



A Study of the Relationship between Locus of Control and Self-monitoring to Resilience in Students

Ina Shanava

Faculty of Social Sciences, Georgian National University SEU, Georgia

Giorgi Gergauli

Faculty of Medicine, European University, Georgia

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Abstract

A person may experience both positive and negative stress, which is mainly associated with a wide range of negative consequences, such as a decrease in well-being, an increase in diseases, post-traumatic stress, anxiety, and depression disorders. High stress in a person does not always develop these negative results. According to latest researches and studies, most people are exposed to stress, and developing resilience is the main factor in order to cope with the unpredictable environment (Troy & Mauss, 2011). The ability to disengage from negative stimuli and feelings is an important protective factor against long-term negative results. Resilience represents the ability of a person to cope with life's difficulties and is a multidimensional characteristic which varies by context, age, gender, culture, and individual life (Felicia et al., 2021). According to contemporary approaches, resilience is a personal trait that helps a person to adapt and cope with traumatic experience. Psychological component of resilience means that a person maintains psychological health without any trauma and stressors, while behavioral component of resilience means maintenance of self-effectiveness and aspiration towards goals (Kamushadze, 2021). One of the components of resilience at the individual level is identified as self-control, which is an aspect of behavior control and is often viewed as willpower and the ability to control impulses. In a psychological sense, self-control refers to emotions and the initiation or

modification of emotional reactions through cognitive processes. The locus of control is also considered to be a factor that has a significant influence on the formation of resilience. According to Rotter, people differ from each other according to the localization of control over events. This difference can be described as internal and external poles. Internal people believe that everything that happens in their lives depends only on their personal qualities, purposefulness, abilities, and competence. External people strongly believe that their lives are controlled by outside forces, and their success or failure is the fault of randomness, other people, and so on., This paper therefore focuses on determining the relationship between the locus of control and self-monitoring to resilience among undergraduate, graduate, and doctoral students. Internal-External Locus of Control Scale (I-E Scale), Self – Monitoring Scale, and Brief Resilience Scale (BRS) were used in this study. Based on the analysis of the results, it was revealed that self-ownership is related to resilience and locus of control, and the latter is negatively related to resilience. Differences were analyzed by demographic characteristics.

Keywords: Hardiness of Students, Internal-External, Locus of Control, Self-Control, Self-Monitoring, Resilience

Introduction

Self-monitoring, resilience and control of locus represents one of the significant conditions for preventing life difficulties/obstacles and problems related to psychological health. Positive reactions on changes can be connected with the skill of coping with problems, as well as the level of self-monitoring, as long as they control and pay attention to their own expressive behaviors and self-presentation. The level of self-monitoring is very crucial for establishing whether the attitude defines behavior or not. Self-monitoring influences relationships differently. High level of self-monitoring is strongly connected with the attempt made by a person to better fit his/her behavior with the situation (Sumbadze et al., 2012).

In the contemporary world, a person's resilience is very important in the face of many difficult challenges. This goes a long way to show how the individual manages to adapt positively with the situation and cope with difficulties. Resilience is a human representational system about oneself, the world, and the relationship with the world, which include three relatively independent components: involvement, control, and taking risks (Chomakhidze, 2022).

The latest approaches involve several directions while understanding resilience. Some of the authors consider this as a personal characteristic feature and as “immunity” against traumatic experiences. Others see resilience

as the result of overcoming a serious obstacle that acquires a functional character (Kamushadze, 2021).

Behavioral and psychological components of resilience are distinguished (Kamushadze, 2021). Psychological component implies that a person maintains psychic health and welfare with the help of resilience. Thus, an individual does not have to go through a traumatic experience or illness to deal with difficulties and make them work. Behavioral component is directed to the person's skill to maintain effectiveness and aspire towards goals (Kamushadze, 2021).

