationship by teacher support ($Z = 2.17$, $p = .030$) were found in this study. The results for both moderated relationships show a similar pattern. Visual representation of both results presented in Figures 4 and 5.[5] reveal that external barriers are negatively related to both work volition and career adaptability, controlling for community sample. However, this trend is seen to be modified when taking into consideration either high or low presence of teacher support. The slopes of the negative relationships between external barriers and work volition and between external barriers and career adaptability were steeper for students with high social support than for students with low social support. At low levels of external barriers high social support is substantially more advantageous than low social support. Ratings of work volition decline more rapidly as external barriers increase for students with high teacher support than for students reporting lower social support. The pattern

Table 4. Tests of Main Effects And Interaction/Moderation for Three Response Variables.

Main or Interactive Effect	Work volition				Career adabtability				School motivation			
	b	*β*	Z	*p*	b	*β*	Z	*p*	b	*β*	Z	*p*
External barriers	-.257	-.309	−3.99	.000	-.146	-.160	−2.51	.012	-.184	-.185	−2.79	.005
Proactive personality	.410	.495	5.45	.000	.592	.665	6.79	.000	.431	.440	6.18	.000
Int: EB x PP	.049	.049	0.49	.621	-.009	.006	−0.09	.930	.127	.077	1.27	.206
External barriers	-.302	-.358	−4.10	.000	-.215	-.234	−3.29	.001	-.231	-.224	−3.29	.001
Critical motivation	.077	.083	1.33	.184	.281	.285	3.99	.000	.478	.431	5.70	.000
Int: EB x CRITMO	.202	.066	1.10	.270	.134	.081	1.57	.117	.176	.095	1.13	.260
External barriers	-.263	-.310	−3.45	.001	-.148	-.165	−2.21	.027	-.127	-.127	−1.66	.096
Teacher social support	.117	.417	2.21	.027	.173	.207	2.83	.005	.334	.356	4.44	.000
Int: EB x SOCSUP	-.174	-.132	−2.14	.033	-.168	-.121	−2.17	.030	-.037	-.024	−0.28	.782

Notes. The terms interaction and moderation are used interchangeably in this manuscript. Main effects estimated simultaneously with an interaction are conditional and do not have the same meaning as a main effect estimated alone (Aiken & West, 1991; Lorah & Wong, 2018). The interaction effect (moderation) was estimated in a full model and adjusted for the main effects.

Note that each of the analyses reported in this table was adjusted for the effect of the community sample as a covariate; the test statistic of the covariate is not reported here. The standard errors of the estimates and test statistics (Z) are based on the unstandardized estimates. Mplus (v. 8.7) also gives correct standard errors and Z tests for the standardized estimates. The standard errors and Z tests for unstandardized and standardized models are not necessarily the same, but all agree in the application reported here.

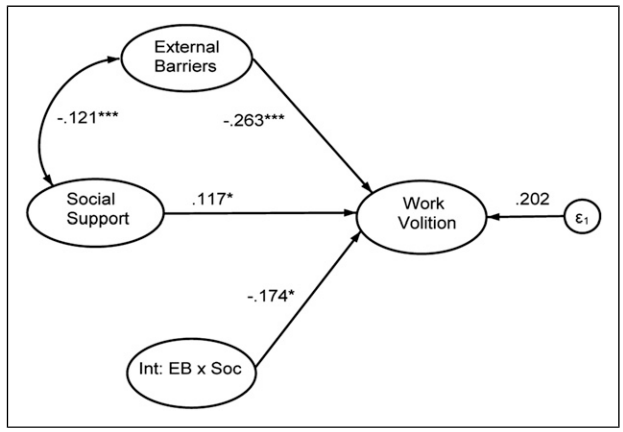

Figure 2. Path diagram of the moderation effect of teacher social support on work volition. Note: All paths coefficients are adjusted (controlled) for community sample; data not shown on the path diagram. *$p < .05$. **$p < .01$. ***$p < .001$.

of the moderation effect for career adaptability (Figure 5) shows the same differential loss of career adaptability across high and low teacher support groups as external barriers increase.

Discussion

This study represents an initial effort to explore the tenets of PWT in a sample of secondary school students. More specifically, we focused on PWT's aforementioned contextual barriers and the role of several moderating variables, specifically proactive personality, teacher support, and critical

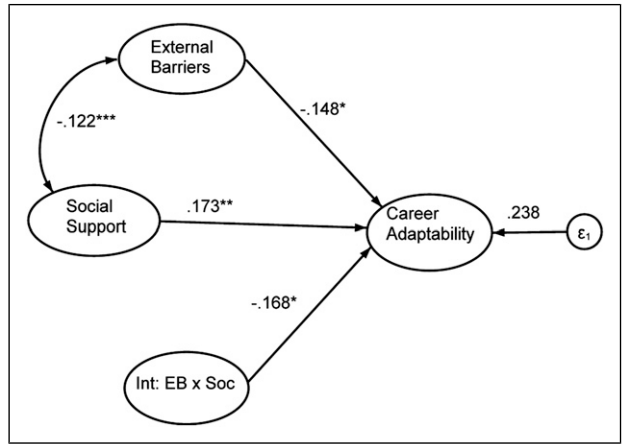

Figure 3. Path diagram of the moderation effect of teacher support on career adaptability. Note: All paths coefficients are adjusted (controlled) for community sample; data not shown on the path diagram. *$p < .05$. **$p < .01$. ***$p < .001$.

