# International Institute of Islamic Thought Mapping the Terrain Study Technical Report 

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P 500 Grove St., Suite 200 Herndon, VA 20170
C. (703) 471-1133

- (703) 471-3922
- iiit@iiit.org


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## 1. Methods Overview

This document summarizes the technical aspects of data collected for Advancing Education in Muslim Societies (AEMS) survey study (2019-20120) and accompanies the report by Nasser, Saroughi, \& Shelby (2021). Statistics provided in this manual are based on a sample of 15 countries/regions which participated in AEMS 2019-2020 study (see Table 1). Due to reasons such as regional differences, financial budget, host-country approvals, and location of AEMS affiliate offices almost all country-level samples were restricted to a few selected regions. However, an effort was made to randomize as much as possible the selection of schools and universities from each region, and the selection of students within each institution. All individuals directly involved in data collection received training about protocols required for research involving human subjects.

## Sample and Participants

This section provides a descriptive overview of the survey data. Data were collected from four distinct groups of respondents: school students, school teachers, university students, and university instructors. Figure 1 shows the distribution of survey respondents by survey type and Figure 2 shows their distribution by country. The largest sample $(n=2,657)$ was collected from India while the smallest sample came from the USA $(n=293)$. Mean sample size was $1,240($ Median $=1,169$, $S D=546)$. There was also variation in distribution of survey type across countries. Table 1 shows the cross-tabulation of survey type by country.


Figure 1 Distribution of Survey Respondents by Survey Type


Figure 2 Distribution of Survey Respondents by Country

## Table 1

Distribution of survey type by country

|  | Survey type |  |  |  |  |
| :--- | :--- | :---: | :--- | :--- | :--- |
| Country | School <br> student | School <br> teacher | University <br> student | University <br> instructor | Total |
| Algeria | 778 | 188 | 224 | 46 | 1,236 |
| Bangladesh | 1,203 | 184 | 169 | 9 | 1,565 |
| Bosnia | 794 | 282 | 966 | 60 | 2,102 |
| India | 1,982 | 329 | 262 | 84 | 2,657 |
| Indonesia | 345 | 19 | 609 | 21 | 994 |
| Jordan | 479 | 144 | 252 | 30 | 905 |
| Kenya | 620 | 126 | 361 | 69 | 1,176 |
| Kyrgyzstan | 762 | 194 | 524 | 55 | 1,535 |
| Malaysia | 912 | 84 | 68 | 20 | 1,084 |
| Mauritius | 595 | 170 | 172 | 34 | 971 |
| Morocco | 745 | 207 | 243 | 46 | 1,241 |
| Sudan | 499 | 108 | 270 | 72 | 949 |
| Tanzania | 799 | 76 | 279 | 15 | 1,169 |
| Tatarstan | 622 | 70 | 0 | 32 | 724 |
| USA | 256 | 37 | 0 | 0 | 293 |
| Total | 11,391 | 2,218 | 4,399 | 593 | 18,601 |

## Analysis

Nasser et al. (2021) report the primary analytic results for the Advancing Education in
Muslim Societies Mapping the Terrain Study 2019-2020. The purpose of the analysis information provided in this report is to give additional details for technically oriented stakeholders.

To review, Nasser et al. (2021) reported frequency information for demographic variables, independent sample t-tests, reliability analysis, effect size statistics, confirmatory factor analysis, structural equation modeling, and mediation testing. Demographics are also reported here, with additional details and breakdowns. More details are provided regarding data
preparation (e.g. items removed due to CFA and Reliability analysis) are discussed. Also, additional discussion and details regarding SEM analysis choices and weighting decisions are provided.

## 2. Demographic Variables

There is an overlap between the information provided here and in the general report (Nasser, et al. 2021), However, this technical report includes more details in demographic section compared to the general report (Nasser et al, 2021). The overlap is intentional to provide context.

## Gender

The sample has slightly more female than male survey respondents (Figure 4). The distribution of gender within each survey type also has more female than male respondents, except for university instructors ( $58 \%$ male) as shown in Table 2. There was some variation in distribution of gender across countries as can be seen in Table 3 and Figure 5. Specifically, the following countries surveyed $\geq 60 \%$ females: India, Kyrgyzstan, Algeria, Mauritius, Sudan, and Tatarstan. Given the large sample sizes, the statistical significance shown in Tables 2 and 3 can be suspect. Thus, Cramer's V (an effect size not impacted by sample size) that represents how strongly two categorical variables are associated was also calculated. According to Cohen's (1988) well established rules for interpreting effect sizes the following cut-offs apply for Cramer's V:. $1=\mathrm{a}$ small effect, 3 = a medium effect, and $.5=$ a large effect. Thus, although the differences in gender for survey type and by country may be statistically significant, they do not represent even a medium effect. This means that the difference is not very meaningful (i.e., practically significant).


Figure 4 Distribution of Survey Respondents by Gender

## Table 2

Distribution of Respondent Gender by Survey Type

|  | Female |  | Male |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Survey Type | Count | \% | Count | $\boldsymbol{\%}$ | Total <br> Count |
| School student | 6,656 | 59 | 4,691 | 41 | 11,347 |
| School teacher | 1,270 | 58 | 939 | 42 | 2,209 |
| University student | 2,494 | 57 | 1,887 | 43 | 4,381 |
| University instructor | 249 | 42 | 341 | 58 | 590 |
| Total | 10,669 | 58 | 7,858 | 42 | 18,527 |

Note: $\chi^{2}=63.29, p<.001 ;$ Cramer's $V=.06, p<.001$

Table 3
Distribution of respondent gender by country

|  | Female |  | Male |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Country | Count | $\boldsymbol{\%} \%$ | Count | $\mathbf{\%}$ | Total Count |
| Algeria | 754 | 62 | 468 | 38 | 1,222 |
| Bangladesh | 778 | 50 | 774 | 50 | 1,552 |
| Bosnia | 1,217 | 58 | 884 | 42 | 2,101 |
| India | 1,630 | 61 | 1,025 | 39 | 2,655 |
| Indonesia | 555 | 56 | 439 | 44 | 994 |
| Jordan | 511 | 57 | 393 | 43 | 904 |
| Kenya | 547 | 47 | 615 | 53 | 1,162 |
| Kyrgyzstan | 1,058 | 69 | 477 | 31 | 1,535 |
| Malaysia | 596 | 55 | 486 | 45 | 1,082 |
| Mauritius | 642 | 66 | 324 | 34 | 966 |
| Morocco | 593 | 48 | 633 | 52 | 1,226 |
| Sudan | 571 | 60 | 377 | 40 | 948 |
| Tanzania | 597 | 51 | 568 | 49 | 1,165 |
| Tatarstan | 447 | 62 | 275 | 38 | 722 |
| USA | 173 | 59 | 120 | 41 | 293 |
| Total | 10,669 | 58 | 7,858 | 42 | 18,527 |

