# Pre-service Teachers' Attitudes toward Research in a Middle Eastern Teachers College

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**Abstract**  The purpose of the study was to examine pre-service teachers' attitudes toward research. The study used a cross-sectional survey approach. Data was collected online using Attitude to Research measure. Data was collected from pre-service teachers who completed a course in action research in their last semester. A total of 76 pre-service teachers completed the questionnaire. The data were analyzed using the Statistical Package for Social Science Students (SPSS). The study found that majority of the pre-service teachers have positive attitudes towards research. All five subscales (research usefulness for profession, research anxiety, positive attitudes towards research, relevance to life, research difficulty) of the Attitudes to Research (ATR) scale are related. However, the strongest relationship was found between the usefulness of research for the teaching profession and positive attitudes to research. Faculty teaching research methods must adopt strategies that improve the attitudes of pre-service teachers to research.

*Keywords: pre-service teachers, research attitude, teacher preparation, teacher education, practitioner inquiry, action research, teacher research*

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## 1. Introduction

The need for improving teachers' reflective practices to enable them to address issues of instructional effectiveness and find solutions to problems encountered in the classrooms, has increasingly become central in education [1,2]. As reflective practitioners, teachers remain largely the likely consumers of research in education [3]. The need has resulted in the introduction of courses in teacher education programs to enable pre-service teachers to make a cultural shift and embrace research as a reflective tool aimed at improving teaching practices [4]. However, earlier studies suggest that undergraduate students generally have a negative attitude or anxiety towards research [5]. Attitudes affect the intent of the behavior, and intent of the behavior shapes the actions. Therefore, people with a positive attitude about a subject tend to behave more responsibly towards the subject compared to those with negative attitudes [6]. Furthermore, it is not only important to provide people with the necessary knowledge and skills in order to help them conduct research but equally necessary to ensure that individuals have positive attitudes towards scientific research [4,6].

According to the hierarchical model of attitude [7], attitude is the disposition or feeling individuals have towards an object or something. It is general consensus that attitude is a hypothetical construct inaccessible to direct observation and must be inferred from measurable reactions to the attitude object [7]. In the view of the hierarchical model of attitude theory, attitude is comprised of cognition, affect, and conation, and each of the three components attitude is expressed through verbal and nonverbal reactions [7]. According to the theories of behavioral intention, attitude refers to a set of beliefs associated with a given behavior, weighted by the positive or negative evaluation of the outcome [8]. Meaning people may have a favorable or unfavorable predisposition towards something depending on the evaluation of the outcome. For example, the fear of failure, anxiety or difficulty may determine a person's favorable or unfavorable attitude towards the object [8]. Generally, we have a favorable attitude towards something or an object, if we believe have largely desirable characteristics and form an unfavorable attitude towards an object, we deem undesirable [7]. The formation of attitudes, according to the expectancy-value model attitudes develop reasonably from the beliefs people hold about the object of the attitude [7]. A study found that technology students in education have positive attitudes towards research [9]. Similarly, [4] found pre-service teachers in a Turkey undergraduate program have medium-level attitudes towards doing research. Papanastasiou [5] argued it is

important to identify the attitudes towards research so that a positive attitude can be developed among students and hence help their learning of the subject. Engaging students in research activity is associated with increased positive perceptions of research [10].

Research methods course is an important element of teacher preparatory education curriculum based on the rational teacher education curricula is to widen the expertise and capabilities of forthcoming teachers and to sustain concentration and optimistic attitude toward research [9]. Thus, teacher training institutions that offer research education for pre-service teachers should enable them to develop research skills and a positive attitude towards research and be able to use the techniques and analyze scientific research. However, very limited research exists about the attitudes of pre-service teachers towards research [11]. In furtherance, if the pre-service teachers do not adopt the understanding of research-based teaching, then the research courses that they take during the undergraduate program will be of no use to them [4]. It is suggested that the development of research attitude and skills during a teaching course can improve and affect the reflective processes of pre-service teachers [12]. In addition, if pre-service teachers are given opportunity to experience the research process through undertaking research, it will further develop new skills, approaches, and strategies that positively affect their reflective capacity [12]. Papanastasiou [5] reported that majority of studies conducted on undergraduate student attitudes have largely focused on statistics. Measuring students' attitudes towards research is essential to investigate the interest and attitudes of students towards research [13].

