

## **Vocational Self-Efficacy as a Moderator on the Relationship Between Perceived Social Support and Students' Interest in TVET Programmes in Pakistan**

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### **ABSTRACT**

Studies have shown that the behaviour of family, friends and significant others shapes young people's self-belief and interest in Technical and Vocational Education and Training (TVET) programmes. However, limited research has documented how vocational self-efficacy can significantly impact the relationship between perceived social support and students' interest in Pakistani TVET programmes. Thus, this study utilised quantitative research to examine the role of vocational self-efficacy as a moderator in the relationship between perceived social support and students' interest in TVET programmes. A total of 386 secondary school students filled out three questionnaires: vocational self-efficacy, perceived social support, and interest in the TVET programmes scale using Social Cognitive Career theory as a theoretical framework. The data were analysed using Structural Equation Modelling (SEM) and statistical analysis using Statistical Package for the Social Sciences (SPSS). The correlation analysis revealed that perceived social support and students' interest in the TVET programmes were negatively correlated, and vocational self-efficacy was not a moderator. This study benefits the authorities, policymakers, and researchers in supporting TVET programmes in Pakistan.

*Keywords:* Social cognitive career theory, students' interest, vocational self-efficacy

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### **INTRODUCTION**

Technical and Vocational Education and Training have received significant attention worldwide due to the rising demand for a workforce that is well-trained, industry-responsive, and has high-order thinking skills (Marope et al., 2015). The trained and skilled workforce has an extensive role

in attracting foreign direct investment and aiding in the industrialisation and economic development of the country (Haudi & Cahyono, 2020). In addition, the nation's physical development is profoundly affected by the skills adopted by the community through the education system. TVET programmes in developed countries have existed for decades and are well-organised and substantiated (Obwoye & Kwamboka, 2016). For example, around 80% of youths aged 15 to 29 in Germany and 20% in Switzerland are more likely to enrol in TVET programmes than other work-study programmes (Organisation for Economic Co-operation and Development [OECD], 2017).

Despite the significance of TVET, the programme is still unpopular among South Asian countries like Pakistan, Nepal, Afghanistan, Sri Lanka, India, and Bangladesh. The low enrollment in TVET is due to poor perception in society (Lee, 2020). For example, the TVET term in Pakistan focuses on theoretical and hands-on training and developing proficiency in the manual skills needed. Furthermore, many manual or labour-intensive jobs are perceived as unbecoming and are considered a trade for the poor and underprivileged in Pakistan (Alam, 2015).

Due to these social and cultural beliefs, many parents do not want their children to enrol in the TVET, thus affecting students' interest in the programmes (Ayub, 2017). There were no formal TVET training bases in 1947 in Pakistan. However, in the mid-1950s, two polytechnic institutes in Karachi

and Rawalpindi were established. Over the years, Pakistan's technical education system has undergone several developmental changes as the government realised the significance of TVET in reforming the labour force (Technical and Vocational Training Authority [TEVTA], 2018).

Given the rising demand for skilled workers in the labour market, the Medium Term Development Framework developed a strategy covered from 2005 to 2010 by implementing successful schemes and resources to meet the demand of the labour market of one million per year (Government of Pakistan, 2005). Under the plan, Pakistan established the National Vocational and Technical Education Commission (NAVTEC), which serves as the country's governing and coordinating body for the TVET sector and policy formulation. The foremost motive was to meet the international standards in the TVET sector and meet the labour market demand while promoting enrolment. Only 3%. Pakistan's early TVET system, the lowest ever in the region, focused more on curriculum-based methods than a competency-based or practical approach (National Vocational and Technical Training Commission, 2018). The National Education Policy also highlighted these challenges by recognising that skill development is imperative. The TVET sector needs to be strengthened to achieve labour market demands to effectively utilise the working-age population and achieve sustainable economic growth (National Educational Policy, 2009).

Consequently, NAVTEC presented a pioneering policy entitled 'Skilling Pakistan National Skills Strategy (2009-2013),' which formulated a plan to compete in the domestic and global market for skill development. Under this policy, the government also set a vision entitled "Skills for Employability and Skills for All," where the National Skills Strategy acknowledged two key objectives: (i) shifting from supply-driven to demand-driven training by enlisting the private sector where relevance, equity, and access are at the core of the strategy, (ii) shifting from curriculum-based and time-bound training towards more competency-based education (National Vocational and Technical Training Commission [NAVTTTC], 2018). Twenty reforms are proposed to implement and achieve the desired goals and objectives. It mainly provides applicable economic and industrial growth skills to provide access to informal economy workers by implementing an efficient quality assurance approach and promoting research and development.

Despite the government's several reforms, the workforce's development with technical and professional skills has been disregarded. As a result, it has produced a tiny share of the skilled workforce in Pakistan. The widening skill gap contributes to high unemployment in various economic sectors (Nooruddin, 2017). The high unemployment rate in Pakistan indicates that a large portion of potential human capital is still untapped. TVET is being promoted internationally and has the potential to substantially reduce the risk of rising unemployment and is viewed as a means to reduce youth unemployment

(Hanushek et al., 2017; Mansor & Rashid, 2013).