Note: $\chi^{2}=2978.42 p<.001$; Cramer's $V=.23, p<.001$


Figure 5 Distribution of Male and Female Respondents by Country

Age
Information on age was collected from all survey respondents. This variable was originally operationalized as an ordinal variable with the following age groups: Less than 18, 18-24, 25-34, $35-44,45-54,55-64,65$ to 74 , and 75 or older. For analysis purposes, the age groups of 65 to 74 and 75 and older were merged to create a 65 or older category. This occurred due to the small sample size for 65 or older ( 27 respondents in total). The distribution of survey respondents by age is shown in Figure 6. The largest category was Less than $18(n=10.235)$. The distribution of age by survey type is shown in Table 5. Table 4 shows crosstabs for age by survey type. The differences are statistically significant as would be expected with surveys for students and teachers. Similarly, the variables are only minimally associated as shown by the Cramer's V result of 1.16 (small effect; Cohen, 1988)

Table 4
Distribution of respondent age

| Age <br> Category | Count | Percent |
| :--- | :--- | :--- |
| Less than 18 | 10,235 | 56 |
| 18 to 24 | 5,160 | 28 |
| 25 to 34 | 1,335 | 7 |
| 35 to 44 | 942 | 5 |
| 45 to 54 | 593 | 3 |
| 55 to 64 | 200 | 1 |
| 65 or older | 27 | 0 |



Figure 6 Count Distribution of Survey Respondents by Age

Table 5
Distribution of survey respondents by age and by survey type

| Age | Survey type |  |  |  |  |  |  |  | Total Count | $\begin{gathered} \text { Total } \\ \% \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | School student |  | School teacher |  | University student |  | University instructor |  |  |  |
|  | Count | \% | Count | \% | Count | \% | Count | \% |  |  |
| Less than 18 | 9,980 | 98 | 31 | 0 | 224 | 2 | 0 | 0 | 10,235 | 100 |
| 18 to 24 | 1,283 | 24 | 139 | 3 | 3,714 | 72 | 24 | 1 | 5,160 | 100 |
| 25 to 34 | 49 | 4 | 719 | 54 | 364 | 27 | 203 | 15 | 1,335 | 100 |
| 35 to 44 | 11 | 1 | 692 | 74 | 49 | 5 | 190 | 20 | 942 | 100 |
| 45 to 54 | 1 | 0 | 452 | 76 | 15 | 3 | 125 | 21 | 593 | 100 |
| 55 to 64 | 3 | 2 | 159 | 79 | 1 | 1 | 37 | 18 | 200 | 100 |
| 65 or older | 9 | 33 | 9 | 33 | 0 | 0 | 9 | 33 | 27 | 100 |
| Total | 11,336 | 61 | 2,201 | 12 | 4,367 | 24 | 588 | 3 | 18,492 | 100 |

Note: $\chi^{2}=24,836.64, p<.001$; Cramer's V $=1.16, p<.001$

## Relationship Status

The relationship status question was administered to school teachers and university instructors but not to university and school students. This is a nominal variable with six mutually exclusive categories: single (never married), married (living together), married (living separately), divorced, widowed, and other. The univariate distribution of marital status is presented in Table 6 and Figure 7. Most respondents are Married, Living Together ( $66 \% ; n=1,833$ ).

Table 6
Distribution of relationship status

| Relationship Status | Count | \% |
| :--- | :--- | :--- |
| Married, Living Together | 1833 | 66 |
| Single (Never Married) | 703 | 25 |
| Married, Living Separately | 99 | 3 |
| Divorced | 92 | 3 |
| Widowed | 50 | 2 |
| Other | 16 | 1 |
| Total | 2793 | 100 |



Figure 7 Percent Distribution of Marital Status

## Number of children

Only school teachers and university instructors were asked about the number of children that they had. The distribution of this variable is shown in Table 7 and Figure 8. Seventy-three percent of the sample had two children or less.

Table 7
Distribution of number of children

| Number of <br> Children | Count | \% |
| :--- | :---: | :---: |
| 0 | 746 | 27 |
| 1 | 532 | 20 |
| 2 | 715 | 26 |
| 3 | 364 | 13 |
| 4 | 220 | 8 |
| 5 | 89 | 3 |
| 6 | 37 | 2 |
| 7 or More | 26 | 1 |



Figure 8 Percent Distribution of Number of Children

## Highest Level of Education Completed

The education question asked school teachers and university instructors for their highest level of education completed and had eight categories (see Table 8 and Figure 9). The results by
school teacher compared to university instructor are shown in Table 9 and Figures 10,11. For example, $2 \%$ of school teachers have doctorates, compared to $45 \%$ of university instructors.

Table 8
Distribution of highest level of education completed

| Education Level | Percent |
| :--- | :--- |
| Less than a High School Diploma | $1 \%$ |
| High School Degree or Equivalent | $2 \%$ |
| Some College, No Degree | $2 \%$ |
| Associate Degree | $6 \%$ |
| Bachelor's Degree | $35 \%$ |
| Master's Degree | $30 \%$ |
| Professional Degree | $12 \%$ |
| Doctorate | $11 \%$ |



Figure 9 Percent Distribution of Highest Level of Education Completed

Table 9
Distribution of survey respondents by highest level of education completed and respondent type


Figure 10 Percent Distribution of Highest Level of Education Completed for School Teachers


Figure 11 Percent Distribution of Highest Level of Education Completed for University Instructors

## Current Grade in School

A separate question was used to collect information on current grade level of school students. Distribution of grade is presented in Table 10 and Figure 12. A comparison of grade level by gender is shown in Table 11 and Figure 13. Table 12 and Figure 14 show grade level by age, and Figure 15 shows average grade level by country. Because grade level is an ordinal variable, mode was used to communicate the average.

