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The relationship of deprivation and gender to perception of barriers, optimism and attachment during the postsecondary transition

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Abstract

Introduction. High school students' self-reports about their perception of barriers, optimism and attachments in relation to the postsecondary transition were examined.

Method. Factor analysis of an inventory administered to 1044 high school students (573 males and 471 females) who attended six urban schools in Scotland identified three factors.

Results. ANOVA indicated that students living in areas of higher deprivation reported perception of more career barriers and fewer career scaffolding attachments. Males were more optimistic about their career prospects but reported fewer career scaffolding attachments. There was an interaction between deprivation and gender with regard to career optimism.

Discussion and Conclusion. These results contribute to an explanation of why failure to obtain a positive postsecondary destination is more prevalent in young people living in areas of greater social deprivation, and in males rather than females. The implications for practice, policy and future research are discussed.

Keywords: Career Barriers, Career Optimism, Attachment, Social Cognitive Career Theory, Postsecondary Transition.

Resumen

Introducción. Se examinaron los autoinformes del alumnado de secundaria sobre su percepción de las barreras, el optimismo y los apegos en relación con la transición postsecundaria.

Método. El análisis factorial de un inventario administrado a 1044 estudiantes de secundaria (573 hombres y 471 mujeres) que asistieron a seis escuelas urbanas en Escocia identificó tres factores.

Resultados. ANOVA indicó que los estudiantes que viven en áreas de mayor privación económica social informaron la percepción de más barreras profesionales y menos apegos hacia andamios educativos. Los hombres eran más optimistas sobre sus perspectivas de carrera, pero informaron menos apegos para andamios educativos. Hubo una interacción entre la privación económica social y el género con respecto al optimismo sobre la carrera.

Discusión y Conclusion. Estos resultados contribuyen a explicar por qué el hecho de no obtener un postsecundario positivo es más prevalente en los jóvenes que viven en áreas de mayor privación económica social y en los hombres que en las mujeres. Se discuten las implicaciones para la práctica, la política y la investigación futura.

Palabras clave: Barreras profesionales, optimismo profesional, apego, teoría de la carrera cognitiva social, transición postsecundaria.

Introduction

Across the world there has been significant recent research and policy interest in improving the transition from high school to first postsecondary destinations in employment, education or training (e.g., Anders & Dorsett, 2017; Hanson et al., 2017; Sanderson, 2019). Indeed, England and Scotland have implemented government policies which guarantee that every school leaver receives a fully-funded offer of a positive first destination immediately on leaving school, complete with financial incentives to encourage engagement (Cooke, 2013; Scottish Government, 2012; Valiente et al., 2020). Despite this, a significant number of young people fail to enter a positive postsecondary destination on leaving school and join the ranks of unemployed youth. Holmes et al. (2021) have shown that since 2000 the number of unemployed school leavers has been consistent at approximately 14%, but with an understandable rise to 17% in the two years immediately following the 2008-9 global financial crisis.

Ralston et al. (2021) present longitudinal data to show that being "not in education, employment or training" (NEET) in the period immediately after leaving school is associated with long-term scarring in the form of a ten times greater incidence of being economically inactive twenty years later. Bäckman and Nilsson (2016) argue that this labour market exclusion is both a step on an already unfavourable life trajectory, and a crucial triggering factor for wider social exclusion. It has also been shown that being NEET on leaving school also carries a higher risk of poor physical and mental health (Feng, Everington, & Ralston, 2015); of drug and alcohol misuse, parenting at a young age, and criminal activity (Coles et al., 2010; Simmons et al., 2020). Macguire (2015) argues that the consequences of this pattern of long term social and economic exclusion is profoundly damaging not only for the young people themselves but for society as a whole. Stabingis (2020) presents comparative data to show that most progress in reducing the numbers of young people who were NEET was achieved in countries that developed public-private partnerships in the process of implementing the European Union Youth Guarantee programme, which assured a positive destination for every school leaver.

Several studies have shown that high school students from areas of higher social deprivation are over represented in those who fail to enter a positive placement after school (e.g., Feng et al., 2015; Schoon, 2014, 2020; Skills Development Scotland, 2014, 2015).

Other studies have shown that males are over-represented in those who fail (Collins et al., 2000; Feng, et al., 2015; Skills Development Scotland, 2014, 2015;). These demographic gaps in postsecondary transition attainment represent a significant social justice problem for schools, policy-makers and government decision makers. The present study seeks to explore the possibility that socioeconomic status and gender differences in the rate at which school leavers fail to obtain a postsecondary destination and become unemployed can be explained in part by detectable differences in their thinking and emotional response to their social environments. Therefore, the study sought to investigate the effect of socioeconomic status and gender on the perception of career barriers, career optimism and career scaffolding attachments. This has the potential to inform educational practice, policy and future research to help close the socioeconomic and gender attainment gaps in the achievement of positive postsecondary destinations.

The social cognitive Model of Career Self-Management

A Career Self-Management Model (CSM) has been posited by Lent and Brown (2013) and subsequently developed and empirically supported by Brown and Lent (2018) and by Lent et al. (2017). This was built on the earlier framework of Social Cognitive Career Theory (SCCT) (Lent et al., 1994), which was originally derived from the fundamental tenet of generic social cognitive theory that thinking, behaviour and environment influence each other reciprocally in the production of human agency (Bandura, 1977, 1986, 1989). According to the CSM model, robust self-efficacy beliefs and optimistic career expectations increase the likelihood that people will engage in career goal-setting, and adaptive career actions including career exploration and job search behaviours. Increased perception of career barriers is hypothesised to hinder this process by negatively influencing self-efficacy beliefs, reducing career optimism, hindering goal setting behaviour, and inhibiting the translation of goals into career actions (Brown & Lent, 2018).