Students' interest in TVET is an area that needs exploring as there is a prerequisite to identifying which factors influence them (Blattman & Ralston, 2015). Personal interest is a construct that plays a crucial role in understanding human behaviour and motivation, and individual interest rises in early childhood and is primarily consistent from childhood to young adulthood (Su, 2020). The combination of contextual and cognitive factors, like perceived social support and vocational self-efficacy, can explain the development of individual interest.

Among these variables, the most significant predictors of secondary school students' interest include vocational self-efficacy, which refers to an individual's belief in his or her own ability to complete a task (Van Rooij et al., 2017). If students are not confident that they can be accomplished and succeed in a specific activity, their interest in that activity will decline (Huang et al., 2019). A recent study conducted in schools and colleges in Nigeria showed that students have low self-efficacy in skills acquisition and lifelong learning. Many TVET students showed low levels of assurance in their ability to hold onto skills and refrained from going to workshops and laboratories where machines, working tools, and equipment were fitted. Some students showed less interest than others and had no motivation to learn new skills or face new challenges (Usoro & Etuk, 2016).

Currently, research on TVET programmes in Pakistan has been mainly anchored on demographic differences, facilities, funding, curriculum, and enrolment (Azeem et al., 2022; Chamadia & Shahid, 2018; Siddiqui et al., 2019). Furthermore, there is insufficient literature to provide information regarding the cognitive factors influencing school students' interest in TVET programmes in Pakistan. This study aims to fill the literature and methodological gaps by using SEM to investigate the role of vocational self-efficacy as a moderator between perceived social support and students' interest in TVET programmes in Pakistan.

## LITERATURE REVIEW

### Social Cognitive Career Theory

The Social Cognitive Career Theory (SCCT) (Lent et al., 2008) provides a framework that incorporates these career-related factors into a comprehensive model for career development based on personal interest. SCCT emphasises the interactional dynamics of person, environment, and behaviour, which affect the development of academic and career interests (Lent & Brown, 2008). In this model, individuals develop an interest in activities in which they feel efficacious (i.e., in which they have higher levels of self-efficacy). Furthermore, some of these interests elicit similar goals, affecting career choice behaviours, and further affecting their interests.

Self-efficacy is at the heart of Bandura's Social Cognitive Theory (Bandura, 1977; Bandura & Locke, 2003) and SCCT (Lent

et al., 1994). Academic and career choice behaviours are positively impacted by self-efficacy, the perceptions of one's ability to perform a task or behaviour successfully (Bandura, 1977). Self-efficacy determines the number of effort people expend on an activity, their perseverance when confronted with obstacles, and their resiliency when facing challenges (Schunk & Pajares, 2002). When people believe their actions can produce desired results, they are more motivated to act or persevere in facing difficulties. Conversely, highly self-efficacious, well-skilled people may choose not to engage in behaviours consistent with their high levels of self-efficacy in an academic or career path if they believe that there may be adverse outcomes to their doing so, such as social constraints, disincentives, or performance limitations (Bandura, 1997; Lent et al., 2001). Higher levels of self-efficacy in one domain result in more positive outcome expectations. Together, higher levels of self-efficacy and more positive outcome expectations lead to and reinforce one's interest in a specific field (Lent et al., 2008). Developing interests must lead to further exposure to related activities, which increases the probability of a person performing and practising desirable task behaviours. In turn, this produces the attainment of performance goals, which creates revisions of self-efficacy and outcome expectations in the person's mind. This interactive feedback loop of practising a task and having one's self-efficacy and outcome expectations revised repeats itself over one's life span. However, once interests stabilise, it tends

to take “very compelling experiences to provoke a fundamental reappraisal of career self-efficacy and outcome beliefs” (Lent et al., 2008, p. 89), such as dramatic changes in one’s life or career circumstances. However, self-efficacy and outcome expectations do not shape vocational interest, choice, and performance alone. Individual traits and context influence career interest, choice, and performance, including family, friends, and schooling (or education) (Bandura, 1977; Lent & Brown, 1996).

The present study focuses on TVET interests, with the discussion centring on Lent et al. (2008). The Model of Interest Development SCCT holds that vocational self-efficacy is central to forming career interests. Students tend to develop interests in academic subjects and careers when they possess strong self-efficacy and have great social support from friends, family, and their school environment, which indirectly affects interests.

### Dimensions of Interest

In educational psychology, the concept of interest is strongly rooted within a grander body of literature called individual differences, which are concentrated on the research of personality and intellectual differences between entities. Three theoretical classifications, cognition, affection, and conation, exist in the broad discipline of individual variations (Ainley, 2011; Hidi & Renninger, 2020). Cognition refers to the realisation of knowledge and deeper levels of processing or understanding (Grossnickle, 2016), whereas affection

consists of temperamental and emotional constructs, like an individual’s hypothetical levels of attraction to a fondness for an event (Niankara, 2019). Lastly, conation comprises intrinsic motivation and is a force arising from a person free from external factors (Tobias, 2006). The sub-dimensions of the construct of interest are shown in Figure 1.

