

The Role of Perceived Social Support, Vocational Self-Efficacy and Vocational Outcome Expectation on Students' Interest in the TVET Program

Nazia Azeem^a, Muhd Khaizer Omar^{a*}, Abdullah Mat Rashid^a, Arnida Abdullah^a, Zeinab Zaremohzzabieh^a

^a Faculty of Educational Studies, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia

Abstract: This study aimed at examining the predictors of students' interest in the Technical and Vocational Education and Training (TVET) program among secondary school students in Pakistan. The sample of the study consisted of 386 secondary school students randomly drawn from the schools of Pakistan. For data collection, a set of self-reported questionnaire was designed, and multiple linear regression was conducted to evaluate the hypotheses raised for the study. Based on the social cognitive career theory, three variables were assessed. The combination of the research variables significantly contributed 61.2% ($R^2 = 0.61$) to students' interest in the TVET program. Meanwhile, vocational self-efficacy was found to be the most dominant factor contributing to students' interest in the TVET program. In the light of these findings, it is suggested for intervention designed to increase secondary school students' interest to take vocational self-efficacy into consideration. Finally, ideas for future research were discussed.

Keywords: Secondary school, predictors, Pakistan, multiple linear regression, TVET

1. Introduction

Technological advancement is progressing at a rapid pace and has added new expectations for the 21st century workforce whose technical education products are prepared and effectively operating (Goel & Vijay, 2017). The workforce of the 21st century is unique and can help individuals who acquire adequate skills. The unique characteristics of the 21st-century dynamism comprise: (i) jet age or high technology demanding efficient use of technology in all areas of life; (ii) scientific and computer world; (iii) an era of highly skilled generalists and practitioners; (iv) an era requiring children to manage with intricacy through scientific and technological skills; and (v) a world where the foundations of education are more based on competence, efficiency, accuracy, and effectiveness (Iroriteraye-Adjekpovu, 2013). These distinctive characteristics have made the labor force usable in the world of work. In many countries, the Technical and Vocational Education and Training program (TVET) aids to promote the socio-professional participation of adults and young people (Omara et al., 2019; Zelloth, 2014). Career pursuit is based on personal life goals and aspirations that help to avoid social exclusion and poverty (Billett, 2004; Virolainen & Stenström, 2014).

TVET has been widely acknowledged as one of the most important subjects in the educational system (Saari & Rashid, 2013). The skilled workforce has a substantial role to attract foreign direct investment and in industrialization, economic, and individual development (Abdullah et al., 2020). Despite the significance of TVET to rapid economic growth, the program appears to be a long way from receiving public acceptance in Pakistan. The TVET program is as vital as other functional subjects in the list of courses in educational institutes. TVET education is a highly mandatory exposure to students at all levels in order to develop a skillful force in Pakistan. TVET-focused universities in Pakistan are equipped and can produce well capable and skilled workforce. However, there is still a gap at the secondary level, and it is desirable to fill this gap with the TVET program (Mustafa et al., 2005). Secondary education plays its role as the bridge between primary and higher education. Bringing TVET closer to the prerequisites of evolving or dynamically changing global labor economies and markets can assist young individuals in finding sustainable and productive employments (Sheikh et al., 2019).

In response, policymakers have emphasized on extending skills training prospects at the secondary level. As a result, the government took numerous plans and actions in Pakistan to incorporate TVET subjects at a secondary education level. For example, in the early 1970s, home economics, agriculture, and agro-technical subjects like industrial arts (electricity, woodwork, and metalwork) were introduced in selected secondary schools. Nevertheless, the objectives could not be met accordingly due to diverse obstacles at various levels. Likewise, the 2001-02 Matric Technical Stream was established with the help of different organizations such as UNESCO and Japan International Cooperation, despite the fact that TVET has not been successful and popular at the secondary school level in Pakistan (Ayub, 2017).