The study aimed at exploring the extent of pre-service teachers' attitudes towards research after completing a course in action research for reflective practitioners. Teachers are encouraged to be reflective practitioners and to use critical reflections to improve their instructions [12]. In addition to the conventional role of teachers, teachers are increasingly taking roles of community change agents [12]. More importantly, if research is not one of the official requirements for accountability, it will take teachers' interest and commitment to engage in research as an added role. The outcome of the research will also be used to improve upon teaching research methods. Similarly, there was a positive perception among medical students to research and the role of research in their future careers in two universities in Malaysia [14].

## 1.1. The Purpose of the Study

For teachers to practice reflective teaching, they have to have the knowledge and skill to engage in action research, and consequently improve upon their practice. This study explored the attitudes of pre-service teachers towards research after completing a required course in action research during the final semester of their training.

## 1.2. Research Question

What is the extent of pre-service teachers' attitudes toward research?

## 2. Materials and Methods

This study was conducted using a cross-sectional design. The design is appropriate for the study because the researcher is interested in exploring the attitudes of pre-service teachers towards research [15,16]. The participants of this study are final year pre-service teachers of Bahrain Teachers College in the Kingdom of Bahrain. The action research for reflective practitioners' course is compulsory for all final year students in the last semester of their training preceding practicum. The final year action research course is the only research course offered to pre-service teachers in the Bahrain Teachers College. The pre-service teachers engaged in acquisition of knowledge and skills necessary to engage in research when they begin full- time teaching. As part of the requirement of the research course, the students in small groups completed research projects and presented an action research report. The participants are pre-service teachers trained over a four or five year period depending on the entry level into the program.

### 2.1. Instrument and Data Collection

The study adopted a validated existing instrument established to measure attitudes to research, the Attitude to Research (ATR) scale [5]. The questionnaire is a 7-point Likert scale, 1 through 7, with 1 being strongly agreed and 7 strongly disagree. The instrument consists of 32 items with high reliability of (r = 0 .948) [5]. The 32-item scale consists of five subscales; 1 = usefulness of research in students' professional lives, 2 = research anxiety, 3 = positive attitude towards research, 4 = relevance to students' use of research in students' lives, and 5 = difficulty of research. The data were collected through an online questionnaire by sharing the link with pre-service teachers who completed a course in action research at the Bahrain Teachers College. The study used purposive sampling technique in selecting the participants. This technique is appropriate because only final year pre-service teachers enroll in the action research course is a good representative to reveal the attitude of pre-service teachers to research in the college [15]. The questionnaire was sent to a total of 136 pre-service teachers, however, only pre-service teachers completed the questionnaire resulting in a response rate of 56%.

### 2.2. Data Analysis and Results

Data from the ATR was analyzed using SPSS. However, before the analysis was conducted, all negative statements were reverse coded "so that a higher number response on the Likert scale would represent positive attitudes" [[5], p.18]. The reliability of the ATR scale was determined by conducting Cronbach's alpha coefficient of internal consistency of the items, the 32-item scale produced a reliability coefficient of r = 0.900. The reliability of the instrument in the present study satisfactorily high and similar to the established reliability (r = 0.948) of the instrument [5]. In addition, a principal factor analysis with varimax rotation was used to confirm the factor structure of the items as [5] determined in the development of the ATR scale (Appendix 1). The results

of the factor analysis confirmed the five-factor scale established [5]. The first factor accounted for 17.08% of the total variances of the ATR scale. The second factor accounted for 9.20% of the total variance of the ATR scale. The third factor accounted for 12.08% of the total variance of the ATR scale. The fourth factor accounted for 7.27% of the total variance, while the firth factor accounted for 5.34% (see Appendix 1).

In order to compare the means of the subscales, Hotelling's $T^2$ was conducted. The results from the MANOVA analysis revealed statistical significance (Hotelling's $T^2 = 74.485$, $p \leq 0.00$). The mean score for each student on the subscales was calculated. Table 1 presents the descriptive statistics of the five subscales of the ATR scale. The two subscales with the highest mean were the research usefulness for the profession was 5.94, and positive attitudes towards research 5.2. The research anxiety (mean = 4.37) and relevance to life (mean = 4.91) subscales have mean scores moderately higher than the mean of the ATR scale (mean = 4).