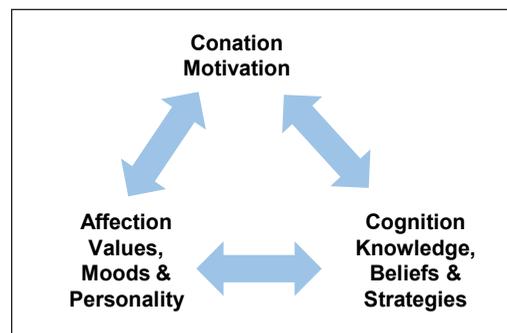


Figure 1. Interest connection within the construct  
Source: Ainley (2011)

As can be seen, interest is a robust motivational process that guides academic and career trajectories, energises learning, and is essential to academic success. Consequently, this study picked students’ interest in TVET as its most crucial construct and dependent variable. Throughout this study, the researcher referred to these three components (affection, cognition, and conation) as the facets of interest in Technical and Vocational Education and Training programmes.

### Perceived Social Support and Student Interest

Social support can be measured as the perception or support given by friends, family, and significant others that encourage

an individual and augments the physical, cognitive, and affective psychological dynamics (Vietze, 2011; Zimet et al., 1988). Perceived social support is categorised in three ways: (i) emotional support that involves empathy, trustworthiness, the availability of someone to listen to problems, and concern over an individual's well-being, (ii) informational support where valuable information, concrete advice, or suggestions about resources and courses of action is given and (iii) instrumental support where tangible assistance is given like money, transportation, and repairs (Gaeeni et al., 2015). These support behaviours are typically assessed in functional measures, and friends, family, and teachers seem to be students' most pervasive sources of social support (Zimet et al., 1988). The availability of social support from friends, family, and teachers continues to be a central focus of career interest and career development literature, and studies have shown that social support positively correlates with individuals' interest in persuading them to become entrepreneurs (Agarwal et al., 2020; Ayyubi et al., 2018; Azeem & Omar, 2019).

### **Family Support and Students' Interest**

The importance of family support in the career interest of their children is a critical factor in predicting the career interest of children and task-related confidence, specifically during the early stages of adolescence. Proper family support pertains to members who show concern toward each other and are willing to solve problems together (Haslam et al., 2017). Many

sociological and psychological theories share the assumptions that parents often transmit their values to their children, and this can shape their children's values (Grusec et al., 2000). Research shows that parents and their young adults are now more connected than in past generations and children frequently pursue their parents' endorsement (Corey, 2015). Lauermaun et al. (2017) found that children value parents' support as it influences children's interests and career expectations more than friends and teachers.

Parents influence their children's interests, values, and career choices and can offer financial means that provide security and educational opportunities that allow youth to attain financial independence and stability (Davidov et al., 2015). Parents also provide information on various job opportunities and are the first to introduce youths to important work-related skills in the labour market (Ginevra et al., 2015). Based on this, the following hypothesis was proposed:

*H<sub>1</sub>: There is a significant relationship between family support and students' interest in TVET programmes.*

### **Friends' Support and Students' Interest**

Friends' support contributes to youths' healthy emotional well-being (Hellfeldt et al., 2020). Alberti and Emmons (2002) defined support from friends as behaviour that permits individuals to act per their interest to use their rights to express their feelings easily, defend themselves, and consider equality in personal relationships

(Alberti & Emmons, 2002). The studies show that peer support does not influence students' interest in a choice of subject or career interests, while studies show that peers hinder youths' academic and vocational skills (Kazi & Akhlaq, 2017). According to Ngwato (2020), students' interest and desire to choose TVET programmes are associated with friends' support due to norms among teenagers. Hence, their friends can influence students' interest in TVET programmes due to their norms. As such, the following hypothesis was proposed:

*H<sub>2</sub>: There is a significant relationship between friends' support and students' interest in the TVET programmes.*

### **Significant Others Support and Students' Interest**

Support from significant others refers to the emotional comfort and practical assistance given by school members, administrators, teachers, career counsellors, and professional help (Zamani-Alavijeh et al., 2017; Zimet et al., 1988). Besides the family, teachers play an essential role in increasing student interest and attitude (Lan & Moscardino., 2019). Zee and Roorda (2018) found that the emotional support given by teachers uniquely contributed to the development of social skills and academic competence of elementary school students.

Aziz and Zulkifi (2020) postulated that students' families and peers were a moderately high push factor influencing the student's enrolment in the Malaysian TVET programmes. However, there is limited

research on perceived social support and students' interest in TVET programmes in Pakistan. Based on this, the following hypothesis was proposed to establish the relationship between perceived social support and students' interest in the TVET programmes among secondary schools in Pakistan:

*H<sub>3</sub>: There is a significant relationship between significant other's support and students' interest in the TVET programmes.*

### **Vocational Self-Efficacy as a Moderator between Perceived Social Support and Students' Interest in the TVET Programmes**

Vocational self-efficacy is how individuals view self-capabilities (Betz & Schifano, 2000; Gainor, 2006). If the person has low vocational self-efficacy, they may not persevere in facing challenges and may feel discouraged. Vocational self-efficacy determines the initiatives of behaviour and influences the degree of effort one will put in and how long that behaviour can be sustained (Bandura, 1997; Bandura & Locke, 2003).

