A path analysis of effects of the career locus of control dimensions and career decision self-efficacy on career aspiration

Muna Al-Bahrani, Yousef Abu Shindi, Suad Allawati and Bakkar Bakkar

Department of Psychology, Sultan Qaboos University Al-Khod, Muscat, Oman

ABSTRACT
This study examined the mediating role of career decision self-efficacy in the relationship between career locus of control and career aspiration. A 9-item Career Aspirations Scale, 31-items Career Locus of Control Scale, and 24-item Career Decision Self-Efficacy Short Form were administered to 2700 students from grades 10 to 11 studying in high schools. Path analysis results indicated that a positive direct effect of the internal locus of control on career aspiration and a negative direct effect of powerful others on career aspiration. Internal control, luck, and powerful others explained 43% of the variation in career decision self-efficacy. The results showed a positive direct effect of career decision self-efficacy on career aspiration. All together internal control, luck, powerful others, and career decision self-efficacy explained 42% of the variation in career aspiration. Implications were discussed to enhance internal locus of control and career self-efficacy among students.

Self-efficacy predicts strongly career-related attitudes from early high school through college (Hackett & Lent, 1992; Lent et al., 1989). Findings showed that career decision-making self-efficacy was associated with success criteria of intrinsic fulfilment and work-life balance, as well as internal career locus of control. As individuals with an internal locus of control attribute behavioural consequences to their personal characteristics, such as abilities and efforts, therefore they are more likely to develop relevant abilities in achieving positive career outcomes (Zhou et al., 2016). Individuals who feel control over their lives may be more motivated to perceive themselves as adaptable in their careers. Individuals with an internal locus of control are not only adaptable to career changes, but they are also likely to have high self-confidence and engage in occupational activities. However, the effect of external influences can significantly alter a given career path (Duffy, 2010; Duffy & Dik, 2009; Kim & Lee, 2018). Similarly, individuals with external locus of control experienced more difficulty in the process of decision making due to the lack of required information or inconsistent information (Ulas & Yildirim, 2019).

Self-efficacy plays various roles through the more effective use of metacognitive strategies, which involve planning and self-regulation (Chemers et al., 2001). Research findings strongly suggested that efficacy beliefs not only exert a strong, direct influence on career decision making and career choice, but self-efficacy also significantly affects the development of core vocational choice predictors such as interests, values, and goals (Bandura, 1986; Betz & Hackett, 1986; Hackett & Lent, 1992). Indeed, Self-efficacy and outcome expectations regarding activity involvement apply a significant, direct effect on the development of career interests (Lent et al., 2002). Specifically, occupational self-efficacy and interest are averagely correlated (Bandura, 1986, 2010; Brown & Lent, 1996). Self-efficacy and outcome expectations each contributed significant direct paths to choice
consideration (Lent et al., 2010). The stronger the self-efficacy beliefs, the firm interest students expressed in a given occupational area (Betz & Hackett, 1981; Lapan et al., 1989). Conversely, weak decision making self-efficacy could impede career exploratory behaviour and therefore might be predictive of career indecision and other problems in career decision making. For example, individuals are likely to fail to develop interests in activities in which their self-efficacy is fragile or when they anticipate receiving neutral or negative outcomes (Hackett & Lent, 1992; Lent et al., 2002).

Self-efficacy involves a dynamic set of self-beliefs that are specific to particular performance domains and that interact in a complex way with another person, behaviour, and environmental factors (Gray & O’Brien, 2007; Lent et al., 2002, 2010; Tang et al., 2008). Positive correlations between career decision self-efficacy, career aspiration, occupational self-efficacy, and instrumentality were reported by Gray and O’Brien (2007). The higher people’s perceived efficacy to fulfil educational requirements and occupational roles, the wider the career options they seriously consider pursuing, the greater the interest they have in them, the better they prepare themselves educationally for different occupational careers, and the greater power they have in challenging career pursuits (Lent et al., 1984, 1989; Ogunmakin & Akomolafe, 2013).