**Table 1. Descriptive statistics of subscales**

| Subscale | Mean | Standard Deviation |
|---|---|---|
| F1 Research Usefulness for Profession | 5.94 | 0.89 |
| F 2 Research Anxiety | 4.37 | 1.18 |
| F 3 Positive attitude towards research | 5.27 | 1.19 |
| F 4 Relevance to life | 4.91 | 1.07 |
| F 5 Research Difficulty | 3.89 | 0.69 |

Table 2 presents coefficient of correlations between the subscales of the Attitude to Research scale. The inter-correlations of the subscales present a pattern among the subscales. The research usefulness for profession subscale most highly correlated with the positive attitude towards research (r = 0.738) and relevance to life (r = 0.557) subscales. The research anxiety subscale correlated moderately with research difficulty (r = 0.404), and the positive attitudes to research subscale correlated high with relevance to life (r = 0.561) subscale. Finally, the research difficulty subscale correlated moderately with research anxiety (r = 0.404) subscale.

**Table 2. Inter-correlations between the five subscales**

| Subscales | Research Usefulness for profession | Research Anxiety | Positive attitudes toward research | Relevance to life |
|---|---|---|---|---|
| Research Anxiety | .020 | | | |
| Positive attitudes toward research | .738** | .272** | | |
| Relevance to life | .557** | .198 | .561** | |
| Research difficulty | .029 | .404** | .250* | .044 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The descriptive statistics of each item of the Attitude to Research scale is presented below (Table 3). Table 3 presents the means and standard deviations for the items that constitute each of the five subscales (research usefulness for profession, research anxiety, positive attitudes towards research, relevance to life, and research difficulty) of the ATR scale. All the items of the research

usefulness for profession subscale (9 items) have the highest mean. The two items with the highest means are research is useful to every profession (mean = 6.45) and research should be taught to all students (mean = 6.46).

Most of the items of the research anxiety subscale (8 items), have means approximately equal or greater than the mean of the 7 - point Likert scale ($\leq 4$). The two items with mean less than the mean of the Likert scale was research is stressful and research is complicated items. For the items of the positive attitudes to research subscale, all eight items have means that are greater than the mean of the ATR scale (4).

**Table 3. Descriptive Statistics of items of the five subscales**

| Items | Mean | Std. Deviation |
|---|---|---|
| Research is connected to my field of study | 6.17 | 1.226 |
| Research is useful for my career | 6.14 | 1.373 |
| Research is very valuable | 6.20 | 1.033 |
| The skills I have acquired in research will be helpful to me in the future | 6.33 | 1.148 |
| Research is useful to every profession | 6.45 | 1.985 |
| I will employ research approaches in my profession. | 5.28 | 1.630 |
| Research should be indispensable in my professional training | 4.93 | 1.769 |
| Research should be taught to all students | 6.46 | 1.160 |
| Knowledge of research is as useful as writing. | 5.46 | 1.544 |
| Research makes me anxious RECODED | 4.47 | 1.807 |
| Research Scares me RECODED | 5.17 | 1.652 |
| Research is stressful RECODED | 3.64 | 1.687 |
| Research is complicated RECODED | 3.97 | 1.689 |
| Research is difficult RECODED | 4.42 | 1.585 |
| Research Makes me nervous RECODED | 4.41 | 1.737 |
| Research is a complex subject RECODED | 4.33 | 1.535 |
| I feel insecure about research data analysis RECODED. | 5.22 | 1.511 |
| Research is interesting | 5.50 | 1.501 |
| I like research | 5.21 | 1.535 |
| I love research | 5.18 | 1.679 |
| I am interested in research | 5.41 | 1.643 |
| I enjoy research | 5.39 | 1.317 |
| Research is pleasant | 4.91 | 1.453 |
| Most students benefit from research | 5.74 | 1.258 |
| I am inclined to study the details of research procedures carefully | 4.84 | 1.617 |
| I use research in my daily life | 3.75 | 1.642 |
| Research is irrelevant to my life RECODED | 5.59 | 1.683 |
| Research oriented thinking does not play an important role in my daily life RECODED | 5.38 | 1.336 |
| Research oriented thinking plays an important role in my life is irrelevant to my life | 4.92 | 1.564 |
| I make many mistakes in research RECODED | 5.45 | 1.553 |
| I have trouble with Arithmetic RECODED | 4.97 | 1.254 |
| I find it difficult to understand the concepts of research RECODED | 4.92 | 1.564 |

N = 76.

