Interactive support effects on career agency and occupational engagement

among young adults

Lyndsey Jenkins

Edinburgh Napier University, UK

Debora Jeske

Edinburgh Napier University, UK

First author:

Lyndsey Jenkins School of Computing Edinburgh Napier University 10 Colinton Road Edinburgh EH10 5DT, Scotland, UK Email: 1.jenkins@napier.ac.uk Tel: 0044 131 455 2610

Second / corresponding author:

Debora Jeske Business School Edinburgh Napier University 219 Colinton Road Edinburgh EH14 1DJ, Scotland, UK Email: d.jeske@napier.ac.uk Tel: 0044 131 455 3464

Funding statement

The present research was not funded by any agency or grant.

This manuscript was accepted to the "Journal of Career Assessment" on April 24, 2016. Please reference as follows: Jenkins, L., & Jeske, D. (in press). Interactive support effects on career agency and occupational engagement amongst young adults. *Journal of Career Assessment*

Interactive support effects on career agency and occupational engagement among young adults

Abstract:

The PIC model by Gati and Asher describes three career decision making stages: pre-screening, in-depth exploration, and choice of career options. We consider the role that three different forms of support (general career support by parents, emotional/instrumental support, and informational support) may play for young adults in each of these three decision-making stages. The authors further propose that different forms of support may predict career agency and occupational engagement, which are important career decision precedents. In addition, we consider the role of personality traits and perceptions (decision-making window) on these two outcomes. Using an online survey sample (N = 281), we found that general career support was important for career agency and occupational engagement. However, it was the combination of higher general career support with either emotional/instrumental support or informational support that was found to lead to both greater career agency and higher occupational engagement. Personality also played a role: Greater proactivity also led to greater occupational engagement, even when there was little urgency for participants to make decisions (window of decision-making was wide open and not restricted). In practical terms, the findings suggest that the learning required in each of the three PIC processes (pre-screening, in-depth exploration, choice of career options may benefit when the learner has access to the three support measures.

Keywords: Career Agency; Career Support; Emotional Support; Indecisiveness; Occupational Engagement; Proactivity

Introduction

One of the greatest challenges in career counseling is to help clients identify the options and alternatives that are also compatible with the career seeker's career preferences, abilities and capabilities (Gati & Asher, 2001). Every person will have their own aspirations, their own ideas and their own decision to make in the pursuit of their career. We define career as the usually sequential and often different employment-related positions and roles held by individuals as well as the various activities they engage in over time (see Arnold & Randall, 2010). Whether or not various options are pursued will depend on which unique options they have identified for themselves and how they choose to approach these. What is more, each individual has their own process of learning about career options. This may not necessarily occur in a formal setting, such as sitting down with a counsellor. Some decisions are made in consultation with important others or shaped by the type of opportunities individuals become aware of while seeking information about careers from others. Adolescents and young adults tend to seek out social and informational support from a variety of different sources. These parties include parents (see Gibbons & Borders, 2010; Kracke, 2002; Metheny & Hawley McWhirter, 2013; Olson, 2014), peers (Kracke, 2002; Slaten & Baskin, 2014), and mentors (Direnzo, Weer & Linnehan, 2013; Olson, 2014). This means each individual goes through processes of both formal and informal learning as well as self-directed learning in the sense that they structure their own decision making as they progress through their own journey of finding out how to best make their own decision. This decision will be unique to them and no one else (Casey, 2005).

The learning process is facilitated by the type of support each individual has. Career related support may come in different forms, such as emotional encouragement for one's plans, facilitative provision of materials or opportunities, sharing of information and knowledge

sharing. Very often this support may be sought and received from more experienced or close others, including parents, mentors and role models(e.g., Eby et al., 2013; Renn et al., 2014). The literature suggests that individual career decision-making and career success are often influenced by various support mechanisms (Choi et al., 2012; Lent, Brown & Hackett, 2000; Ng & Feldman, 2014; Wall, Covell, & Macintyre, 1999). Many young adults find social support beneficial and seek information using online networks and career portals (e.g., Boorman, 1975; Lee, 2009; Wang & Noe, 2010), and access peer advice (Suzuki & Calzo, 2004). Access to information and the availability of role models may also be important attributes of professional and personal networks in offline and online settings (Lent et al, 2010; Subrahmanyam et al., 2008). Social and potentially information-related support are likely to influence career information seeking behavior and subjective career success (see meta-analysis by Ng & Feldman, 2014).

In this study we consider how personality, informational and support variables (the latter of which are situation-specific) may influence decision-making, and be captured in career agency and occupational engagement amongst students facing a transition from university to the workplace. We contextualize the findings and interpret them in relation to the Prescreening, In-Depth Exploration, and Choice (PIC) model (Gati & Asher, 2001). We are not testing the model as such but hereby propose that specific variables may be key to each of the processes that are involved in the PIC model. In other words, the current work aims to give further insight into the variables that may influence how people progress through the various processes. The next section describes the PIC model in more detail and the link to learning, followed by a section on the role of different support measures in the various PIC processes.

The PIC process model: Learning about the self and one's options

Several models describe the various elements involved in career decision-making. A particularly relevant model was proposed by Gati and Asher (2001) and is known as the PIC model. This model captures the process of decision-making, from early orientation to choice and is based on Decision Theory (Bell, Raiffa, & Tversky, 1988). As it captures both the role of evaluating personal self-knowledge as well as career specific information, it is a model that captures career decision making as a learning process. We are here referring to learning processes as activities through which a learner gains a new skill or knowledge (e.g., information search). By engaging with these tasks or activities, learners engages with all the aspects of the issues they are trying to gain an understanding about. Via this process they also gain insight about themselves and, hopefully, solve various questions and problems on their own. Such learning processes often take place in a non-didactical fashion without the help of an educator (Brousseau, 1997).