Vocational self-efficacy relates to one's confidence in pursuing career-related tasks, where stronger vocational self-efficacy brings higher personal goal aspirations (Betz, 2007). According to Bandura (1997), perceived self-efficacy occupies a central part in the novel structure of social cognitive theory because self-efficacy beliefs will impact adaptation, alter their rights, influence other determinants and affect the strengths of commitment and aspirations. Most people

can empower themselves and raise their self-efficacy by using environmental factors that can influence people's interests, behaviours, and attitudes (Bandura, 2012).

Margolis and McCabe (2006, p. 218) viewed vocational self-efficacy as a form of a question, such as "Do we have the capability to shape and implement the activities needed to achieve an exact task at a preferred level?" Vocational self-efficacy plays a remarkable role in TVET students' lives, and people will be able to overcome challenging and complex situations more easily if they have higher levels of self-efficacy (Bandura, 2012).

Vocational self-efficacy has a moderate, positive correlation with vocational interests (Nuutila et al., 2020) and influences career plans among high school students in Italy (Chiesa, 2016), Australia (Rogers et al., 2018) and college students in Hong Kong (Li et al., 2019). Consequently, support interventions that boost youths' career-related self-efficacy and broaden occupational possibilities must be carried out (Azeem et al., 2021; Omar et al., 2019; Rashid et al., 2009).

Self-efficacy is a significant moderator of the strength of the relationships between empathy and forgiveness (Baghel & Pradhan, 2014), global leadership competencies and knowledge transference (Yoon & Han, 2018), role stress and job burnout (Ho, 2018), and positive mood and cognitive performance (Niemic & Lachowicz-Tabaczek, 2015). The studies mentioned above have discussed self-efficacy as a moderator on other domains in the Western

context. In addition, many researchers have related self-efficacy as a mediator in students' career interests (Chui et al., 2020; Horvath, 2017; Saari & Rashid, 2013). However, only some researchers have found vocational self-efficacy to moderate students' career interests in the Western context (Golestan, 2014; Lent et al., 2013). Regarding Pakistan, there is no research on vocational self-efficacy as a moderator on the relationship between perceived social support and students' interest in TVET programmes. Based on this, the following hypothesis was proposed:

*H<sub>4</sub>: Vocational self-efficacy will moderately affect the relationship between perceived social support and students' interest in the TVET programme.*

## **CONCEPTUAL FRAMEWORK AND HYPOTHESES**

The research's conceptual framework is based on the moderating effect of vocational self-efficacy between perceived social support and students' interest in TVET programmes. Based on Zimet et al. (1988), the perceived social support model consists of family, friends, and significant others. Furthermore, vocational self-efficacy is viewed as a secondary school student's confidence in completing various vocational tasks. Furthermore, a vocational self-efficacy questionnaire developed by Ali et al. (2005) was used in this study. Lastly, students' interest in the TVET programmes is viewed based on Ainley's (2011) definitions of a person's prior knowledge and experiences

of value and enjoyment in that context determine their interest. The research framework is shown in Figure 2.

The following research objectives proposed for this study are:

- i. To determine the relationship between family support and students' interest in TVET programmes.
- ii. Assess the relationship between friends' support and students' interest in TVET programmes.
- iii. To examine the relationship between significant others and students' interest in TVET programmes.
- iv. To determine the vocational self-efficacy as moderate on the relationship between perceived social support and students' interest in the TVET programmes.

The hypotheses formulated for this study are:

- H<sub>1</sub>: There is a significant relationship between family support and students' interest in the TVET programmes.
- H<sub>2</sub>: There is a significant relationship between friends' support and students' interest in the TVET programmes.
- H<sub>3</sub>: There is a significant relationship between significant others and students' interest in the TVET programmes.
- H<sub>4</sub>: Vocational self-efficacy will moderate the relationship between perceived social support and students' interest in the TVET programmes.

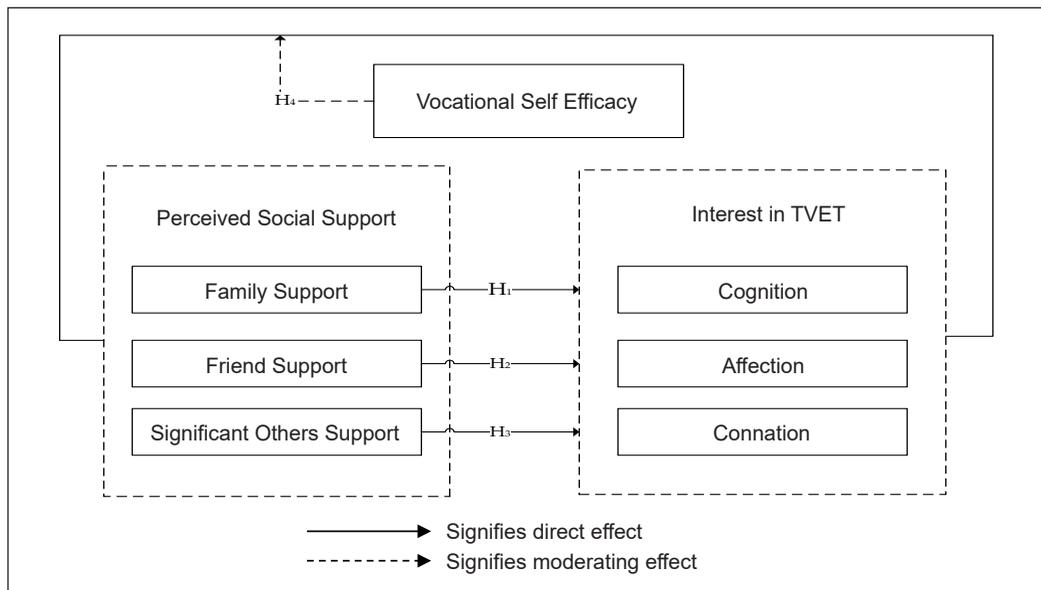


Figure 2. Research framework specifying the hypothesised structural linkages among variables