The construct of attachment is not often considered within social cognitive models of career development. However, on the basis of a review of the literature, Wright and Perrone (2008) have proposed that it should be more explicitly integrated within such models on the rationale that “a limitation of past research has been the lack of a theoretical framework that explains the relationship between attachment constructs and career-related variables....the combination of attachment theory and SCCT could provide a useful and more comprehensive framework to guide future research in this area” (p. 87).

The CSM also hypothesises that individual differences in person factors such as socioeconomic status and gender are important variables within the career development processes, and can have effects throughout the transmission pathways of the model (Brown and Lent, 2018). In an empirical study Douglas and Topping (2020) confirmed that students living in areas of higher social deprivation, and females in particular, reported lower levels of self-efficacy belief that they could successfully obtain a place in employment or education after leaving school.

Perception of Career Barriers

It has been posited that individual differences in career outcomes could primarily be due to differences in perceived barriers (Lent, Brown, and Hackett, 1994). Empirical studies have confirmed that relationships do exist between perception of career barriers and other career variables. For example, perception of career barriers by high school students in the USA was associated with lower self-efficacy beliefs about ability to attend postsecondary education (Gonzalez et al., 2013); lower career aspiration (Ali & McWhirter, 2006; Kenny et al., 2003), and greater career indecision (Constantine, Wallace & Kindaichi, 2005). It has also been shown that relevant individual differences do exist in the perception of barriers. For example, perception of career barriers in high school students in the USA was shown to be associated with lower socioeconomic status (Irvin et al., 2012; McWhirter, 1997) and female gender (McWhirter, 1997). In particular, female high school students in the USA anticipated encountering significantly more career barriers specifically associated with financing their postsecondary education plans than males (McWhirter et al., 2007).

Career Optimism

Human attainment requires an optimistic cognitive style, which enables recovery of self-efficacy in the face of difficulties and setbacks (Bandura, 1977, 1989). A tendency to experience negative or positive affect can also influence the way in which career-relevant information is processed (Lent et al., 1994). If an individual experiences high levels of negative affect in general, all other things being equal, that person is also likely to perceive more career barriers (Lent et al., 2000). Optimism has been conceptualised as a generalised expectation that good things will happen, and is frequently measured in psychological research using the revised Life Orientation Test (LOT-R) (Scheier et al., 1994). This measure originally represented optimism and pessimism as a single bipolar personality trait. But

subsequent studies in a diverse range of populations have shown that the LOT-R is bi-dimensional and that optimism and pessimism are two independent constructs, rather than a single bipolar trait (e.g. Chang et al., 1997; Glaesmer et al. 2012; Herzberg et al., 2006). Optimism was confirmed as largely unrelated to pessimism in a population of Australian high school students (Creed, Patton and Bartrum 2002).

It has been shown that optimistic high school students in Australia reported more career planning and exploration, were more confident about their career decisions, and had more career goals (Creed et al., 2002). However, studies which explored the relationship between optimism and socioeconomic status reported no significant effects in a general population in the UK (Robb et al., 2009), or among American and Jordanian participants (Khallad, 2013). But these studies used combinations of educational, occupational and income factors to measure socioeconomic status: an approach which has been criticised by Diemer, Mistry et al. (2013) as inadequate for capturing the complex multidimensional nature of this construct. It is also important to note that no study was found which investigated the extent to which socioeconomic status was related to optimism specifically in high school students.

Other studies have reported that levels of generic optimism were invariant in relation to gender in general populations in Germany (Glaesmer et al., 2012) and Finland (Heinonen et al. 2006), and in Australian high school students (Creed et al., 2004; Patton et al., 2004).

Career Scaffolding Attachments

Children develop attachments to primary caregivers which give rise to internal working models of the self and the self in relation to others, which they then use to interpret subsequent relationship experiences (Bowlby, 2005). Attachment behaviour in adults and children has been conceived within four categories including secure, anxious-avoidant, anxious-ambivalent and disorganised, which were associated with differences in early caregiving (Ainsworth et al., 2015; Main & Solomon, 1986). A meta-analysis of fifty-five studies involving 4,729 children has shown that socioeconomic status is a significant risk factor for insecure attachment (Cyr et al., 2010). Additionally, a pooled analysis of 22 samples including 887 children showed that males have a significantly increased incidence of insecure attachment compared to females (Gloger-Tippelt & Kappler, 2016).

It has been posited that differences in attachment-based, internalised working models originating in infancy affect career-related learning experiences through fundamental approach - avoidance mechanisms, and that securely attached individuals can more readily access efficacy-building learning experiences (Wright & Perrone, 2008). Studies have confirmed that relationships exist between measures of parent and/or peer attachment and other career variables (although most of these were conducted with university students in the USA). For example, secure attachment in university students was positively related to career decision-making self-efficacy (Tokar et al., 2003; Wolf & Betz, 2004), career aspiration and career self-efficacy (O'Brien, 1996).