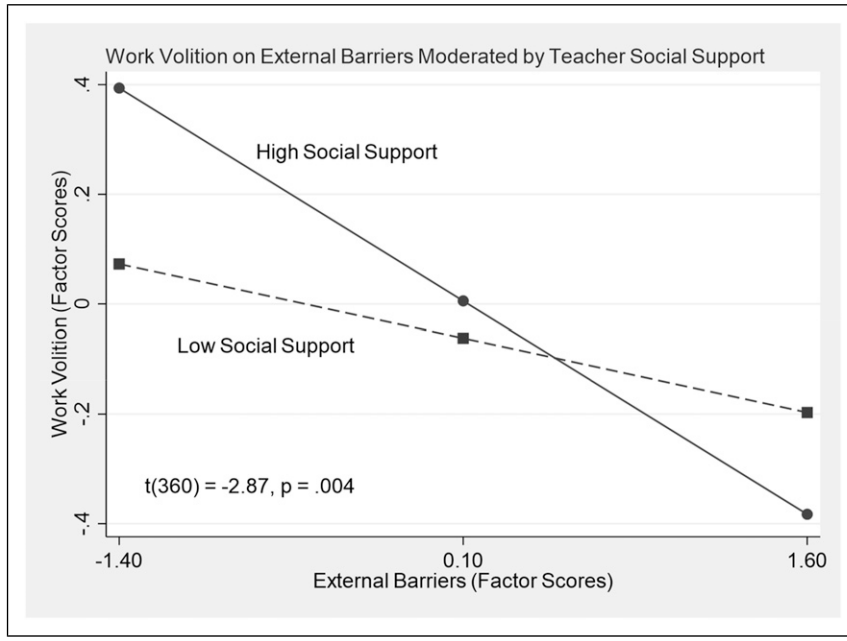

Figure 4. Moderation of external barriers and work volition by teacher social support.

motivation. This is the first study to examine teacher support and critical motivation in the PWT framework. The findings confirm aspects of PWT, similar to those observed among college students and working adults, while also revealing some discrepant findings. We discuss the findings below in relation to our hypotheses.

PWT is unique among career development theories in that it posits risk factors of poverty and social marginalization at the forefront to the model as determinants of work satisfaction and access

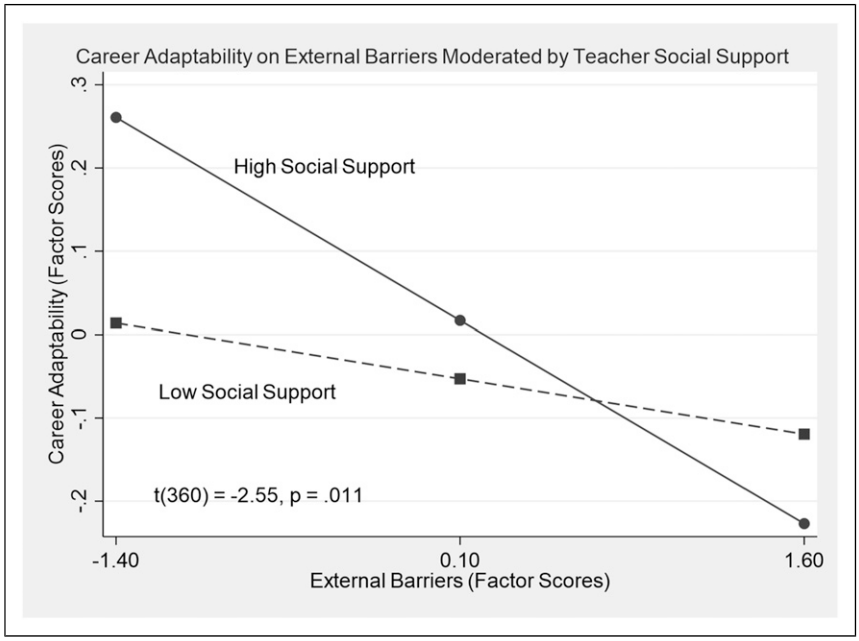

Figure 5. Moderation of external barriers and career adaptability by teacher social support.

to decent work. Consistent with hypotheses one through three and with well-established findings in PWT and other literature (Douglass et al., 2020; Duffy et al., 2018), our findings affirm that high school students' perceptions of perceived marginalization, operationalized as external barriers to further education, are inversely associated with individual assets adaptive for career progress, specifically work volition, career adaptability, and school motivation. Although the students in the two samples were recruited from schools and communities that differed greatly in terms of economic resources and ethnic/racial composition, the students across both samples who perceived more barriers perceived less access to future opportunities, felt less equipped to cope with problems or transitions in their future work roles, and reported less internal motivation to master academic skills than students who perceived fewer barriers.