The PIC models encompasses three stages. The first stage involves *pre-screening* (Gati & Asher, 2001). During this stage, individuals perceive the need to make decisions about their career trajectory. They start to search for possible career options or alternatives by (re)considering their career aspirations, ultimately determining what the most desirable work aspects are for themselves, and considering their options in terms of their own personal preferences and skills. Once the most desirable options are determined, they are re-evaluated and the list is whittled down by revisiting the same but also seeking further information (e.g., training requirements for each choice). Since this process requires individuals to examine their own preferences as part of an iterative process, this stage may also lead to changes in choices as well as modified perceptions of one's own preferences and priorities. For example, individuals take note of any alternatives that were eliminated due to small discrepancies that

could possibly be rectified as part of the career process (e.g., skill deficits could be addressed by additional training). This means that personal and career information (about the self and career options) is key at this stage.

The second stage involves *in-depth exploration* (Gati & Asher, 2001). Having identified the overall options, this process expands on the analysis of each option. Information is verified and sought, if the existing detail are not sufficient. At this stage, it also becomes important for the decision makers to speak to others with authority and experience. For example, decision makers seek work experience in the field or seek interactions with knowledgeable others to enable them to gain further understanding about the intricacies of each career options (such as the development required, expectations on new candidates, and the possible future trajectory for those in this profession). Further resources include online materials like those provided by professional bodies and educators who provide the training for these options. In essence, this stage expands on the self-reflection required in the previous stage by now requiring the decision-makers to assess their own potential person-career fit. This may involve candidates verifying that the short list of options is compatible with their own preferences, considering all of the information they have gathered during the pre-screening and the in-depth exploration stage. This may also be complimented by an analysis of constraints and barriers to achieve certain career outcomes (as these may not be under the influence of the individual).

The third stage represents the final stage of analysis and culminates in individuals selecting and '*choosing the most suitable alternative*' (Gati & Asher, 2001). The goal of this stage is to achieve a degree of certainty as to which decision is most appropriate and clearly identify this career option as the most suitable to the career decision maker. Normally, one or two options are identified, with the second option representing an alternative pursuit if the first is unrealizable. However, the number of options may be particular to the individual. Even though each individual may move through the three stages, they may move through these at very different paces and even revisit stages – in line with feedback loops. Some career decisions may need to be revised when the optimal choice turns out to be unavailable or unobtainable at the time the career decision makers wishes to pursue it.

Role of support at different PIC stages

The degree to which career agency and occupational engagement are observed as precursors to career decision-making may depend on a variety of factors. We first explore the role of different forms of support. Parents and other significant peers may provide important sources of career, informational and emotional support for young adults (Direnzo et al., 2013), and thus facilitate efforts invested in career preparation (see also Hirschi, Niles & Akos, 2011; Kracke, 2002; Rogers & Creed, 2011). The PIC model essentially covers these preparatory aspects in the decision-making process. In addition, by consulting others and having access to more information, decision making may be enhanced.

As a result, the presence of important others may increase the degree to which specific or broader career options are even considered in the pre-screening stage. In the in-depth exploration stage, exchanges about one's choices and suitability for certain careers are likely to be facilitated by discussion held with those who are able to assess and name the preferences and skills of the decision-maker. At the same time, if individuals do not face a certain degree of urgency to make a decision, they may never progress to choosing their most suitable career option. Instead, they may delay this even when doing so may lead to decisions based on outof-date information.

Support-related outcomes

The PIC model makes it clear that at each stage of the model, different forms of support may become instrumental to help young adults engage with the processes inherent to each stage – leading to both career agency and occupational engagement. Career agency reflects the extent to which individuals are developing and planning their entrance into the job market and future career (Rottinghaus et al., 2012). Individuals who diligently search, invest and self-reflect on their priorities and how these influence their future exhibit higher career agency, indicative of individuals assuming responsibility for pursuing their career plans. This competence may be the outcome but also predictor of the extent to which individuals will effectively engage in prescreening and in-depth exploration as these steps require the capacity for self-reflection as well as forethought.

The second construct is occupational engagement. This captures the extent to which individuals actively seek to understand their own interests and career choices by interacting with others (see Cox et al, 2014). A person exhibiting higher occupational engagement, indicative of the person actively exploring their specific options, may thus succeed particularly in seeking support in the second stage of the PIC process. In-depth exploration is more likely to be successful when the individuals are able to draw on information and support from others who are familiar with the decision-makers and their potential career choices. In addition, as the selection of potential career choices may further require extensive reflection on the long-term benefits, this process may be effectively supported by discussion.

Based on our previous literature review, we suggest that three types of support are instrumental to the successful completion of each of the three PIC processes: career and emotional/instrumental support (especially during pre-screening), informational support (particularly during in-depth exploration) as well as a combination of all three when career choices are finalized. The relationships between the stages of the PIC model, and different forms of support and outcomes (on career agency and occupational engagement) are summarized in Figure 1 below.

PIC stages	Key support variables	Outcomes / may precede final				
		decision (e.g., career choice)				
Pre-screening \rightarrow	Career support and emotional/instrumental support →	Career agency/				
In-depth exploration \rightarrow	Career support and informational support \rightarrow	occupational engagement				
Choosing options \rightarrow	Career support \rightarrow					

Figure 1. PIC stages, support and outcomes

In line with past research on the role of social support in career-related behavior and decision making (e.g., Vertsberger & Gati, 2015), we suggest that these various support-focused constructs also operate as significant predicators of specific behaviors (including career agency and engagement). This means rather than suggesting correlational relationships, we assume a causal relationship between the key support variables and the outcomes/precedents of final career-related decisions.