In Pakistan, TVET is facing many challenges across the country; social and cultural norms play a vital role in developing individual interest and keeping pupils reluctant to enroll in technical institutes (Chamadia & Shahid, 2018). Personal interest is a construct that has a crucial part in understanding human behavior and motivation. It is acknowledged that individual interest emerge during early childhood and is mostly consistent from childhood to young adulthood (Su et al., 2019). The combination of psychological factors, background variables, and social influences can explain individual interest development (Wang et al., 2019). Human development occurs within a context of the system that is formed by one's affiliations (e.g., family, neighbor, school, or childcare), associations of different social groups, and significant socio-political climate (Osher et al., 2020).

In light of the above challenges, this study intends to predict students' interest in the TVET program among Pakistani secondary school students from key variables of perceived social support, vocational self-efficacy, and vocational outcome expectation. In addition, the present research aims to contribute to the TVET dialog and expand the current literature regarding secondary school students' interest in the area of TVET programs.

2.Literature Review and Hypothesis Development

2.1. Perceived Social Support

Parental and caregiver support encourages functional and emotional independence in career interest and development (Wang & Fu, 2015; Zhang et al., 2015), higher levels of career commitment, and increased self-efficacy in career-development tasks (Camacho-Thompson et al., 2019). Parental support gives resources essential for the professional process to be implemented, as well as confidence and drive to those seeking careers, therefore boosting their self-efficacy (Manzano-Sanchez et al., 2019). Furthermore, some researchers argued that parental support is linked to the development of vocational self-efficacy and outcome expectations (Fouad & Santana, 2017; Mansor & Rashid, 2013; Mau & Li, 2018). Parental support has also been specifically related to math career-based self-efficacy among African American adolescents (Bounds, 2017), Mexican American adolescents (Garriott et al., 2017), Native American and Caucasian adolescents (Turner et al., 2020), and multi-ethnic middle school youth (Hall et al., 2017). A great deal of the parental support research findings are based on assumptions regarding the social interactions between parents and their children, such as modeling, emotional support, and instrumental support (Bandura, 1997). In a study conducted by Aziz and Zulkifi (2020), it was revealed that students' family and peers were the moderately high push factor in terms of effect on Malaysian students' enrolment in TVET programs. However, there is limited research on perceived social support and students' interest in TVET programs in the context of Pakistan. In view of the above review, the following hypothesis is proposed to establish the predictors of students' interest in the TVET program among secondary schools in Pakistan:

Hypothesis 1: Perceived social support is a significantly positive predictor of students' interest in the TVET program.

2.2.Vocational Self-Efficacy

Vocational self-efficacy is how individuals view their capabilities and abilities in academic and other career choices (N. Betz, 2007; Gainor, 2006). Patterns of views about capacity to execute career-relevant activities or occupational tasks have been characterized here as vocational self-efficacy, also known as career self-efficacy (e.g., Donnay & Borgen, 1999). The phrase "career self-efficacy" was used by Betz et al. (1996) to describe the potential that low efficacy expectations with regard to some element of career behavior may act as a hindrance to optimum career choice and individual growth. If a person has low vocational self-efficacy, they may not persevere in any challenging task. They might believe that they are incompetent to do the task well and might feel discouraged and overwhelmed by the task. The judgment of vocational self-efficacy determines the initiatives of behavior, influences the degree of effort that one will expend, and determines how long that behavior can be sustained (Bandura & Locke, 2003). Young adults with career decision issues and unfavorable outcome expectations for their future careers are more willing to pursue support throughout this process (Vertsberger & Gati, 2016). In a study conducted by Gizzri (2005), it was found that many final-year university students were concerned about seeking work after graduation and were unsure of what they would do next. Consequently, it is possible that this research will be a first in describing secondary school students' career counseling needs. Secondary school pupils will feel more committed to their profession if they know what they want to do after graduation and how to accomplish it. Therefore, the below hypothesis is proposed:

Hypothesis 2: Vocational self-efficacy is a significantly positive predictor of students' interest in the TVET program.