Two studies were found which specifically investigated these relationships with high school students. Both of these used the Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987), which assessed three broad dimensions including: degree of mutual trust; quality of communication; and extent of anger and alienation. The first study, Vignoli et al. (2005) found that in Belgian high school students, females reported greater perceived security of attachment to their parents and also greater frequency and diversity of career exploration, compared to males. The second study, Germeijs and Verschueren (2009) showed that French high school students who reported greater perceived security of attachment to their mother showed higher levels of career exploration and career decision-making. No significant differences were found in this effect with regard to the students' own gender.

The aims of the current study

The study was designed to explore the possibility that perceptions of career barriers, career optimism, and career scaffolding attachments, could contribute to an explanation of why young people who live in areas of greater socioeconomic deprivation, and males in particular, have lower rates of success in securing a place in employment, education or training, when they leave school.

The study also aimed to address the measurement issues apparent in previous studies. It has been shown that social cognitive career constructs have greatest salience when measured in closely focused, domain-congruent ways (Bandura, 2006; Betz & Hackett, 2006). Therefore, the use of broad generic measures of social cognitive constructs may be viewed as a limitation in previous studies. Also, the construct of socioeconomic status has recently

received increased attention and scrutiny in psychological research (APA Task Force on Socioeconomic Status, 2007), and there have been calls for greater conceptual clarity and parallel specificity between how socioeconomic status is measured, the purposes of the research, and specific characteristics of the population (Diemer et al. 2013; Evans, 2004). Consequently, the use of parental occupational and educational status as measures of socioeconomic status may also be considered a significant limitation in previous studies.

Objectives and Hypotheses

The current study sought to develop new measures of perceived career barriers, career optimism and career scaffolding attachments that are more congruent with the specific target behaviour of obtaining a positive postsecondary destination in employment, education or training. The study also sought to apply a measure of socioeconomic status that captured a wider range of domains than previous studies, which are of greater specific relevance to the research hypotheses stated below and the characteristics of the high school population. The ultimate aspiration of the study was, therefore, to generate new, evidence-based insights to inform educational practice, policy and future research, to help address and close the socioeconomic and gender gaps in the attainment of immediate postsecondary destinations.

The following research hypotheses were tested in this study:

1. High school students from lower socioeconomic backgrounds, and males, will report greater perception of career barriers.
2. High school students from lower socioeconomic backgrounds, and males, will report lower levels of career optimism.
3. High school students from lower socioeconomic backgrounds, and males, will report fewer career scaffolding attachments.

Method

Participants

The participants were 1044 senior high school students (573 males and 471 females) who attended six urban high schools from a single urban local authority in Scotland. The age of the participants ranged from 15 years 0 months to 19 years 1 months, with a mean of 16 years 6 months ($SD=8.1$ months). The upper part of the range was represented by young people who had started school late as infants, and so were slightly older than their peer group.

The six participant schools were selected from a total population of nine schools in the research area, based on the following criteria. Two schools were excluded from the research sample because they were atypical: one because it was a female only school and the other because it delivered the curriculum in Gaelic. The questionnaire was piloted in a single school which served a catchment area in the middle of the range present in the whole local authority research area. The school in which the questionnaire was piloted was not included in the main study. The participants for the main study were drawn from the six remaining schools. This provided a sample population which covered the complete range of social economic status present within the local authority area, and had similar demographic characteristics to the local authority area as a whole. As all of the participating schools were administered by a single local authority, they had implemented the same policy and practice guidance with regard to vocational and professional orientation programmes to help young people prepare for leaving school, and make the transition to employment, education and training after school. Being an inner city local authority area, both the research sample and the population from which it was drawn were skewed towards higher levels of deprivation in comparison to the whole Scottish population. The sample represented 57% of the total population of students in years 11, 12 and 13 in the six participant schools.

Instruments

The data for the current study was generated using a questionnaire designed to measure three social cognitive career factors that related specifically to the target behaviour of successfully achieving a postsecondary place in education, training or employment, as opposed to becoming unemployed immediately on leaving school. These included perceptions of career barriers, career optimism, and career scaffolding attachments. A total of eleven questionnaire items were used in the study. Questionnaire items were generated from three sources. Firstly, a literature review on research carried out within the theoretical framework of the Career Self-Management Model, particularly in direct relation to young people preparing for the postsecondary transition (e.g., Brennan, Clark, & Shaver, 1998; Lent & Brown, 2013; Lent, Brown, & Hackett, 1994; Lent, Brown, & Hackett, 2000; Lent, Ireland, Penn, Morris, & Sappington, 2017; Wright & Perrone, 2008). Secondly, existing questionnaires and inventories including: Perception of Educational Barriers Scale (McWhirter, Crothers, & Rasheed, 2000); Life Orientation Test-Revised (Scheier, Carver, & Bridges, 1994); and Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987). Thirdly, items originated by one of the authors, who was a practising educational psychologist. Participants

were asked to rate the degree to which they agreed with each item statement. A response of 0 indicated *Strongly Disagree* through to a score of 100 which indicated *Strongly Agree*. Participants were required to place a cross on a continuous line from 0 to 100.

The socioeconomic status variable was obtained using the Scottish Index of Multiple Deprivation (SIMD). This is an online research tool, maintained by the Scottish Government, which allows the identification of the level of deprivation associated with every individual residential address in Scotland. It is a weighted index of 38 indicators, across eight domains including: income; employment; health; education, skills and training; housing; geographic access; and crime (Scottish Government, 2021a; 2021b). It provided an authoritative, highly sensitive, multi-dimensional measure of socioeconomic status, based on small and finely graded geographical zones. The address location used was the young person's main residence. When it was known that the young person's parents did not live together, or the child did not live with either parent, the residential address at which the young person spent most time was used. Establishing the deprivation ranking (1-6505) of the individual residential location of each participant enabled the identification of the quintile segment of deprivation for the geographical location in which each participant lived, relative to the whole national population of Scotland. In this way, three levels of socioeconomic status variable were established including: (1) quintile 1 on the index of deprivation ($N=474$); (2) quintiles 2 and 3 ($N=329$); (3) quintile 4 and 5 ($N=233$). This resulted in 475 participants in the High Deprivation condition, 329 participants in the Medium Deprivation condition, and 233 in the Low Deprivation condition. The independent variable of gender was applied at two levels: male and female.