Hypotheses 4 though 12 focus on the role of proactive personality, critical motivation, and teacher support as moderators of the relationships between perceived barriers and work volition, career adaptability, and school motivation among high school students. The only significant moderator effect in our study relates to hypotheses 10 and 11 for the role of teacher support as a moderator of external barriers for work volition and career adaptability. The moderating role of teacher support, interestingly, was counter to expectation as the benefits of high levels of teacher support declined precipitously as barriers increased. While we would hope that high teacher support would buffer the negative effects of external barriers, our findings suggest that students with high teacher support may be more vulnerable to declines in work volition and career adaptability as barriers increase than students with low support. Given that high school teacher support has not been widely studied in relation to student career beliefs (Kenny et al., 2010), these findings will need to be verified in further studies and the explanation for the findings is not clear. It is possible; however, that students reporting high barriers may feel that support from teachers cannot help them to resolve significant barriers around financial need, societal discrimination or family obstacles outside of the school context. When external barriers are low, support from teachers may be more likely to enhance positive future work expectations. However, when barriers

are high, teacher support loses its protective effect. It is also possible that in schools attended by the study participants, which are designed to be supportive of low income and marginalized students, that teachers strive to provide extra support to students who experienced the most barriers. While that support might be helpful, the external barriers that are likely to impact their future work remain.

As reported in Table 4, teacher support did have a positive and direct main effect on work volition, career adaptability, and school motivation. The findings for moderation only explain the contribution of teacher support beyond its direct benefits. While the findings for direct effects are consistent with abundant literature (Kenny et al., 2010; Kenny & Medvide, 2013) documenting direct benefits for social support with regard to student motivation, education and other outcomes, more research is needed to understand how teacher social support is related to the development of career beliefs, such as work volition and career adaptability, especially for students experiencing substantive systemic barriers. The current findings suggest, however, that teacher support might be understood in PWT as a factor that compensates directly for risk, rather than as a protective factor that moderates high level of risk (Zimmerman et al., 2013).

This study adds to the very limited research (Autin et al., 2021; Douglass et al., 2020; Kim & Allan, 2021; Wang et al., 2019) that has explored proactive personality and critical consciousness as moderators of the relationship between economic constraints and marginalization and measures of adaptive career progress, such as work volition and career adaptability (Duffy et al., 2012, 2018; Maggiori et al., 2017; Rudolph et al., 2017). Consistent with the findings of Douglass et al. (2020), proactive personality was not a significant moderator, as expected in hypotheses 4 though 6 in our study. Douglass et al. (2020) suggest that the failure of proactive personality to serve as a moderator may be related to measurement issues, including the assessment of proactive personality as an attitude, rather than as a goal or actual behavior. Although that is possible in the current study, proactive personality was the most robust direct effect, being positively and significantly associated with all three outcomes in our study. This is consistent with the Douglass et al. (2020) study, which found proactive personality to have a direct relationship with work volition and career adaptability. The relationship between proactive personality and career adaptability is well-documented in the literature (Tokar & Kaut, 2018), yet its role as a moderator, especially for marginalized students or workers, has not been well-researched or documented. Thus, while proactive personality appears to be a factor promotive of youth career progress, it does not appear to be more beneficial for youth experiencing higher levels of contextual barriers.

This is the first study assessing critical motivation as a dimension of CC in the PWT framework. While critical motivation demonstrated a positive and direct relationship with career adaptability and school motivation in our study, it was not significant as a moderator. Prior research identifying positive effects for critical consciousness (e.g., Cadenas et al., 2021) has largely assessed direct or promotive rather than compensatory effects. Emerging research (Autin et al., 2021; Kim & Allan, 2021) assessing CC as a moderator in PWT has yielded inconsistent findings, suggesting that some dimensions of CC might have a moderating effects for some indices of marginalization or economic constraints, but not for others. While the reasons why critical motivation was positively related to career adaptability and school motivation, but not related to work volition in the current study are unclear, it appears that students' commitment to social change is not enough to assure them that they can realize their career goals, despite barriers. Perhaps the CC dimension of critical action, which is gaining increased attention in recent scholarship (Diemer et al., 2020b; Heberle et al., 2020; Jemal, 2017), could make a difference in that regard. Consistent with the findings of McWhirter and McWhirter (2016) and Cadenas et al. (2021) with high school and college students, our findings do provide some support for the direct benefits of critical motivation for high school students. The complexity of current findings affirm the conclusions of CC scholars that further research is needed to better understand the interplay of

critical motivation and other dimensions of critical consciousness across age groups, level of social class, and racial privilege, in relation to school and career progress (Heberle et al., 2020; Jemal, 2017).

Implications for Policy and Practice

The preliminary nature of the current study suggests caution in identifying implications for practice. Nevertheless, since PWT is intended to identify factors that might be modified through individual and systemic intervention (Blustein et al, 2019b), we identify some tentative observations and suggestions that might guide further research to inform practice and policy, especially for youth.