The mediating role of self-efficacy among variables such interests, outcome expectations, and career choices in relation to career development has been extensively supported by previous research (Betz, 1993; Lent & Brown, 2002; Tang et al., 2008). The stronger the perceived self-efficacy, the higher the goal aspirations people adopt and the firmer is their commitment to them. When goals are self-set people with high self-efficacy set higher goals than do people with lower self-efficacy. They are also more committed to assigned goals, use better task strategies to attain the goals, and respond more positively to negative feedback than people with low self-efficacy (Bandura & Locke, 2003; Locke & Latham, 2002). The different types of perceived occupational self-efficacy were predictive of both adoption and rejection of particular classes of career pursuits. For instance, children of high perceived scientific and technological efficacy chose career pursuits embracing professorial and creative activities. Those of high educational and medical efficacy selected medically oriented occupations and avoided a work-life of clerical and sales activities (Bandura et al., 2001).

The career decision self-efficacy has indeed mediated the effect of attributional style on career exploration (Rumalutur & Salim, 2020). The effect of internal locus of control on career decision self-efficacy suggesting that internal locus of control could be used as a more general motivation tool to improve an individual’s confidence to adapt than to affect proactive career behaviour (Kim & Lee, 2018; Locke & Latham, 2002). Individuals with a higher internal locus of control conveyed less global decision difficulty. It appears that individuals with an internal locus of control are less oriented to the opinions of others and therefore less likely to delay the process of gathering and analysing career information, and less likely to report general decision difficulty. Hence, an orientation to the opinions, preferences, and guidance of others were associated with greater career decision difficulty (Shin & Kelly, 2015; Shin & Lee, 2018). Therefore, individuals who have difficulty making career decisions because of external variables can be assisted towards a stronger sense of internal locus of control as a means of increasing career decision self-efficacy (Shin & Lee, 2018).

Other researchers were documented positive links between student career aspiration and external influences. For example, adolescents whose parents have a higher level of education reported a higher level of career aspiration than those whose parents have a lower level of education (Al-Bahrani et al., 2020; Wang & Staver, 2001). Twelfth-grade students who described themselves as intrinsically motivated and having an external locus of control, reported having high levels of self-efficacy (Landine & Stewart, 1998). However, other external variables such as luck had a negative effect on career decision self-efficacy while helplessness and powerful others were not significant predictors of career decision self-efficacy (Shin & Lee, 2018). According to Perry and Liu Griffin (Perry et al., 2011), individuals may not be able to mentally differentiate the influence of authority’s institutions from the influence of feeling vulnerable due to a lack of agency because they are not
developmentally ready to make such differentiation or they are not in a life role that requires them to do so.

The present study examines the relationship among the constructs of career locus of control, career decision self-efficacy, and career aspiration with a sample of high school students. Previous findings showed a strong support for the major meditational role played by occupational self-efficacy in the process of choosing a career. Occupational self-efficacy is an essential variable to include in developing models of career choice, and interactions between occupational self-efficacy and several other career-related variables such as vocational interests (Betz & Hackett, 1986). Likewise, other researchers particularly verified not only the functional relation of perceived self-efficacy to behaviour but also the well-known impact of efficacy belief on aspiration (Bandura & Locke, 2003). This study contributes to the existing career models explaining the influence of career locus of control and self-efficacy upon career aspiration. There is a rarity of research examining the effects of negative emotions and hopelessness and locus of control regarding self-efficacy in making career decisions. Researchers are encouraged to examine contextual factors that influence the career development process and perceived limitations to vocational choice. This examination would include vital variables of individuals’ microsystems and macrosystems (Fouad & Byars-Winston, 2005; Lent et al., 2010; Ulas & Yildirim, 2019).

The assumed model in this study is that career aspiration a dependent variable and the subscales of the locus of control are independent ones, while career decision self-efficacy is a meditational variable. Hence, this study sought to answer the general question. What is the effect of career locus of control on career aspiration with particular focus on the mediating role of career self-efficacy? We hypothesized that career internal locus of control will be associated with increasing in career decision self-efficacy and career aspiration. We also predict a positive direct impact of the internal locus of control on the career aspiration. Further, powerful others will have a negative direct effect on the career aspiration. We purposed a positive direct effect of career decision self-efficacy on the career aspiration. In addition, it was hypothesized the mediating role of self-efficacy on the relationship of locus of control on career aspiration as shown in Figure 1.