Table 10
Distribution of current grade level

| Grade level | Count | \% |
| :--- | :--- | :--- |
| 8 | 145 | 1 |
| 9 | 2,187 | 20 |
| 10 | 3,205 | 30 |
| 11 | 3,111 | 29 |
| 12 | 2,022 | 19 |
| Total | 10,670 | 100 |



Figure 12 Percent Distribution of Grade Level

Table 11
Distribution of current grade level by gender

|  | Female |  | Male |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Grade | Count | \% | Count | \% | Total <br> Count | Total <br> $\boldsymbol{\%}$ |
| 8 | 94 | 65 | 51 | 35 | 145 | 100 |
| 9 | 1309 | 60 | 872 | 40 | 2181 | 100 |
| 10 | 1824 | 57 | 1376 | 43 | 3200 | 100 |
| 11 | 1857 | 60 | 1247 | 40 | 3104 | 100 |
| 12 | 1157 | 58 | 853 | 42 | 2010 | 100 |
| Total | 6241 | 59 | 4399 | 41 | 10640 | 100 |



Figure 13 Percent Distribution of Current Grade Level by Gender

Table 12
Distribution of current grade level by age

|  | Less than 18 |  |  |  |  |  |  | 18 to 24 |  |  |  |
| :--- | :--- | :---: | :--- | :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| Grade | Count | $\%$ | Count | \% | Total <br> Count | Total <br> $\%$ |  |  |  |  |  |
| 8 | 143 | 99 | 2 | 1 | 145 | 100 |  |  |  |  |  |
| 9 | 2160 | 99 | 17 | 1 | 2177 | 100 |  |  |  |  |  |
| 10 | 3122 | 98 | 64 | 2 | 3186 | 100 |  |  |  |  |  |
| 11 | 2779 | 90 | 314 | 10 | 3093 | 100 |  |  |  |  |  |
| 12 | 1373 | 69 | 616 | 31 | 1989 | 100 |  |  |  |  |  |
| Total | 9577 | 89 | 1013 | 11 | 10590 | 100 |  |  |  |  |  |



Figure 14 Percent Distribution of Current Grade Level by Age


Figure 15 Average Current Grade by Country $($ Average $=$ Mode $)$

## Current Year in University

A separate question was used to collect information on current year of study of university students. Distribution of current year is presented in Table 13 and Figure 16. Current year in university by gender is shown in Table 14 and Figure 17. University year by age crosstabs are in Table 15. Average (i.e., mode) year in university by country is displayed in Figure 18.

## Table 13

## Distribution of current university year

| University <br> year | Count | \% |
| :--- | :--- | :--- |
| Bachelors, Year 1 | 944 | 22 |
| Bachelors, Year 2 | 1299 | 31 |
| Bachelors, Year 3 | 1079 | 26 |
| Bachelors, Year 4 | 777 | 18 |
| Masters | 135 | 3 |
| Doctoral | 11 | 0 |
| Total | 4367 | 100 |



Figure 16 Count of Current University Year

Table 14
Distribution of current university year by gender

| University year | Female |  | Male |  | Count Total | $\begin{gathered} \% \\ \text { Total } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Count | \% | Count | \% |  |  |
| Bachelors, Year 1 | 611 | 65 | 332 | 35 | 943 | 100 |
| Bachelors, Year 2 | 734 | 57 | 561 | 43 | 1295 | 100 |
| Bachelors, Year 3 | 603 | 56 | 476 | 44 | 1079 | 100 |
| Bachelors, Year 4 | 412 | 53 | 364 | 47 | 776 | 100 |
| Masters | 52 | 39 | 81 | 61 | 133 | 100 |
| Doctoral | 3 | 30 | 7 | 70 | 10 | 100 |
| Total | 2415 | 57 | 1821 | 43 | 4236 | 00 |



Figure 17 Percent Distribution of Current University Year by Gender

Table 15
Distribution of current university year by age

| University Year | $\begin{gathered} \text { Less than } \\ 18 \\ \hline \end{gathered}$ |  | 18 to 24 |  | 25 to 34 |  | 35 to 44 |  | 45 to 54 |  | 55 to 64 |  | Count Total | $\begin{gathered} \text { Percent } \\ \% \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Count | \% | Count | \% | Count | \% | Count | \% | Count | \% | Count | \% |  |  |
| Bachelors, <br> Year 1 | 159 | 18 | 736 | 78 | 40 | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 940 | 100 |
| Bachelors, <br> Year 2 | 33 | 3 | 1189 | 91 | 64 | 5 | 11 | 1 | 0 | 0 | 0 | 0 | 1297 | 100 |
| Bachelors, Year 3 | 11 | 1 | 963 | 90 | 73 | 7 | 18 | 2 | 8 | 1 | 0 | 0 | 1073 | 100 |
| Bachelors, Year 4 | 18 | 2 | 646 | 84 | 99 | 13 | 8 | 1 | 3 | 0 | 0 | 0 | 774 | 100 |
| Masters | 1 | 1 | 65 | 50 | 58 | 44 | 4 | 3 | 2 | 1 | 1 | 1 | 131 | 100 |
| Doctoral | 0 | 0 | 1 | 9 | 6 | 55 | 3 | 27 | 1 | 9 | 0 | 0 | 11 | 100 |
| Total | 222 | 5 | 3600 | 85 | 340 | 8 | 48 | 1 | 15 | 1 | 1 | 0 | 4226 | 100 |



Figure 18 Average Current University Year by Country (Average $=$ Mode $)$

## Tenure

Tenure was measured as the total number of years in current job. Summary statistics for tenure are presented in Table 16. The distribution of tenure was positively skewed (see Figure 19).

## Table 16

## Distribution of work experience

| Work Experience | Count | \% |
| :--- | :--- | :--- |
| Less than 1 year | 214 | 8 |
| 1 to 3 years | 449 | 16 |
| 4 to 6 years | 449 | 16 |
| More than 6 years | 1668 | 60 |
| Total | 2780 | 100 |



Figure 19 Percent Distribution of Work Experience

## Religion

The religion question asked each respondent about their current religion. The distribution of religion in the overall sample is presented in Table 17 and Figure 20. The religion variable was recoded into Muslim and Non-Muslim (i.e., Christian, Hindu, Buddhist, Atheist, Agnostic, Jewish, and Nothing in Particular). Summary statistics for Muslim / Non-Muslim are presented in Figures 21-23.