2.3.Vocational Outcome Expectation

One of the most significant factors in career interest and career development is vocational outcome expectation (Rashid et al., 2009). It denotes the beliefs concerning outcomes of career choice (McWhirter &

Metheny, 2009) and consequences of actions related to career development (Bandura, 1997), lower level of education and achievement to predict lower vocational outcome expectations (Hu et al., 2020). Social cognitive career theory (SCCT) is an applicable theory to comprehend vocational outcome expectations; this relates to how personal and environmental variables impact one’s career interests (Lent & Brown, 2019). The social cognitive career theory (SCCT) has proven to be comprehensive in describing the diverse career development patterns of various persons as a multistage and leading career model(Lent et al., 2011). In previous studies, social support (Mohd Rasdi & Ahrari, 2020), academic motivation (Iwanaga et al., 2019), social status and family support (Metheny & Mcwhirter, 2013), career calling (Dik et al., 2019), family importance (Vela et al., 2019), self-efficacy and perceived career barrier (Polat & Özdemir, 2020) have been identified as predictors of vocational outcome expectations in high school settings.

Garcia et al. (2020) found that enculturation, family importance, acculturation, and hope were the predictors of Latina students’ vocational outcome expectations. Işıl et al. (2020) discovered that vocational outcome expectation explained 29% of satisfaction of life among the university students in Turkey. Furthermore, the findings showed that vocational outcome expectation was negatively correlated with age ($r = -.11$), whereas there was positive correlation with department fit ($r = .41$), department satisfaction ($r = .40$), and job probability ($r = .35$). These findings become more significant for students to find a job as they reach the graduation phase.

Previous studies showed that students and parents have a perception that a career related to TVET is not secure (Azubuikie, 2011), has long hours and low-wage occupations (Ojimba, 2012), and has a low status in society (Azeem & Omar, 2019; Okwelle & Ayonmike, 2014). In contrast, several studies indicated that students have a perception that TVET is more attractive in the labor market, whereby more jobs are available (Aizenman et al., 2018). Middle school, junior high, and high school-aged vocational outcome expectations and preferences have been shown to be associated with gender (Hayes et al., 2018). Other research found that students from higher social classes choose fields of study with high-income returns, such as business and engineering (Iannelli et al., 2018).

According to an extensive literature on the predictors of vocational outcome expectations, few studies showed the significant role of vocational outcome expectation as an independent variable in predicting career interests, choice and performance goals, career planning, career search behavior, and the chance to achieve career interests, performance, goals, and satisfaction in specific fields (Lent et al., 2002). However, in the context of students’ interest in the TVET program, limited researchers have looked at the correlations between interest and vocational outcome expectations as explained by Lent et al. (2013). Therefore, in view of the above review, the following hypothesis is proposed to establish the vocational outcome expectations as predictors of students’ interest in the TVET program among secondary schools in Pakistan 9/see Figure 1).

Hypothesis 3: Vocational outcome expectation is a significantly positive predictor of students’ interest in the TVET program.

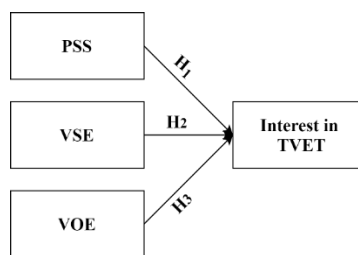


Figure 1. Conceptual framework of study.

Note: PSS= Perceived social support, VSE= Vocational self-efficacy, VOE= Vocational outcome expectation

3. Materials and Methods

This study adopted a cross-sectional survey design. Researchers chose to use a quantitative technique based on prior research (Hair et al., 2010). A structured self-reported questionnaire was used to collect data. 386 participants were randomly selected from government secondary schools in Punjab, Pakistan. The researcher surveyed the sampled secondary schools, briefed the students (respondents), and distributed the questionnaires. Additionally, participation was voluntary, and no participants were forced into partaking in the study. Students were informed of the study through a verbal message from the school’s contact person. A student who was interested in participating had to be 15 – 17 years old and would be able to consent to participation when accessing the surveys. The data were analyzed using multiple linear regression with the assistance of SPSS software version 24.