**Method**

**Participants**

Participants were 2700 students from grades 10 to 11 studying in several public high schools situated in nine governorates in Sultanate of Oman. The participants were males 1365 (50.6%) and females 1335(49.4%). The average age of participants was 16.01(SD = 0.1). The sample included 1376 students in grade 10 and 1324 in grade 11.

![Figure 1. The hypothesized theoretical model.](image-url)
**Measurements**

Career Aspirations Scale (CAS): The study applied a career aspirations scale Arabic version to measure students’ aspirations. Participants indicated how true each statement was for them on a scale ranging from (0) not at all true of me to (5) very true of me. Preliminary support of the psychometric proprieties of 9-items with a reliability of 0.67 on a sample consisted of adolescents within the Omani context was documented. The results of factor analysis supported a one-factor solution suggesting that the scale did not capture the multi-dimensions of CAS that was proposed by Gray and O’Brien (2007) and Gregor and O’Brien (2016). The one-factor solution accounted for 27.22 in variance, which indicated that the scale had only one dominant factor in nine items (Al-Bahrani, Al-Lawati, Abu shindi, Bakkar & Alsiyabi, 2019; Al-Bahrani et al., 2020).

Career Locus of Control Scale (CLOCS): The career locus of control was assessed with a scale developed by Miller and Shevlin (Miller & Shevlin, 2007). Allawatia et al. (in press) examined the psychometric characteristics of the CLOCS among high school students within the Omani context. The scale is in its initial version consisted of 47 items distributed over four domains: Internal Locus of Control, Chance, Helplessness, and Powerful Others. Internal Locus of control indicates the extent to which participants believe that their life circumstances result from their own behaviour. Example items include ‘I can decide most of the things in my life on my own.’ Participants answer items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The construct validity was examined by conducting exploratory factor analysis on a sample (n = 2706) within the Omani context. Factor analysis yielded one factor with 31 items divided into three subscales (12 internal locus of control, 6 luck, and 13 powerful others). The reliability of domains was reported as follow: internal locus of control, 0.79, luck, 0.77, and powerful others, 0.84.

The Career Decision Self-Efficacy Short Form: The career decision-making self-efficacy scale -short form consisted of 25-items (CDSE-SF: Betz et al., 1996). The scale sass five domains: self-efficacy to accomplish accurate self-appraisals, self-efficacy to select specific goals, self-efficacy to formulate plans for the future, self-efficacy to gather occupational information, and self-efficacy to engage in effective problem-solving. The construct validity was also assessed by conducting exploratory factor analysis on a pilot sample (n = 60) within Omani culture. Factor analysis yielded one factor with 24 items, and one item (16) was deleted because of low loading, so the final version of (CDSE-SF) consisted of 24 items. The items are rated on a 5-point Likert-type scale: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The maximum score of all scale items is (120), and the minimum score is 24, and the average score is 72, which means that the higher the score the higher the self-efficacy. Cronbach Alpha for this scale was 0.89.

**Procedure**

The research approval was ensured within the procedures defined in the Ministry of Education in Sultanate of Oman. We acquired the approval first from the ministry and then permission was granted from the school principals. The instruments were distributed to students in grade tenth and eleventh. Students were filled out the CAS, CLOC, and CDSE-SF under the supervision of an assistant researcher during chool hours. The students were guaranteed anonymity in using data. They also completed demographic information. Information was requested regarding grade level, gender, age, and parents’ educational level.

**Results**

Path analysis was performed to test the structure of the subscales of career locus of control, career decision self-efficacy, and career aspiration as shown in Figure 1.

Table 1 shows that subscales of locus of control and career aspiration are correlated significantly at 0.01. It is correlated positively with an internal locus of control and negatively with an external
Locus of control subscales (powerful others and luck). Additionally, internal locus of control is correlated positively with career decision self-efficacy where powerful others and luck are correlated negatively with career decision self-efficacy.

