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### **BUYING ADDICTION: RELIABILITY AND CONSTRUCT VALIDITY OF AN ASSESSMENT QUESTIONNAIRE**

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# Buying Addiction: Reliability and Construct Validity of an Assessment Questionnaire

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## Abstract

*The paper presents the construction and studies of reliability and construct validity of a new questionnaire, the Problematic Shopping Scale, designed to evaluate the shopping behaviour. In Italy, in fact, there is not a valid questionnaire to evaluate the shopping behaviour.*

*The questionnaire, in its final form, is composed of 22 item and shows good internal consistency.*

*PSS can be considered a reliable psychometric tool suitable to assess problematic buying behaviour. Also, it is an instrument easy to administer and to score. Further research is needed to analyse concurrent validity by means of clinical criteria, and to obtain a standardization of the scale in Italian representative sample.*

**Keywords:** *Buying addiction, Assessment, Clinical screening, Validation, Psychometric properties.*

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### **Introduction**

The following paper shows the establishment and the first psychometric studies conducted around the Problematic Shopping Scale (PSS) and developed in order to evaluate the problematic shopping behaviour levels through the examination of the relation between shopping and psychological variables (attitudes, motivations, affections and behaviours).

The constantly growing consideration around the compulsive buying arises from the need of thinking carefully about a phenomenon that risks to overspread as a real addiction. During the last century, in fact, the compulsive behaviour has experienced great changes: nowadays we don't buy just what we need, that is just one of the possible motivations that might drive us; more if we focus on the common language spoken we find that the English term "shopping", although is usually used as a synonym for "buying", it actually expresses a different and wider meaning that contains the sense and the gist of the purchase in the modern and postmodern society: not just a simple action dictated by necessities or needs, but a real experience moved by desires, dreams and pleasure which might undertake compulsive modes.

About that, Neuner et al. (2005) have emphasized how recently the compulsive shopping is constantly spreading, whilst several studies underline the importance of studying the psychosocial aspects related to the disorder (Rodriguez-Villarino et al. 2006; Dittmar 2005) and the need of using appropriate instruments to assess a reliable and valid assessment; that is more important if we consider that a proper compulsive buying disorder classification is still questioned.

Several researches have connected the buying problem to the addiction disorder (Krych, 1989), other authors have related it to the obsessive-compulsive disorder (Hollander, 1993), more other researches have connected the problem to the humour disorder (Lejoyeux et al., 1996).

The present work is based on a theoretical model that considers the compulsive buying as a behavioural addiction, a pathological custom associated to a behaviour characterised by an abiding impulse to buy, a compulsion to go shops, a personal addiction oriented to an activity that ends in the loss of behaviour control, failures in controlling and revising the activity and significant affective consequences, when the action is not feasible, at the individual and social levels. Both of the research and

clinical fields have focused their attention on the following variables as factors that might help the evolution of a problematic and pathologic relation with the shopping activity: social-demographic variables as gender, age, social condition; personal variables as anxiety and depression, presence of other kind of addictions but also factors like low self-esteem, materialistic values, tendency to the money, paralysing coping strategies focused in particular on the avoidant, sensation and risk seeking and external focus of control; moreover the family variables like the same parents that manifest an impulsive and compulsive behaviour, assume a particularly critic educating style and manifest the custom to give presents as compensatory mechanism to keep calm their own kids; finally the contextual variables which explaining the shopping disorder as a product of some social modification that underlies the shopping and the buying as activities that determinate an unavoidable lowering of self-adjustment and the loss of sense of time ad reality (Gupta, 2013; Black, 2007).

## **1.1. Method**

### **1.1.1. The scale establishment**

The aim of the present contribution has been to establish and validate a new Italian instrument to evaluate the problematic form of the compulsive buying. Furthermore, the need to create a new scale instead of translating one already created by other countries, is justified by the continuous modifications of those instruments by their authors as well as by the different dimensions of the buying behaviour assessed with several instruments in relation to different theoretical model.

The first result of our work has been produced by the integration and translation of two of the instrument illustrated before; their reliability and validity have been proved by the same authors: CBMS (Valence et al., 1988) whence 4 items have been taken, in particular the items evaluating the tendency to spend money, impulse to purchase, shopping as alternative form of self-healing and guilty feelings after the purchase. In addition to those items other have been added: 3 items introduced by Elliott (1994) in the short version of the CBMS, and 2 proposed by Isen (1984) to value the buying role in the mood control. Finally we have elaborated 6 more items based on the most recently found compulsive buying variables: social consequences, loneliness and output role (Cheuk, 2003; McElroy et al., 1994). We have decided to

include those dimensions because we have considered them as particular features of the compulsive buying disorder. The pilot version of the instrument has been composed of 25 items, it was asked to the subject to express, for each of them, a preference, from “never” to “very often”, regard the frequency experimented and the thoughts connected to the purchase (table 1).