According to the researchers, there is a strong connection between resilience and control of locus perceived by a person. Thus, with internal people, depression, anxiety, and stress level can be much more lower. In addition, the people with internal locus behaviors can be classified as problem-oriented. Also, locus of control can be connected with employment and many other results, such as job satisfaction, motivation, and leadership. The coping process begins in response to a traumatic event, and a person's belief that their recovery process is within their control determines their readiness to begin the recovery process. Although a number of studies have described the relationship between locus control and resilience, locus control has been found to be important in determining resilience. However, in-depth research in this area is still scarce (McGregor, 2018).

Control of locus is one of the integral features of self-consciousness, which connects the sense of responsibility, the willingness to be active, and the sense of oneself. According to Rotter, people differ from each other with control localization on the events that are important and considerable for them. There are two poles of control localization – internal and external (Chomakhidze, 2022). In the first case, a person considers that anything that happens in his/her life is based on his/her personal traits, competence, purposefulness, and opportunities. Therefore, it is a legitimate result of his/her own activity (inner control). In the second case, a person strongly believes that his/her success or failure is a result of external forces, such as fortune, randomness, other people, and so on (external control). Rotter opines that control of locus is a special and fundamental type of generalized hope, which is a level of understanding of the causal relationship between a person's own behavior and the achievement of the desired result. An individual may try to achieve certain goals and objectives, with a generalized hope that the attempt will be successful. The behavior of a person who believes that destiny can be controlled is different from the behavior of a person with an external locus of control, who also believes that fate depends on luck, chance, or other people (Chomakhidze, 2022).

1. Method

Research Goal: To determine the relationship between locus of control and self-monitoring to resilience among students. Internal-External Locus of Control Scale (I-E Scale) (Sumbadze et al., 2012), Self-Monitoring Scale (Sumbadze et al., 2012), and Brief Resilience Scale (BRS) (Kamushadze, 2021) were used in this research. Research participants evaluated statements with grades on the scales, and SPSS 20 was used to work on the data.

Target Group: Students

Selection: Non-probability sampling methods - available sampling and snowball sampling - were used.

The Study Tried to Answer the Following Questions

- What is the relationship between self-monitoring, locus of control, and resilience among Georgian students?
- Is the level of education (undergraduate, graduate, and doctoral) associated with different outcomes of self-monitoring, locus of control, and resilience?

Hypothesis: While doing this research, there were established hypotheses

H1. Resilience rate among internal students will be higher compared to external ones;

H2. A high rate of self-monitoring among students will be associated with a high rate of resilience;

H3. Female respondents have a higher rate of externality compared to male respondents;

H4. The resilience rate for PhD students will be higher compared to undergraduate and graduate students;

H5. Female respondents will have a higher rate of self-monitoring compared to males;

H6. The resilience rate will be higher with male respondents compared to female respondents.

1.1. Participants

Two hundred and fifty-two (252) students of the higher education institution of Georgia participated in the study. Based on collated data, 89.3% were female and 10.7% were male. The average age of respondents was 22 years ($M=22$, $SD=4.43$). 78.2% of the students involved in the study were at the bachelor's level, 15.9% at the master's level, and 6% at the doctoral level. 14.7% of the respondents were first-year students, 40.1% were second-year students, 27.8% were third-year students, and 17.5% were fourth-year students. 88.1% of the participants were single and 11.9% were married.

1.2. Data Collection Procedure

The survey was conducted using Google Forms platform. After introducing the main goals and objectives of the research, respondents took part in the survey voluntarily. Considering the ethical standards of the survey, anonymity was preserved. In order to avoid missing data and obtain complete information, it was compulsory to answer all of the questions.

1.3. Research Limitation

The main limitation of the research is the selection of respondents. It would have been better if the students of all universities in Georgia were involved in the research. This would have made it possible to generalize the results. The restriction is also related to the violation of the gender balance as majority of the respondents were female representatives.

2. Measures

2.1. Internal-External Locus of Control Scale (I-E Scale)¹

The locus of control measurement scale was created by Julian Rotter in 1996. The scale is administered in a forced-choice format and requires respondents to select from each pair of statements A and B. One statement represents an internal or external locus of control to identify the statement with which they agree more. The scale consists of 29 pairs of statements, of which 23 measure locus of control and 6 pairs are supplementary statements (Sumbadze et al., 2012).