3.1.Measures

Vocational outcome expectation was measured by the revised 12-item Vocational Outcome Expectations Scale (Metheny & Mcwhirter, 2013), which assessed the respondents' expectations associated with the outcomes of vocational planning and choices. Sample items included "I will achieve my career/occupational goals", "I will have a career/occupation that is respected in our society", and "I will be successful in my chosen career/occupation". The participants responded on a five-point Likert-type scale that ranged from "Strongly disagree" (1) to "Strongly agree" (5). The Cronbach's alpha coefficient for the current study was $\alpha=.96$.

Perceived social support was measured by the Multidimensional Scale of Perceived Social Support, consisting of 12 items that evaluated the respondents' perception of social support from their friends, family, and significant others according to Zimet et al. (1988). Sample items included "My family tries to help me" (Family), "I can talk about my problems with my friends" (Friends), and "There is a special person who is around when I am in need" (Significant others). The responses were measured on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The present study achieved an internal reliability coefficient of $\alpha=.91$.

Vocational self-efficacy was measured by the Vocational Educational Self-Efficacy Scale, which is a set of 20 items developed by Ali et al. (2005) to measure the confidence of respondents in their ability to perform vocational tasks based on a five-point Likert scale ranging from "No confidence at all" (1 point [pt.]) to "Complete confidence" (5 pt.). In this current study, the internal consistency coefficient of vocational self-efficacy was achieved at $\alpha=.95$.

Interest in TVET was measured by a set of 19 items adapted from Ainley (2011) and Baker et al. (2015). Sample items included "I like working with my hands" (Affection), "I know different ways to create a design" (Cognition), and "I am persistent and willing to try a new process to get an invention to work" (Conation). The participants responded on a five-point Likert-type scale that ranged from "Strongly disagree = 1" to "Strongly agree = 5". In this study, the Cronbach's alpha coefficient of the instrument was $\alpha=.92$.

4.Results

According to the demographic statistics, there were 203 (15.6%) responders who were 15 years old, 135 (48.0%) who were 16 years old and 48 (12.4%) who were 17 years old. There were 197 (51.0 percent) females and 189 (49.0 percent) males among the responders. In terms of respondents' educational levels, computer science groups accounted for the majority (34.7 percent), humanities groups accounted for 128 (33.2 percent), and Bioscience groups accounted for the remaining 124 (31.1 percent) (see Table 1).

Table.1. Demographic results.

	Frequency	Percentage (%)	Mean	SD
Age			15.75	1.67
15	203	52.6		
16	135	35.0		
17	48	12.4		
Gender				
Male	189	49.0		
Female	197	51.0		
Field of Education				
Computer Science	134	34.7		
Bio-Science	124	32.1		
Humanities	128	33.2		

Multiple linear regression analysis (MLR) was performed to assess the prediction of students' interest by the study's independent variables. Preliminary data analyses were conducted initially to confirm that normality, linearity, and multicollinearity assumptions were not breached. The predictors (perceived social support, vocational self-efficacy, and vocational outcome expectation) significantly predicted students' interest in the TVET program among secondary school students in Pakistan, whereby $F(3, 383) = 200.75, p < .001$. The most positive and statistically significant predictor was vocational self-efficacy with $\beta = .169, p < .001$. Vocational outcome expectation with $\beta = -.480, p < .001$ and perceived social support with $\beta = -2.83, p < .001$ were negatively significant predictors of students' interest among secondary school students in Pakistan. The three predictor variables explained 61.2% of the total variance in Pakistani students' interest. According to Cohen (1988), this is a large effect. The overview of the findings is shown in Table 2.

