



VALIDITY OF PSYCHOMETRIC TOOLS IN SOCIAL SCIENCES: MEASURING GRIEVING CHILDREN VALUE SYSTEM

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Abstract: This paper deals with some theoretical approaches of a modern definition of research validity and its importance to the other basic research quality level – reliability. It is stated that validity is mostly described as a main prerequisite to make conclusions not only based on research instrumentality and the set of respondents but mainly from the whole research. Also, based on the former research about grieving children socialization, these children value internalization system and the construction of such model are revealed as well. Consequently, grieving children value system is shown through their behavioural patterns: they less than the others internalize openness, believing in self and others, sensitiveness, respect, self-control and activity. Generally, the main socio-moral values, that make the basis of favourable socialization for children (age 7–11), consist of openness, believing in self and others, sensitiveness, respect, self-control, solidarity and activity.

Keywords. Validity, psychometrics, grieving children value system, psychometric tools.

Short title. Validity of psychometric tools.

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Introduction

Most of the socialization research is directed towards the individual, as social being development and his/her participation in society. Thus, the socialization is the essential basis of an individual's participation in a particular society, as well as expression, according to which, the relations with surrounding environment and its events are revealed. On the other hand, socialization is quite a difficult psychosocial process. In a fast developing society it has become more difficult for children to socialize adequately. Various social changes (sudden growth of technologies and science, mobility, urbanization, individualization etc.) have an influence on the participants and determinants of socialization [1–3].

The recent researches have shown that children from incomplete families are more prone to the aggressiveness than others from nuclear families [4]. On the other hand, after the loss of one parent children of age 6–7 and even younger suffer from feeling guilt i.e. they usually blame themselves for the things that have happened [5]. Thus, the loss in the family with its negative emotional charge also makes it more difficult for a child to identify himself/herself and consequently limits the value of internalization. As a matter of fact, the loss impedes the socialization processes of such children. Many authors, for example Berns [6] et al, points out the values internalization as the basis of a child's socialization, because he/she seeks to identify with close people and intercept their values. Thereby, a problematic question arises: i) on which methodological basis we could explore such children value system, and ii) which methodological approach to construct such psychometric system would be the most appropriate.

This work is basically devoted a) to present some of theoretical approaches of a modern definition of research validity and its importance to reliability; b) to reveal the grieving children socialization aspect, their behaviour, through these children value internalization system and to show the construction of such model.

1. Literature overview

Psychometric tools validation process. Psychometric instruments have been used to measure and reveal some psychological differences between people for many years. In these days, instruments tend to be slightly more sophisticated and can deliver genuine insights into individual and team capabilities and behaviours. Thus, over 70 % of larger companies are currently using psychometric instruments to gather and interpret vital information to help them to maximize their people's potential. Also if psychometric tools are used quite professionally they can help an organization make effective use of its people and to improve business performance. Actually, psychometric profiling is accepted as a tool that can enhance: managerial decision making during recruitment and selection; individual and team development; managerial development, and organizational change. Putting it in other words, psychometric tools are questionnaires or tests that have some predictive ability, that is, the ability to predict outcomes in the workplace [8].

To become psychometrically valid, the questionnaire or test must go through a rigorous process of validation that is usually carried out by a workplace psychologist who specialises in psychometric evaluation. According to psychometricians Sabesan [9], Anastasi&Urbina [10], examples of psychometric tools are as follows: i) numeric

tests; ii) literary tests; iii) colour blindness tests; iv) crime predictor tests; v) personal behavioural styles tests; vi) personal values tests; vii) stress response tests; viii) safe working capability tests etc. They are used as inputs to overall processes. Thus they should have a predictive validity and tolerance score for each of the elements of the test or questionnaire.

Meaning for data reliability. Validity measures how appropriate a test is for a specific purpose. A test may be considered valid for one use and invalid for the other. According to Bitinas et al. [11], there are only two levels that show research quality – validity and reliability. Although validity is in most cases only a desirable pursuit. Actually, as mentioned authors would state, contemporary definition of validity says that this research quality level is mostly described as a pure prerequisite to make conclusions not only based on research instrumentality and the set of respondents but mainly from the whole research.

Also a research paradigm may influence conclusions direction as well [12]. Thus validity is the degree to which evidence and theory support specific interpretations and uses of test scores [13]. Although there are many types of validity, a screening tool should test for content validity and concurrent validity. Content validity tests a developmentally appropriate range of skills. Concurrent validity shows how well a screening tool compares to other similar measures in the market [14]. According to DeVon [15], planning for psychometric testing through design and reducing non-random error in measurement will add to the reliability and validity of instruments and increase the strength of study findings [16]. Underreporting of validity might occur because of small sample size, poor design, or lack of resources. Lack of information on psychometric properties and misapplication of psychometric testing is common in the literature (for instance, Bitinas et al).

