

**INTERNATIONAL JOURNAL OF  
EDUCATION, PSYCHOLOGY  
AND COUNSELLING  
(IJEPC)**[www.ijepec.com](http://www.ijepec.com)**THE PERSISTENCE PARADOX: A SELF-DETERMINANT  
THEORY (SDT) ANALYSIS OF PSYCHOLOGICAL RESILIENCE  
AND MOTIVATIONAL VULNERABILITY IN TVET STUDENTS  
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**Article Info:****Article history:**

Received date: 02.11.2025

Revised date: 19.11.2025

Accepted date: 10.12.2025

Published date: 22.12.2025

**To cite this document:**

Godfrey, M. M. P., Malek, M. D. H. A., & Juli, E. (2025). The Persistence Paradox: A Self-Determinant Theory (SDT) Analysis of Psychological Resilience and Motivational Vulnerability in TVET Students (Preliminary Descriptive Analysis). *International Journal of Education, Psychology and Counseling*, 10 (61), 1156-1161.

**DOI:** 10.35631/IJEPC.1061079**Abstract:**

This quantitative descriptive study, guided by Self-Determination Theory (SDT), analyzed the motivational profile and psychological vulnerability of underprivileged students (N=85) enrolled in a Technical and Vocational Education and Training (TVET) program. This research was initiated to provide the necessary empirical foundation for a broader study on student resilience, following a problem statement revision to focus on soft skills issues. The study empirically examined the "Persistence Paradox": the co-existence of high sustained effort with a statistically low foundation of autonomous motivation. Data from the Student Cognitive and Academic Questionnaire (SCAQ) underwent reliability and descriptive analysis. The instrument demonstrated strong internal consistency across 47 items (Cronbach Alpha = 0.773). Descriptive results confirmed a critical motivational imbalance: high Controlled Extrinsic Motivation ("Getting a vocational certificate is very important for me," Mean = 8.41) was significantly contrasted by low Intrinsic Motivation ("I am enjoying my academic work at Montfort," Mean = 4.31). Furthermore, the high reported mean for "trouble concentrating" (Mean = 6.60) signals a pervasive frustration of the Basic Psychological Needs (BPNs) for Autonomy and Competence. The findings characterize student resilience as potentially fragile due to its controlled motivational source, providing a strong quantitative basis for the planned follow-up qualitative investigation.



## Introduction

Technical and Vocational Education and Training (TVET) is a vital mechanism for improving the socioeconomic mobility of students from underprivileged backgrounds (UNESCO, 2015). However, success requires not only technical proficiency but also a high degree of psychological resilience—the dynamic capacity to maintain sustained effort, adapt, and succeed despite chronic academic and socio-economic adversity (Masten, 2001).

### *The Empirical and Theoretical Problem*

The initial research proposal for this project, entitled, "*RESILIENCE AMONG STUDENTS IN VOCATIONAL EDUCATION AND TRAINING*", underwent a crucial revision. Examiners recommended shifting the focus from general TVET industry challenges to the critical soft skill/psychological issues affecting persistence. This quantitative study serves as the first phase of the revised research design, providing empirical justification for the psychological focus. The analysis uncovered a significant motivational pattern, termed the Persistence Paradox: students display robust effort (mean=7.39), driven primarily by powerful Extrinsic Motivation (mean=8.41), which is undermined by a remarkably low level of Intrinsic Motivation (mean=4.31). This imbalance is interpreted using Self-Determination Theory (SDT) (Deci & Ryan, 2008). SDT holds that motivation driven by external rewards (Controlled Motivation) is less enduring and more psychologically taxing than motivation driven by personal values or enjoyment (Autonomous Motivation). Therefore, the statistically confirmed paradox signals a state of Fragile Resilience that threatens long-term student persistence.

### *Research Objectives*

This quantitative study aims to achieve the following, providing the foundation for the broader research project:

1. To determine the internal consistency of the psychological and motivational constructs in the SCAQ instrument.
2. To descriptively analyze the motivational profile (Intrinsic vs. Extrinsic) and the reported levels of academic difficulty among the student population.
3. To interpret the findings using SDT to characterize the nature and potential vulnerability of student resilience.

## Theoretical Framework: Self-Determination Theory (SDT)

### *The Motivational Continuum and Fragile Resilience*

The descriptive results (Extrinsic Motivation carried the mean = 8.41; Intrinsic Motivation carried the mean = 4.31) place the students' drive squarely in the realm of Controlled Motivation (Ryan & Deci, 2000). The high level of effort (mean = 7.39) sustained by this controlled motivation, particularly in the face of low enjoyment, generates psychological tension. SDT (Deci & Ryan, 1985) supports the hypothesis that this type of persistence is prone to burnout and collapse when environmental pressures shift or internal resources deplete (Teixeira et al., 2012), thus defining the state as Fragile Resilience.

### ***Basic Psychological Needs (BPN) Frustration***

SDT's premise is that optimal functioning depends on the satisfaction of three Basic Psychological Needs (BPNs): Competence, Autonomy, and Relatedness (Deci & Ryan, 2008). The descriptive statistics act as statistical indicators of BPN frustration:

- **Competence Frustration:** The high mean score for "trouble concentrating" (mean=6.60) and the moderate-low self-perception of being "clever in the workshop" (mean=5.35) statistically suggest that students frequently feel ineffective in their learning tasks, frustrating the need for Competence.
- **Autonomy Frustration:** The low mean for academic enjoyment (mean=4.31) is a quantitative signal of behavior that is not volitional, but rather externally determined, frustrating the need for Autonomy (Sheldon & Niemiec, 2006).

