The Career Belief Patterns Scale

A background to the construction and development of norms for the Scale

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The Career Belief Patters Scale (CBPS) was developed as a tool to aid our investigations into career choice behaviour in India. We have used this instrument extensively both in our research and application oriented work. Some of the findings based on the CBPS are reported in Chapter 4. This article provides further details regarding the construction of the scale and the development of norms for interpretation of the scores obtained from the CBPS. The construction of the CBPS occurred through three studies which are described below.

Study 1: Scale Development

Method

The participants

Development of the initial item pool for the CBPS began with observations of the career planning behaviour of high school students over a two-year period, in the course of careers guidance workshops held for 12,244 students whose ages ranged between 13 and 18 years (mean = 15.67 years; SD = 0-93). Boys comprised 51.78% of the sample (N = 6341) and girls comprised 48.21% of the sample (N = 5903). These workshops were held in total of 204 schools in villages, towns and South Indian cities. Since our field experiences consistently indicated that significant differences could exist in the career beliefs of young people from disadvantaged backgrounds and those from more privileged environments, our sample was drawn from a range of socio-economic status (SES)

groups. Further details regarding samples sizes across five SES groups are provided in Table 1.

Table 1: Details regarding sample sizes (%) across SES levels

SES Levels	Study	Study 2	Study 3
Level 1 (lowest SES)	2101 (17.18%)	7 (5.83%)	186 (13.6%)
Level 2 (upper-lower SES)	2557 (20.91%)	38 (31.66%)	518 (37.9%)
Level (lower-middle SES)	2724 (22.28%)	24 (20%)	490 (35.9%)
Level 4 (upper-middle SES)	2561 (20.95%)	33 (27.5%)	116 (8.5%)
Level 5 (highest SES)	2301 (18.82%)	18 (15%)	56 (4.1%)

Data collection procedure

The principal investigator of this study facilitated each workshop assisted by a team of two career counsellors trained by the principal investigator. Each group comprised 40 to 60 students and all workshops followed a standardised format. The initial item pool was extracted from one of the activities in the workshop which required students to write down their responses to the question: "Put down at least one statement you believe to be true about career planning." The responses given by each participant ranged from one statement to three statements. A total of 13,952 statements were collected.

Item reduction

The next step was to systematically reduce the number of these items. It was noted that the content of some of the statements (about 12% of the total item pool) were unique to individuals (e.g. 'I believe it is possible to retire before the age of 25.'). Other statements (about 24% of the total item pool) were gender specific (e..g. 'It is more difficult for girls to build a career') or unique to small groups in specific locations (e.g. 'The mining industry is the most profitable'). A 'commonality index' was developed to extract statements whose themes were common across a large section of the sample. Each statement was independently rated for its commonality of content across the sample by the principal investigator and the two assistants. Items were rated as 0 if it was felt that the content was not common across 80% of the sample and 1 if it was felt that it was

common to more than 81% of the sample. Items rated as 1 by all three raters were selected leading to the identification of 641 statements. An estimation of the inter-rater reliability of the three raters yielded a Cronbach's alpha of 0.89.

Since this research focuses on the negative content of career beliefs, it was important at this stage to develop a working definition based on which the 'negative' content of career beliefs could be identified. Based on reports in the Indian literature discussed above and the investigator's field experiences, the following description of negative career beliefs was articulated for the purposes of the study: (a) beliefs about self-worth that would inhibit the individual from engaging in career development activities; (b) orientations to the future that placed a low emphasis on planning for a career and inhibited the motivation to persist toward a career goal; (c) beliefs that could inhibit the motivation to develop skills and acquire proficiency for a career. The same team of raters independently examined the 641 statements to select items whose content reflected negative beliefs about career planning. Items were rated as 0 if it was felt that the content was not negative and 1 if it was felt that it was negative. Items rated as 1 by all three raters were selected. Items that were unique to only one gender, a specific SES group or a particular geographical location were dropped from the item pool. A total of 79 statements were selected based on these criteria. The inter-rater reliability of the three raters was a Chronbach's alpha of 0.88.

Use of the vignette technique to contextualise items
Vignettes are carefully constructed verbal pictures, designed to identify attitudes and elicit opinions. The use of vignettes has been found to be a credible research device in situations where the re-creation of real life events is difficult and cumbersome (e.g. Wilson & While, 1998). The CBPS uses vignettes to place abstract ideas within a familiar context and thereby help respondents identify with the situation easily. Table 2 gives an example of the embedding of the content of one of the 79 items identified from the larger pool of statements, into vignettes.

Table 2: An example of embedding the content of statements into vignettes

Statement reflecting negative beliefs	Vignette
"Studying after high school is of no use."	Ramesh studied hard and even got a degree. But he still does not have a job. Therefore studying after high school is of no use.

Verification and Rating of Vignettes

The next objective was to obtain an objective rating that would indicate the face and content validity of the vignettes. A panel of five clinical psychologists trained in Cognitive Behavioural Therapy and in career counselling, who were not involved in the data collection was formed. It was assumed that their training in the Cognitive Behavioural method and career counselling would provide a foundation on which to evaluate the content of the beliefs embedded in the vignettes. Each of them rated each of the 79 vignettes on a 0 to 2 point scale where 0 indicated no negative content, 1 indicated low negative content and 2 indicated high negative content. With a view to collating approximately double the number of vignettes that would be finally used, 46 items with the highest ratings were retained. The mean rating values of the selected items ranged from 1.6 to 2. An estimation of Cronbach's alpha placed the inter-rater reliability of the five raters at 0.83.