Table 17
Distribution of religion

| Religion | Count | \% |
| :--- | :--- | :--- |
| Muslim | 15,850 | 86 |
| Christian | 1,340 | 7 |
| Hindu | 483 | 0 |
| Buddhist | 258 | 1 |
| Athiest | 160 | 2 |
| Agnostic | 90 | 1 |
| Jewish | 43 | 1 |
| Nothing in Particular | 168 | 1 |
| Other | 95 | 1 |



Figure 20 Distribution of Religion


Figure 21 Percent Distribution Muslim / Non-Muslims by Gender


Figure 22 Percent Distribution Muslim / Non-Muslims by Highest Level of Education Completed


Figure 23 Percent Distribution Muslim / Non-Muslims by Country

## 3. Reliability Analysis

A summary of scales administered in the survey is shown in Table 18. A X mark in this table indicates whether the scale was administered to the corresponding population (i.e., school student, school teacher, university faculty, and university student). For example, the problem-solving items were administered to school and university students only. A full description of scale items with corresponding codes is provided in Appendix A. All scale items were administered on a 1-4 Likerttype scale (see Appendix A for details).

An assumption of reliability analysis is that all inter-item correlations are positive. However, some items were deleted because it was not possible to obtain positive correlations across all items in the scale (See Appendix A). Corrected item-total correlations and Cronbach's alpha if item deleted were then utilized to remove scale items to improve the overall internal consistency of the scale iteratively. Cronbach's alpha was then computed for each scale and, in the case of student self-efficacy, its corresponding subscales. All the reliability results for the scales in the overall sample are acceptable ( $\geq 0.65$ ). A generally accepted rule is that a Cronbach's alpha of 0.6 to 0.7 indicates an acceptable reliability level, 0.8 to .95 is very good, and greater than .95 may be an indicator of abundance and is not necessarily good (Ursachi, Horodnic, \& Zait, 2015). Missing values were handled conservatively for the scales developed (i.e., reported scale means). Respondents must have answered all of the questions utilized in the scale in order for their survey responses to be included in the mean results. It is important to note that Self-Regulation had some questions answered by all respondents and some only answered by students. Since the student only items were removed during the reliability analysis, the scales reported utilized results from
both the teachers and the students. Future research should consider splitting Self-Regulation into two separate scales Self-Regulation Students and Self-Regulation Teachers.

Practically, a determination was made that items would be removed consistently from scales for all analyses. This means that items may have been removed due to Reliability analysis and/or one or more of the CFA analyses. Details as to the reasons each item is removed is shown in Appendix A. For example, in Self-efficacy, students only were also tested by reliability analysis for three subscales: initiative, effort, and persistence. However, the results for these subscales showed low Cronbach alpha results, both for the overall sample and for most countries. Cronbach alpha results for the overall sample were as follows: initiative $=0.56$, effort $=0.59$, and persistence $=.61$. Although persistence is slightly above the .60 cut-off, for all countries except Bosnia, Indonesia, Kyrgyzstan, Tatarstan, Kenya, Malaysia, and the USA the resulting Cronbach alpha was lower than . 60 . As a result, the reliability analysis for all scales and not subscales were included in Nasser et al. (2021).

Table 18
Scales included by respondent type

| Scale | School <br> Student | School <br> Teacher | University <br> Faculty | University <br> Student |
| :--- | :---: | :---: | :---: | :---: |
| Empathy | X | X | X | X |
| Forgiveness | X | X | X | X |
| Religiosity | X | X | X | X |
| Self-efficacy, istructors only |  | X | X |  |
| Self-efficacy, students only | X |  |  | X |
| Collectivistic vs. individualistic orientation | X | X | X | X |
| Problem solving | X |  |  | X |
| Meaning making | X | X | X | X |
| Sense of belonging | X |  |  | X |
| Hope |  | X | X | X |
| Life Satisfaction |  | X | X | X |
| Gratitude | X | X | X | X |
| Emotion Regulation | X | X | X | X |
| Self -Regulation | X | X | X | X |

## Table 19

## Scale Reliability Estimates by Survey Type

| Scale | Overall <br> Sample | School <br> Student | School <br> Teacher | University <br> Faculty | University <br> Student |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Empathy | 0.66 | 0.65 | 0.73 | 0.67 | 0.65 |
| Forgiveness | 0.76 | 0.75 | 0.80 | 0.80 | 0.74 |
| Religiosity | 0.86 | 0.86 | 0.86 | 0.86 | 0.87 |
| Self-efficacy, instructors only | 0.93 | N.A. | 0.93 | 0.92 | N.A. |
| Self-efficacy, students only | 0.67 | 0.64 | N.A. | N.A. | 0.70 |
| Collectivistic vs. <br> individualistic orientation | 0.67 | 0.64 | 0.74 | 0.73 | 0.69 |
| Problem solving | 0.80 | 0.79 | N.A. | N.A. | 0.82 |
| Meaning making | 0.76 | 0.76 | 0.80 | 0.78 | 0.74 |
| Sense of belonging | 0.82 | 0.82 | N.A. | N.A. | 0.81 |
| Hope | 0.79 | N.A. | 0.81 | 0.79 | 0.78 |
| Life satisfaction | 0.69 | N.A. | 0.74 | 0.76 | 0.66 |
| Gratitude | 0.65 | 0.62 | 0.72 | 0.66 | 0.68 |
| Emotion regulation | 0.67 | 0.65 | 0.75 | 0.72 | 0.70 |
| Self-regulation | 0.73 | 0.71 | 0.78 | 0.74 | 0.73 |