## MATERIALS AND METHODS

### Research Design

In this quantitative research, a cross-sectional survey design was adopted to determine secondary school students' interest in TVET programmes in Pakistan. The reasons for using a cross-sectional sample design are as follows: firstly, it allows the researcher to study a sample of respondents from the appointed population at a single point in time, minimising the impact of time-related confounding factors. Secondly, the data obtained from a cross-sectional design can be collected from many people and be comparable because a particular point does not influence the data in time. Lastly, it is a relatively fast, easy-to-conduct, and inexpensive research. Hence, this research design fulfils the eight hallmarks of scientific research: testability, purposiveness, precision, rigour, parsimony, confidence, replicability, and objectivity (Ary et al., 2018). Thus, a cross-sectional design was an appropriate research method for this research.

### Participants

This study adopted a quantitative, cross-sectional survey design. It involved 319,299 tenth-class students from 6400 secondary public schools in the Punjab province of Pakistan. The sample size of this study was determined to be 384 using Cochran's formula, and an additional 5% was added to the minimum sample to account for non-response from some students during the data collection process, making the total sample 403 (Cochran, 2007). The choice

of the participant was made through a stratified proportionate sampling method. In the first stage, twelve districts were randomly selected out of Punjab's 36 districts (four districts were randomly selected from each high, high-medium, medium, and low-medium social stratum). In the second stage, the researcher randomly selected three schools with equal sample sizes from twelve districts of Punjab. It was done using computer-generated digits ( $3 \times 12 = 36$  schools). Finally, the sample size was computed to its proportion (percentage) in each district, assuming that all the government high schools and higher secondary schools had similar standards and environments. The assumption was made because staff recruitment in these schools was centralised, and equal qualifications were prescribed to each member.

Similarly, the institutions were not autonomous in their activities, but centralized procedures were being followed. In the third stage, the research participants were selected at the school level. The selection was conducted randomly from a list of secondary schools in the twelve districts, and the school selections were made by referring to a random number table. Subsequently, while visiting the selected schools, the students were randomly picked using the students' name list, which the school principals provided to complete the questionnaires. Of the 403 questionnaires distributed, 386 copies were filled and returned. Overall, only 386 questionnaires were analysed in this research, forming a usable response rate of 95 %.

Additionally, participation was voluntary, and students were informed of the study through a verbal message via the schools' contact persons. Only students aged 15–17 and older who could consent to participation were selected.

### Instrumentations

For this quantitative research, a three-part questionnaire was created. The first section concerns the research topic, its importance and confidentiality, and the anonymity statement. The second section comprised the respondent's demography, and the third section contained the questionnaires comprising perceived social support, vocational self-efficacy, and students' interest in the TVET programmes.

For the "Multidimensional Scale of Perceived Social Support," a five-point Likert scale consisting of 12 items that measure respondents' perception of social support from their friends, family, and significant others was developed according to Zimet et al. (1988). For the "Vocational Educational Self-Efficacy Scale," a set of 20 items was developed according to 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 pt.) to "Complete Confidence" (5 pt.). Similarly, a set of 19 questions with a five Likert scale ranging from "strongly disagree = 1 to strongly agree = 5" were adapted from Ainley (2011) and Baker et al. (2015) to measure students' interest in the TVET programme. This study validated the content of the instruments using four experts.

Two experts were from Universiti Putra Malaysia, and two were from the University of Education, Lahore. The comments from the experts were taken into consideration, and necessary adjustments were made to ensure that the instruments' item, as well as their formats, adequacy, and logical structures, justify the content validity of the instruments. The reliability test was measured using Cronbach Alpha coefficients. As reported in Table 1, the reliability coefficient values ranged from .851 to .975 indicating all values exceeded the desired level of 0.7 (Hair et al., 2019). Therefore, the instrument that comprised 51 items was reliable as the Cronbach alpha was higher than the acceptable level of .70.

Table 1  
*Cronbach Alpha Reliability of the constructs*

	No of items	Main Study n=386
<b>Perceived Social support</b>	12	a=.91
Friends	4	a=.92
Family	4	a=.94
Significant others	4	a=.92
<b>Interest in TVET</b>	19	a=.95
Affection	7	a=.77
Cognition	5	a=.71
Conation	7	a=.78
<b>Vocational Self-efficacy</b>	20	a=.95

*Note:* >0.6=Poor, 0.6-<0.7=Questionable, 0.7-<0.8=Acceptable, 0.8-<0.9=Good, 0.9≤=Excellent

*Source:* Hair et al. (2019)

### Data Analysis

The data obtained were analysed using descriptive statistics, and Pearson correlation analysis was used to determine if there were any significant bivariate relationships

between the independent variables and the dependent variable. SEM with Smart Partial Least Squares software (SMART-PLS) 3.0 was used to determine the moderating influence of vocational self-efficacy between the role of family, friends, and significant others and students' interest in the TVET programmes. Based on the SEM model, the structural model of the study was found to fit with the data. The two-step process involved in the systematic application of these criteria entailed distinct assessments of the measurement and structural models (Table 2). First, the assessment of the structural model results followed the confirmation of reliability and validity.