According to a resilience framework (Zimmerman et al., 2013), direct effects suggest the promotive benefit of identified factors for all students, irrespective of their level of external barriers. Although the moderators were not significant as hypothesized, the observed direct effects suggest that some constructs may nevertheless be worthy foci for intervention and may be helpful for all youth. Proactive personality, for example, represents an individual level psychological asset that is considered increasingly important for adapting in an uncertain and changing vocational world (Hirschi & Koen, 2021). While our findings add to research suggesting that proactive personality could be an important focus for career development intervention and evidence suggests that proactive personality is a malleable trait (Hirschi & Koen, 2021; Kirby et al., 2002; Roberts et al., 2017), knowledge of ways to foster proactive personality in a culturally responsive and developmentally sensitive manner deserves further investigation. Although further research is needed to add to the understanding of the varied dimensions of critical consciousness across age and context (Heberle et al., 2020; Jemal, 2017), our findings add to the research documenting some benefits of critical consciousness for high school youth (Diemer et al., 2016; Seider & Graves, 2020). Our findings thus also support the call for research (e.g., Seider & Graves, 2020; McWhirter et al., 2019) to assess the best ways to cultivate varied dimensions of critical consciousness in school and community settings.

The observed inverse relationships between perceived external barriers and work volition, career adaptability and school motivation also affirm the continued need to identify factors that might further enhance resilience among young people. The models that were examined in this study are derived from those proposed by Duffy et al. (2016). Research in vocational and developmental psychology suggests, however, that additional compensatory resources and individual assets may be relevant for high school and college students (Kenny & Tsai, 2020; Pan et al., 2018). Pan et al. (2018), for example, found in a study of Chinese university students that internship quality moderated the relationship between proactive personality and career adaptability. Although the students in our first community sample had not yet engaged in their summer internship experience, the students in our second community sample were engaged in work-based learning (WBL). The WBL experience might be explored as a context of social support in PWT.

Finally, the failure to identify moderating effects for proactive personality and critical motivation, the unexpected findings for social support, and the generally modest contributions of study variables as compensatory factors for external barriers highlight the need for systemic and structural change that will reduce economic and social marginalization. As noted by the PWT perspective, broad systemic change is vital and warrants further research and social action (Blustein et al, 2019b).

Limitations and Future Directions

The current studies provide initial findings on the contributions of PWT in conceptualizing the career progress of high school youth but need to be considered in light of study limitations. This

research is correlational and cross sectional such that causal relationships cannot be assumed. We have also relied on self-report measures which are limited by respondent honesty, self-awareness, and concerns for social desirability. The application of PWT for understanding youth career progress requires a consideration of a broader array of constructs. With regard to the promotive constructs, we assessed support from teachers but did not assess support from family members or friends, which are known to be important contextual supports associated with social, school and vocational outcomes among youth (Ali et al., 2005; Kenny et al., 2003). Our assessment of critical consciousness also represents only one aspect of the full construct, with recent reviews emphasizing the importance of all three dimensions, especially social action (Diemer et al., 2020b; Heberle et al., 2020; Jemal, 2017; Rapa et al., 2018). We assessed proactive personality using an abbreviated measure, which differs from the measure used by Douglass et al. (2020) and Wang et al. (2019), but evidences adequate reliability and correlates well with the longer measure. We assessed students' experiences with marginalization and economic constraints with a specific measure of perceived external barriers to further education. While we believe that this is a relevant and valid approach for high school students, measures that assess constraints and marginalization more broadly across contexts and over time have been found to be a more robust predictor of decent work than more narrow assessments (Duffy et al., 2019). Our initial attempt to assess PWT for high school students has examined school motivation, along with work volition and career adaptability. Yet, there remain other indices of youth progress rooted in social cognitive theory, such as vocational outcomes expectation and vocational self-efficacy (Ali et al., 2005; Kantamneni et al., 2018; Kenny et al., 2003), that might be considered in future research.

Although two very different groups of high school students were assessed in this study, they represent very specific school and community contexts and thus cannot be considered representative of the broader population of high school students or even of the communities in which they reside. The students in the second community sample chose to attend a Catholic high school known for their work-based learning program. We can assume that they differ from other students in their community based on their decision to attend this school and by the school and WBL experience in which they are embedded. The sample of students in our first community sample are generally less socioeconomically privileged and more diverse in relation to their immigration status and race/ethnicity than others in their school or community, which is not surprising given the recruitment goals of the summer program. While this study and PWT attends to participant experience of marginalization, research would benefit from examining how specific aspects of the family, school, and community contexts separately and in interaction foster the promotive factors that enable students to navigate marginalization and promote equity in their journey to decent work. In order to more fully unpack the influence of context for high school students, research is needed with larger samples of students so that attention can be given to examining the protective benefits of varied aspects of the school, family, and community contexts.

Despite these limitations and varied considerations, this research represents an important, but initial effort, in examining the potential value of PWT for youth career progress.