Table 20
Scale Means by Age Category

| Scale | Age Category |  |  |  |  |  |  | $t$-test | $\begin{aligned} & \text { Cohen's } \\ & d \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Less than 18 | $\begin{gathered} 18 \text { to } \\ 24 \end{gathered}$ | $\begin{gathered} 25 \text { to } \\ 34 \end{gathered}$ | 35 <br> to <br> 44 | $\begin{aligned} & 45 \\ & \text { to } \\ & 54 \end{aligned}$ | $\begin{aligned} & 55 \\ & \text { to } \\ & 64 \\ & \hline \end{aligned}$ | 65 or older |  |  |
| Empathy | 3.18 | 3.10 | 3.13 | 3.18 | 3.21 | 3.24 | 2.99 | n.s. | . 03 |
| Forgiveness | 2.28 | 2.40 | 2.47 | 2.49 | 2.54 | 2.51 | 2.61 | $\begin{aligned} & t= \\ & 14.15 ; \\ & p<.001 \end{aligned}$ | . 29 |
| Religiosity/spirituality | 3.53 | 3.50 | 3.54 | 3.54 | 3.50 | 3.30 | 2.81 | n.s. | -. 01 |
| Self-efficacy, teachers only | 3.02 | 2.99 | 3.13 | 3.16 | 3.20 | 3.10 | 3.16 | $\begin{aligned} & t=3.25 ; \\ & p<.05 \end{aligned}$ | . 29 |
| Self-efficacy, students only | 2.00 | 2.10 | 2.18 | 2.31 | 2.33 | 2.60 | 2.30 | $\begin{aligned} & t=4.42 ; \\ & p<.001 \end{aligned}$ | . 36 |
| Collectivistic vs. individualistic orientation | 3.24 | 3.15 | 3.19 | 3.21 | 3.25 | 3.24 | 3.27 | n.s. | . 01 |
| Problem solving | 3.12 | 3.09 | 3.13 | 3.06 | 3.17 | 2.85 | 2.80 | n.s. | . 05 |
| Meaning Making | 3.05 | 3.06 | 2.98 | 2.84 | 2.85 | 2.84 | 2.87 | $\begin{aligned} & t=- \\ & 11.54 ; \\ & p<.001 \end{aligned}$ | -. 25 |
| Sense of belonging | 2.99 | 2.92 | 3.00 | 2.97 | 2.77 | 3.56 | 2.62 | n.s. | . 08 |
| Hope | 3.26 | 3.13 | 3.20 | 3.28 | 3.33 | 3.24 | 3.24 | $\begin{aligned} & t=9.08 ; \\ & p<.001 \end{aligned}$ | . 22 |
| Life Satisfaction | 3.05 | 2.85 | 2.84 | 2.98 | 3.01 | 2.97 | 2.97 | $\begin{aligned} & t=4.52 \\ & p<.001 \end{aligned}$ | . 11 |
| Gratitude | 3.32 | 3.27 | 3.25 | 3.33 | 3.37 | 3.29 | 3.21 | n.s. | . 00 |
| Emotion regulation | 3.08 | 3.04 | 3.06 | 3.11 | 3.13 | 3.11 | 2.89 | $\begin{aligned} & t=2.71 ; \\ & p<.05 \end{aligned}$ | . 06 |
| Self-regulation | 3.24 | 3.16 | 3.20 | 3.26 | 3.27 | 3.37 | 3.01 | $\begin{aligned} & t=2.76 \\ & p<.05 \end{aligned}$ | . 05 |

Table 21
Scale Means by Gender

| Scale | Gender |  | t-test | Cohen's d |
| :---: | :---: | :---: | :---: | :---: |
|  | Female | Male |  |  |
| Empathy | 3.20 | 3.10 | $\begin{aligned} & \hline t=12.45 ; \\ & p<.001 \\ & \hline \end{aligned}$ | 19 |
| Forgiveness | 2.32 | 2.40 | $\begin{aligned} & t=-8.75 ; \\ & p<.001 \end{aligned}$ | -. 14 |
| Religiosity/spirituality | 3.54 | 3.48 | $\begin{aligned} & t=5.51 ; \\ & p<.001 \end{aligned}$ | . 09 |
| Self-efficacy, adults only | 3.15 | 3.14 | n.s. | . 02 |
| Self-efficacy, students only | 2.02 | 2.08 | $\begin{aligned} & t=-6.18 ; \\ & p<.001 \\ & \hline \end{aligned}$ | -. 10 |
| Collectivistic vs. individualistic orientation | . 23 | 3.17 | $\begin{aligned} & t=8.56 ; \\ & p<.001 \end{aligned}$ | . 13 |
| Problem-solving | 3.12 | 3.10 | n.s. | . 03 |
| Meaning making | 3.03 | 3.03 | n.s. | -. 00 |
| Sense of belonging | 2.98 | 2.95 | $\begin{aligned} & t=3.85 ; \\ & p<.001 \end{aligned}$ | . 07 |
| Hope | 3.21 | 3.16 | $\begin{aligned} & t=3.89 ; \\ & p<.001 \end{aligned}$ | . 09 |
| Life satisfaction | 2.93 | 2.84 | $\begin{aligned} & t=6.42 ; \\ & p<.001 \end{aligned}$ | . 16 |
| Gratitude | 3.35 | 3.24 | $\begin{aligned} & t=13.28 \\ & p<.001 \end{aligned}$ | . 20 |
| Emotion regulation | 3.09 | 3.03 | $\begin{aligned} & t=8.77 ; \\ & p<.001 \end{aligned}$ | . 13 |
| Self-regulation | 3.25 | 3.17 | $\begin{aligned} & t=8.14 ; \\ & p<.001 \end{aligned}$ | . 12 |

Note. n.s. $=$ not significant. Cohen's $d$ results greater than .2 but less than .5 should be interpreted as a minimal relationship.

## 4. Confirmatory Factor Analysis

We used factor analysis to confirm the structure of each scale being utilized in the Structural Equation Modeling. Three separate confirmatory factor analysis procedures were conducted (one for each structural equation model). For each item flagged by the analysis as being not significant, it was individual removed and the factor analysis was performed again in order to evaluate the adequacy of factor loadings. This process was repeated until a sound factor structure was found. Factor analysis results, including factor loadings are detailed in Nasser et al. (2021). The list of items flagged by the confirmatory factor procedure for removal (factor loading < .3) are listed in Appendix A.

Scales included by analysis

|  | Reliability <br> Analysis | Student <br> CFA <br> Model | Teacher <br> CFA <br> Model | General <br> CFA <br> Model |
| :--- | :---: | :---: | :---: | :---: |
| Empale | X | X |  | X |
| Forgiveness | X | $\mathrm{X}^{*}$ |  | X |
| Religiosity | X |  |  |  |
| Self-efficacy, adults only | X |  | X |  |
| Self-efficacy, students only | X | X |  |  |
| Collectivistic vs. individualistic orientation | X |  |  | X |
| Problem solving | X | X |  |  |
| Meaning making | X |  | X | X |
| Sense of belonging | X | X |  |  |
| Hope | X |  |  |  |
| Life Satisfaction | X |  | X |  |
| Gratitude | X |  | X | X |
| Emotion Regulation | X | X | X |  |
| Self-regulation | X |  | X |  |

*Note. Scale included in original model but removed due to poor model fit.