The research relevance to life subscale (4 items) has two items (research is irrelevant to my life (5.59), research-oriented thinking does not play an important role in my life (5.38) with higher means. Finally, the use of research difficulty subscale (3 items), the item with the highest mean is, I make many mistakes in research (5.45).
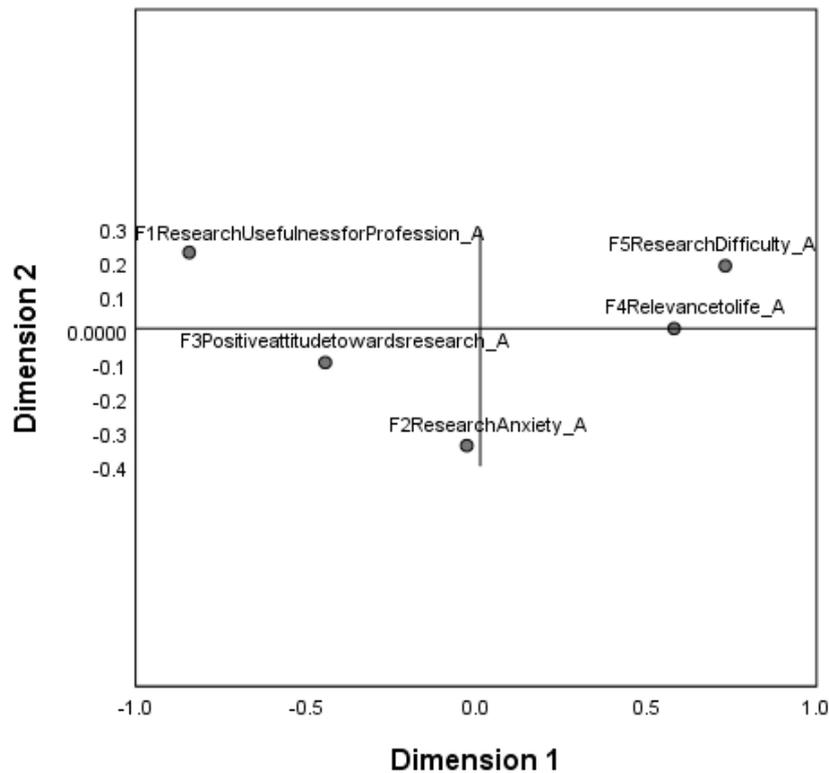
**Figure 1.** Two dimensional configuration of the five factor model based on Elucidian distances

In addition to the use of correlations to estimate the relationship between the subscales, a multidimensional scaling was used to estimate the closeness among the five factors of the ATR scale (see Figure 1). A multidimensional scaling analysis was conducted to display the multivariate data on a lower two-dimensional space [5]. Projecting the points on dimension 1 shown in Figure 1, group 1 includes the factors of research difficulty and relevance to life, while group 2 includes the factors of research usefulness for profession along with positive attitudes towards research and research anxiety. However, projecting the data on dimension 2 shows group 1 comprises of research difficulty and relevance to life alongside research usefulness for profession research, while group two consist of positive attitudes towards research and research anxiety factors. Clearly, from the projections of the factors on both dimensions, the factors of research difficulty and relevance to life grouped together, and sometimes with research usefulness for a profession, however, the usefulness factor is further away from the two factors. On the other hand, positive attitudes to research are always grouped with research anxiety, which may well show that the anxiety students have towards research have something to do with the positive attitudes towards research. Overall, it is possible that some other factors influence students' attitudes to research other than the difficulty of the subject.

## 3. Discussion

The current study explored the attitudes of pre-service teachers towards research after completing a required research course in their last semester in the teacher training college. As noted, most of the attitude measures relate to students' attitudes towards, the ATR is among the few measures for research methods [5]. First of all, the current study confirmed the five factors identified as meaningful in an earlier study (see Table 1) to the ATR scale developed [5]. The five factors or subscales include research usefulness for a profession, research anxiety, positive attitudes towards research, relevance to life, and research difficulty.

The relationship between the five subscales is examined. The strongest relationship existed between research usefulness for a profession and positive attitudes towards research. The relationship suggests that students' view of the value of research for their profession may influence their favorable or unfavorable attitudes towards research. According to the value - expectancy theory, "a person would hold certain attitudes towards an object by evaluating it" [[7]. p.156]. Another strong relationship found in the data was between relevance to life, research usefulness, and positive attitudes towards research. This indicates that students who see the usefulness of research tend to have positive attitudes towards the subject [5]. The mean responses of positive attitudes toward research (5.27) is greater than the mean score of the scale, confirming the findings of the research. However, a moderately strong relationship was found to exist between research anxiety and research difficulty. The results show that the anxiety pre-service teachers in this study have towards the subject that they may find difficult. This finding is in contrast to the observations of [5].