The focus of the current analysis is thus to examine the role of different forms of support on career agency and occupational engagement amongst young adults. We specifically expect that both career agency and occupational engagement are predicted by more support being made available, with potential interactions between the different forms of support. The specific hypotheses in this research therefore build on existing research findings and Figure 1 as follows:

H1: Career agency (H1a) and occupational engagement (H1b) are positively predicted by career support and emotional/instrumental support (combined).

H2: Occupational engagement is positively predicted by career and informational support (access to information).

Role of personality and perceptions

The extent to which individuals make decisions may also be a function of both personality and perceptions of the decision maker. For example, the pre-screening stage relies on good self-awareness and reflection as well as a sense of urgency instead of hesitancy, which may be underscored by a more proactive personality type. We propose that this urgency to make a decision may be influenced by one's perception of the circumstances and personal readiness to get engaged (e.g., both proactivity and occupational engagement). In other words, career decisions may be a matter of perception or willingness to engage with and make decision in the far or immediate future, resulting in different perceived decision-making windows.

Proactivity has been defined as a reflection of an individual's "tendency to initiate actions to identify opportunities and shape their environments" (Cai et al., 2015, p. 88; see also Bateman & Grant, 1993; Crant, 2000). Several studies have shown that this trait is particularly relevant to career decision-making as it has been shown to predict career exploration behavior (Cai et al., 2015), career indecision and maturity (Park, 2015), as well as objective and subjective career success (see also Zikic & Klehe, 2006).

A similarly important trait may thus also be indecisiveness – a trait that is likely to reduce the ability of decision makers to critically but also effectively evaluate their options. Career indecisiveness may hinder this process as this trait is often linked to lower self-confidence and fear of commitment (Stead & Watson, 2006). Indecisiveness therefore reflects a tendency for individuals to experience chronic indecision and difficulty when making a decision (e.g., Jones, 1989; Martincin & Stead, 2015). Indecisiveness may be hindering progress even further when the person faces career decision-making difficulties and lacks socio-emotional support (e.g., Saka, Gati & Kelly, 2008). Career indecisiveness is likely to frustrate decision-making at the end of the PIC process as the decision makers may find it impossible to come to a decision without help. On the other hand, if an individual is proactive, they may see this final stage as an opportunity to independently obtain additional information on their alternatives and go that extra mile if the information is not readily available.

This leads us to suggest that more proactive individuals may be more capable to identify alternative options in the absence of readily accessible advisors and information about their options. In contrast, less proactive and more indecisive individuals are much more passive and reliant on whatever opportunities cross their path. And finally, greater occupational engagement is more likely to increase the effectiveness with which decision makers successfully complete the analyses required at the second and third stage of the career decisionmaking process (in-depth exploration and identification of the most suitable options). In other words, we expect that proactivity and indecisiveness positively and negatively predict both outcomes for young adults, in line with past research. Our final hypothesis can thus be summarized as follows:

Role of personality and perceptions on overall outcomes (irrespective of PIC stage):

H3: Career agency (H3a) and occupational engagement (H3b) are positively predicted by proactivity and negatively predicted by indecisiveness.

H4: Occupational engagement is negatively predicted by greater perceived hesitancy to decide on a career (perceived decision-making window to make decisions now or in the future) and positively predicted by proactivity. As a point of clarification: the three different forms of support investigated in this study as part of H1 and H2 are not expected to have a role in shaping the need to make decisions in the future or the here and then (shaping a decision-making window). Both support and the perceived need to make decisions may exist independently from one another. As a result, only personality and perceptions (e.g., perceived decision-making window) are expected to predict to career decision-making (in H3 and H4) by increasing or decreasing the likelihood of such behavior.

Method

Participants

Participants were sought by announcing the study in class and on several institutional research platforms. Excluding incompletes (n = 24), the online survey was completed by 281 Psychology undergraduates (including 5 high school students attending optional college classes) from three educational institutions in the American Midwest (n = 151, 53.7%) and North East England (n = 130, 46.5%). At the time of participation, participants had selected a major as the survey was completed as part of an extra credit option in third and fourth year (with the exception of the five high school students). There was no evidence of significant differences between the three groups, as a result the data was combined for the purpose of this study. Participants were on average about 20 years old (M = 20.67, SD = 2.74) with an age range of 17 to 35 years old. Three out of four participants were women (75.1%, n = 211). Male participants made up less than a quarter of the sample (23.5%, n = 66, 4 missing values). Two thirds of participants were in either part-time (n = 148, 52.7%) or full-time (n = 13, 4.6%)

employment. The remainder of the sample was not working at the time of the survey (n = 116, 41.3%; 4 missing values).

Measures

The outcome measures are listed first, followed by the three support measures, personality traits of interest and control variables. All reliability measures are based on Cronbach's alpha.

Career agency. This was assessed using five out of ten items from a measure designed to assess career agency, that is, perceived capacity for self-reflection and forethought to intentionally initiate, control, and manage career transitions (Rottinghaus et al., 2012). The retained items were selected because they were only relevant to students still in the process of completing their education. An example item is: "I can perform a successful job search." Responses were made on a five point Likert type scale ranging from (1) *strongly disagree* to (5) *strongly agree* ($\alpha = .78$, M = 3.83, SD = 0.61).

Occupational engagement. This was measured using nine items from the Occupational Engagement Scale–Student, OES-S (Cox et al., 2014). An example item is: "I need information about education/training programs I want to enter." Responses were made on a five point scale ranging from (1) *unlike me* to (5) *like me* ($\alpha = .81$, M = 3.32, SD = 0.40).

Career support. Four items were used to measure support from family and friends in pursuing career goals (Rottinghaus et al., 2012). This subscale measures perceived emotional and instrumental support from family and friends in pursuing career goals. An example item is "I receive the encouragement I need from others to meet my career goals." Responses were made on a five point Likert type scale ranging from (1) *strongly disagree* to (5) *strongly agree* ($\alpha = .85$, M = 3.49, SD = 0.88).