Procedure

Ethical approval for the research was first obtained from the Research Ethics Committee at the authors' university and also the local authority in which the research took place. Informed consent to carry out the research was then obtained from Head Teachers in the participating schools, parents of participants, and also the participating young people themselves. Participants were included in the study only on the basis of positively affirmed consent. It was made clear to participants that they could decline to participate in the research or withdraw after commencement without difficulty, penalty, or loss of entitlement to services. Participants and their parents were given a participant information sheet two weeks before the questionnaire administration. This gave details about the purpose of the research,

the task, confidentiality, anonymity, and the time commitment involved. This information was confirmed orally to participants immediately before administration.

Two groups of eight young people, with four males and four females in each group, participated in a pilot evaluation of the questionnaire, which was administered by one of the authors. Participants were supplied with a list of six prompt questions designed to elicit their views on the effectiveness of the questionnaire items to allow them to communicate what they were thinking, feeling and doing to prepare to leave school. All the participants completed the pilot questionnaire within a 30 minute period. In the subsequent feedback sessions, which lasted a further 30 minutes, one questionnaire item was identified as potentially confusing to the participants. This item was reworded using direct feedback from pilot group participants.

The final questionnaire was administered in the main study by one of the authors, in classrooms, to mixed gender groups drawn from year 11, 12 and 13 students in six high schools. All participants were able to complete the questionnaire within a 30 minute period.

Participant responses were stored in SPSS on a secure computer server. In order to protect the confidentiality of students, entries were identified only by means of a unique participant number, rather than by name.

Results

Data Analysis

The data were checked to determine if they were appropriate for Exploratory Factor Analysis (EFA) in accordance with the procedure recommended by Brace, Snelgar and Kemp (2012). No item deviated substantially from the mean. A Bartlett test of sphericity showed $\chi^2(55df) = 2106.52, p < .001$, indicating there were discoverable relationships within the data. A Kaiser-Meyer-Olkin (KMO) test was carried out to determine whether the inter-correlations between the items could be accounted for by a smaller set of factors. The average KMO for the initial matrix was 0.75, which was substantially greater than the .5 minimum recommended by Brace, et al. (2012), indicating suitability for factor analysis. Factor extraction was carried out on the scores on the items using Principal Components Analysis (PCA) based on Eigenvalues greater than one, and rotated using orthogonal equimax rotation. This rotation was chosen because it produced a three factor solution with high factor loadings

for all items. The scree test was examined as recommended by Cattell (2010), which also suggested a three factor solution accounting for 53.66 % of the variance. The result was a simple, interpretable structure, which is shown in Table 1. The alpha coefficients for Career Scaffolding Attachments, Career Optimism and Perception of Career Barriers factors were .71, .63 and .63 respectively.

The study used a 3x2 between-subjects design. The independent variables were socioeconomic status and gender. The dependent variables were participant scores on questionnaire scales measuring perception of career barriers, career optimism, and career scaffolding attachments.

Factor analysis of the scores on the questionnaire items was used to statistically test the accuracy of the hypothesised logical clustering of social cognitive constructs. A two-way ANOVA was then used to explore the relationship between participants' scores on each of the three resultant scales on the one hand, and socioeconomic status and gender on the other.

Table 1. *Factor structure of the Career Scaffolding Attachments, Career Optimism, and Perception of Career Barriers Scales*

Questionnaire items	Scales		
	Career Scaffolding Attachments	Career Optimism	Perception of Career Barriers
1. I have someone close to me at home who encourages me to talk about my feelings about my career.	.77	.14	-.21
2. I have a friend of the same sex with whom I can discuss my career.	.72	.06	-.01
3. I have someone I feel close to at home that I can trust to discuss my career.	.67	.17	-.35
4. I have a friend of the opposite sex with whom I can discuss my career.	.69	.09	.12
5. I feel there is nothing in the world around me to stop me having a satisfying career.	.04	.67	-.26
6. Getting a good career is under my control.	.15	.67	-.07
7. I'm always optimistic about my future after school.	.16	.67	-.23
8. If I take a job after school it will lead to a satisfying career for me.	.08	.64	.14
9. I feel that my circumstances are preventing me doing what I want in my career.	-.08	.07	.81
10. I feel there are things getting in the way of my career choices.	-.05	-.10	.75
11. Having a satisfying career is going to be difficult for me.	-.06	.27	.60
Eigenvalues	2.10	1.91	1.90
% of variance	19.06	17.33	17.26
Cronbach's alpha	.71	.63	.63
Mean	74.62	62.53	39.70
Standard deviation	20.69	17.57	20.98

Note: The highest loading for each item is shown in bold print

Perceived Career Barriers Scale.