The means of the subscales in Table 1, reveals that the majority of the pre-service teachers agree on the usefulness of research in the teaching profession (mean = 5.94). Furthermore, pre-service teachers in the current

study have the highest level of positive attitudes towards the usefulness of research in the profession. A similar finding was reported in a study of attitudes towards research among technology education students in Pakistan [9]. In addition, the study found that the majority of the pre-service teachers have positive attitudes towards research (mean = 5.27). Moreover, in an exploratory study of undergraduate students' attitudes to research in Rwanda, found that student's level of attitudes was high in the usefulness of research and the positive predispositions towards research [17]. Furthermore, the means of the items for each subscale (Table 1) reveals a similar trend. The usefulness of research for a profession and positive attitudes towards research has the highest item means, indicating most of the participants agreed with the statements. However, the pre-service teachers' levels of attitude to research anxiety (mean = 4.37) and the relevance of research to life (mean = 4.91) were moderately higher than the mean of the ATR scale. The finding is in contrast to findings among education technology students, the students disagreed that research is relevant to their Life [9]. Not surprisingly, the participants in the current study somewhat disagreed with the statements related to research difficulty (mean = 3.89) in comparison to the mean 4 of the ATR scale. As the tutor of the course, students always expressed their anxiety at the beginning because the action research course is the first research course for the teacher trainees throughout their training. However, by the end of the semester, the pre-service teachers seem less anxious and tend to have a more favorable disposition towards the subject.

# 4. Conclusion

Overall the study found that pre-service teachers who participated in the study have positive attitudes towards research. In addition, majority of the pre-service teachers agreed on the usefulness of research for the profession, and the need for research to be taught to all students. Students reported a significant acquisition of skills, knowledge in research methods, and improved attitudes towards research after completing a course in research methods [10]. "As the result of varied experience, we form believes about an object the combine to produce an attitude towards it, an attitude that remains relatively stable across time and situations" [7]. Therefore, the action research course may have contributed in large part to high positive attitudes the pre-service teachers reported in the current study. Faculty teaching research methods course should consider adopting pedagogical strategies for developing positive attitudes towards research because of its importance of research to academic as well as a professional career [18]. However, other factors may impact the attitudes of pre-service teachers to research. Therefore, similar studies should consider collecting data about the attitudes of participants before and after the research methods course to find the impact of the subject on students' attitudes. The limitation of the study includes the use self-reported data, and the data can be influenced by participant biases. The findings are not generalizable because it is limited to pre-service teachers enrolled in a teacher preparatory program.

# Statement of Competing Interests

The authors have no conflict of interest.

# References

[1] Ersoy, A. F. & Cengelc, T. (2008). The Research Experience of Social Studies Pre-service Teachers: A qualitative Study. *Educational Sciences: Theory & Practice 8* (2), 541-554

[2] Zambo, D. (2007). The Fuel of Educational Psychology and the Fire of Action Research. *Teaching Educational Psychology, 2*(1), 1-12.

[3] Hopkins, D. (2002). A teacher's guide to classroom research. (3rd Ed.) New York: Open University Press.

[4] Shaw, K., Holbrook, A., Scevak, J., & Bourke, S. (2008). The Response of Pre-Service Teachers to a Compulsory Research Project. *The Australian Educational Researcher, 35*(3), 89-110.

[5] Papanastasiou, E. C. (2005). Factor structure of the "attitudes toward research" scale. *Statistics Education Research Journal, 4*(1), 16-26.

[6] Akçöltekin, A. (2016). Investigation of the effect of training on the development of High School Teachers' Attitudes towards scientific research and project competitions. *Educational Sciences: Theory and Practice,16*(4), 1349-1380

[7] Ajzen, I. (1993). Attitude theory and attitude-behavior relation. In Dagmar Krebs & Peter Schmidt (Eds), *New Directions in Attitude Measurement* (41-57). Berlin; Walter de Gruyter.

[8] Kim, J., & Nan, X. (2012). Understanding the psychology of attitudes: A review of attitudes research guided by theories of behavioral intention and dual-process models. In *Psychology of Attitudes* (pp. 35-59). Nova Science Publishers, Inc..

[9] Hussain, T., Ch, A.Q., Akhter, M., Abid, N & Sabir, S. (2016). A Study on Attitude towards Research among Technology Education Students in Pakistan, *Bulletin of Education and Research,*38(2), 113-122.