Emotional/Instrumental support. This included four items from two subscales listed in the Brief COPE scale (in Carver, 1997). Two items assessed received instrumental support and

two evaluated emotional support. An example item is: "I would get advice or help from them about what to do" (receiving instrumental support). The response options ranged from (1) *strongly disagree* to (4) *strongly agree*. All four items were used to create a composite for overall instrumental and emotional support ($\alpha = .91$, M = 3.18, SD = 0.59).

Informational support. In order to assess the extent to which individuals would have access to but also seek information from others, we used the six-item Environment Exploration subscale (Stumpf, Colarelli, & Hartmann, 1983). Participants were asked how likely is it that they would ask their contacts/friends for different types of information such as "Information about potential career possibilities". Two items were added from the "External Search Instrumentality" subscale (also by Stumpf et al., 1983). These items were (1) "Initiating conversations with friends and relatives about careers" and (2) "Initiating conversations with several other students about their career interviews." The response options originally ranged from (1) *little* to (5) *a great deal*. These were changed to (1) *hardly ever* to (5) *almost always* to better capture the extent to which information support from others was readily available to them ($\alpha = .94$, M = 2.49, SD = 0.77).

Proactive personality. This was assessed using six items from Bateman and Crant's (1993) Proactive Personality Scale. An example item is: "Nothing is more exciting than seeing my ideas turn into reality." Responses options were on a seven point Likert type scale ranging from (1) *strongly disagree* to (7) *strongly agree* ($\alpha = .81$, M = 5.17, SD = 0.82).

Indecisiveness. The indecisiveness subscale was taken from Jones (1989). An example is "I frequently have difficulty making decisions". The four items were presented together with the proactivity items and had the same response scale ranging from (1) *strongly disagree* to (7) *strongly agree* ($\alpha = .78$; M = 3.98, SD = 1.26).

Perceived decision making window (a measure of career urgency). Perceived decisionmaking window essentially captures the degree to which career decisions are in the immediate

or distant future. In other words, it is a measure of career decision-making urgency. This construct was assessed using four items from the choice-work subscale (Jones, 1989). An example item is: "My future work or career is not important to me right now". The response scale was: (1) "*strongly disagree* to (8) *strongly agree*. Higher scores reflect more relaxed circumstances (larger decision making window) and thus less perceived urgency to make a decision ($\alpha = .69$, M = 2.54, SD = 1.13).

Access to advice. Participants were asked to rate the likelihood with which they would seek advice from (a) friends, (b) colleagues, (c) family members, (d) romantic partners and (e) advisers / experts from organizations, clubs etc. Response options ranged from (1) *very unlikely* to (4) *very likely*. The response from all five items was used to produce a composite representing access to advice overall ($\alpha = .65$, M = 3.06, SD = 0.51).

Lack of information. The subscale measuring lack of educational and occupational information (Jones, 1989) was based on five items. An example item is: "I need information about education/training programs I want to enter." This subscale was presented together with the career agency scale. Responses were made on a five point Likert type scale ranging from (1) *strongly disagree* to (5) *strongly agree* ($\alpha = .79$, M = 3.49, SD = 0.76).

Demographics. This included age, gender and employment.

Procedure

The research invitation was either announced in class or circulated to the students by the instructors of the Psychology courses via email. The survey contained two sections which were presented in the same order to all participants. In section one, once they had completed the consent form, participants completed measures for proactivity, career agency, lack of occupational information, occupational engagement, access to information, emotional support,

and perceived room for decision making (urgent vs. non-urgent). The second part captured data on employment status and other demographics. A debriefing statement followed, explaining the purpose of the research and details of withdrawal procedures.

Results

Descriptives and Reliability

Almost all scales performed satisfactorily (reliability estimates above .70), with the exception of the measure used to assess the perceived decision-making window (as captured by career urgency). All correlations are shown in Table 1. The highest correlation was observed for occupational engagement and career agency (r = .53, p < .001).

Hypothesis Testing

H1: Career and emotional support. Multiple regression was conducted, also considering the potential covariates such as age and gender. Only significant covariates are mentioned. The first analysis focused on career agency. Emotional/instrumental support a marginally significant predictor ($\beta = .118$, p = .070). However, career support ($\beta = .140$, p = .009) was a significant predictor. Both variables in the model explained a significant amount of variance in career agency ($R^2\Delta = .050$, p = .001), also controlling for age (p < .05) in the first step ($R^2 = .039$, p = .001). In addition, a significant amount of variance was explained by the interaction between both forms of support ($R^2\Delta = .019$, $\beta = .161$, p = .028). This provides support for hypothesis 1a.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Career agency	1										
(2)	Occupational engagement	.53**	1									
(3)	Career support	$.17^{**}$.21**	1								
(4)	Emotional support	$.14^{*}$	$.17^{**}$.43**	1							
(5)	Inform. support (access)	.11 ^t	.24**	.38**	$.18^{**}$	1						
(6)	Proactivity	.36**	.37**	.04	.03	.03	1					
(7)	Indecisiveness	31**	22**	.02	.02	.02	28**	1				
(8)	Dec.mkg. window	31**	26**	05	02	06	20**	$.20^{**}$	1			
(9)	Advice overall	$.12^{*}$.21**	.43**	.35**	$.38^{**}$.01	.01	04	1		
(10)	Inform. lack	49**	32**	05	12	.02	17**	.36**	.25**	01	1	
(11)	Age	$.20^{**}$.13*	05	08	.02	.21**	25**	29**	05	21**	1

Table 1: Correlations between constructs related to support, personality, outcomes and age

Note. N=281. t < .01, * p < .05, ** p < .01. Dec.mkg. window reflects degree of urgency that is perceived (urgent vs. non-urgent). A greater window reflects less urgency.