Tests for the goodness of fit of the model yield results that fell within an accepting range indicating a good model fit. The tests yield a Comparative Fit Index (CFI) of .998, a Root Mean Square Error of Approximation (RMSEA) of 0.014, and a $\chi^2$ \( (3.88, N=2700) \), $p=0.143$.

The results in Figure 2 reveal a statistically positive direct effect of the internal locus of control on the career aspiration variable, where the standardized regression weight value of this effect is 0.35, a statistical significance at 0.01. The results also show a negative direct effect of powerful others on career aspiration, where the regression weight value is –0.3, a statistical significance at 0.01. The direct effect of luck on career decision self-efficacy is not statistically significant.

As shown also that the three factors of the locus of control (internal control, luck, and powerful others) are able to explain 43% of the variation in career decision self-efficacy. The results reflect a positive direct effect of career decision self-efficacy on the career aspiration variable, where the standardized regression weight value of this effect is 0.18, a statistical significance at 0.01.

The figure also shows that the three subscales of the locus of control: internal control, luck, and powerful others and career decision self-efficacy variable are able to explain 42% of the variation in career aspiration. With regard to the indirect effects of the subscales of the career locus of control on the career aspiration through the variable of career decision self-efficacy, the indirect effect value of the internal control subscale is 0.12, which is statistically significant at 0.01, and is not so for the subscale of luck and powerful others.
Discussion

The findings of this study provided substantial empirical support for the posited causal structure through which career locus of control and career decision self-efficacy impact adolescents’ career aspiration. In accord with the conceptual model posited in the present study, the internal locus of control had a positive direct effect on the career aspiration and a negative direct impact of powerful others on the career aspiration. This result is similar to a reported tendency for those higher on ‘career’ internality to express higher confidence in aspects of career decision-making. This result confirms somewhat previous findings indicating external career locus of control was a significant predictor of decision-making difficulty (Lease, 2004; Shin & Lee, 2018). Likewise, external locus of control such as powerful others, luck, and helplessness were correlated negatively with career decision self-efficacy (Shin & Lee, 2018). Such reported results suggest internal career locus of control positively predicted students’ career decision-making self-efficacy. Meanwhile, the negative relationship between external locus of control and career decision-making self-efficacy can be explained by the fact that individuals who hold external locus of control may be making less efforts when deciding, or they may expect an individual in their cultural contexts to make decisions on their behalf. These individuals may experience lack of self-confidence about their decision-making skills. Such situations will make the decision-making process difficult (Kirdök & Harman, 2018; Lease, 2004).

Luck as a subscale of external locus of control did not have any effect in either ways direct or indirect on career decision self-efficacy in the current study. Indeed, as documented by Shin and Lee (2018) that luck would still have a significant negative effect on career decision self-efficacy. Other external subscales such as helplessness, powerful others, and chance factors did not have significant effects on individuals’ self-efficacy and career adaptability (Zhou et al., 2016). Accordingly, career counsellors working with either a client higher on internality or higher on externality, different challenges related to active versus passive participation, independent versus dependent role-taking, and control will present (Millar & Shevlin, 2007). Specifically, those who hold higher expectations of external control present somewhat various challenges for career service delivery (Shin & Lee, 2018). For these types of clients, counsellors are encouraged to explicitly assess the relevance of external factors that clients perceive as salient when making a career choice. Counsellors can also assist clients in identifying career options that may encompass as many of these factors as possible and exploring the extent to which these considerations influence their decision making (Duffy & Dik, 2009). It is likely that such individuals will require considerably greater levels of assistance and encouragement to engage in the process of making decision and identify a set of acceptable choices rather than ideal options (Shin & Kelly, 2015).