2.2. Self-Monitoring Scale²

Self-monitoring scale was created by Mark Snyder in 1972. This scale includes 18 statements that are evaluated with dichotomic answers – Yes/No. According to the scale indicator, people differ from each other with self-monitoring level, which determines how they control and pay attention to their own expressive behaviors and self-presentation (Sumbadze et al., 2012).

2.3. Brief Resilience Scale

According to Smith et al. (2008), the six statement version of the brief resilience research scale evaluates skills of coping with difficulties. The answers are given on the 5 grade scale, where 1 = completely disagree, while 5 = completely agree. The paper uses the Georgian version of the Brief Resilience scale from Kamushadze's dissertation (2021).

¹Adapted to the Georgian population by Sumbadze et al. (2012)

²Adapted to the Georgian population by Sumbadze et al. (2012)

3. Results

To determine the relationship between locus of control and self-monitoring to resilience among students, one-dimensional analysis, two-dimensional analysis, cross-tabulation analysis, one-factor ANOVA table, and linear regression analysis were used to process the obtained data. Also, Pearson's correlation coefficient and X^2 were calculated.

In order to illustrate differences on the self-monitoring research scale based on demographic features and statistical procedures, it was established that female self-monitoring level was low at 25.3%, while 74.7% was high level. For the males, self-monitoring level was low at 33.3%, while 66.7% was high level ($X^2=.000$; $df=1$). Accordingly, self-monitoring level for the females and males indicates $M=8.19$; $SD=3.202$ and $M=11.85$; $SD=3.427$, respectively. Based on the variance analysis (ANOVA Table), it was established that gender differences on the self-monitoring scale are statistically reliable ($df=1$; Mean square= 323.060; $F= 31.037$; $Sig=.000$).

On the self-monitoring research scale, 66.7% and 70.7% of married respondents have a low level of self-ownership. Conversely, 33.3% of married respondents and 29.3% of single respondents have a high level of self-monitoring ($X^2=.407$; $df=1$). Based on variance analysis (ANOVA Table), it was determined that the differences on the self-monitoring scale according to marital status are not statistically significant ($df=1$; Mean square= 1.520; $F=.130$; $Sig=.719$).

While working on the data, it was found that the increasing trend of the self-monitoring index is revealed along with the increase in the level of education on the self-monitoring research scale. The average rate of self-monitoring among undergraduate students and master level student is $M=7.75$ and $M=8.64$, respectively. Thus, 10.07.82.5% of undergraduate students, 69.5% of master's students, and 46.7% of PhD students showed low self-monitoring. On the self-monitoring research scale, 17.5% of undergraduate students, 30.5% of master's students, and 53.3% of PhD students have a high level of self-monitoring ($X^2=.032$; $df=2$).

Based on variance analysis (ANOVA Table), it was determined that the differences according to the level of learning on the self-monitoring scale are statistically significant ($df=2$; Mean square=30.703; $F=2.669$; $Sig=.071$).

According to cross-tabulation analysis, it was determined that 75.7% of first-year students, 75.2% of second-year students, 67.1% of third-year students, and 59.1% of fourth-year students have a low level of self-monitoring. However, 24.3% of first-year students, 24.8% of second-year students, 32.9% of third-year students, and 40.9% of fourth-year students who participated in the study had a high level of self-monitoring on the research scale ($X^2=.197$; $df=3$). The variance analysis (ANOVA Table) revealed that

the differences according to the year of study on the self-monitoring scale are not statistically significant ($df=3$; Mean square= 3.375; $F= .287$; Sig =.835).