The next step of our research has been the verification of item structure conducted by experts, clinical psychologists and university professors, in order to evaluate how much clear the Italian language results and the matter validity compared with the original scales.

We have proceeded then with a study aimed to evaluate the psychometric features of the instrument.

**Table 1.** PSS first version items

1. I buy impulsively (1)	1 2 3 4 5
2. I buy more when I am under stress (1)	1 2 3 4 5
3. I feel something inside that pushes me to go shopping (1)	1 2 3 4 5
4. The shopping activity has interfered with my family life (5)	1 2 3 4 5
5. I use to feel guilty after I buy something (1)	1 2 3 4 5
6. I don't show anyone what I buy because I'm afraid to be judged as irrational (1)	1 2 3 4 5
7. I feel sometimes the urge to buy something (clothes, book, etc.) (1)	1 2 3 4 5
8. My buying behaviour has interfered with my job and my social life (5)	1 2 3 4 5
9. I have bought unnecessary things even though I couldn't afford them (1)	1 2 3 4 5
10. If I am upset I feel better buying something (2)	1 2 3 4 5
11. I'm a spendthrift (1)	1 2 3 4 5
12. If I had financial problems, I have the feeling I could count on someone that might help me (1)	1 2 3 4 5
13. I feel myself most important when I buy something (4)	1 2 3 4 5
14. My purchase makes me feel better than anything else (4)	1 2 3 4 5
15. Sometimes I feel a spontaneous and unexpected impulse that pushes me to go out and buy something in a store (1)	1 2 3 4 5
16. I like to impress people with the things I use to buy (4)	1 2 3 4 5
17. The shopping has caused me financial problems (5)	1 2 3 4 5
18. I prefer to go on my own to buy something (5)	1 2 3 4 5
19. I feel depressed I have to buy myself something (2)	1 2 3 4 5
20. When I travel, I use to go shopping (5)	1 2 3 4 5
21. I buy things even I can't afford them (3)	1 2 3 4 5
22. I think that the other people would be surprised if they knew my shopping customs (3)	1 2 3 4 5
23. I can't resist the temptation of a shining shop's window (5)	1 2 3 4 5
24. I buy myself things to make me feel better (3)	1 2 3 4 5
25. When I can't go shopping I feel nervous and anxious (3)	1 2 3 4 5

Note - (1) Items translated from the CBMS; (2) Translation of the items added by Isen; (3) Items translated from the CBS (4) Translation of the items added by Elliott; (5) Items freshly elaborated.

## 1.2. Sampling

We have involved a sample extract from a normal population constituted of 437 subjects, to evaluate the reliability and validity of the instrument construct; the research involved a stratified sample based on the variables: gender, age, education. The population sample involved represents a layered, randomly extracted from the Sicilian territory and composed of the 52.17% of women (N = 228) and the 47.83% of men (N = 209). The age on average is 26.22 years old with a standard deviation equal to 11.81, whilst the education, on average, is medium-high with the 21.73% having a primary school degree or else.

## 2. Results

### 2.1. Psychometric properties of the instrument

The homogeneity of the pilot version instrument appears to be acceptable (Cronbach alpha = .92) as well as the other reliability index connected to the internal consistency: split-half coefficient = .84, Spearman-Brown = .91, Guttman-Rulon coefficient = .90.

We have conducted a factorial analysis using the principal component method, to evaluate the scale structure; we have adopted as principle to extract the factors, the Cattell's scree-test. The most valid number of factors resulted to be 2 due to the first two self-values to much elevated (respectively 9.03 and 2.18) respect to the third components and the following ones: 1.22, 1.20, 1.04.

The first factor self-value corresponds at the 25.79% of the variance explained, the second factor self-value corresponds at the 19.05%. The two factors together constitute the 44.84% of the total variance; their item saturation, after the orthogonal rotation with the Varimax method, is reported into the table 2.

**Table 2.** Matrix of the factorial saturation after the Varimax rotation.

Item	<i>FACT. 1</i>	<i>FACT. 2</i>
10	<b>.80</b>	.15
3	<b>.78</b>	.16
19	<b>.76</b>	.30
7	<b>.72</b>	.22
24	<b>.71</b>	.26
15	<b>.69</b>	.34
2	<b>.68</b>	.19
11	<b>.65</b>	.21
23	<b>.63</b>	.31
1	<b>.58</b>	.15
9	<b>.51</b>	.32

Item	<i>FACT. 1</i>	<i>FACT. 2</i>
8	.08	<b>.82</b>
17	.11	<b>.77</b>
4	.06	<b>.74</b>
6	.03	<b>.65</b>
21	.37	<b>.56</b>
22	.30	<b>.53</b>
13	.37	<b>.52</b>
16	.35	<b>.42</b>
8	.08	<b>.82</b>
17	.11	<b>.77</b>
4	.06	<b>.74</b>