[10] Hardway, L., & Stroud, M. (2014). Using Student Choice to Increase Students' Knowledge of Research Methodology, Improve Their Attitudes Toward Research, and Promote Acquisition of Professional Skills. *International Journal of Teaching and Learning in Higher Education, 26*(3), 381-392. ISSN 1812-9129.

[11] Gonyea, N. E. (2013). Development, Validity, and Reliability of the Pre-service Teachers' Attitude Toward Educational Research (P-TATER) Scale. *The Journal of Research in Education (2),* 78-96

[12] Impedovo, M. A., & Malik, S. K. (2016). Becoming a Reflective In-service Teacher: Role of Research Attitude. *Australian Journal of Teacher Education, 41*(1), 99-113

[13] Shaukat, S., Siddiquah, A., Abiodullah, M., & Akbar, R. A (2014). Postgraduate Students' Attitudes towards Research. *Bulletin of Education and Research, 36*(1),111-122

[14] Ismail, M. I., Bazli, M.Y., & O'Flynn, S.B. (2014). Study on medical student's attitude towards research activities between University College Cork and Universiti Sains Malaysia. *Procedia - Social and Behavioral Sciences,* 116, 2645-2649.

[15] Passer, M.W. (2017). *Research methods: Concepts and connections* (2ⁿᵈ Ed). NY; Worth Publishers.

[16] Mertler, C.A. (2020). *Action research: Improving schools and empowering educators* (6ᵗʰ Ed). L.A; SAGE Publications.

[17] Habineza, F. (2018). An exploratory survey of undergraduate students' attitudes towards research in Ines-Ruhengeri in Rwanda. *International Educational Applied Scientific Research Journal (IEASRJ), 3*(3) e-ISSN: 2456-5040.

[18] Tosun, C. (2014). Pre-Service Teachers' Opinions about the course on scientific research methods and the levels of knowledge and skills they gained in this course. *Australian Journal of Teacher Education 39*(10), 95-112.

# Appendix 1

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings[a] |
|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total |
| 1 | 9.230 | 28.844 | 28.844 | 5.466 | 17.082 | 17.082 | 5.793 |
| 2 | 4.694 | 14.668 | 43.511 | 2.945 | 9.204 | 26.286 | 2.769 |
| 3 | 2.028 | 6.338 | 49.849 | 3.866 | 12.082 | 38.368 | 7.600 |
| 4 | 1.514 | 4.730 | 54.579 | 2.328 | 7.274 | 45.642 | 4.839 |
| 5 | 1.293 | 4.040 | 58.619 | 1.710 | 5.343 | 50.985 | 1.979 |
| 6 | 1.224 | 3.826 | 62.445 | | | | |
| 7 | 1.123 | 3.510 | 65.955 | | | | |
| 8 | 1.105 | 3.453 | 69.408 | | | | |
| 9 | 1.076 | 3.362 | 72.770 | | | | |
| 10 | .985 | 3.077 | 75.847 | | | | |
| 11 | .862 | 2.693 | 78.540 | | | | |
| 12 | .777 | 2.430 | 80.970 | | | | |
| 13 | .665 | 2.078 | 83.048 | | | | |
| 14 | .602 | 1.882 | 84.930 | | | | |
| 15 | .537 | 1.678 | 86.608 | | | | |
| 16 | .483 | 1.510 | 88.118 | | | | |
| 17 | .447 | 1.398 | 89.516 | | | | |
| 18 | .421 | 1.317 | 90.832 | | | | |
| 19 | .400 | 1.251 | 92.084 | | | | |
| 20 | .388 | 1.213 | 93.297 | | | | |
| 21 | .335 | 1.047 | 94.344 | | | | |
| 22 | .321 | 1.004 | 95.348 | | | | |
| 23 | .254 | .794 | 96.142 | | | | |
| 24 | .223 | .696 | 96.838 | | | | |
| 25 | .180 | .562 | 97.400 | | | | |
| 26 | .171 | .535 | 97.935 | | | | |
| 27 | .155 | .484 | 98.420 | | | | |
| 28 | .135 | .421 | 98.841 | | | | |
| 29 | .122 | .382 | 99.223 | | | | |
| 30 | .104 | .326 | 99.549 | | | | |
| 31 | .080 | .251 | 99.800 | | | | |
| 32 | .064 | .200 | 100.000 | | | | |

**Total Variance Explained**

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.