When a 2-way ANOVA was applied using participant scores on the Perceived Career Barriers Scale the main effect of deprivation was statistically significant, $F(2, 1036) = 7.958$, $p < .001$, indicating that participants living in areas of higher deprivation reported greater perception of career barriers than participants living in areas of lower deprivation. Employing the Bonferroni post-hoc test, significant differences were found between the high deprivation and low deprivation conditions ($p < .001$) and the medium deprivation and low deprivation conditions ($p = .003$). There were no significant differences between the high deprivation and the medium deprivation conditions ($p = 1.00$). There was no main effect for gender: $F(1, 1036) = 0.074$, $p = .785$. There was no statistically significant interaction between these two factors: $F(2, 1036) = .785$, $p = .456$. These results are displayed in diagrammatic form in Figure 1.

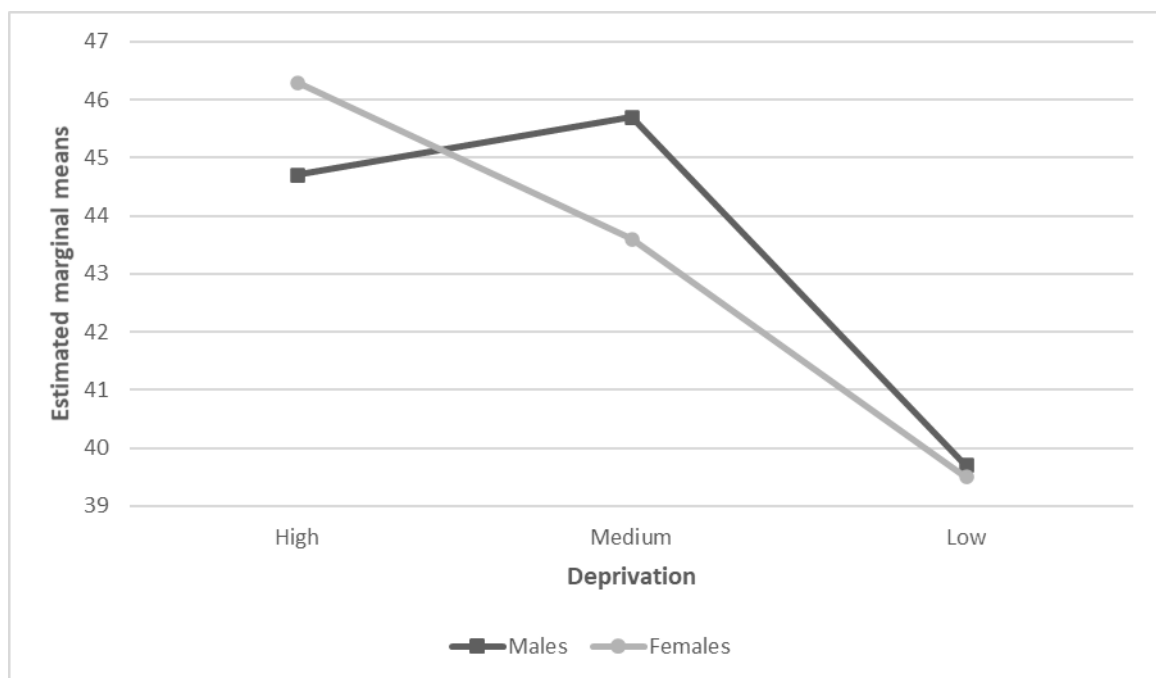


Figure 1. Marginal mean scores on the Perceived Career Barriers Scale. A higher marginal mean indicates a greater perception of career barriers.

The Career Optimism Scale.

When a 2-way ANOVA was applied using participant scores on the Career Optimism Scale the main effect of deprivation was not statistically significant, $F(2, 1036) = 0.076$, $p = .927$. However, the main effect of gender was statistically significant: $F(1, 1036) = 41.979$, $p < .001$, indicating that males report greater optimism about their career than females.

However, there was also a statistically significant interaction between deprivation and gender, $F(2, 1036) = 3.581, p=.028$, indicating that at high deprivation and at low deprivation males have higher scores on the Career Optimism Scale than females, while at Medium Deprivation males also show greater scores on the Career Optimism Scale than females but to a significantly lesser degree. These results are displayed in diagrammatic form in Figure 2.