The results also showed significant indirect effects of the internal locus of control on the career aspiration through the career decision self-efficacy, As previously found by Tang et al. (2008) that the significant paths from self-efficacy to career interests for high school students suggest that career self-efficacy is strongly related to career interests. The mediating role of self-efficacy is confirmed suggesting learning experiences significantly influence self-efficacy, which then influences career interests and choices. Clearly, self-efficacy and outcome expectations are good predictors of interests and increase interests in the prediction of choosing goals (Lent et al., 2010). Self-efficacy is specifically critical when person’s level of self-efficacy following negative feedback determines whether subsequent goals are raised or lowered (Bandura & Cervone, 1986; Bandura & Locke, 2003). It is largely through repeated activity practice, modelling, and feedback from important others that adolescents are able, gradually, to develop their skills, adopt personal performance standards, form a sense of their capability at diverse tasks, and beliefs about what will happen if they perform these tasks (Lent et al., 2002). Hence, the use of a group interpretation strategy that incorporated sources of performance accomplishments and verbal persuasion as a means of providing interest feedback increased participants’ career decision-making self-efficacy (Luzzo & Day, 1999; Luzzo et al., 1996; Zhang & Lu, 2002).
The current results also indicated that the three factors of the locus of control: internal control, luck, and powerful others were able to explain 43% of the variation in career decision self-efficacy. Such result consistent with finding indicated that parental general psychosocial support was a significant factor in predicting career decision-making self-efficacy, explaining 38.3% of the variance of this construct for secondary vocational students (Xing & Rojewski, 2018). The findings of this study also revealed that the internal locus of control, luck, powerful others, and career decision self-efficacy were able to explain 42% of the variation in career aspiration. The contributions of locus of control to the prediction of career self-efficacy partially is consistent with the finding of Ogunmakin and Akomolafe (2013) is that 36% of the variance in the academic performance of secondary school students was accounted for self-efficacy and locus of control. In addition, similar results were reported by Rottinghaus et al. (2003) that the self-efficacy/interest linkage is consistently strong ranging from 25% to 46% of variance (Shin & Kelly, 2015). Taking into consideration some evidences indicated that the more external barriers perceived, the more career planning and exploration was engaged, which suggested that the perception of external barriers may not lower confidence or reduce career-related activities (Creed et al., 2004). Furthermore, Bandura et al. (2001) reported that powerful others such as self-efficacious parents are most likely to enhance their children’s academic self-beliefs by expressing their promotive efficacy through high aspirations. In choosing career paths, children are projecting far in the future.

This study has some limitations. The study conducted on students in grades tenth and eleventh so the findings will be generalized only to high school students. Another limitation is related to the scale. Although the scale was originally developed to be used as one of the four subscales of internality, helplessness, luck, and powerful others, it is possible that both helplessness and powerful others function as parts of external locus of control (along with luck subscale); and luck might have the biggest variance among them (Shin & Lee, 2018). The luck and helplessness scales were highly correlated reflecting a tendency towards externality. As such, the positive correlation between the luck and the powerful others factors was expected (Millar & Shevlin, 2007; Perry et al., 2011).

Despite these limitations, the results of this study provided the significant path from career locus of control and self-efficacy to career interests for students in their tenth and eleventh grades indicating that internal locus of control and career self-efficacy were strongly related to career interests across genders. Clearly, the current research supported the major role of career self-efficacy as a predictor of career related aspiration. Accordingly, counsellors have to cognizant the role of self-efficacy and learning experiences in shaping high school students’ career interests and choices (Fouad & Byars-Winston, 2005). Likewise, additional support for the role of internal locus of control in students’ career aspiration was reported in the present study. Therefore, a useful practical implication includes a career programme consisting of meaningful learning experiences will facilitate the development of self-efficacy in students’ aspired careers and internal locus of control expectations. Expectations can be influenced in the direction of internality then this shift might transfer to all aspects of the career decision-making process (Millar & Shevlin, 2007; Tang et al., 2008). Also, individuals who have difficulty making career decisions can be assisted towards a stronger sense of internal locus of control as a means of increasing the client’s career decision self-efficacy (Shin & Lee, 2018).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Dr Muna Abdullah Al-Bahrami Ph.D. in Ed. counselor. Associate professor in the Department of Psychology at College of Education in Sultan Qaboos University.
Dr Yousef Abdelqader Abu Shindi Ph.D. in measurement & evaluation. Associate professor in the Department of Psychology at College of Education in Sultan Qaboos University.

Dr Suad Mohammed Allawati Ph.D. in counseling. Expert, consultant, and researcher in counseling.

Dr Bakkar Suliman Bakkar Ph.D. in counseling. Associate professor in the Department of Psychology at College of Education in Sultan Qaboos University.

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