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Notes

1. The Mplus quasi-maximum likelihood Integration Algorithm for models fitted by the |WITH command in tests of moderation reported in this manuscript provide identical path coefficients to those reported by the Mplus MLR estimator.
2. In statistical parlance a moderation effect is used to describe a statistical interaction between continuously distributed variables (Cohen, Cohen, Aiken, & West, 2006). We use the terms interaction and moderation interchangeably in this manuscript.
3. More thorough detail about the many methods of evaluating interactions with latent variables is given in Lorah & Wong (2018).
4. The main effects reported in Table 4 were estimated in a latent variable regression analysis with main and interaction effects estimated simultaneously—each adjusted for the other. Main effects estimated simultaneously with an interaction are conditional and do not have the same meaning or interpretation as a main effect estimated alone (Aiken & West, 1991; Lorah & Wong, 2018; Preacher, 2003). All of the moderators, with the exception of critical motivation, were significantly and positively related to each of the 3 response variables $p < .004$. External barriers were negatively and significantly related to each of the 3 response variables at $p < .004$.
5. The plots of the moderated effects are based on the factor scores of the latent variables resulting from the CFA's of the latent variables involved in the moderation. Interaction plots of the total scores of the original variables show remarkably similar patterns.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications, Inc.

Ali, S. R., McWhirter, E. H., & Chronister, K. M. (2005). Self-efficacy and vocational outcome expectations for adolescents of lower socioeconomic status: A pilot study. *Journal of Career Assessment*, *13*(1), 40–58. http://doi.org/10.1177/1069072704270273

Allan, B. A., Tebbe, E. A., Bouchard, L. M., & Duffy, R. D. (2019). Access to decent and meaningful work in a sexual minority population. *Journal of Career Assessment*, *27*(3), 408–421. http://doi.org/10.1177/1069072718758064

Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *16*(3), 397–438. http://doi.org/10.1080/10705510903008204

Autin, K. L., Duffy, R. D., Jacobson, C. J., Dosani, K. M., Barker, D., & Bott, E. M. (2018). Career development among undocumented immigrant young adults: A psychology of working perspective. *Journal of Counseling Psychology*, *65*(5), 605–617. http://doi.org/10.1037/cou0000280

Autin, K. L., Williams, T. R., Allan, B. A., & Herdt, M. E. (2021). Decent work among people of color: The moderating role of critical consciousness. *Journal of Career Assessment*, 106907272110398. http://doi.org/10.1177/10690727211039811

Ayoub, M., Gosling, S. D., Potter, J., Shanahan, M., & Roberts, B. W. (2018). The relations between parental socioeconomic status, personality, and life outcomes. *Social Psychological and Personality Science*, *9*(3), 338–352. http://doi.org/10.1177/1948550617707018

Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, *14*(2), 103–118. http://doi.org/10.1002/job.4030140202

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education*, *84*(6), 740–756. http://doi.org/10.1002/1098210.1002/1098

Blustein, D. L. (2006). *The psychology of working: A new perspective for counseling, career development, and public policy.* Routledge.

Blustein, D. L., Ali, S. R., & Flores, L. Y. (2019a). Vocational psychology: Expanding the vision and enhancing the impact. *The Counseling Psychologist*, *47*(2), 166–221. http://doi.org/10.1177/0011000019861213

Blustein, D. L., & Kenny, M. E. (2020). The psychology of working: A theory of change for personal and systemic intervention. In N. Hoffman, & M. L. Collins (Eds), *Teaching students about the world of work: A challenge to post-secondary educators*. Harvard University Press (pp. 101–112).

Blustein, D. L., Kenny, M. E., Autin, K., & Duffy, R. (2019b). Psychology of working in practice: A theory of change for a new era. *The Career Development Quarterly*, *67*(3), 236–254. http://doi.org/10.1002/cdq.12193

Blustein, D. L., Kenny, M. E., Di Fabio, A., & Guichard, J. (2019c). Expanding the impact of the psychology of working: Engaging psychology in the struggle for human rights and decent work. *Journal of Career Assessment*, *27*(1), 3–28. http://doi.org/10.1177/1069072718774002

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, *105*(3), 456–466). http://doi.org/10.1037/0033-2909.105.3.456

Cadenas, G. A., Peña, D., Minero, L. P., Rojas-Araúz, B. O., & Lynn, N. (2021). Critical agency and vocational outcome expectations as coping mechanisms among undocumented immigrant students. *Journal of Latinx Psychology*, *9*(2), 92–108. http://doi.org/10.1037/lat0000178

Chetty, R., & Hendren, N. (2016). *The impacts of neighborhoods on intergenerational mobility II: County-level estimates (No. w23002)*. National Bureau of Economic Research.

Chetty, R., & Hendren, N. (2018). The impacts of neighborhoods on intergenerational mobility I: childhood exposure effects. *The Quarterly Journal of Economics*, *133*(3), 1107–1162. http://doi.org/10.1093/qje/qjy007

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing and evaluating goodness-of-fit indexes for measurement invariance. *Structural Equation Modeling*, *9*(2), 233–255. http://doi.org/10.1207/s15328007sem0902_5

Crenshaw, K. (1993). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. In D. K. Weisbert (Ed), *Feminist legal theory: Foundations*. Temple University Press. (Original work published 1989) (pp. 383–395).

Crenshaw, K. W. (1994). Mapping the margins: Intersectionality, identity politics, and violence against women of color. In M. A. Fineman, & R. Mykitiuk (Eds), *The public nature of private violence*. Routledge (pp. 93–118).

Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, *74*(4), 580–590. http://doi.org/10.1037/0021-9010.74.4.580

Diemer, M. A., Frisby, M. B., Pinedo, A., Bardelli, E., Elliot, E., Harris, E., McAlister, S., & Voight, A. M. (2020a). Development of the short critical consciousness scale (ShoCCS). *Applied Developmental Science*, *20*, 1-17. http://doi.org/10.1080/10888691.2020.1834394.

Diemer, M. A., Pinedo, A., Bañales, J., Mathews, C. J., Frisby, M. B., Harris, E. M., & McAlister, S. (2020b). Recentering action in critical consciousness. *Child Development Perspectives*, *15*(1), 12-17. http://doi.org/10.1111/cdep.12393.

Diemer, M. A., Rapa, L. J., Voight, A. M., & McWhirter, E. H. (2016). Critical consciousness: A developmental approach to addressing marginalization and oppression. *Child Development Perspectives*, *10*(4), 216–221. http://doi.org/10.1111/cdep.12193

Douglass, R. P., Autin, K. L., Buyukgoze-Kavas, A., & Gensmer, N. P. (2020). Proactive personality and decent work among racially and ethnically diverse working adults. *Journal of Career Assessment*, *28*(3), 512–528. http://doi.org/10.1177/1069072719894571

Duffy, R. D., Blustein, D. L., Allan, B. A., Diemer, M. A., & Cinamon, R. G. (2020). Introduction to the special issue: A cross-cultural exploration of decent work. *Journal of Vocational Behavior*, *116*, 103351. http://doi.org/10.1016/j.jvb.2019.103351.

Duffy, R. D., Blustein, D. L., Diemer, M. A., & Autin, K. L. (2016). The psychology of working theory. *Journal of Counseling Psychology*, *63*(2), 127–148. http://doi.org/10.1037/cou0000140

Duffy, R. D., Diemer, M. A., & Jadidian, A. (2012). The development and initial validation of the work volition scale–student version. *The Counseling Psychologist*, *40*(2), 291–319. https://doi.org/10.1177/0011000011417147

Duffy, R. D., Gensmer, N., Allan, B. A., Kim, H. J., Douglass, R. P., England, J. W., Autin, K. L., & Blustein, D. L. (2019). Developing, validating, and testing improved measures within the psychology of working theory. *Journal of Vocational Behavior*, *112*, 199-215. https://doi.org/10.1016/j.jvb.2019.02.012.

Duffy, R. D., Velez, B. L., England, J. W., Autin, K. L., Douglass, R. P., Allan, B. A., & Blustein, D. L. (2018). An examination of the psychology of working theory with racially and ethnically diverse employed adults. *Journal of Counseling Psychology*, *65*(3), 280–293. https://doi.org/10.1037/cou0000247

England, J. W., Duffy, R. D., Gensmer, N. P., Kim, H. J., Buyukgoze-Kavas, A., & Larson-Konar, D. M. (2020). Women attaining decent work: The important role of workplace climate in psychology of working theory. *Journal of Counseling Psychology*, *67*(2), 251–264. https://doi.org/10.1037/cou0000411

Gutowski, E. R., Blustein, D. L., Kenny, M. E., & Erby, W. (2021). The decline of decent work in the 21st century: Implications for career development. In P. Robertson, P. McCash, & T. Hooley (Eds.), *Oxford handbook of career development* (pp. 23-34). New York, NY: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190069704.013.3.

Heberle, A. E., Rapa, L. J., & Farago, F. (2020). Critical consciousness in children and adolescents: A systematic review, critical assessment, and recommendations for future research. *Psychological Bulletin*, *146*(6), 525–551. https://doi.org/10.1037/bul0000230

Hirschi, A., & Koen, J. (2021). Contemporary career orientations and career self-management: A review and integration. *Journal of Vocational Behavior*, *126*, 103505. https://doi.org/10.1016/j.jvb.2020.103505.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jemal, A (2017). Critical consciousness: A critique and critical analysis of the literature. *The Urban Review*, *49*(4), 602–626. https://doi.org/10.1007/s11256-017-0411-3

Jiang, Z. (2017). Proactive personality and career adaptability: The role of thriving at work. *Journal of Vocational Behavior*, *98*, 85-97. https://doi.org/10.1016/j.jvb.2016.10.003.

Kantamneni, N. (2020). The impact of the COVID-19 pandemic on marginalized populations in the United States: A research agenda. *Journal of Vocational Behavior*, *119*, 4. https://doi.org/10.1016/j.jvb.2020.103439.