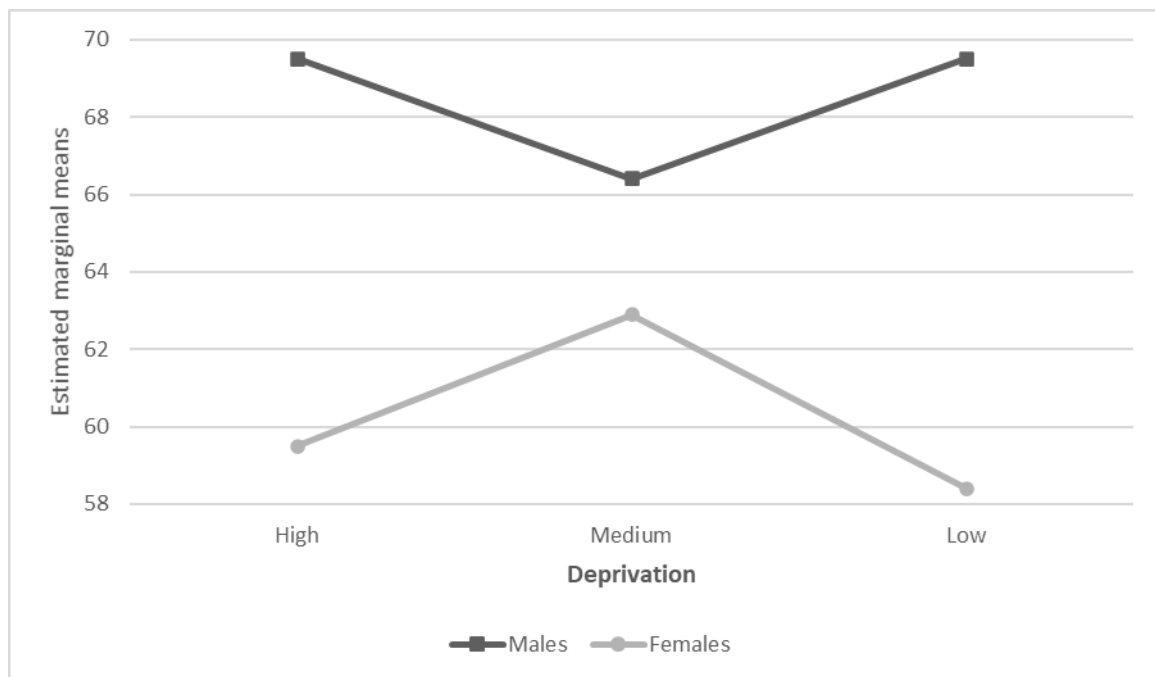


Figure 2. Marginal mean scores on the Career Optimism Scale. A higher marginal mean indicates greater career optimism.

Career Scaffolding Attachments Scale.

When a 2-way ANOVA was applied using participant scores on the Career Scaffolding Attachments Scale, the main effect of deprivation was statistically significant: $F(2, 1036) = 4.581, p=.01$, indicating that participants living in areas of higher deprivation reported fewer career scaffolding attachments than participants living in areas of lower deprivation. Employing the Bonferroni post-hoc test, there was a significant difference between high deprivation and the low deprivation conditions ($p=.015$). There was no significant difference between the high deprivation and the medium deprivation conditions ($p=.294$), or between the medium deprivation and the low deprivation conditions ($p=.636$). The main effect of gender was also statistically significant: $F(1, 1036) = 5.580, p=.018$, indicating that males reported fewer career scaffolding attachments than females. There was

no statistically significant interaction between these two factors, $F(2, 1036) = .243, p = .785$. These results are displayed in diagrammatic form in Figure 3.

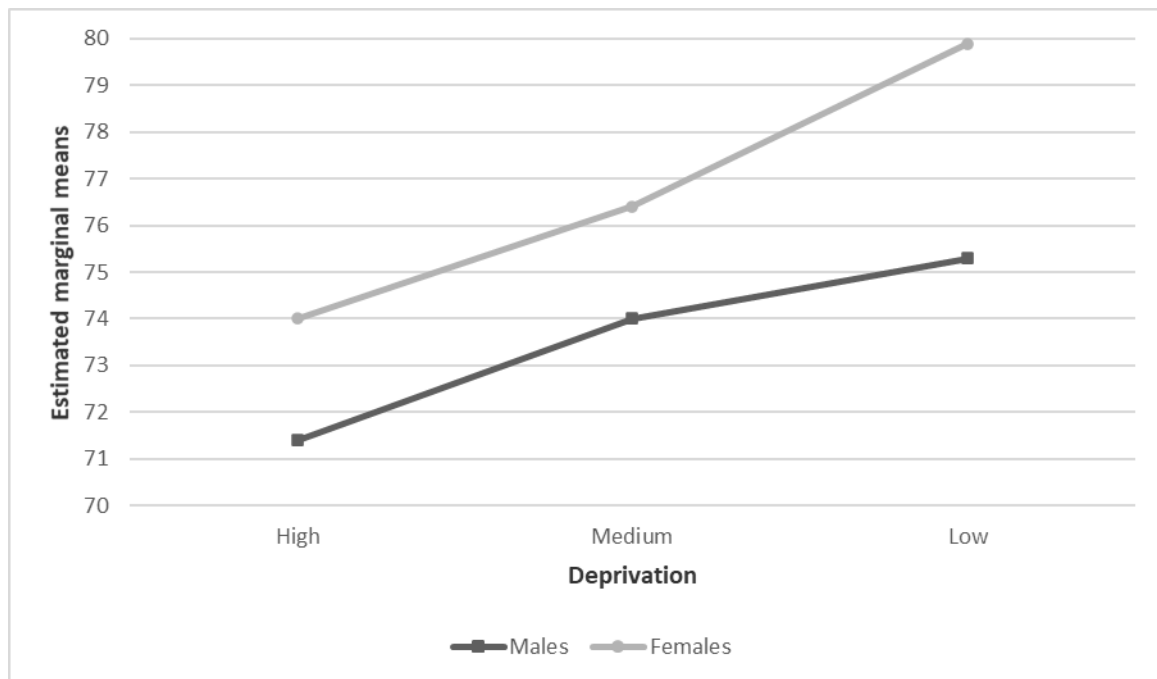


Figure 3. Marginal mean scores on the Career Scaffolding Attachments Scale. A higher marginal mean indicates more career scaffolding attachments.

Discussion and Conclusions

Career Barriers and Socioeconomic Status

The results show that high school students from areas of higher deprivation were more likely to report that a postsecondary career was going to be difficult for them, and that circumstances were getting in the way of their choices. This is congruent with the previous findings of Irvin et al. (2012), and McWhirter (1997).