Validating the measurement models and fitting the structural model are the two phases involved in the structural equation modelling process. Validation of the measurement models is achieved mainly through confirmatory factor analysis, while structural model fitting is achieved mainly through path analysis with latent constructs.

## RESULTS

### Demographic Information of the Respondents

The respondents' demographic data showed 189 (49.0%) males and 197 (51.0%) females.

A total of 203 (52.6%) respondents were 15 years old, 135 (48.0%) were 16 years old, and 48 (12.4%) were 17 years old. With regards to the level of education of the respondents, computer-science groups were in the majority, constituting (34.7%) of all participants, 128 (33.2%) of the respondents were from the humanities group, and the remaining 124 participants (31.1%) were from the bioscience group.

### Hypotheses 1: Relationship Between Family Support and Students' Interest in the TVET Programmes

The study's first hypothesis was to establish the relationships between family support and students' interest in TVET programmes. The strength of the relationship was analysed using the Cohen rule of thumb, where  $r = 0.1$  to  $0.29$  is considered weak,  $r = 0.30$  to  $0.49$  is considered medium, and  $r = 0.50$  to  $1.0$  is strong (Cohen, 2013). Table 3 shows the correlation among the variables tested.

There is a significant relationship between family support and students' interest ( $r = -0.621$ ,  $p < 0.05$ ). Furthermore, there is a strong, negative correlation between the variables with a coefficient of  $-0.621$ , indicating that students with higher family support had a lower interest in the TVET programmes; thus, the hypothesis is accepted.

Table 2  
PLS-SEM

Systematic Evaluation of PLS-SEM	
Evaluation of the Measurement Models	Internal consistency (composite reliability), indicator reliability, convergent validity (average variance extracted), discriminant validity
Evaluation of the Structural Model	Coefficients of determination (R <sup>2</sup> ) predictive relevance (Q <sup>2</sup> ), size, and significances of path coefficients f <sup>2</sup> effect sizes.

Source: Hair et al. (2016)

Table 3  
Mean (*M*), Standard Deviation (*SD*), and correlation among the variables

Variables	<i>M</i>	<i>SD</i>	PSSfa	PSSfr	PSSso	INT
Family Support (PSSfa)	3.51	1.12	1	0.472**	0.603**	-0.621**
Friend Support (PSSfr)	3.32	0.93		1	0.520**	-0.556**
Significant Other (PSSso)	3.20	1.25			1	-0.602**
Interest TVET (INT)	2.61	0.94				1

Note: \*\* Correlation Coefficient is significant at the 0.01 level (2-tailed)

### Hypotheses 2: Relationship Between Friends' Support and Students' Interest in the TVET Programmes

$H_2$ : There is a significant relationship between friends' support and students' interest in the TVET programmes. The data shows a significant relationship between family support and students' interest ( $r = -0.556$ ,  $p < 0.05$ ). Furthermore, there is a strong, negative correlation between the variables with a correlation coefficient of  $-0.556$ , indicating that students with higher friend support had a lower interest in the TVET programmes. Therefore, the hypothesis is accepted.

### Hypotheses 3: Relationship Between Significant Others' Support and Students' Interest in the TVET Programmes

$H_3$ : There is a significant relationship between friend support and students' interest in the TVET programmes. There is a significant relationship between family support and students' interest ( $r = -0.602$ ,  $p < 0.05$ ). There is a strong, negative correlation between the variables with a coefficient of  $-0.60$ , indicating that students with support from significant others had a lower interest in the TVET programmes. Consequently, the hypothesis is accepted.

### Hypotheses 4: Vocational Self-Efficacy as a Moderator in the Relationship Between Perceived Social Support and Students' Interest in the TVET Programmes

The effect of vocational self-efficacy as a moderator in the relationship between perceived social support and students' interest in the TVET programmes was analysed, and the validity of the measurement and structural model was determined.

### Measurement Model Assessment

In this study, using SEM was supported by PLS (Partial Least structures) graphic software to build the structural model of students' interest in TVET programmes in Pakistan. In addition, confirmatory factor analysis (CFA) was carried out to test the data obtained for model fitness, to assess convergent validity, and to construct reliability.

To improve the model, the initial measurement model showed a low Average Variance Extracted (AVE) of  $> 0.5$ . Therefore, these CFA items were lower than  $CFA < 0.5$  and were dropped to stabilise the error variances. Subsequently, two items were dropped out of forty-nine from the initial model: one from family support

(PSSfa4) and one from friend support (PSSfr6). Table 4 shows the results of the measurement model.