Kantamneni, N., McCain, M. R. C., Shada, N., Hellwege, M. A., & Tate, J. (2018). Contextual factors in the career development of prospective first-generation college students: An application of social cognitive career theory. *Journal of Career Assessment*, *26*(1), 183–196. https://doi.org/10.1177/1069072716680048

Kenny, M. E., Blustein, D. L., Chaves, A., Grossman, J. M., & Gallagher, L. A. (2003). The role of perceived barriers and relational support in the educational and vocational lives of urban high school students. *Journal of Counseling Psychology*, *50*(2), 142–155. https://doi.org/10.1037/0022-0167.50.2.142

Kenny, M. E., Blustein, D. L., Liang, B., Klein, T., & Etchie, Q. (2019). Applying the psychology of working theory for transformative career education. *Journal of Career Development*, *46*(6), 623–636. https://doi.org/10.1177/0894845319827655

Kenny, D. A., & Judd, C. M. (1984). Estimating the nonlinear and interactive effects of latent variables. *Psychological Bulletin*, *96*(1), 201–210. https://doi.org/10.1037/0033-2909.96.1.201

Kenny, M. E., & Medvide, M. B. (2013). Relational Influences. In S. D. Brown, & R. W. Lent (Eds), *Career Development and Counseling: Putting Theory and Research to Work* (2nd edition). John Wiley, pp. 329–356.

Kenny, M. E., & Tsai, B.W. (2020). Person and system focused prevention in preparing youth to navigate an uncertain work future. *Journal of Prevention and Health Promotion*, *1*(2), 155-182. https://doi.org/10.1177/2632077020965568.

Kenny, M. E., & Walsh-Blair, L. Y. (2012). Educational development: applications. In N. Fouad (Ed), *Handbook of counseling psychology, volume 2, practice, intervention and applications*. American Psychological Association. https://doi.org/10.1037/13755-002 (pp. 29–55)

Kenny, M. E., Walsh-Blair, L. Y., Blustein, D. L., Bempechat, J., & Seltzer, J. (2010). Achievement motivation among urban adolescents: Work hope, autonomy support, and achievement-related beliefs. *Journal of Vocational Behavior*, *77*(2), 205–212. https://doi.org/10.1016/j.jvb.2010.02.005

Kim, T., & Allan, B. A. (2021). Examining classism and critical consciousness within psychology of working. *Journal of Career Assessment*, *29*(4), 644–660. https://doi.org/10.1177/1069072721998418

Kirby, E. G., Kirby, S. L., & Lewis, M. A. (2002). A study of the effectiveness of training proactive thinking. *Journal of Applied Social Psychology*, *32*(7), 1538–1549. https://doi.org/10.1111/j.1559-1816.2002.tb01451.x

Klein, A., & Moosbrugger, H. (2000). Maximum likelihood estimation of latent interaction effects with the LMS method. *Psychometrika*, *65*(4), 457–474. https://doi.org/10.1007/bf02296338

Klein, A. G., & Muthén, B. O. (2007). Quasi-maximum likelihood estimation of structural equation models with multiple interaction and quadratic effects. *Multivariate Behavioral Research*, *42*(4), 647–673. https://doi.org/10.1080/00273170701710205.

Kline, R. B. (2016). *Principles and practice of structural equation modeling*. Guilford.

Li, M., Wang, Z., Gao, J., & You, X. (2017). Proactive personality and job satisfaction: The mediating effects of self-efficacy and work engagement in teachers. *Current Psychology*, *36*(1), 48–55. https://doi.org/10.1007/s12144-015-9383-1

Lorah, J. A., & Wong, Y. J. (2018). Contemporary applications of moderation analysis in counseling psychology. *Journal of Counseling Psychology*, *65*(5), 629-640.

Luginbuhl, P. J., McWhirter, E. H., & McWhirter, B. T. (2016). Sociopolitical development, autonomous motivation, and education outcomes: Implications for low-income latina/o adolescents. *Journal of Latina/o Psychology*, *4*(1), 43–59. https://doi.org/10.1037/lat0000041

Maggiori, C., Rossier, J., & Savickas, M. L. (2017). Career adapt-abilities scale–short form (CAAS-SF): Construction and validation. *Journal of Career Assessment*, *25*(2), 312–325. https://doi.org/10.1177/1069072714565856

Marsh, H. W., Wen, Z., & Hau, K. T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction. *Psychological Methods*, *9*(3), 275–300. https://doi.org/10.1037/1082-989X.9.3.275

McWhirter, E. H., Crothers, M., & Rasheed, S. (2000). The effects of high school career education on social–cognitive variables. *Journal of Counseling Psychology*, *47*(3), 330–341. https://doi.org/10.1037/0022-0167.47.3.330

McWhirter, E. H., & McWhirter, B. T. (2016). Critical consciousness and vocational development among latina/o high school youth: Initial development and testing of a measure. *Journal of Career Assessment*, *24*(3), 543–558. https://doi.org/10.1177/1069072715599535

McWhirter, E. H., Rojas-Araúz, B. O., Ortega, R., Combs, D., Cendejas, C., & McWhirter, B. T. (2019). ALAS: An intervention to promote career development among latina/o immigrant high school students. *Journal of Career Development*, *46*(6), 608–622. https://doi.org/10.1177/0894845319828543

McWhirter, E. H., Torres, D. M., Salgado, S., & Valdez, M. (2007). Perceived barriers and postsecondary plans in Mexican American and white adolescents. *Journal of Career Assessment*, *15*(1), 119–138. https://doi.org/10.1177/1069072706294537

Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Freeman, K. E., Gheen, M., Kaplan, A., Kumar, R., Middleton, M. J., Nelson, J., Roeser, R., & Urdan, T. (2000). *Manual for the patterns of adaptive learning scales*. University of Michigan.