The statistical indicators of BPN frustration provide a strong theoretical basis for concluding that the observed motivational imbalance is a consequence of the TVET environment failing to fully support these core psychological needs (Gagné & Deci, 2005).

## **Methodology**

### ***Research Design***

This research is confined to a quantitative descriptive design, fulfilling the first phase of the overarching research project outlined in the proposal. This method was used to establish psychometric integrity and generate descriptive statistics to characterize the motivational profile of the student body.

### ***Participants, Settings and Instrument***

The study population consisted of N=85 underprivileged students enrolled in a TVET program in Kota Kinabalu. Data was collected using the Student Cognitive and Academic Questionnaire (SCAQ), a 47-item instrument utilizing a 1-10 Likert-type scale to measure constructs including motivation, effort, and academic perception. The analysis focused specifically on the data presented in the reliability analysis document.

### ***Data Analysis***

The analysis focused on:

1. **Reliability Analysis:** Cronbach's Alpha was computed for the overall 47-item scale (Nunnally & Bernstein, 1994).
2. **Descriptive Statistics:** Mean were calculated for key items to profile the motivational and psychological state of the population, providing the statistical basis for the SDT interpretation.

## **Results**

### ***Reliability Analysis***

The analysis confirmed that the SCAQ instrument possesses strong internal consistency.

Metric	Value	N of Items
Cronbach's Alpha	0.773	47

The Cronbach's Alpha value of 0.773 exceeds the accepted 0.70 threshold (Hair et al., 2010), validating the instrument's reliability.

### ***Descriptive Statistics***

The descriptive analysis for the key motivational and psychological items is presented below:

Item (SDT Construct)	Mean
Getting a vocational certificate is very important for me. (Extrinsic Motivation)	8.41
I am enjoying my academic work in the institution or technical institution or in my course. (Intrinsic Motivation)	4.31
I have been keeping up to date with the classes... (Effort/Persistence)	7.39
I have had trouble concentrating... (Competence Frustration Indicator)	6.60
I feel that I am clever in the workshop. (Self-Perceived Competence)	5.35

### **Discussion**

#### ***SDT Interpretation: The Fragile Core of Persistence***

The descriptive data establishes the Persistence Paradox where high effort (Controlled Motivation) coexists with low enjoyment (low Autonomous Motivation). This statistical profile provides the quantitative evidence that the students' resilience is theoretically fragile. The psychological strain of maintaining a high level of effort (mean =7.39) without the inherent reward of enjoyment (mean =4.31) increases the risk of exhaustion and attrition (Teixeira et al., 2012). This finding directly supports the revised problem statement's focus on soft skills and psychological vulnerability.

#### ***Statistical Indicators of BPN Frustration***

The data clearly indicates the statistical presence of BPN frustration: the high mean for concentration difficulties (mean =6.60) signals an unmet need for Competence, and the low mean for enjoyment (mean =4.3) signals a frustration of Autonomy. These findings provide a concrete basis for intervention, suggesting that policies must be directed toward satisfying these BPNs to shift the motivational base from controlled to autonomous, thereby building truly adaptive resilience.

### **Conclusion and Recommendations**

#### ***Conclusion***

This study successfully established the reliability of the SCAQ instrument and provided strong quantitative evidence for the Persistence Paradox among underprivileged TVET students. The motivational profile is characterized by high controlled motivation and significant BPN frustration. This outcome rigorously validates the revised research focus on psychological issues and characterizes the students' persistence as potentially fragile.

## Recommendations

1. **SDT-Driven Intervention:** TVET institutions must focus on interventions that promote the internalization of external goals, shifting students toward Identified Regulation by linking their pursuit of a certificate to deeply held personal values.
2. **BPN-Supportive Pedagogy:** Curricular and instructional design should prioritize opportunities that promote Competence (e.g., scaffolding and timely feedback) and Autonomy (e.g., student choice in learning tasks) to directly address the empirically identified psychological strains.
3. **Conduct a Qualitative Follow-Up Study (Essential Future Research):** This descriptive study achieved its goal of providing quantitative justification, directly informing the original research proposal's aims. However, the statistical data alone cannot capture the depth of student experience. It is strongly recommended that future research proceed with the original research proposal's plan to adopt an in-depth qualitative approach (e.g., using semi-structured interviews with 9 informants, as planned) to explore the specific aims that motivated this research:
  - Explore the understanding of "resilience" in their lived context.
  - Identify the protective factors that enable them to manage BPN frustration.
  - Determine measures to strengthen resilience by uncovering context-specific coping strategies and the role of Relatedness (support systems).

## Acknowledgement

The corresponding author would like to acknowledge a deep gratitude and appreciation towards Dr. Elpidia Juli (PhD.), an alumnus from Faculty of Social Sciences and Humanities, Universiti Malaysia Sabah for assisting in terms of sharing knowledge and support about resilience in the field of psychology. Deep gratitude and appreciation are also extended to the corresponding author's supervisor, Prof. Dr. Mohd Dahlan Hj A. Malek, for continuous guidance and support.

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