This result could potentially contribute to an explanation of why high school students from areas of greater social deprivation are at increased risk of failing in the postsecondary transition. It could be that this heightened perception of barriers in high school students from areas of greater social deprivation is associated with the lower self-efficacy beliefs about the postsecondary transition, which were reported by Douglas and Topping (2020) and Gonzalez et al. (2013). It is also possible this heightened perception of barriers in high school from areas of greater social deprivation is resulting in lower career aspiration, which would be

consistent with the findings of Kenny et. Al. (2003) and Ali and McWhirter (2006), and/or greater career indecision, which would be consistent with the findings of Constantine et al. (2005).

This finding of the current study therefore raises an important question for future research about the relative importance, and possible inter relationship, of objective and subjective dimensions in this observed difference between young people who live in areas with different levels of social deprivation. This will have important onward implications for educational policy and practice, and the design and implementation of interventions to help high school students living in areas of higher deprivation to address their perceptions of greater career barriers.

Career Optimism and Socioeconomic Status

The current study found no main effect for socioeconomic status on optimism between high school students, which is congruent with the findings of previous studies in general populations (Robb et al., 2009; Khallad, 2013).

Career Scaffolding Attachments and Socioeconomic Status

The results show that participants who lived in areas of higher deprivation reported significantly fewer career scaffolding attachments. This is congruent with the previous findings of Cyr et al. (2010), which showed that socioeconomic status was a significant risk factor for insecure attachment, based on a large-scale meta-analysis of 4,729 children. This result could also potentially contribute to an explanation of why high school students from areas of greater social deprivation are at greater risk of failing in the postsecondary transition. It could be that the fewer career scaffolding attachments reported by high school children from areas of greater social deprivation is contributing to the lower self-efficacy beliefs about the postsecondary transition, which were reported by Douglas and Topping (2020) and Gonzalez et al. (2013).

This is consistent with the fundamental idea that securely attached individuals will display more environmental exploratory behaviours than those with less secure attachment (Bowlby, 1973). Therefore, by extension, it may be argued that individuals in the final years of high school, who have had a positive attachment history with caregivers and peers and as a

result are securely attached, will potentially expose themselves to more career-building experiences as they prepare for the postsecondary transition.

This opens the possibility of a positive reinforcement cycle in which greater career approach behaviours, rooted in secure attachment, result in increased self-efficacy beliefs, which in turn results in still greater career approach behaviours, and so on. However, there is also the possibility of a negative reinforcement cycle, in which less securely attached individuals engage in greater career avoidance behaviours. This could result in a reduction in career self-efficacy beliefs, which in turn result in less career approach behaviours, and so on. This reasoning is consistent with the previous finding of Germeijs and Verschueren (2009) which showed that high school students who reported greater perceived security of attachment to their mother also reported higher levels of career exploration and career decision-making.

Career barriers and gender

There was no main effect for gender on perception of career barriers, which is inconsistent with previous findings by McWhirter (1997) and McWhirter et al. (2007) who found female high school students in the USA anticipated encountering significantly more career barriers than males.

Career Optimism and gender

The results show that male high school students reported significantly greater career optimism than females. This result is inconsistent with the findings of previous studies, which reported gender invariance in high school students (Patton et al., 2004; Creed Patton & Bartrum, 2004). However, the interaction effect found between socioeconomic status and gender shows that the disparity between males and females in relation to career optimism is significantly greater at high *and* low deprivation than it is at medium deprivation. Patton et al., (2004) and Creed et al., (2004) worked with a relatively small sample from a single suburban high school in Australia, with only moderate levels of social deprivation within the catchment area. It is therefore possible that these previous studies failed to detect a difference in career optimism between males and females because the population sampled was predominantly of medium level social deprivation, in which the current study also showed a less marked difference.

Douglas and Topping (2020) reported that male high school students reported higher levels of self-efficacy beliefs about their ability to obtain a place in employment or education after school, despite being at greater risk of failure than their females. It is possible, therefore, that the higher levels of career optimism found in males in the current study may be contributing to relative *over*-confidence in males about their ability to secure a positive postsecondary destination in comparison with females. Possible explanations for this include that the higher self-efficacy beliefs and career optimism in males, compared with females, serves some function in relation to ego defence. Another way of thinking about this may be that it is driven by young-male bravado. This finding is also interesting in the context of recent research carried out by the Scottish Government (2020), which showed that, “in secondary school, mental health and wellbeing outcomes tended to be worse for boys in terms of conduct, and worse for girls in terms of mental wellbeing and especially emotional problems” (p.42).

Career scaffolding attachments and gender

The results show that males reported fewer career scaffolding attachments than females. These findings are inconsistent with the previous finding by Germeijs and Verschueren (2006), who found no difference in attachment status between male and female high school students in Belgium. However, Germeijs and Verschueren (2006) used the Inventory of Parent and Peer Attachment (IPPA), which is a generic measure of attachment status. This is in contrast to the Career Scaffolding Attachments Scale used in the current study, which was more specifically targeted on the extent to which high school students perceived that they had close attachment figures at home or among peers in school, with whom they could discuss their career. In other words the measure used in the current study is more domain specific, as advocated by Betz and Hackett (2006). Furthermore, Germeijs and Verschueren (2006) used only the parent items from the IPPA, and did not include the peer items from this attachment measure. This omission could be particularly significant in view of the finding of Ali, McWhirter, and Chronister (2005), that perceived support from siblings and peers was more salient to adolescents making the postsecondary transition than that derived from parents.