Using intplot, we computed the slopes to visualize our findings. The results are depicted in Figure 2. When emotional / instrumental support is low, career agency tends to be relatively low regardless of the level of career support provided. However, when both emotional/instrumental support and career support are high, career agency is significantly higher.



Figure 2. Interaction of career and emotional support in terms of career agency

The second analysis focused on occupational engagement. Emotional/instrumental support $(\beta = .122, p = .063)$ was a marginally significant predictor, but career support was a significant $(\beta = .191, p = .004)$ positive predictor. Together both variables explained a significant amount of variance in career agency $(R^2 \Delta = .061, p < .001)$, also controlling for gender (p < .05; age was not a significant covariate) in the first step $(R^2 = .018, p = .015)$. In addition, a significant amount of variance was explained by the interaction between both forms of support $(R^2 \Delta = .016, \beta = .129, p = .031)$. This provides support for hypothesis 1b. The results for H1b mirrored those for H1a for career agency. When emotional/instrumental support is low, occupational

engagement also tended to be relatively low regardless of the level of career support provided. However, when both emotional/instrumental and career support are high, occupational engagement was also significantly higher.

H2: career and informational support. The second hypothesis was tested along the same lines as the previous hypotheses. We first controlled for gender ($R^2 = .018$, p = .015). Both informational ($\beta = .200$, p = .002) and career support ($\beta = .214$, p = .002) were positive predictors and explained a significant amount of variance in career agency ($R^2\Delta = .079$, p < .001). In addition, a significant amount of variance was explained by the interaction between both forms of support ($R^2\Delta = .014$, $\beta = .139$, p = .038). This provides support for hypothesis 2. The result mirrored those outlined in Figure 2 for career agency. When career support is low, occupational engagement also tended to be relatively low regardless of the level of informational support provided. However, when both informational and career support are high, occupational engagement was also significantly higher.

H3: Proactivity and indecisiveness. We first analyzed career agency. Significant control variables were general access to advice and information as well as age ($R^2 = .257$, p < .001). The two traits explained a significant amount of variance in career agency ($R^2\Delta = .087$, p < .001). As predicted, proactivity was a positive predictor of career agency ($\beta = .272$, p < .001), while indecisiveness was a negative but only marginally significant predictor ($\beta = -.102$, p = .074). The interaction between these two variables was not significant and did not explain any significant amount of variance ($R^2\Delta = .003$, $\beta = .055$, p = .290).

The next analysis included occupational engagement. The results largely mirrored those obtained for career agency, in which we controlled for the same covariates and obtained a nonsignificant interaction result. Again, only proactivity emerged as a strong positive predictor of occupational engagement ($\beta = .284$, p < .001), while indecisiveness was not a significant

predictor of occupational engagement (β = -.029, p = .344). The proactivity results provide partial support for hypothesis 3a and 3b.

H4: Proactivity and decision making window. The final analysis focused on the extent to which the perceived time window to make decisions (urgent vs. non-urgent) and personality predicted occupational engagement. Significant control variables were gender, general access to advice and information as well as lack thereof ($R^2 = .186$, p < .001). Both predictors explained a significant amount of variance ($R^2 \Delta = .100$, p = .001). In line with previous results, proactivity was a positive predictor ($\beta = .282$, p < .001). In addition, having more room to make decisions predicted occupational engagement, albeit negatively ($\beta = -.134$, p = .014). In other words, having a greater time window to make a decision (e.g., there was no urgency to commit to a decision) was associated with less occupational engagement. The two predictors also interacted significantly ($R^2\Delta = .011$, $\beta = .106$, p = .042). This provides support for hypothesis 4.

Using intplot, we computed the slopes to visualize our findings. The results are outlined in Figure 3. Individuals appear to show a similar level of occupational engagement when they are also more proactive, irrespective of how hesitant or relaxed they may be about making career decisions (so how big or small their decision making window is).



Figure 3. Interaction of proactivity and decision making window in terms of occupational engagement

Discussion

Research has examined aspects such as career information seeking (Aiken & Johnston, 1973), occupational engagement (Cox et al., 2014), career adaptability (Rottinghaus et al., 2012), career exploration (Stumpf et al., 1983) and the role of chance events in career decision making (Bright & Pryor, 2005). What all these variables have in common is that they recognize the importance of information access and gathering information in career decision-making (Kracke, 2002). In addition, this research recognizes that these activities are often shaped by individual abilities, interests and goals (Kracke, 2002).

The current paper proposes that specific support variables may be key to each of the processes that are involved in the PIC model (Gati & Asher, 2001). Considering the number of different learning processes involved, we investigated the extent to which support variables may support this learning – and thus PIC processes. In addition to the support measures, personality traits and individual perceptions may be further put forward as key to behaviors

that determine career outcomes. Indeed, personality and individual perceptions may both have direct effects (as tested in an exploratory in our study) or even indirect effects on the likelihood with which they may foster or inhibit individuals' tendency to seek different forms of support (a suggestion for future research). Having support may be key during the in-depth exploration of career options and either facilitate or disable the individual from making an informed choice based on the identified and thoroughly researched career alternatives. Three types of support were identified as instrumental to the successful completion of each of the three PIC processes: career and emotional/instrumental support (especially during pre-screening), informational support (particularly during in-depth exploration) as well as a combination of all three when career choices are finalized. The role of the various predictors was examined by four hypotheses. The first three focused briefly on the role of different forms of support and traits on career agency and occupational engagement. The fourth hypothesis considered the degree to which making a career choice is (not) a priority as a function of the perceived decision making window (e.g., how urgent it is to make a decision in the near future).