The cross-tabulation analysis revealed that 63.6% of the female respondents have a low score on the locus of control scale and 36.4% have a high score. On the mentioned scale, 74.1% of the male representatives had low score and 25.9% had high score ($X^2=.280$; $df=1$). On the locus of control scale, the average score among female and male respondents is $M=10.67$; $SD=4.183$ and $M=9.85$; $SD=4.120$, respectively. Based on variance analysis (ANOVA Table), it was determined that the differences between genders on the locus of control scale are not statistically significant ($df=1$; Mean square= 16.180; $F=.928$; Sig=.336). 66.7% and 64.4% of married respondents had low locus of control. Conversely, 33.3% of married students and 35.6% of single students had a high score on the mentioned scale ($X^2=.817$; $df=1$). According to variance analysis (ANOVA Table), it was determined that the differences on the locus of monitoring scale based on marital status are not statistically significant ($df=1$; Mean square=1.466 $F=.083$; Sig=.773). 62.4% of undergraduate students, 70.0% of master's students, and 80.0% of PhD students were found to have low scores on the locus of control scale from the cross-tabulation analysis. Among the students of the same levels, 37.6% of undergraduate students, 30.0% of master's students, and 20.0% of PhD students showed a high rate ($X^2=.291$; $df=2$). Furthermore, the variance analysis (ANOVA Table) showed that the differences according to the learning level on the research scale of the locus of control are statistically significant ($df=2$; Mean square=56.385; $F=3.292$; Sig=.039). The average score on the locus of control scale with undergraduate students is $M=10.78$; $SD=4.143$, while the average score for graduate students is $M=10.63$; $SD=4.068$. Meanwhile, the average score for PhD students is $M=7.73$; $SD=4.267$. 70.3% of first-year students, 60.4% of second-year students, 68.6% of third-year students, and 63.6% of fourth-year students have a low score on the locus of control scale. 29.7% of first-year students, 39.6% of second-year students, 31.4% of third-year students, and 36.4% of fourth-year students ($X^2=.614$; $df=3$) showed a high rate on the mentioned scale. The average rate of locus of control among first-year students is $M=9.03$; $SD=4.40$, second-year students $M=10.87$, $SD=3.98$, third-year students $M=10.43$; $SD=4.44$, and fourth year students $M=11.48$; $SD=3.74$. Based on variance analysis (ANOVA Table), it was determined that the differences according to the year of study on the locus of control scale are statistically significant ($df=3$; Mean square=44.943; $F=2.627$; Sig=.051).

According to the cross-tabulation analysis, it was determined that 44.0% of female representatives have a low success rate and 56.0% have a high success rate, while 14.8% of male representatives have a low rate and 85.2% have a high rate ($X^2=.004$; $df=1$). Through variance analysis (ANOVA

Table), it was also determined that the gender differences on the research scale of resilience are statistically significant ($df=1$; Mean square=.210; $F=4.814$; $Sig=.029$).

40.7% of married students and 41.0% of single students who participated in the study had a low success rate, while 59.3% of married students and 59.0% of single students had a high success rate ($X^2=.980$; $df=1$). Variance analysis (ANOVA Table) revealed that the differences on the research scale of the outcome according to the marital status are not statistically reliable ($df=1$; Mean square=.048; $F=1.086$; $Sig=.298$).

While working on the data, it was revealed that 45.2% of undergraduate students, 32.5% of master's students, and 6.7% of PhD students had a low success rate. On the other hand, 54.8% of bachelors, 67.5% of master's students, and 93.3% of doctoral students involved in the study had a high success rate ($X^2=.007$; $df=2$). Therefore, the variance analysis (ANOVA Table) showed that the differences according to the study level on the research scale of resilience are statistically significant ($df=2$; Mean square=.252; $F=5.905$; $Sig=.003$).

40.5% of first-year students, 38.6% of second-year students, 35.7% of third-year students, and 54.5% of fourth-year students had a low success rate. Subsequently, 59.5% of first-year students showed a high rate. This is followed by 61.4% of second-year students, 64.3% of third-year students, and 45.5% of fourth-year students ($X^2=.222$; $df=3$). Based on variance analysis (ANOVA Table), it was determined that the differences based on the year of study on the resilience research scale are not statistically reliable ($df=3$; Mean square=.031; $F=.698$; $Sig=.554$).