Table 2. MLR analysis for predictors of students' interest in TVET program.

Construct	B	SE	β	t	p
-----------	---	----	---------	---	---

1	(Constant)	4.514	.192	-	23.565	.000
2	PSS	-.271	.040	-.283	-6.724	.000
3	VSS	.191	.040	.169	4.773	.000
4	VOE	-.450	.039	-.480	-11.446	.000

Note. PSS= Perceived social support, VSE= Vocational self-efficacy, VOE= Vocational outcome expectation, R = .782, R² = .612, F = 200.75.

5. Discussion and Conclusion

The present study examined the factors that predicted secondary school students' interest in TVET programs. The prediction was guided by some SCCT factors, which emphasizes the combination of contextual and cognitive factors that form students' interest at an early stage. The findings of this study revealed that vocational self-efficacy, perceived social support, and vocational outcome expectation statistically predicted students' interest in TVET programs among secondary school students in Pakistan. According to the level of contribution, vocational self-efficacy was a significantly positive predictor of students' interest. Nevertheless, perceived social support and vocational outcome expectation were significantly negative predictors of students' interest in TVET programs among Pakistani secondary schools. These results are in line with Baba and Vallerga (2020), which showed that partners, friends, and family played highly negative influential roles, specifically in providing support at the interest development stage in TVET programs. The findings of vocational self-efficacy in this study are aligned with those of other research that depicted vocational self-efficacy and career exploration efficacy predicted middle school students' interests across Holland themes (Turner & Lapan, 2002). The result of this study is also consistent with several previous studies that found outcome expectation predicted the interest but not goals orations (Lent & Brown, 2013; Turner et al., 2020).

These findings imply that students' interest in the TVET program among secondary school students in Pakistan could be effectively reinforced by employing self-efficacy measurements from a variety of sources, e.g., positive emotional arousal, verbal persuasion, vicarious learning, and past performance accomplishment or mastery. Furthermore, students' interest in the TVET program could be addressed by including them in self-motivated goal-setting activities, assisting them in better understanding themselves and their surroundings, developing career objectives, and having control over their decisions.

Given the growing importance of TVET, career options, and the persistent underrepresentation of students in TVET fields, the knowledge can be gained by examining cognitive and contextual factors associated with students' interest in the TVET program. The variables of this study, i.e., perceived social support, vocational self-efficacy, and vocational outcome expectation variables, have proven to be important in predicting secondary school students' interest in the TVET program. Vocational self-efficacy was found to be the most dominant factor contributing to students' interest in the TVET program. There is a significant need to give more emphasis on vocational self-efficacy as this will increase the confidence of secondary school students to pursue TVET careers that will eventually eradicate the unemployment rate and increase the student enrollment in TVET programs.

6. Limitations and directions for future studies

The current study provides an orderly theory-driven analysis of SCCT as a starting point for those doing future research. Some limitations must be acknowledged, as well as their potential consequences on the findings. Although this study has offered useful information on student interest in Programs via SCCT, it is not without flaws. The first limitation we recognize is the homogeneity of the participants, all of whom were secondary school students. This limits the applicability of the findings to other student groups. The second limitation is related to study measures. Despite the fact that these scales are standardized, researchers were unable to locate any study that combined these measures among students in secondary schools specifically in context of Pakistan. However, construct validity test was undertaken, which does not rule out the possibility that it has not been standardized among students.

Acknowledgments Appreciation goes to Universiti Putra Malaysia (UPM), and Research Management Center (RMC) for the coordination and distribution of financial support for this study.

References

- Abdullah, N. S., Sumarwati, S., Abd Aziz, M. I., Ziden, A. A., Abd Razak, N., & Jalil, S. A. (2020). Life and career skills amongst technical and vocational education and training (TVET) students. *International Journal of Innovation, Creativity and Change*, 11(12), 637–654.
- Ainley, M., & Ainley, J. (2011). Student engagement with science in early adolescence: The contribution of enjoyment to students' continuing interest in learning about science. *Contemporary Educational Psychology*, 36(1), 4–12.
- Aizenman, J., Jinjarak, Y., Ngo, N., & Noy, I. (2018). Vocational education, manufacturing, and income distribution: International evidence and case studies. *Open Economies Review*, 29(3), 641–664.