Item	<i>FACT. 1</i>	<i>FACT. 2</i>
14	<b>.46</b>	<b>.58</b>
25	<b>.40</b>	<b>.54</b>

Item	<i>FACT. 1</i>	<i>FACT. 2</i>
5	.28	.38
18	.30	.20
12	.23	.11
20	.40	.08

The first factor can be traced to the purchase individual dimension as solution to a subjective need connected to the impulse and the purpose of modifying the mood; whilst the second factor corresponds to the purchase social dimension as modality to impress people as well as an activity that causes social consequences. Some item (14 and 15) results twice factorial due to its saturation equal or higher than 0.40 in both of them. In view of the elevate homogeneity of the total scale and how useful has been having a global score, we have evaluated the presence of items that could be less homogeneity respect the other items through their analysis. We have calculated the total-item correlation and every time we have excluded the item considered not much correlated with the general scale score. The analysis emphasizes how only three items show a value lower than 0.40 and evaluate aspects not really integrated with the others. Those items, less correlated with the rest of the questionnaire, are the same showed up during the factorial analysis with a saturation lower than 0.40 and, in particular, items 12, 18 and 20.

Those items seem to have averages higher than the other items; it goes to confirm the fact that any item has been equally evaluated by entire sample. Moreover, the results show how those items were not much discriminating and could be deleted to improve the scale homogeneity. The item 5 (after I buy something I use to feel guilty) could be kept because it doesn't show a saturation higher than 0.40 in none of both factors thought its total correlation is equal to 0.47. Finally we have been able to find the items illustrated, thanks to the combined use of the item-analysis and the factorial analysis. Then, we have deleted those items because we have considered them as not connected to the problematic buying behaviour although sometimes, both of them can be present at the same moment.

## 2.2. Analysis of the short version scale

The short version scale internal consistency seems to be very elevated and lightly higher than the consistency showed by the long version scale. Other internal consistency indices are: split-half coefficient = .85, Spearman-Brown = .92, Guttman-Rulon cohefficient = .92. We have calculated the differences related to the gender through the using of the short version scale showed in the table 3: the results resulted statistically significant and confirmed the data already found by precedent authors (Dittmar, 2005).

**Table 3.** Gender differences in the 22 items version of the scale.

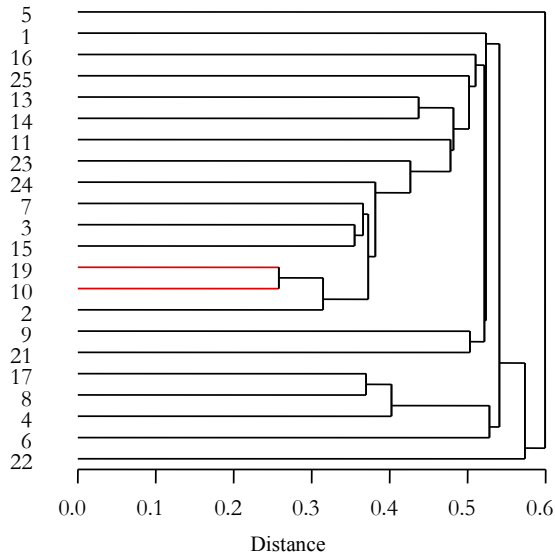
	<i>Males</i>	<i>Females</i>
N	209	228
Minimum	22.00	22.00
Highest	90.00	91.00
Average	46.95	51.82
Standard deviation	15.92	15.08

Note - The difference between the two gender averages is statistically significant ( $t = -3,28$ , g.l. 434,  $p < .001$ ).

Furthermore, we have repeated the factorial analysis on the 22 item scale and the Cattell scree-test confirmed the 2 factors as the best solution (the self-values resulted very elevated, respectively 8.79 and 2.13, respect to the third component and the next ones: 1.18, 1.05, 0.97)