2. Grieving children value system on their behaviour level: designing, measuring and validating the instrument

The research object is the grieving children value system and appropriate methodological approaches while validating the psychometric tool/model of these children *Value Internalization*.

The goal of this paper could be expressed as follows: i) to reveal some theoretical basis on psychometrics validation and, on the other hand, ii) to show the modelling as well as analysis processes of these children value system.

Main research method could be entitled as a factor analysis (using inner compatibility degree – Cronbach α) of grieving children internalized values. All calculations were provided using MS SPSS 16.0 program [17] according to mentioned Cronbach α formula:

$$\alpha = \frac{N}{N-1} \left(1 - \frac{\sum_{i=1}^N \sigma_{v_i}^2}{\sigma_x^2} \right) \quad (1)$$

where N is the number of components (items or testlets), σ_x^2 represents the variance of the observed total test

scores, and σ_y^2 represents the variance of component i . Another alternative way to define Cronbach α formula could be provided by Eq(2):

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}, \quad (2)$$

where N represents the number of components (items or test sets), \bar{v} equals the average variance and \bar{c} is the average of all covariance between the components.

Referring to other works [18-20] and to the data of a pilot study, the model of internalized values was set along with the content of those values and factor analysis. As Darlington [21] points out, factor analysis includes both component analysis and common factor analysis. This method is used to study the patterns of relationship among many dependent variables, with the goal of discovering something about the nature of the independent variables that affect them, even though those independent variables were not measured directly. Thus, answers obtained by factor analysis are necessarily more hypothetical and tentative than true when independent variables are observed directly. Within this research basically the PCA method was used, i.e. there are two main methods of extracting the factors from a set of variables that are given below in the 1st table in the form of values and their manifestations: common factor analysis (known as principal factor analysis, PFA) and principal components analysis (PCA) [22]. There was no need for setting up a causal model but simply to reduce a large number of items (29 empirical indications) to a smaller number of underlying latent variables (4 groups of factors, see Table 1). Algorithmically factor analysis using PCA method was used (that is the most common extraction technique).

3. Main results and discussion

M. E. Young [23] within his research on models of internalized values in classroom environment states that internalization can be fostered by discipline, teaching, example or modelling, social reinforcement of appropriate behaviour and arrangement of the environment so that desirable behaviour is naturally elicited. The development of a sense of self, ability to self-regulate, and attachment are important precursors of internalization, continues the author. Generally internalization is based upon the child's accurate perception of the message and either the acceptance or rejection of that message. Internalization of values is observed when acceptable behaviour is generated from intrinsic factors and not from the anticipation of external consequences. Two things are required to internalize values: i) clarity of universal and personal values – one must be convinced that universal values are valid and truly worth pursuing, and also that the personal values are clear and strongly felt; ii) contrary conditionings are neutralized (Self-Transformation, [24]). The conditionings to be neutralized are of two kinds: i) physic-emotional conditionings – those involving habits and emotional reactions, such as fears, resentments etc.; ii) mental conditionings – those molded by cultural values, such as the measurement of success and failure, philosophy of life, etc. They create preferences for lifestyles, modes of action etc. When true clarity

is achieved, and conditionings are comprehensively reviewed, then values can be fully integrated into one's life with minimal difficulty.

We have performed research when a pilot study was organized and held back in 2005 while main losses and these children personality characteristics were set (see Table 2). This table, as mentioned above, shows exactly the main factors of grieving children value internalization that evidently create a model of these children desirable value system - 1st factor - communicativeness and cooperation, 2nd factor - self control and self-esteem regulation, 3rd factor - locus of control, 4th factor - empathy. Locus of Control refers to the extent to which individuals believe that they can control events that affect them. Individuals with a high internal locus of control believe that events result primarily from their own behavior and actions.

Empirical indications mean the particular behaviour of grieving children that appears in certain social situations. Values manifestations indicate smaller variables that come out from main values stated in the Table 1.

As we can observe from the table above, factor analysis (using Principal Component's method - PCA - and Varimax rotation with KMO normalization – 0.79, and Bartlett's test – $\chi^2 = 3485.88$ $p < 0.000$) has shown that the majority of those empirical indications are rather important. The inner compatibility's degree of this model is very high as well (Cronbach $\alpha = 0.91$). Thus, the main internalized values for grieving primary school children would be as follows: openness, believing in self and others, sensitiveness, respect, self-control, solidarity, and activity.