## 5. Structural Equation Modeling

To explore the three models of interest for the general sample, instructors, and students, CFAs were first conducted. In addition to using the CFA results to examine the items and determine the final items removed, the correlation matrices were also examined to help ensure spurious statistical results are not utilized in the final model. Mediation was addressed by analyzing direct effects and the specific indirect effects. Specific indirect effects were determined using bootstrapping, which requires no missing data. Missing data was eliminated by removing all survey respondents who did not have complete responses for the final survey questions of interest in each model. Goodness of fit statistics are reported for all CFA and SEM models. As this work is exploratory in nature and due to the need to use goodness of fit statistics minimally impacted by large sample sizes, the following fit indices (and their liberal cut-offs for fit) are utilized: CFI ( $>0.90$ ), and RMSEA ( $<0.10$ ). Chi-square is also reported, since it is standard, but it is sensitive to sample size and rarely not significant for social science SEM analysis, as is desirable (ideally $p>.05$ ).

After conducting analysis, the paths of our hypothetical models that were not found significant were removed from each of their related models, and the final models were developed and reported in Nasser, Saroughi, \& Shelby, 2021.

## 6. References

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. -Routledge Academic.

Nasser, I., Saroughi, M., \& Shelby, L. (2021). Advancing education in Muslim societies mapping the terrain study 2019-202 report. IIIT.

Ursachi, G., Horodnic, I. A., \& Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. Procedia. Economics and finance.

## APPENDIX A

## List of survey scale items including discarded items*

| Item code | Survey Type |  |  |  | Item <br> Removed | Removal <br> Reason | Item description |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | University instructor | School teacher | University student | School student |  |  |  |
| Forgiveness |  |  |  |  |  |  | Please indicate the likelihood that you will forgive someone in each of the following situations: |
| Forgive_Car | x | x | x | x | IR | 2 | Imagine that your brother/sister borrowed your car and while he/she was driving it he/she crossed a red light and hit another car, which caused a great damage to your car, but no one was hurt. |
| Forgive_BrokenEngagement | x | x | x | X |  |  | Imagine a young man from your town who was almost engaged to one of your sisters broke up with her. |
| Forgive_SecretDisclosure | x | x | x | x |  |  | Imagine you told your sibling a secret and you wanted him/her not to tell anyone, then you discovered that he/she had disclosed this secret to a few people. |
| Forgive_CousinArgument | x | x | X | x |  |  | Imagine you had an argument with your cousin, and he asked you to leave his or her house. |
| Forgive_CurseSameReligion | x | X | X | x |  |  | Imagine you were at a social gathering and you heard someone from your same religion curses yours. |
| Forgive_CurseDiffReligion | x | x | x | X |  |  | Imagine you were at a social gathering and you heard someone who is different form your religion curses yours. |
| Forgive_Wall | x | x | x | X |  |  | How important is volunteering for you based on your religious beliefs? |
| Forgive_Rumor | X | x | X | X |  |  | Imagine that one of your friends starts a nasty rumor about you that is not true. |


| Forgive_Loss | x | x | x | x |  |  | As a result, people begin treating you worse than they have in the past Imagine that a friend borrows your most prized possession and then loses it. The friend refuses to replace it. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Response choices: $1=$ Extremely unlikely, $2=$ Unlikely, $3=$ Likely, $4=$ Extremely likely |
| Collectivistic vs. individualistic orientation |  |  |  |  |  |  | Please select the frequency with which you engage in each of the following actions: |
| CIO_SelfDepend | x | x | x | x | IR | 3 | I'd rather depend on myself than others. |
| CIO_SelfDependMost | x | x | x | x | IR | 3 | I rely on myself most of the time; I rarely rely on others. |
| CIO_OwnThing | x | x | x | x | IR | 3 | I often do "my own thing". |
| CIO_Identity | x | x | x | x |  |  | My personal identity, independent of others, is very important to me. |
| CIO_JobBetter | x | x | x | x |  |  | It is important that I do my job better than others. |
| CIO_Competition | x | x | x | x | IR | 3 | Competition is the law of nature. |
| CIO_BetterTense | x | x | x | x | IR | 3 | When another person does better than I do, I get tense. |
| CIO_PeerPrize | x | x | x | x |  |  | If a peer gets a prize, I would feel proud. |
| CIO_PeerWellbeing | x | x | x | x |  |  | The well-being of my peers is important to me. |
| CIO_PleasureTime | x | x | x | x |  |  | To me, pleasure is spending time with others. |
| CIO_Cooperate | x | x | x | x |  |  | I feel good when I cooperate with others. |
| CIO_ParentsChildren | x | x | x | x |  |  | Parents and children must stay together as much as possible. |


| CIO_Family <br> CIO_RespectGrpDecisions | xx | Xx | Xx | x |  |  | Family members should stick together, no matter what sacrifices are required. It is important to me that $I$ respect the decisions made by my groups. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Response choices: $1=$ Never, 2 = Sometimes, $3=$ Often, $4=$ Always |
| Student Self-efficacy |  |  |  |  |  |  | Please select the frequency with which you engage in each of the following actions: |
| SE_NotTryComplicated |  |  | x | x | IR | 3 | If something looks to complicated I will not even bother to try it. |
| SE_AvoidDifficult |  |  | x | x |  |  | I avoid trying to learn new things when they look too difficult. |
| SE_NewGiveUp |  |  | X | X |  |  | When trying to learn something new, I soon give up if I am not initially successful. |
| SE_PlansCertain |  |  | x | x | IR | 3 | When I make plans, I am certain I can make them work. |
| SE_KeepTrying |  |  | x | x | IR | 3 | If I can't do a job the first time. I keep trying until I can. |
| SE_Unpleasant |  |  | X | X | IR | 1 | When I have something unpleasant to do, I stick to it until I finish it. |
| SE_RightToWork |  |  | x | X | IR | 3 | When I decide to do something, I go right to work on it. |
| SE_TryHarder |  |  | X | X | IR | 3 | Failure just makes me try harder. |
| SE_RarelyAchieve |  |  | x | x | IR | 3 | When I set important goals for myself, I rarely achieve them. |
| SE_NotCapable |  |  | x | X |  |  | I do not seem capable of dealing with most problems that come up in my life. |


| SE_DontHandle | x | x | When expected problems occur, I <br> don't handle them very well. |
| :--- | :--- | :--- | :--- |
| SE_Insecure | x | x | I feel insecure about my ability to <br> do things. |
| Problem Solving |  | Response choices: $1=$ Never, $2=$ <br> Sometimes, $3=$ Often, $4=$ Always |  |
| PS_ResultsThink | x |  | Please select the frequency with <br> which you engage in each of the <br> following actions: |
| PS_GatherInfo | x | I think of possible results before I |  |
| act. |  |  |  |