The value of the loading factor for all the items (students' interest, perceived social support, vocational self-efficacy) was above 0.5. The reliability of the measurement model was based on the criteria of internal reliability with Cronbach Alpha > 0.7, CR > 0.6, and AVE > 0.5 (Table 4). Construct reliability coefficient values ranged from 0.910 to 0.962, indicating that all values exceeded the desired level of 0.6. Hence, convergent validity for the measurement model in this study was adequate. Fornell and Larcker (1981) recommended that "the value of the square root of AVE of one construct must be higher than the value of inter-correlations between the constructs" to validate the discriminates. As depicted in Table 5, the AVE's square roots are higher than their corresponding intercorrelations. Consequently, the measurement model for this study was found fit and be acceptable.

**Assessment of the Structural Model and Hypothesis Testing**

For the evaluation of the structural model, the essential criteria used were path coefficient ( $\beta$ ), coefficient of determination ( $R^2$ ) for an endogenous variable, effect size ( $f^2$ ), prediction relevance ( $Q^2$ ), and multicollinearity/inner Variance Influence Factor (VIF). The  $R^2$  value of the interest in TVET was 0.590, more than 25% demonstrating a highly acceptable prediction level in empirical research (Shmueli et al., 2019). Furthermore, there was no multicollinearity issue in this current study, as the inner VIF values are less than five. The results in Table 6 depict that the lowest VIF value was 1.419 and the highest VIF value was 2.45, which confirmed the lack of multicollinearity within independent variables.

A blindfolding test was done to compute  $Q^2$  to investigate the predictive relevance of the model. The model was determined to be a good fit and have high predictive

Table 4  
*Results of the measurement model*

Constructs	Items	FL	CA	CR	AVE
Perceived Social Support (PSS)	10	0.893-0.924	0.912	0.910	0.684
Vocational Self-efficacy (VSE)	20	0.888-0.902	0.943	0.949	0.580
TVET Interest (INT)	19	0.801-0.830	0.958	0.962	0.569

Note: "FL = Factor Loading; CA = Cronbach's alpha; CR = Composite Reliability"

Table 5  
*Discriminant validity for the measurement model*

	AVE	INT	PSS	VSE
TVET Interest (INT)	0.569	0.754		
Perceived Social Support (PSS)	0.684	-0.662	0.711	
Vocational Self-efficacy (VSE)	0.580	0.481	-0.409	0.713

relevance as the  $Q^2$  values were above zero. The fit indices for the model are displayed in Table 6.

Table 6  
Fit indices for the structural model

	$R^2$	$Q^2$	$f^2$	$VIF$
INT	0.590	0.295		
VSE			0.512	2.425
PSS			0.104	1.419

Bootstrapping was used to observe the moderating effect. The standardised path coefficient for  $H_4$  was not significant at  $p < 0.001$ . As shown in Table 7, vocational self-efficacy did not have any moderating role in the relationship between perceived social support and interest in TVET ( $\beta = 0.012, t = 0.373, p > 0.05$ ). Therefore, the hypothesis is rejected, and the final research model is displayed in Figure 3.

Table 7  
Summary of hypotheses testing

Path	$B$	$M$	$SD$	$T$	$P$	Result
$H_4 : PSS * VSE \rightarrow TVET \text{ interest}$	0.012	0.010	0.033	0.373	.709	Non- Significant