- Ali, S., McWhirter, E., & Chronister, K. (2005). Self-efficacy and vocational outcome expectations for adolescents of lower socioeconomic status: A pilot study. *Journal of Career Assessment, 13*(1), 40–58.
- Ayub, H. (2017). Parental influence and attitude of students towards technical education and vocational training. *International Journal of Information and Education Technology, 7*(7), 534–538.
- Azeem, N., & Omar, M. K. (2019). Students' interests in technical and vocational education and training (TVET) program: A systematic review. *International conference on educational research and practice*. Palm Garden Putrajaya, Malaysia.
- Aziz, S. N., & Zulkifli, N. B. (2020). Pull and Push Factors of Students' Enrolment in the TVET Programme at Community College in Malaysia. *Journal of Technical Education and Training, 12*(1), 68–75.
- Azubuike, O. C. (2011). Influential factors affecting the attitude of students towards vocational/technical subjects in secondary schools in Southeastern Nigeria. *Journal of Educational and Social Research, 1*(2), 49–50.
- Baba, Y. L., & Vallerga, M. E. (2020). Exploring Family Multi-type Maltreatment, Social Support, and Externalizing and Internalizing Problems Among Asian and Asian American College Students. *Asian Journal of Social Science Studies, 5*(3), 1–17.
- Baker, D. R., Wood, L., Corkins, J., & Krause, S. (2015). Tinkering and technical self-efficacy of engineering students at the community college. *Community College Journal of Research and Practice, 39*(6), 555–567.
- Bandura, A. (1997). *Theoretical perspectives: Self-efficacy: The exercise on control*. W.H. Freeman and Company.
- Bandura, A., & Locke, E. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88*(1), 87–99.
- Betz, N. (2007). Career self-efficacy: Exemplary recent research and emerging directions. *Journal of Career Assessment, 15*(4), 403–422.
- Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of Career Assessment, 4*(1), 47–57. <https://doi.org/10.1177/106907279600400103>
- Billett, S. (2004). Co-participation at work: Learning through work and throughout working lives. *Studies in the Education of Adults, 36*(2), 190–205.
- Bounds, P. S. (2017). Contextual factors related to African American adolescent career development. *The Career Development Quarterly, 65*(2), 131–144.
- Camacho-Thompson, D., Gonzales, N., & Fuligni, A. (2019). Adolescent academic socialization: A within-group comparative analysis among Mexican-origin families. *Journal of Adolescent Research, 34*(4), 411–437.
- Chamadia, S., & Shahid, M. (2018). Skilling for the future: Evaluating post-reform status of “skilling pakistan” and identifying success factors for TVET improvement in the region. *Journal Of Technical Education And Training, 10*(1), 1–14.
- Dik, B., Reed, K., Shimizu, A. B., Marsh, D. R., & Morse, J. L. (2019). Career Callings and Career Development. In J. Athanasou & H. Perera (Eds.), *International Handbook of Career Guidance* (pp. 185–206). Springer.
- Donnay, D. A., & Borgen, F. H. (1999). The incremental validity of vocational self-efficacy: An examination of interest, self-efficacy, and occupation. *Journal of Counseling Psychology, 46*(4), 432–447.
- Fouad, N. A., & Santana, M. C. (2017). SCCT and underrepresented populations in STEM fields: Moving the needle. *Journal of Career Assessment, 25*(1), 24–39.
- Gainor, K. (2006). Twenty-five years of self-efficacy in career assessment and practice. *Journal of Career Assessment, 14*(1), 161–178.
- Garcia, C., Vela, J. C., Guerra, F., & Garcia, C. (2020). Identifying Relevant Predictors of Latina/o Adolescents' Vocational Outcome Expectations. *Journal of Multidisciplinary Graduate Research, 15*(1), 10–24.
- Garriott, P. O., Raque-Bogdan, T. L., Zoma, L., Mackie-Hernandez, D., & Lavin, K. (2017). Social cognitive predictors of Mexican American high school students' math/science career goals. *Journal of Career Development, 44*(1), 77–90.
- Gizir, C. A. (2005). Orta Dogu Teknik Universitesi son sinif ogrencilerinin problemleri uzerine bir calisma [A study on the problems of the Middle East Technical University senior students]. *Mersin University Journal of the Faculty Education, 1*, 196–213.
- Goel, D., & Vijay, P. (2017). *Technical and vocational education and training (tv et) system in india for sustainable development*. UNEVOC.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis*. Prentice Hall.
- Hall, A. R., Nishina, A., & Lewis, J. A. (2017). Discrimination, friendship diversity, and STEM-related outcomes for incoming ethnic minority college students. *Journal of Vocational Behavior, 103*, 76–87.
- Hu, S., Hood, M., Creed, P. A., & Shen, X. (2020). The Relationship Between Family Socioeconomic Status and Career Outcomes: A Life History Perspective. *Journal of Career Development, 1*–16.
- Iannelli, C., Gamoran, A., & Paterson, L. (2018). Fields of study: Horizontal or vertical differentiation within higher education sectors? *Research in Social Stratification and Mobility, 57*, 11–23.
- Işıl, Y., Dündar, A., & Atli, A. (2020). Expectation of Vocational Outcome as a Predictor of Life Satisfaction of University Students. *Inonu University Journal of the Graduate School of Education, 7*(13), 70–77.
-