3.1. Regression Analysis

Linear regression analysis revealed that the locus of control scale explained 29% of the data variability ($R^2 =.087$; $R^2 \text{ Adj}=.064$; $B=14.663$; $\beta=.031$; $SE=1.772$; $t=8.256$; $Sig=.000$). On the locus of control scale, the most important predictors were age and year of study. Locus of control has a negative relationship with self-monitoring ($B=-.038$; $Sig=.031$) and resilience ($B=-4.135$; $Sig=.001$) (see Table 1)

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.294 ^a	.087	.064	4.040

a. Predictors: (Constant), self-monitoring, resilience, age, gender, study level, year of study

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.632	1.772		8.256	.000
	self-monitoring	-.038	.082	-.031	-.457	.031
	Resilience	-4.135	1.286	-.209	-3.214	.001
	Age	.160	.098	-.169	1.627	.005
	Gender	-.120	.900	-.009	-.134	.894
	study level	.517	.783	.070	.661	.509
	Year of study	.630	.290	.143	2.171	.031

A. Dependent Variable: Locus of Control

The resilience research scale explains 38% of the data variability ($R^2 = .151$; $R^2 \text{ Adj} = .130$; $B = .412$; $SE = .094$; $t = 4.388$; $\text{Sig} = .000$). The most important predictors on the resilience scale are self-monitoring ($B = .015$; $\beta = .243$; $SE = .004$; $t = 3.857$; $\text{Sig} = .000$) and locus of control ($B = -.010$; $\beta = -.194$; $SE = .003$; $t = -3.214$; $\text{Sig} = .001$) (see Table 2).

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.388 ^a	.151	.130	.19651

a. Predictors: (Constant), self-monitoring, locus of control, age, gender, academic degree (study level) year of study

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.412	.094		4.388	.000
	self-monitoring	.015	.004	.243	3.857	.000
	locus of control	-.010	.003	-.194	-3.214	.001
	Age	.003	.005	.072	.714	.476
	Gender	.002	.044	.003	.052	.959
	academic degree (study level)	.045	.038	.120	1.172	.242
	Year of study	-.006	.014	-.025	-.388	.698

A. Dependent Variable: Resilience

The self-monitoring scale explained 41% of the data variability ($R^2 = .174$; $R^2 \text{ Adj} = .154$; $B = 4.223$; $\beta = .031$; $SE = 1.534$; $t = 2.754$; $Sig = .006$). The most important predictors on the self-monitoring scale are resilience ($B = 3.823$; $\beta = .236$; $SE = .991$; $t = 3.857$; $Sig = .000$) and gender ($B = 3.527$; $\beta = .320$; $SE = .662$; $t = 5.324$; $Sig = .000$) (see Table 3).

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.418 ^a	.174	.154	3.139

A. **Predictors:** (Constant), resilience, locus of control, age, gender, academic degree(study level)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.223	1.534	.031	2.754	.006
	Resilience	3.823	.991	.236	3.857	.000
	Locus of control	-.023	.050	-.028	-.457	.648
	Age	-.095	.076	-.123	-1.240	.216
	Gender	3.527	.662	.320	5.324	.000
	academic degree(study level)	.002	.609	.000	.003	.997
	Year of study	.260	.227	.072	1.145	.253

A. Dependent Variable: Self- Monitoring

3.2. Correlation

Based on data correlation analysis (Pearson's correlation coefficient), it was found that the relationships between the overall indicators of locus of control, self-ownership, and resilience are significant (see Table 4).

1. There is a strong negative correlation between locus of control and self-monitoring ($r = -0.780$; $p < .01$).
2. There is a negative correlation between resilience and locus of control ($r = -0.242$; $p < .01$).
3. There is a positive correlation between self-monitoring and resilience ($r = 0.262$; $p < .01$).