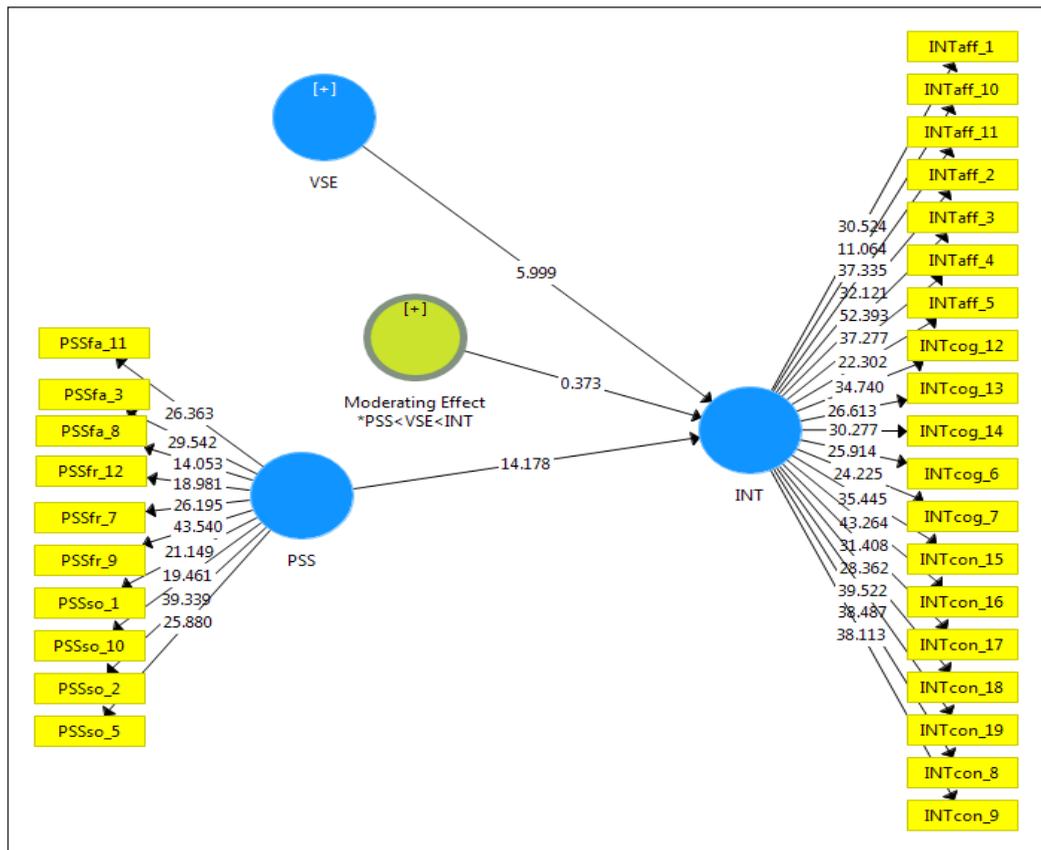


Figure 3. Structural model of the study

## DISCUSSION

Based on the results, support from family members negatively correlated and showed significance against the students' interest in the TVET programme among secondary school students in Pakistan. Furthermore, family influence showed negative, strong statistical significance on the student's interest in the TVET programme. This finding is consistent with recent research by Aziz and Zulkifli (2020), indicating that many families do not support their children's interest in TVET programmes. It might be due to biases in families and the perception that the TVET programmes are merely a substitute for students who are not academically gifted.

This study found that friends had a significant negative correlation with students' interest in TVET programmes. These findings are consistent with Kazi and Akhlaq (2017) and Ngwato (2020), who inferred that friends negatively influence their peers when selecting school subjects. Peer groups belonging to the same social class share the same values, influencing their friend's choices, especially in academic and vocational skills. This result might be due to many students lacking knowledge and being less inclined to do manual work. Also, some students right from secondary schools developed a phobia about career interest in TVET programmes because of the negative impressions passed on to them, either by their senior colleagues or friends. However, such students' expectations in TVET cannot directly affect their interest and intention to join the programmes.

This study also found that significant others were negatively correlated and showed statistical significance in influencing students' interest in TVET programmes. It suggests that secondary school students with high perceived social support are least likely to be interested in TVET programmes. This finding is corroborated by previous studies where perceived social support from friends, family, peers, and teachers played an important role in influencing the individuals' interest in studies (Azeem et al., 2021; Ngwato, 2020). It can be attributed to Pakistani society, where manual work has been primarily regarded as low, leading to less interest. The Ministry of Education in Pakistan is considering making TVET a compulsory subject for all primary and secondary school students, where a credit pass in the subject will become a requirement for admission to study in tertiary institutions across Pakistan. This initiative will require motivated teachers ready to give their students the best foundation in TVET careers.

Lastly, it has been found that vocational self-efficacy was not statistically or significantly influencing the relationship between perceived social support and students' interest in the TVET programmes in this study. The result is in line with Ayyubi et al. (2018) and Rashid (2009), who explained that students are more influenced by the people they rely on, such as family, friends, and significant others. The possible explanation is that in Pakistani society, children are less independent in making choices and more dependent on family,

friends, and significant others. Furthermore, parents are more interested in approving majors that pay well and are related to higher social status. The negative perceptions of the TVET programmes make them unattractive to family, friends, and significant others. It is conceivable that eradicating the negative perception of the TVET programmes increases the support of family, friends, and significant others to create interest in the TVET programmes.

Despite the importance of this study, this approach had some limitations. Firstly, the sample size of the current study focused only on government schools. Future studies can include government and private school participants, which will help increase the model's performance. Secondly, the participants who were enlisted in this study were only secondary school students, which limited the generalisability of the results. Future studies should expand the participation to include the general population from different provinces (older adults, children) to represent the study sample comprehensively. Lastly, this study did not find the reasons for the negative perception among family, friends, and significant others. Future studies can shed light on these underlying factors using a qualitative approach.

## CONCLUSION

Given the growing importance of Technical and Vocational Education and Training (TVET) and the career options and persistent underrepresentation of students in the fields, there is knowledge

to be gained by examining cognitive and contextual factors associated with students' interest in the programmes. Generally, these variables have been proven important in this study concerning secondary school students' interest in TVET programmes. Therefore, there is a significant need to emphasise these variables more, as it could eradicate unemployment and increase student enrolment in TVET programmes. In addition, this study reveals a negative perception of TVET programmes among family, friends, and significant others, influencing students' interest in pursuing the programmes in Pakistan. Furthermore, vocational self-efficacy does not moderate the relationship between perceived social support and students' interest in TVET programmes.

This study has important implications for the relevant authorities to help them focus more on promoting TVET among families, teachers, and parents. Training activities can be carried out to ensure that they are well-informed about the latest updates in the TVET field so that they can encourage their children to pursue the programmes. School counsellors may provide some practical strategies to parents that help them explore their careers and discuss their children's future work plans and the job market.

The interest in pursuing TVET can be emphasised in the school curriculum to increase awareness about the various career opportunities. More TVET programmes in the curriculum can be adapted, such as inviting professionals to share their

experiences with students, teachers, and parents to promote it in Pakistan.

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