Other researches, such as E. Scott's [25], show that some of the children are reared under the dual influence of primary (parents) and secondary (nursery teachers) socializing agents, and some of them are reared under the influence of primary agents only. In E. Scott's research two groups of children were compared having in mind their internalization of the cultural values of self-reliance, cooperation, and compliance; their integration among these internalized values and their congruity between conformity and internalization with respect to each value. The following conclusions were made where nursery children were found to have greater internalization of self-reliance and cooperation, to display higher value integration and greater congruity with regard to compliance. Intelligence was positively correlated with internalization of each value and with integration. Level of maternal expectations was positively correlated with internalized self-reliance and cooperation. Perceptions of expectations were positively correlated for the same values. Maternal acceptance of the child was positively correlated with internalization of cooperation and compliance and with integration, while it was part of a higher-order interaction effect with maternal expectations and treatment group in the case of internalized self-reliance. Thus in our research the model of grieving children socialization reveals its strengths on the aspects of indicated such children behaviour and main both universal and practical values along with their manifestations.

While comparing the internalized value system of those who have experienced loss in the family and those who did not, some behavioural differences were identified. It was set that grieving children less than the others internalize openness, believing in self and others, sensitiveness, self-control, and activity (see Table 2).

Table 1. Model of internalized values for the primary school children

Values	Their manifestations	Empirical indications	Factors
Openness	Sincerity	1. Shares with others (his/her knowledge, stuff, impressions, feelings)	0.63
		2. Doesn't cheat	0.82
	Straightforwardness	3. Doesn't lie (says the truth)	0.75
		4. Accepts his/her own mistakes	0.67
Believing in self and others	Self-confidence	5. Doesn't avoid harder tasks	0.71
		6. Tries again while not succeeded	0.60
	Relying on others	7. Tells about him/herself	0.52
		8. Asks for others' opinion	0.43
Sensitivity	Compassion	9. Shows sympathy (comfort etc.)	0.72
		10. Makes no harm	0.88
	Advertency	11. Listens to others	0.80
		12. Shows their merit	0.72
Respect	Respect to others	13. Doesn't humiliate	0.52
		14. Behaves naturally with others	0.56
	Self-respect	15. Doesn't boast of smth.	0.64
		16. Keeps the word	0.76
Self-control	Self-control	17. Finishes task until the end	0.56
		18. Doesn't burst while not succeeded	0.61
		19. Controls behaviour	0.54
	Patience	20. Doesn't groan in case of misfortune	0.58
Solidarity	Forbearance	22. Considers others	0.73
		23. Doesn't revenge	0.81
	Peacefulness	24. Agrees with teacher, peers etc.	0.50
		25. Doesn't use any violence while facing conflicts etc.	0.68
Activity	Initiative	26. Decides what to do	0.76
		27. Gets involved into the activity voluntarily	0.51
	Self-sufficiency	28. Suggests the ways of doing certain things	0.43
		29. Completes the work voluntarily	0.52

Boys in this case were affected more than girls by the experienced loss in the family (see fig. 1). The results, as it is shown in table 3, have confirmed that grieving boys less than the others internalize the openness ($\chi^2 = 84.14$ $p < 0.000$), believing in self and others, sensitivity ($\chi^2 = 69.18$ $p < 0.000$), respect, self-control ($\chi^2 = 33.16$ $p < 0.03$), solidarity ($\chi^2 = 29.23$ $p < 0.02$), and activity. These values are more obvious within non-grieving children behaviour.

Meanwhile grieving girls behaviour in many cases differs much than boys and other classmates (see fig. 2). The data shows that grieving girls quite more than the

others – non-grieving classmates – practically internalize solidarity, respect, activity, and openness.

The significant correlation between these two groups of participants was not found.

Conclusions

1. Validity measures how appropriate a test is for a specific purpose. A test may be considered valid for one use and invalid for the other. Validity is mostly described as a main prerequisite to make conclusions not only based on research instrumentality and the set of respondents

Table 2. Statistically meaningful internalized values based on experienced losses

No.	Parameter	Chi square χ^2	Statistic significance p
1.	Sensitivity	42.39	< 0.002
2.	Self-control	87.52	< 0.000
3.	Activity	31.67	< 0.005
4.	Openness	84.14	< 0.000
5.	Believing in self and others	69.18	< 0.000
6.	Solidarity	29.23	< 0.02

but mainly on the whole research. Therefore based on the former research about grieving children socialization these children value internalization system and the construction of such model were revealed.

2. The tested and validated psychometric tool/model of Grieving Children Value Internalization helped to identify the main four factors that are socializing and cooperation, self control and self-esteem regulation, locus of control and empathy. This helps to analyze further grieving children socialization on their behaviour basis having in

mind the value of internalization as the main individual socialization factor and bridge.

3. The main socio-moral values that make the basis of favourable socialization for children (age 7–11), were distinguished. The list of such values consists of: openness, believing in self and others, sensitiveness, respect, self-control, solidarity and activity. However, it was set that grieving children less than the others internalize openness, believing in self and others, sensitiveness, respect, self-control and activity.

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