The more domain specific and complete measure of career scaffolding attachments used in the current study has shown that males reported less experience of attachment figures at home and among their peers, that they trusted and felt close to, and with whom they felt

they could discuss their career, when compared with females. This finding is consistent with the finding of Vignoli et al. (2005) who found that females reported greater perceived security of attachment to parents and also greater frequency and diversity of career exploration compared to males.

Limitations

The study was carried out in six schools from a single local authority in Scotland. This raises questions about the generalisability of the findings and highlights the need to repeat the study in other populations to generate more data on the reliability and validity of the scales employed. It is also important to recognise that the link between career scaffolding attachments, career optimism, perception of barriers, and the actual target behaviour of being able to attain a positive postsecondary destination was not measured directly in the current study, but instead inferred through associations with socioeconomic status and gender reported in previous studies.

It is recognised that items used in the questionnaire require further development and refinement. For example, the items which assess Career Scaffolding Attachments need further development, and perhaps the addition of more items, to improve their ability to assess whether or not young people have attachment figures with whom to discuss their career *and* also the quality of the affective bonds that young people have with these attachment figures. Also, it is recognised that the use of the word “always” in item 7 could confuse young people as to whether they should rate how optimistic they felt about their career, or how frequently they felt optimistic. These limitations will be addressed in the planned process of ongoing empirical development of the questionnaire.

A range of important individual aspects, such as self-concept, and contextual aspects, such as the external labour market, are not currently included in the Career Self-Management Model on which our paper is based, but which could be included in an expanded version of the model in the future, and also in questionnaire items which assess those constructs.

Implications for Practice, Policy and Future Research

The results suggest that teaching, counselling and coaching interventions designed to enable high school students to explore and challenge both their subjective and objective experiences of career barriers may be effective in improving postsecondary outcomes for high

school students from areas of higher social deprivation. Female students in particular may benefit from specific interventions which help them to identify and develop their levels of optimism about their career prospects. The Penn Optimism Programme (Jaycox et al., 1994) uses the principles of cognitive behaviour therapy (including disputing causal beliefs to promote more hopeful thinking), combined with behavioural approaches to enable participants to generate problem-solving options that were previously unavailable to them.

Educational interventions which improve the number and quality of career scaffolding attachments that high school students experience when interacting with significant adults could be an effective way to improve postsecondary outcomes for high school students from areas of higher social deprivation, and for males in particular. The *Connect* programme (Moretti et al., 2015), *Video Interaction Guidance* (Kennedy et al., 2010), and *The Basic Trust Method* (Polderman et al., 2011) have all been shown to be effective in improving adult-child attachment security using combinations of interactive skill-building activities and psycho-education. It would be particularly beneficial if the implementation of these interventions could focus on direct work with parents, teachers and career professionals who also know and work directly with the young people themselves. Educational psychologists could also have a role in these interventions, both through indirect consultation and direct involvement with parents and young people. It is also considered important that these interventions should not be confined to the final years of secondary schooling, but for maximum impact should begin much earlier in a young person's schooling, and be implemented continuously during the different stages of secondary education.

Government agencies in the UK already provide guaranteed, fully funded, first destination opportunities to all school leavers, together with financial incentives to encourage engagement. Some of these are targeted specifically on vulnerable students from geographical areas and local communities with high levels of deprivation. However, in the light of the findings of the current study, it could be beneficial if socioeconomic status and gender were given still greater recognition as risk factors for failure to achieve a positive postsecondary destination. It could also be advantageous if the measurement scales developed in the current study were recommended in central and local authority policy guidance to schools. These could be introduced as enabling assessment tools for teachers and other career professionals to identify those young people at greatest risk of failing to obtain a positive postsecondary

destination. The scales could also be used in the selection of which young people should be recruited into which educational interventions.

However, the limitations noted above indicate that substantial research tasks remain. These include the need for a process of ongoing empirical development of the measurement scales employed to increase the number of items and improve validity and reliability, particularly with regard to the quality of affectional bonds within the career scaffolding attachments construct. This would produce more evidence about the generalisability and variability of the findings in other geographies and cultures. These tasks could be undertaken through action research projects implemented at practitioner level by teachers, career development professionals, and educational psychologists.

Conclusions

The results show that perceptions of career barriers, career optimism, and career scaffolding attachments vary in relation to the factors of socioeconomic status and gender, in ways that are congruent with the predictions of Social Cognitive Career Theory (SCCT) (Lent et al., 1994, 2000) and the Self-Management model (CSM) (Lent & Brown, 2013). The constructs of perceived career barriers and career optimism are already well integrated within the CSM model. However, attachment factors are less frequently considered in research studies based on the model. The results clearly indicate that attachment theory should be more explicitly integrated into the CSM model. The relatively under-researched area of career-relevant adolescent attachment functioning has clear potential to contribute to an understanding of the large observed disparities in attainment of positive postsecondary destinations in relation to socioeconomic status and gender.

Therefore, it has been shown that individual differences in the perceptions of career barriers, career optimism, and career scaffolding attachments have the potential to help explain why high school students, who live in areas of lower socioeconomic status, and males in particular, are over represented in those who fail to attain a positive postsecondary destination in employment education and training, and join the ranks of unemployed youth. These individual differences in career-related social cognitive factors suggest good prospective outcomes for assessment-based targeting of differentiated practitioner interventions with different groups of high school students. This has the potential to inform not only the provision of equal postsecondary opportunities in employment, education and

training, but also the differentiation of interventions to develop and enable psychological readiness in all young people to take advantage and benefit from such opportunities.

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