The first hypothesis (H1) examined the role of career and emotional/instrumental support. Both variables independently and in conjunction predicted career agency and occupational agency, although only career support was a significant predictor (at p < .01) while the support measure was only marginally significant (at $p \le .07$). These findings were also obtained when the analysis involved both career and informational support (H2), although in this case both predictors were found to be significant (at p < .01). Overall, the results suggest that career support is most effective (e.g., helpful in terms of aiding the decision-maker) if this is further complemented by either higher emotional/instrumental (H1a/b) or informational support (H2a/b). The combination of these different forms of support appears to lead to higher career agency and occupational engagement. This means that career advisors' efforts may only bear fruit if their efforts coincide with support from close others (career support from parents,

emotional support from close others) or at least informational support from others. This makes sense since both pre-screening (the exploration of what one is suited for) and in-depth exploration (the extensive exploration of opportunities and barriers associated with each career option, given one's own characteristics) rely on the decision makers' access to feedback and support. This is in line with research that showed information access is critical to career decision-making (Kracke, 2002).

In addition, we wanted to consider the influence of personality traits (proactivity and indecisiveness; H3) as well as proactivity and perceptions related to the urgency to make a decision (decision-making window; H4) on the same outcomes. The results suggest that the level of proactivity of the individuals also seem to play a role (H3) in terms of the extent to which young adults will search for new opportunities more or less proactively, specifically, career agency (p < .001). A very similar result was obtained for occupational engagement (H4). This is in line with evidence that links proactivity and career exploration (Cai et al., 2015) and suggests that proactivity may be an important trait to consider during the three processes outlined in the PIC model. Moreover, the interaction of proactivity with the perceived window for decision making (H4) suggests that high proactivity is a very important driver of greater occupational engagement. The slopes also showed that greater need or pressure to make a career-related decision (smaller window for decision-making) may restrict occupational engagement. However, the results for indecisiveness were not necessarily statistically significant (at p < .05). Indecisiveness seemed to have a slightly more negative influence on individual career agency (at $p \le .07$; H3) but none in terms of occupational engagement (H4).

In relation to the PIC model, two explanations may be put forward. First, occupational engagement may be lower when support is low because the decision makers compromise and settle on the first options available to them. This suggests that the three PIC processes may be short-circuited: When the need arises, individuals may omit the in-depth exploration stage in

order to come to a decision quickly. A second explanation may be that career decision making may be undermined by time pressure: Decision-makers may potentially reduce the effort that can and is dedicated to the exploration of options in reaction to time pressure. This may also be attributed to another variable not captured in our data. That is, when high proactivity is combined with high affect spin – a greater emotional sensitivity to negative and positive events which may lead to more unpredictable emotional states (see Beal et al., 2013). Career indecision has been found to increase (see Park, 2015), potentially due to these individuals experiencing less stable interpersonal relationships (Timmermans, Van Mechelen, & Kuppens, 2010) and thus also different forms of support.

PIC model: Contribution and practical implications

The current study makes a number of contributions to the existing literature on career decisionmaking, specifically in relation to the PIC process model. First, there is no research available that explores the influence of different types of support that could help facilitate the progression through the PIC model processes. Our research provides evidence that a combination of different support measures may need to be considered, rather than single forms of support.

Second, we believe the PIC stages can be best described as stages that require a person to engage in various learning processes. What we like to propose is that that these learning processes do, however, differ from decision making process because making a decision can be made immediately and does not necessarily require the learner to engage in further learning. In this way, a decision making process may involve weighing up the pros and cons in order to arrive at a choice, however, the decision-maker may not know enough (or learn enough ahead of time) to ensure that the decision was the right one. As a result, the successful completion of these learning processes (activities) depends on the support that is available and time

restrictions – which may be further moderated by the individual's personality. And third, this research highlights that the PIC model appears to indirectly recognize highly contextualized and potentially informal processes. For example, regardless of the amount of career support, an individual may be able to make a decision more easily if they feel supported emotionally and understand they have someone to consult if in doubt.

The research also has some implications in terms of the process and development of individual career counselling activities. The primary aim of the first session between a counsellor and a student (sometimes known as the initial assessment) is to understand the individual, needs and to assess how the decision is going to be made. This can include looking at what support is available to the person (e.g., emotional support from family and friends) or even what information is available to help the person make an informed decision. This enables the counsellor to gain a full picture of the individual and how they are approaching the decision making process. If the counsellor identifies a gap in support (for example, if they do not have information or career support), the first session may be dedicated to support the individuals to engage in the process of actively seeking what is needed, and becoming more independent agents in their decision-making process, rather than passive participants.

As the first two stages of the PIC model require skills, reflection and exploration (that the counselee may not be used to), the counsellor may wish to encourage the individuals to participate in more discussion-focused tasks and set practical tasks for the individuals to take away and complete in their own time. Careers practitioners could help the individuals build the skills to engage in reflection and discussion of their options. This is a skill which is important in employability as well as different career decision making processes. Finally, counselors may wish to consider the time frame in which the career decision needs to be made. If the time frame is shorter, occupational engagement may be lower as the counselees may make more hasty decisions, because they may not be aware of all the information that they can access. Our

current results suggest that more proactive individuals may also show more occupational engagement but setting realistic and measurable targets (such as searching for information on certain careers for example) might help to address any issues of indecisiveness if the counselor presents all options to the individual and supports them in working through the process together.

Limitations and Future Research

A number of theoretical and methodological limitations apply. First, the analysis in the current paper did not take into account the specific PIC stage that the adult may find themselves in as this would require a longitudinal exploration (a good example is the work by Park, 2015) and consideration of possible feedback loops (as some adults may return to the initial prescreening stage if the in-depth exploration suggests undesirable or unsuitable career options given the additional information that has been obtained).