Table 4. *Correlations Between Locus of Control, Self-Monitoring, and Resilience*

	Locus of Control	Self-Monitoring	Resilience
Locus of Control	1	-,780	-,242
Self-Monitoring	-,780	1	,262
Resilience	-,242	,262	1

** $p \leq .01$; * $p \leq .05$; *** $p \leq .001$

4. Discussion

Based on the data obtained during the research process, it was revealed that the self-monitoring rate of male respondents is higher compared to female respondents. This means that the differences are statistically reliable. However, hypothesis 5 was not confirmed. From the data analysis, it was also determined that according to age and marital status, no statistically significant differences were revealed on the self-monitoring research scale. Nonetheless, it should be noted that statistically significant differences were found on the self-control research scale according to the level of study. The increasing trend of the self-monitoring index was also revealed along with the increase in the level of education on the self-control research scale. In particular, compared to bachelor students, master's students have a higher rate of self-monitoring, and doctoral students have a higher rate than master's students.

As a result of the data analysis, it was determined that 63.6% of the female respondents included in the study are internal and 36.4% are external. Conversely, 74.1% of the male respondents are internal and 25.9% are external. The differences are not statistically reliable. Although the gender balance is disturbed, hypothesis 3 of the paper indicates that it has been partially confirmed. On the mentioned scale, based on marital status, a statistically insignificant difference was revealed. Furthermore, the externality with marriageable undergraduate students was revealed at a very low rate. A slightly higher level of internalization was also revealed among the married undergraduate, graduate, and doctoral students involved in the study. Based on the data analysis, it was determined that the level of learning is negatively correlated with the locus of control. The higher the level of learning, the lower the locus of control. 62.4% of undergraduate students, 70.0% of graduate students, and 80.0% of doctoral students have a low locus of control (internal). However, the differences are statistically reliable. 70.3% of first-year students, 60.4% of second-year students, 68.6% of third-year students, and 63.6% of fourth-year students are internal. 29.7% of first-year students, 39.6% of second-year students, 31.4% of third-year students, and 36.4% of fourth-year students are external. The differences are statistically reliable.

56.0% of the female representatives and 85.2% of the male representatives have a high indicator of resilience on the Brief Resilience Scale (BRS). The differences are statistically reliable. Thus, hypothesis 6 was confirmed. Statistically reliable differences were found according to the level of study on the Brief Resilience Scale (BRS). The higher the level of education, the higher the resilience rate. In particular, 54.8% of the bachelor students, 67.5% of the master's students, and 93.3% of the doctoral students have a high resilience rate. Hence, hypothesis 4 was confirmed. Statistically insignificant differences were revealed on the Brief Resilience Scale (BRS) according to the year of study. 59.5% of first-year students, 61.4% of second-year students, 64.3% of third-year students, and 45.5% of fourth-year students have a high resilience rate.

A linear regression analysis revealed that the locus of control scale explains 29% of the data variability (significant predictors are stability; year of study), the stability research scale explains 38% of the data variability (significant predictors are self-monitoring; locus of control), and the self-monitoring scale explains 41% of the data variability (significant predictors are stability; gender). Based on the correlation analysis, it was revealed that the locus of control has a negative relationship with resilience. Specifically, the lower the locus of control (internality), the higher the resilience. Also, the higher the locus of control (externality), the lower the stability rate. The results further revealed that the resilience rate of internal students is higher compared to external students. Therefore, hypothesis 1 was confirmed. According to the correlation analysis, it was determined that students who had a high level of self-monitoring also had a high level on the Brief Resilience Scale (BRS). Thus, hypothesis 2 was confirmed.

Conclusion

The aim of this paper was to determine the relationship between the locus of control and self-monitoring to resilience with undergraduate, graduate, and doctoral students based on the analysis of the obtained data. It was determined that:

- The rate of self-monitoring among the male undergraduate students is high;
- Self-monitoring is lower among bachelor students and higher among doctoral students.
- Bachelor students, alongside master's and doctoral level students who participated in the research are internal.
- The resilience rate increases depending on the level of study (it is relatively low with bachelor students, higher with master's students, and highest with doctoral students).

- In terms of gender, the resilience is different and higher with male respondents.
- Internal students have a higher resilience rate than students with high self-monitoring.

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