| PS_ListenIdeas |  |  | x | x |  |  | I listen to the ideas of others even if I disagree with them. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PS_CompareIdeas |  |  | X | x |  |  | I compare ideas when thinking about a topic. |
| PS_MindOpen |  |  | x | X |  |  | I keep my mind open to different ideas when planning to decide. |
|  |  |  |  |  |  |  | Response choices: $1=$ Never, $2=$ Sometimes, $3=$ Often, $4=$ Always |
| Meaning Making |  |  |  |  |  |  | Please indicate how likely to be true each of the following statements is for you: |
| MM_UnderstandLife | X | X | x | X | IR | 3 | I understand my life's meaning. |
| MM_LifeMeaningful | x | X | x | X |  |  | I am looking for something that makes my life feel meaningful. |
| MM_LifesPurpose | x | X | x | x |  |  | I am always looking to find my life's purpose. |
| MM_Purpose | x | x | x | x | IR | 3 | My life has a clear sense of purpose. |
| MM_LifeMeaningfulSense | X | x | x | x | IR | 3 | I have a good sense of what makes my life meaningful. |
| MM_SatisfyingPurpose | X | x | x | x | IR | 3 | I have discovered a satisfying life purpose. |
| MM_FeelSignificant | x | x | x | x |  |  | I am always searching for something that makes my life feel significant. |
| MM_Mission | x | x | x | x |  |  | I am seeking a purpose or mission for my life. |
| MM_NoPurpose | X | X | x | X | IR | 1 | My life has no clear purpose. |
| MM_LifeMeaning | X | X | X | x |  |  | I am searching for meaning in my life. |
|  |  |  |  |  |  |  | Response choices: $1=$ Not at all true, $2=$ <br> Not true, 3 = True, 4 = Very true |


| Sense of Belonging |  |  |
| :---: | :---: | :---: |
| SB_PartOfCommunity | x | x |
| SB_TeachersRespect | x | x |
| SB_TreatedRespect | x | x |
| SB_AcceptanceHard | X | X |
| SB_DontBelong | x | x |
| SB_NoticeGood | X | x |
| SB_FeelDifferent | x | x |
| SB_ProudSchool | X | x |
| SB_LikeMe | X | x |
| SB_OpinionsSeriously | x | X |
| SB_TeachersInterested | X | X |
| SB_CanTalk | X | X |
| SB_PeopleFriendly | X | X |

## Please indicate how likely to be true each of the following statements is for you:

I feel like a real part of my school community.
The teachers have respect for me.
I am treated with as much respect as others at my school. accepted here.

Sometimes I feel as if I don't belong here.

People here notice when I'm good at something.
3 I feel very different from most other students here.

I feel proud of belonging to my school.
Other students here like me the way I am.

Other students in my school take my opinions seriously.
Most teachers at my school are interested in me.
There's at least one teacher or other adult in this school I can talk to if I have a problem.
People at this school are friendly to me.

| SB_NotInterested |  |  | x | x | IR | 3 | Teachers here are not interested in people like me. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SB_Activities |  |  | X | X |  |  | I am included in lots of activities at my school. |
| SB_BeMyself |  |  | x | X |  |  | I can really be myself at this school. |
| SB_GoodWork |  |  | x | x |  |  | People here know I can do good work. |
| SB_DifferentSchool |  |  | x | x | IR | 3 | I wish I were in a different school. |
|  |  |  |  |  |  |  | Response choices: $1=$ Not at all true, $2=$ Not true, $3=$ True, $4=$ Very true |
| Religiosity/Spirituality |  |  |  |  |  |  | Please indicate the level of importance that you attach to each of the following statements: |
| RS_Religion | x | X | x | X |  |  | How important is your religion for you? |
| RS_Prayer | x | X | x | X |  |  | How important is prayer for your religious beliefs |
| RS_FeelGod | X | X | x | X |  |  | How important is it for you to feel that God intervenes in your life? |
| RS_ReligionGrp | X | X | X | X |  |  | How important is it for you to belong to a religious group? |
| RS_DefiningYou | x | x | x | x |  |  | How important is your religion in defining who you are? |
|  |  |  |  |  |  |  | Response choices: $1=$ Not important, $2=$ Slightly important, $3=$ Important, $4=$ Very important |
| Teacher Self-efficacy |  |  |  |  |  |  | Please indicate your opinions about each of the statements below by selecting the appropriate choice: |


| TSE_LocalInvolve | X | X | How much can you do to get local colleges and universities involved in working with your institution? |
| :---: | :---: | :---: | :---: |
| TSE_Safe | x | x | How much can you do to make your institution a safe place? |
| TSE_StudentsTrust | X | x | How much can you do to get students to trust teachers? |
| TSE_StudentsEnjoy | X | X | How much can you do to make students enjoy coming to your class? |
| TSE_Dropout | x | x | How much can you do to reduce student dropout? |
| TSE_Absenteeism | x | x | How much can you do to reduce student absenteeism? |
| TSE_DoWell | X | x | How much can you do to get students to believe they can do well in academic work? |
| TSE_TeachingSkills | X | x | How much can you help other teachers with their teaching skills? |
| TSE_DifficultStudents | x | x | How much can you do to get through to the most difficult students? |
| TSE_LackofSupport | x | x | How much can you do to promote learning when there is lack of support from the home? |
| TSE_OnTask | X | X | How much can you do to keep students on task on difficult assignments? |
| TSE_StudentsMemory | X | x | How much can you do to increase students' memory of what they have been taught in previous lessons? |


| TSE_AdverseCommunity | x | x | How much can you do to overcome <br> the influence of adverse community <br> conditions on students' learning? |
| :--- | :---: | :---: | :--- |
| TSE_WorkTogether | x | x | How much can you do to get <br> students to work together? |
| TSE_DoWork | x | x | How much can you do to get <br> students to do their academic work? |
| TSE_LowInterest | x | x | How much can you do motivate <br> students who show low interest in <br> academic work? |

## Hope

| Hope_Anxiety | x | x | x |
| :--- | :--- | :--- | :--- |
| Hope_Fulfilled | x | x | x |
| Hope_Helpful | x | x | x |
| Hope_LifeQuality | x | x | x |
| Hope_Life | x | x | x |
| Hope_DifficultTimes | x | x | x |

## To what extent do you agree with the following statements?

In my life, hope outweighs anxiety.
My hopes are usually fulfilled.
I feel helpful.
Hope improves the quality of life.
I am hopeful about my life.
Even in difficult times, I am able to remain hopeful.