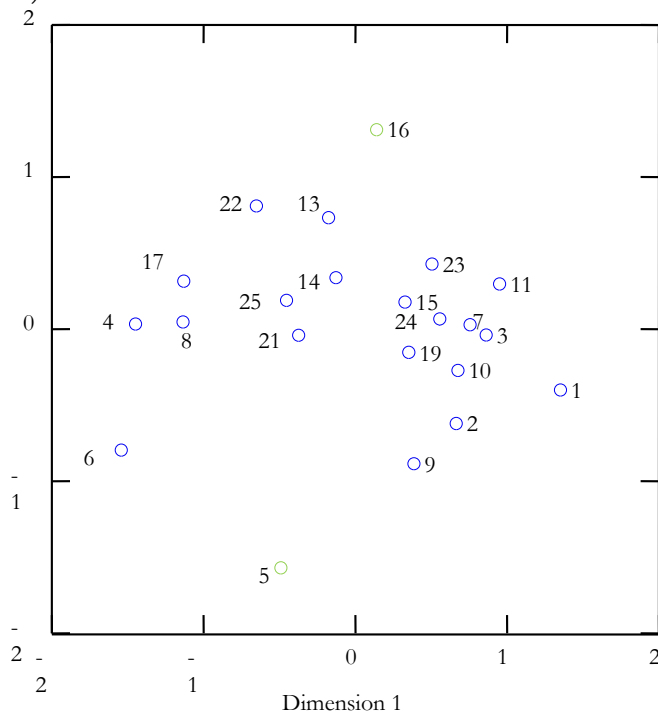
which explains the variance quantity higher than the first analysis (respectively 29.04 and 20.58%, 49.62% total compared with the previous 44.84%). We have also confirmed the factors found in the long version scale through the perfect match of the items that here show a saturation higher than 35, at least in one factor. We have executed then, on this version of the scale, a cluster-analysis using the single linkage method. The scheme reported into the figure 1 emphasized:



**Figure 1.** Result of cluster analysis conducted on the items of the short version scale (single linkage method).

- the higher closeness between the item 10 and 19 and among them and the item 2, constitutes a cluster that defines the purchase as a way to compensate negative affective situations;
- we have associated the cluster created before with the items 3, 15 and 7 that constituted a cluster related to the impulsive and compulsive buying behaviour features;
- we have operated an other relevant association between the items 8 and 17 and among them and the item 4. These items resulted as the first three items for the 2 factor saturation, analysed by the factor analysis. They all underline the principle shopping inferences in the familiar and social environment;
- we have conducted a further analysis starting from the relation between the short version's items and the multidimensional scale;

to make it we have used the Kruskal method which has allowed us to emphasize two main dimensions of the compulsive buying (figure 2).



**Figure 2.** Result of the Multidimensional Scaling conducted on the items of the short version scale.

The first compulsive buying dimension found expresses, on one hand, the impulsivity of the purchase behaviour and the compensation represented by the shopping activity (example: 1. I buy impulsively, 11. I'm a spendthrift, 3. I feel something inside that pushes me to go shopping, 7. I feel sometimes the urge to buy something, 10. If I am upset I get better buying something, 2. I use to buy more when I am under stress) on the other hand the first dimension represents the social consequences of the buying behaviour (example: 6. I don't show anyone what I buy because I'm afraid to be judged as irrational, 4. The shopping activity has interfered with my family life, 17. My behaviour as buyer has interfered with my job and my social life).

The correspondence among this first dimension and the ones we found through the factorial analysis, results clear; the second compulsive buying dimension found, collocated in the vertical graphic axis, results as particularly interested because is related to the self-involvement into the shopping: at the positive pole we find the item 16 (I like impress people with the things I use to buy) and the item 13 (I feel myself most important when I buy something), they both underline the shopping positive and gratifying aspects on the self. Below the graphic we put the item 5 (I use to feel guilty after I buy something) that reminds with the items 2, 6 and 9 the shopping negative consequences on the buyer's self.

### **3. Discussion and conclusions**

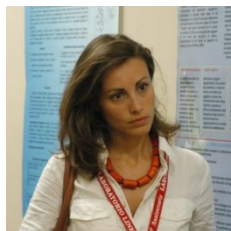
The present study is the result of the necessity to have an Italian instrument with internal coherency and an acceptable construct validity in order to evaluate the compulsive tendency to the purchase. The analysis of the data found has indicated that the Problematic Shopping Scale has good psychometric properties; the high coherency and validity levels, found in the final version of the 22 items scale, permit to consider it as a useful and flexible instrument to evaluate the purchase behaviour (just for research purposes at the moment).

In fact is an instrument easy to administer: it doesn't need a particular training for the researcher and it is useful for epidemiological researches and for screening procedures. Furthermore, the PSS shows a good correspondence with the theoretical model used: the irregular buying behaviour is considered a form of addiction with dimensions like internal aspects, social aspects, positive vs. negative consequences. The individual and social dimensions of the purchase behaviour are confirmed by further analysis conducted to explore the construct validity. The instrument shows good psychometric characteristics; in the future we will have to include a scale taring gender distinct (as variable seems to be significant). Moreover the sample will have to be expanded to a national level in order to permit a standardization and a taring adapted to the Italian population. Secondly, more studies are necessities for a clinical evaluation of the instrument and for a contribution to a cut-off taring able to discriminate subjects with real compulsive buying behaviour.

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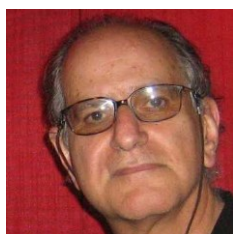
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