Methodological limitations apply to the cross-sectional nature of the sample. We included individuals from different institutions at the same point in time, rather than longitudinal research. Although we observed no differences between the different participant groups, our observations are therefore based on measures taken at one point in time. In addition, some of our results were only marginally significant. We hope that future research will substantiate the findings of our exploratory work. Future research may therefore wish to consider how PIC stages are captured using a longitudinal design as this may also allow researchers to assess the robustness of our findings and ascertain causality of certain relationships. Secondly, our investigation did not test the exact nature of the relationship between social support measures (as captured in H1 and 2) in relation to personality and perceptions (H3 and H4) simultaneously on the outcomes, although we did consider these relationship in our literature review.

In addition, online surveys as used in the present study may be subject to self-reporting bias (Schwarz, 1999) and common method bias (Teo, 2011). Finally, the study focused only on the perspective of the students and thus did not include the perspective of the parents and other important career influencers (including peers, career counsellors, and role models).

Despite these limitations, we hope that the current paper provides a starting point for a support-specific exploration that focuses on the importance or instrumentality of different forms of support during the different PIC processes. Future research may wish to explore, for example, whether or not individuals who are proactive agents and less indecisive feel more capable to do well without the heavy involvement or support from others, although the opposite may be true for less proactive and more indecisive individuals. Furthermore, some research suggests that personal characteristics may override the influence of social forces (e.g., Millar & Shevlin, 2003). This also means that specific behaviors (e.g., career pursuit, career agency, occupational agency, and information seeking) may be shaped more so by personality than the presence of social support for career pursuit and emotional/instrumental support from parents or role models.

References

- Aiken, J. & Johnston, J.A. (1973). Promoting career information seeking behaviors in college students. *Journal of Vocational Behavior*, *3*, 81-87. doi: 10.1016/0001-8791(73)90048-1
- Arnold, J., Randall, R. et al (Eds) (2010). Work Psychology. Understanding Human Behaviour in the Workplace. 5th d. Harlow, Essex: Pearson Education Limited.
- Bateman, T.S., & Crant, J.M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, 14, 103–118. doi: 10.1002/job.4030140202

- Beal, D.J., Trougakos, J.P., Weiss, H.M., & Dalal, R.S. (2013). Affect spin and the emotion regulation process at work. *Journal of Applied Psychology*, 98, 593–605. doi: 10.1037/a0032559
- Bell, D.E., Raiffa, H., & Tversky, A. (1988).*Decision making-Descriptive, normative, and prescriptive interactions*. Cambridge, England: Cambridge University Press.
- Boorman, S.A. (1975). A combinatorial optimization model for transmission of job information through contact networks. *The Bell Journal of Economics*, *6*, 216-249. http://www.jstor.org/stable/3003223
- Bright, J.E.H., & Pryor, R.G.L. (2005). The chaos theory of careers: A user's guide. *Career Development Quarterly*, 53, 291–305. doi: 10.1002/j.2161-0045.2005.tb00660.x
- Brousseau, G. (1997). *Theory of Didactical Situations in Mathematics*. Dordrecht: Kluwer Academic Publisher.
- Cai, Z., Guan, Y., Li, H., Guo, K., Lui, Y., Li, Q., Han, X., Jiangm, P., Fang, Z., & Hua, H. (2015). Self-esteem and proactive personality as predictors of future work and selfadaptability: An examination of mediating and moderating processes. *Journal of Vocational Behaviour, 86*, 86-94. doi: 10.1016/j.jvb.2014.10.004
- Carver, C.S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, *4*, 92-100. doi: 10.1207/s15327558ijbm0401_6
- Casey, A. (2005). Enhancing Individual and Organizational Learning: A Sociological Model. Management Learning, 36, 131-147.
- Choi, B.Y., Park, H., Yang, E., Lee, S.K., Lee, Y., & Lee, S.M. (2012). Understanding career decision self-efficacy: A meta-analytic approach. *Journal of Career Development*, *39*, 443-460. doi: 10.1177/0894845311398042

- Cox, D.W., Krieshok, T.S., Bjornsen, A.L., & Zumbo, B.D. (2014). Occupational Engagement Scale-Student: Development and initial validation. *Journal of Career Assessment* published online 12 February 2014. doi: 10.1177/1069072714523090
- Crant, J.M. (2000). Proactive behavior in organizations. *Journal of Management*, 26, 435–462. doi: 10.1177/014920630002600304
- Direnzo, M.S., Weer, C.H., & Linnehan, F. (2013). Protégé career aspirations: The influence of formal e-mentor networks and family-based role models. *Journal of Vocational Behavior*, 83, 41-50. doi: 10.1016/j.jvb.2013.02.007
- Eby, L.T., Allen, T.D., Hoffman, B.J., Baranik, L.E., Sauer, J.B., Baldwin, S., Morrison, M.A., Kinkade, K.M., Maher, C.P., Curtis, S., & Evans, S.C. (2013). An interdisciplinary metaanalysis of the potential antecedents, correlates, and consequences of protégé perceptions of mentoring. *Psychological Bulletin*, *139*, 41-76. doi: 10.1037/a0029279
- Gati, I., & Asher, I. (2001). Prescreening, In-Depth Exploration, and Choice: From Decision Theory to Career Counselling Practice. *The Career Development Quarterly*, *50*, 140-157.
- Gibbons, M.M., & Borders, L.D. (2010). Prospective first-generation college students: A social-cognitive perspective. *Career Development Quarterly*, 58, 194–208. doi: 10.1002/j.2161-0045.2010.tb00186.x
- Hirschi, A., Niles, S.G., & Akos, P. (2011) Engagement in adolescent career preparation: Social support, personality and the development of choice decidedness and congruence. *Journal of Adolescence*, 34, 173-182. doi: 10.1016/j.adolescence.2009.12.009
- Jones, L.K. (1989). Measuring a three-dimensional construct of career indecision among college students: A revision of the Vocational Decision Scale—The Career Decision Profile. *Journal of Counseling Psychology*, 36, 477-486. http://dx.doi.org/10.1037/0022-0167.36.4.477