- Iwanaga, K., Chan, F., Tansey, T. N., Strauser, D., Ritter, E., Bishop, M., & Brooks, J. (2019). Working Alliance and Stages of Change for Employment: The Intermediary Role of Autonomous Motivation, Outcome Expectancy and Vocational Rehabilitation Engagement. *Journal of Occupational Rehabilitation*, 29, 315–324.
- Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, 60(4), 557–568.
- Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25: Empirical status of the interest, choice, and performance models. *Journal of Vocational Behavior*, 115, 1–25.
- Lent, R. W., Brown, S. D., & Hackett, G. (2002). Social cognitive career theory. In D. Brown (Ed.), *Career choice and development* (Vol. 4, pp. 255–311). Jossey Bass.
- Lent, R. W., Lopez, F. G., Sheu, H.-B., & Lopez Jr, A. M. (2011). Social cognitive predictors of the interests and choices of computing majors: Applicability to underrepresented students. *Journal of Vocational Behavior*, 78(2), 184–192.
- Mansor, M., & Rashid, A. M. (2013). Career indecision: A cross-sectional survey among students of national youth skills training institutes. *Middle-East Journal of Scientific Research*, 17(8), 1073–1079.
- Manzano-Sanchez, H., Matarrita-Cascante, D., & Outley, C. (2019). Barriers and supports to college aspiration among Latinx high school students. *Journal of Youth Development*, 14(2), 25–45.
- Mau, W., & Li, J. (2018). Factors influencing STEM career aspirations of underrepresented high school students. *The Career Development Quarterly*, 66(3), 246–258.
- McWhirter, E. H., & Metheny, J. (2009). *Vocational Outcome Expectations-Revised. A measure of expectations associated with career planning for high school students* [Unpublished measure].
- Metheny, J., & McWhirter, E. H. (2013). Contributions of social status and family support to college students' career decision self-efficacy and outcome expectations. *Journal of Career Assessment*, 21(3), 378–394.
- Mohd Rasdi, R., & Ahrari, S. (2020). The applicability of social cognitive career theory in predicting life satisfaction of university students: A meta-analytic path analysis. *Plos One*, 15(8), 1–22.
- Mustafa, U., Abbas, K., Saeed, A., & Anwar, T. (2005). Enhancing Vocational Training for Economic Growth in Pakistan [with Comments]. *The Pakistan Development Review*, 44(4), 567–584.
- Ojimba, D. P. (2012). Vocational and technical education in Nigeria: Issues, problems and prospects' dimensions (IPP). *Journal of Educational and Social Research*, 2(9), 23–23.
- Okwelle, P., & Ayonmike, C. S. (2014). Towards Value Re-orientation of Youths on the Role of Technical Vocational Education and Training (TVET) for Sustainable Development in Nigeria. Perspective. *Journal of Education and Practice*, 5(8), 187–191.
- Omara, M. K., Azeemb, N., Kamarudinc, S., & Faiz, M. Empowering Holistic Learning Experience through Project Outcome-based Learning (Po-BL): Reflecting on a Case Study of Malaysian University Undergraduate Students. *International Journal of Innovation, Creativity and Change*, 9(12), 230-250.
- Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2020). Drivers of human development: How relationships and context shape learning and development. *Applied Developmental Science*, 24(1), 6–36.
- Polat, F. B., & Özdemir, Y. (2020). Self-efficacy belief and perceived career barriers as a predictor of vocational outcome expectations. *Middle East Journal of Management*, 7(5), 452–470.
- Rashid, A. M., Bakar, A. R., Asimiran, S., & Tieng, L. P. (2009). Career development interventions in secondary schools in the state of Terengganu, Malaysia. *European Journal of Social Sciences*, 8(1), 62–67.
- Saari, H. A., & Rashid, A. M. (2013). Relationship between implementation of cooperative vocational education and job offering among apprentice of national dual training system in Malaysia. *Middle East Journal of Scientific Research*, 18(11), 1578–1583.
- Sheikh, S., Sheikh, H., & Koreshi, Z. (2019). Emerging smart community concept and microgrid technology-a study of lagging skill development in Pakistan. *International Journal of Training Research*, 17(1), 170–181.
- Su, R., Stoll, G., & Rounds, J. (2019). The nature of interests: Toward a unifying theory of Trait-State Interest Dynamics. In *Vocational Interests in the Workplace* (pp. 11–38). Routledge.
- Turner, S. L., Lee, H., Jackson, A. P., Mason-Chagil, G., & Jacobs, S. C. (2020). Examining the Career Self-Management Model Among Native American Students With STEM Career Goals. *Journal of Career Development*, 1–16.
- Turner, S., & Lapan, R. T. (2002). Career self-efficacy and perceptions of parent support in adolescent career development. *The Career Development Quarterly*, 51(1), 44–55.
- Vertsberger, D., & Gati, I. (2016). Career decision-making difficulties and help-seeking among Israeli young adults. *Journal of Career Development*, 43(2), 145–159.
- Virolainen, M., & Stenström, M. (2014). Finnish Vocational Education and Training in Comparison: Strengths and Weaknesses. *Online Submission*, 1(2), 81–106.
- Wang, M. T., Degol, J. L., & Henry, D. A. (2019). An integrative development-in-sociocultural-context model for children's engagement in learning. *American Psychologist*, 74(9), 1086–1102.
- Wang, Z., & Fu, Y. (2015). Social support, social comparison, and career adaptability: A moderated mediation model. *Social Behavior and Personality: An International Journal*, 43(4), 649–659.

- Zelloth, H. (2014). Technical and vocational education and training (TVET) and career guidance: The interface. In G. Arulmani, A. Bakshi, F. Leong, & A. Watts (Eds.), *Handbook of Career Development* (pp. 271–290). Springer. https://doi.org/10.1007/978-1-4614-9460-7_15
- Zhang, J., Yuen, M., & Chen, G. (2015). Career-related parental support for vocational school students in China. *International Journal for the Advancement of Counselling*, 37(4), 346–354.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2