Response choices: $1=$ Strongly disagree, 2
$=$ Moderately disagree, $4=$ Moderately
agree, $5=$ Strongly agree

## Life Satisfaction

## LS_Ideal

x
x
X
To what extent do you agree with the following statements?

In most ways my life is close to my ideal.

| LS_LifeExcellent | x | x | x |  |  |  | The conditions of my life are excellent. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LS_LifeSatisfied | X | X | x |  |  |  | I am satisfied with life. |
| LS_ImportantThings | X | x | x |  |  |  | So far, I have gotten the important things I want in life. |
| LS_ChangeNothing | X | X | x |  |  |  | If I could live my life over again, I would change almost nothing. |
|  |  |  |  |  |  |  | Response choices: $1=$ Strongly disagree, 2 $=$ Moderately disagree, $3=$ Moderately agree, 4 = Strongly agree |
| Gratitude |  |  |  |  |  |  | To what extent do you agree with the following statements? |
| Gratitude_Thankful | x | x | x | x |  |  | I have so much for which to be thankful. |
| Gratitude_LongList | X | X | X | X |  |  | If I had to list everything that I felt grateful for, it would be a very long list. |
| Gratitude_NotMuch | X | x | X | X | IR | 3 | When I look at the world, I don't see much for which to be grateful. |
| Gratitude_Variety | X | x | x | X |  |  | I am grateful to a wide variety of people. |
| Gratitude_Appreciate | X | X | X | X |  |  | As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history. |


| Gratitude_Time | X | X | X | x | IR | 1 | Long amounts of time can go by before I feel grateful to something or someone. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Emotion regulation |  |  |  |  |  |  | Response choices: 1 = Strongly disagree, 2 <br> = Moderately disagree, 3 = Moderately <br> agree, 4 = Strongly agree <br> To what extent do you agree with the following statements? |
| ER_PositiveThink | x | x | x | x |  |  | When I want to feel more positive emotion (such as joy or amusement). I change what I'm thinking about. |
| ER_NegativeThink | x | X | x | X |  |  | When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about. |
| ER_ExpressPositive | x | X | x | x |  |  | When I am feeling positive emotions, I express them. |
| ER_StressCalm | X | X | x | x |  |  | When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm. |
| ER_PositiveChange | x | X | X | X |  |  | When I want to feel more positive emotion, I change the way I'm thinking about the situation. |
| ER_EmotionControl | x | X | X | x |  |  | I control my emotions by changing the way I think about the situation I'm in. |
| ER_NegativeExpress | x | x | X | x | IR | 3 | When I am feeling negative emotions, I express them. |
| ER_LessNegative | x | X | X | x |  |  | When I want to feel less negative emotion, I change the way I'm thinking about the situation. |


|  |  |  |  |  | Response choices: 1 = Strongly disagree, 2 $=$ Moderately disagree, $3=$ Moderately agree, 4 = Strongly agree |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Empathy | X | x | x | x | To what extent do you agree with the following statements? |
| Empathy_Perspective | x | x | x | x | I sometimes try to understand my friends better by imagining how things look from their perspective. |
| Empathy_TwoSides | X | x | X | x | I believe there are two sides to every question and try to look at them both. |
| Empathy_Upset | X | x | X | X | When I'm upset at someone, I usually try to "put myself in his place" for a while. |
| Empathy_Criticizing | x | X | x | X | Before criticizing somebody, I try to imagine how I would feel if I were in their place. |
| Empathy_Waste | x | x | x | x | If I am sure I am right about something, I don't waste much time listening to other people's arguments. |
| Empathy_Difficult | x | x | x | X | I sometimes find it difficult to see things from the "other person's" point of view. |
| Empathy_Sides | x | X | X | X | I try to look at everybody's side of a disagreement before I decide. |
|  |  |  |  |  | Response choices: $1=$ Strongly disagree, 2 $=$ Moderately disagree, $3=$ Moderately agree, 4 = Strongly agree |


| Self Regulation | x | x | x | x |  |  | To what extent do you agree with the following statements? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SR_Goals | x | x | x | x |  |  | I set goals for myself and keep track of my progress. |
| SR_GoalPlan | x | x | x | x |  |  | Once I have a goal, I can usually plan how to reach it. |
| SR_Resolution | x | X | X | x |  |  | If I make a resolution to change something, I pay a lot of attention to how I'm doing. |
| SR_GoalSettingHard | X | X | x | x | IR | 3 | I have a hard time setting goals for myself. |
| SR_GoalProgress | X | x | x | x |  |  | I usually keep track of my progress toward my goals. |
| SR_GoalPlanTrouble | x | x | x | x | IR | 3 | I have trouble making plans to help me reach my goals. |
| SR_Willpower | X | X | X | x |  |  | I have a lot of willpower. |
| SR_Distracted | X | X | x | X | IR | 3 | I get easily distracted form my plans. |
| SR_Trouble | X | X | X | x | IR | 3 | I have trouble making up my mind about things. |
| SR_Decisions | X | X | X | x | IR | 3 | I put off making decisions. |
| SR_Change | X | X | X | x | IR | 3 | When it comes to deciding about a change, I feel overwhelmed by the choice. |
| SR_Problems |  |  | X | x |  |  | Little problems or distractions throw me off course. |
| SR_Focus |  |  | X | x |  |  | I have so many plans that it's hard for me to focus on any one of them. |


| SR_Mistakes | x | x | I don't seem to learn from my mistakes. |
| :---: | :---: | :---: | :---: |
| SR_MistakeOnce | X | X | I usually only have to make a mistake one time in order to learn from it. |
| SR_MistakesLearn | x | x | I learn from my mistakes. |
| Note. $\mathrm{x}=$ item included in this survey type. IR = Item removed from final scale. Reason item removed from scale: $1=$ Item violated assumption that intercorrelations be positive for scale development, $2=$ Item removal facilitated a higher Cronbach alpha result and scale not included in CFA Models, $3=$ CFA factor loading < . 3 . |  |  |  |
| ${ }^{i}$ We recommend for future analysis using the raw data files uploaded, researchers run scale reliability and based on Cronback's Alpha if item is deleted results, they should consider deleting items (and reverse negatively worded items) that will significantly improve the reliability coefficient. |  |  |  |