- Kracke, B. (2002). The role of personality, parents and peers in adolescent career exploration. *Journal of Adolescence*, 25, 19-30. doi: 10.1006/jado.2001.0446
- Lee, S.J. (2009). Online communication and adolescent social ties: Who benefits more from Internet use? *Journal of Computer-Mediated Communication*, *14*, 509–531. doi: 10.1111/j.1083-6101.2009.01451.x
- Lent, R.W., Brown, S.D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, 47, 36–49. http://dx.doi.org/10.1037/0022-0167.47.1.36
- Lent, R.W., Paixão, M.P., da Silva, J.T., & Leitão, L.M. (2010). Predicting occupational interests and choice aspirations in Portuguese high school students: A test of social cognitive career theory. *Journal of Vocational Behavior*, 76, 244-251. doi: 10.1016/j.jvb.2009.10.001
- Martincin, K.M., & Stead, G.B. (2015). Five-Factor Model and difficulties in career decision making: A meta-analysis. *Journal of Career Assessment*, 23, 3-19. doi: 10.1177/1069072714523081
- Metheny, J., & Hawley McWhirter, E. (2013). Contributions of social status and family support to college students' career decision self-efficacy and outcome expectations. *Journal of Career Assessment, 21*, 378-394. doi: 10.1177/1069072712475164
- Millar, R., & Shevlin, M. (2003). Predicting career information-seeking behavior of school pupils using the theory of planned behavior. *Journal of Vocational Behavior*, 62, 26-42. doi: 10.1016/S0001-8791(02)00045-3
- Ng, T.W.H., & Feldman, D.C. (2014). Subjective career success: A meta-analytic review. *Journal of Vocational Behavior*, 85, 169-179. doi: 10.1016/j.jvb.2014.06.001

- Olson, J. (2014). Opportunities, obstacles and options: first generation college graduates and Social Cognitive Career Theory. *Journal of Career Development*, *41*, 199-217. doi: 10.1177/0894845313486352
- Park, I.-J., (2015). The role of affect spin in the relationship between proactive personality, career indecision, and career maturity. *Frontiers in Psychology*, 6, Article: 1754. doi: 10.3389/fpsyg.2015.01754
- Renn, R.W., Steinbauer, R., Taylor, R., & Detwiler, D. (2014). School-to-work transition:
 Mentor career support and student career planning, job search intentions, and self-defeating job search behavior. *Journal of Vocational Behavior*, 85, 422–432. doi: 10.1016/j.jvb.2014.09.004
- Rogers, M.E., & Creed, P.A. (2011). A longitudinal examination of adolescent career planning and exploration using a social cognitive career theory framework. *Journal of Adolescence*, 34, 163-172. doi: 10.1016/j.adolescence.2009.12.010
- Rottinghaus, P.J., Buelow, K.L., Matyja, A., & Schneider, M.R. (2012). The Career Futures Inventory – Revised: Measuring dimensions of career adaptability. *Journal of Career Assessment*, 20, 123-139. doi: 10.1177/1069072711420849
- Saka, N., Gati, I., & Kelly, K. R. (2008). Emotional and personality-related Aspects of careerdecision-making difficulties. *Journal of Career Assessment*, 16, 403–424. doi: 10.1177/1069072708318900
- Schwarz, N. (1999). Self-reports. How the questions shape the answers. *American Psychologist*, *54*, 95-105. doi: 10.1037//0003-066X.54.2.93
- Slaten, C.D., & Baskin, T.W. (2014). Examining the impact of peer and family belongingness non career decision-making difficulties of young adults: A path analytic approach. *Journal* of Career Assessment, 22, 59-74. doi: 10.1177/1069072713487857

- Stead, G.B., & Watson, M.B. (Eds.). (2006). *Career psychology in the South African context* (2nd ed., pp. 94–109). Pretoria, South Africa: Van Schaik.
- Stumpf, S.A., Colarelli, S.M., & Hartman, K. (1983). Development of the Career Exploration Survey. *Journal of Vocational Behavior*, 22, 191-226. doi:10.1016/0001-8791(83)90028-3
- Subrahmanyam, K., Reich, S.M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, 29, 420-433. doi:10.1016/j.appdev.2008.07.003
- Suzuki, L.K., & Calzo, J.P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Applied Developmental Psychology*, 25, 685–698. doi:10.1016/j.appdev.2004.09.002
- Teo, T. (2011). Considering common method variance in educational technology research. British Journal of Educational Technology, 42, E94-E96. doi: 10.1111/j.1467-8535.2011.01202.x
- Timmermans, T., Van Mechelen, I., & Kuppens, P. (2010). The relationship between individual differences in intraindividual variability in core affect and interpersonal behavior. *European Journal of Psychology*, 24, 623–638. doi: 10.1002/per.756
- Vertsberger, D., & Gati, I. (2015). The effectiveness of sources of support in career decisionmaking: A two-year follow-up. *Journal of Vocational Behavior*, 89, 151-161. http://dx.doi.org/10.1016/j.jvb.2015.06.004
- Wall, J., Covell, K., & Macintyre, P. D. (1999). Implications of social supports for adolescents' education and career aspirations. *Canadian Journal of Behavioral Science*, 31, 63–71. http://dx.doi.org/10.1037/h0087074
- Wang, S., & Noe, R.A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20, 115–131. doi: 10.1016/j.hrmr.2009.10.001

Zikic, J., & Klehe, U.-C. (2006). Job loss as a blessing in disguise: The role of career exploration and career planning in predicting reemployment quality. *Journal of Vocational Behavior*, 69, 391–409. doi:10.1016/j.jvb.2006.05.007