Muthén, L. K., & Muthén, B. O. (1998–2017). *Mplus user's guide* (8th ed.). Author.

Pan, J., Guan, Y., Wu, J., Han, L., Zhu, F., Fu, X., & Yu, J. (2018). The interplay of proactive personality and internship quality in Chinese university graduates' job search success: The role of career adaptability. *Journal of Vocational Behavior*, *109*, 14-26. https://doi.org/10.1016/j.jvb.2018.09.003.

Ping, R. A. (1996). Interaction and quadratic effect estimation: A two-step technique using structural equation analysis. *Psychological Bulletin*, *119*(1), 166–175. https://doi.org/10.1037/0033-2909.119.1.166

Porfeli, E. J., & Savickas, M. L. (2012). Career adapt-abilities scale-USA form: Psychometric properties and relation to vocational identity. *Journal of Vocational Behavior*, *80*(3), 748–753. https://doi.org/10.1016/j.jvb.2012.01.009

Preacher, K. J. (2003). A primer on interaction effects in multiple linear regression. www.quantpsy.org/interact/interactions.htm (accessed on November 12, 2021)

Rapa, LJ, Diemer, MA, & Bañales, J (2018). Critical action as a pathway to social mobility among marginalized youth. *Developmental Psychology*, *54*(1), 127–137. https://doi.org/10.1037/dev0000414

Rapa, L. J., Diemer, M. A., & Roseth, C. J. (2020). Can a values-affirmation intervention bolster academic achievement and raise critical consciousness? Results from a small-scale field experiment. *Social Psychology of Education*, *23*, 537-557. https://doi.org/10.1007/s11218-020-09546-2.

Roberts, B. W., Luo, J., Briley, D. A., Chow, P. I., Su, R., & Hill, P. L. (2017). A systematic review of personality change through intervention. *Psychological Bulletin*, *143*(2), 117–141. https://doi.org/10.1037/bul0000088

Rudolph, C. W., Lavigne, K. N., Katz, I. M., & Zacher, H. (2017). Linking dimensions of career adaptability to adaptation results: A meta-analysis. *Journal of Vocational Behavior*, *102*, 151-173. https://doi.org/10.1016/j.jvb.2017.06.003.

Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology*, *84*(3), 416–427. https://doi.org/10.1037/0021-9010.84.3.416

Seider, S., & Graves, D. (2020). *Schooling for critical consciousness: Engaging Black and Latinx youth in analyzing, navigating, and challenging racial injustice*. Harvard Education Press.

Soresi, S., Nota, L., & Ferrari, L. (2012). Career adapt-abilities scale-Italian form: Psychometric properties and relationships to breadth of interests, quality of life, and perceived barriers. *Journal of Vocational Behavior*, *80*(3), 705–711. https://doi.org/10.1016/j.jvb.2012.01.020

Steinmetz, H., Davidov, E., & Schmidt, P. (2011). Three approaches to estimate latent interaction effects: Intention and perceived behavioral control in the theory of planned] behavior. *Methodological Innovations Online*, *6*(1), 95–110. https://doi.org/10.4256/mio.2010.0030

Tokar, D. M., & Kaut, K. P. (2018). Predictors of decent work among workers with chiari malformation: An empirical test of the psychology of working theory. *Journal of Vocational Behavior*, *106*, 126-137. https://doi.org/10.1016/j.jvb.2018.01.002.

Tyler, C. P., Geldhof, G. J., Black, K. L., & Bowers, E. P. (2020). Critical reflection and positive youth development among black and white adolescents: Is understanding inequality connected to thriving? *Journal of Youth and Adolescence*, *49*(4), 757–771. https://doi.org/10.1007/s10964-019-01092-1

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, *3*(1), 4–70. https://doi.org/10.1177/109442810031002

Wall, M. M., & Amemiya, Y. (2001). Generalized appended product indicator procedure for nonlinear structural equation analysis. *Journal of Educational and Behavioral Statistics*, *26*(1), 1–29. https://doi.org/10.3102/10769986026001001

Wang, D., Jia, Y., Hou, Z., Xu, H., Zhang, H., & Guo, X. (2019). A test of psychology of working theory among Chinese urban workers: Examining predictors and outcomes of decent work. *Journal of Vocational Behavior*, *115*, 11. https://doi.org/10.1016/j.jvb.2019.103325.

Watts, R. J., Diemer, M. A., & Voight, A. M. (2011). Critical consciousness: Current status and future directions. In C. A. Flanagan, & B. D. Christens (Eds), *Youth civic development: Work at the cutting edge; youth civic development: Work at the cutting edge*. Jossey-Bass. https://doi.org/10.1002/cd.310, (*2011*, pp. 43–57)

Westen, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, *34*(5), 719–751. https://doi.org/10.1177/0011000006286345

Zimmerman, M. A., Stoddard, S. A., Eisman, A. B., Caldwell, C. H., Aiyer, S. M., & Miller, A. (2013). Adolescent resilience: Promotive factors that inform prevention. *Child Development Perspectives*, *7*(4), 215–220. https://doi.org/10.1111/cdep.12042