Study 2: Item Analysis for Initial Item Selection

Method

Instruments

Socio-economic status. The Socio-economic Status Scale (SESSQ) developed by Kapoor & Singh (1998) was used as the measure of socio-economic status. The SESSQ comprises a total of 56 questions presented in specific categories (described in the above) and is scored according to a system of weightings assigned to each item. The maximum obtainable score is 103 and minimum is 10. Higher scores on the SESSQ indicate higher SES levels.

Career belief patterns. The 46 vignettes comprised the 'stimulus' part of the Career Belief Patterns Scale. Response choices were structured with seven scale points and anchored with the following phrases:

7 = I agree completely   6 = I agree most of the times

5 = I agree sometimes   4 = Slightly unsure if this is true

3 = Somewhat unsure if this is true   2 = I would agree with this only rarely

1 = I would not agree with this at all

Participants were instructed as follows: "Given below are short descriptions of events that commonly occur in our lives. The people described below are students just like you who have responded to these events in a particular way. Please indicate on your answer sheet, the degree to which you agree or disagree with the way in which the students have responded."

Sampling and data collection procedure

The literature has indicated that private schools largely cater to the higher SES groups, while state run schools are mainly attended by students from lower SES backgrounds (Reddy & Gibbons, 1999). The sample for this study was therefore drawn both from two private and state schools each, through career guidance workshops held for students in the final year of their high school. All four schools followed the same curriculum. The project was explained to the workshop participants and their voluntary participation was solicited. Those consenting to take part completed the SESSQ and the 46 CBPS vignettes. The questionnaires were administered to the students in their classrooms in groups of about 30 to 40 students. Care was taken to ensure that students did not discuss their responses with their friends by instructing them not to do so and by seating them some distance away from each other.

Participants

57 female and 63 male high school students (N = 120) took part. The mean age of the sample was 15.11 years (SD = 0.39). The mean SES level of the sample, across all four

schools, was 3.14 (SD = 1.19). The number of students from the low SES group was 69 (57%) and 51 (42%) students comprised the sample from the high SES schools. The mean age of the students from the low SES schools was 15.10 years (SD = 0.34). 34 (49%) were boys and 35 (50%) were girls. The mean SES level of the low SES schools was 2.25 (SD = 0.65). The mean age of students from the high SES schools was 15.13 years (SD = 0.44). 30 (58%) were boys and 21 (41%) were girls. Further details regarding samples sizes across the five SES groups are provided in Table 1.

Results

The mean score obtained by the entire sample on the 46 items was 235.54 (SD = 14.47). The mean score of the students from the low SES schools was 242 (SD = 11.38). The boys in this group obtained a mean of 243 (SD = 10.68), and the girls recorded a mean score of 241.08 (SD = 12.10). The mean score of the students from the high SES schools was 226.70 (SD 13.56). The boys in this group obtained a mean of 227.33 (SD = 12.66) and the girls recorded a mean score of 225.80 (SD = 15.03).

Since maintaining a balance between the length of the test and sustaining the respondents' interest was important given the age group for whom this scale is intended, the aim was to extract 20 of the best discriminating items from the 46 vignettes. An item-total correlation procedure was used to identify the best discriminating vignettes. Each respondent's item rating choices were scored and the item scores summed to constitute the respondent's total score. There were no missing data. The item-total correlations of the items were examined and the 20 best discriminating vignettes were selected to constitute the first version of the Career Belief Patterns Scale. Table 3 provides the correlation indices and significance levels of the items chosen. All the items finally selected had significant correlations of at least 0.22 with the total score. The alpha reliability was computed and yielded a value of 0.86 for the set of 20 items.

Table 3: Item-total correlations of items selected to compose the first version of the Career Belief Patterns Scale

Item No.	Correlation	Item No.	Correlation
1	0.22*	11	0.23*
2	0.45***	12	0.40***
3	0.41***	13	0.30**
4	0.24***	14	0.31***
5	0.23**	15	0.27**
6	0.37***	16	0.25**
7	0.23*	17	0.30**
8	0.36***	18	0.27**
9	0.32***	19	0.22*
10	0.34***	20	0.30**

*p < 0.05; **p < 0.01; ***p < 0.001*

Study 3: Factor Analyses to Explore Underlying Factor Structure

The 20 vignettes extracted through item analysis were examined for an underlying factor structure. It was hypothesised that the scale would yield discrete components of career belief patterns.

Method

Sampling and data collection procedure

Data collection was similar to the procedure followed in Study 2. Volunteers completed the SESSQ and the 20-item CBPS. The questionnaires were administered to the sample in groups of about 40 to 60 students per group.

Participants

The sample comprised a total of 1366 (808 females and 558 males) high school students drawn from 18 different schools. The sample's mean age was 15.49 years (SD = 0.93).

SESSQ data were used as the criteria to categorise the sample into five SES groups. Further details regarding samples sizes across SES groups are provided in Table 1.

Results

Factor Analyses of items

A principal-components analysis was performed (N = 1366) on the 20 vignettes. The following criteria were used to determine the number of factors to be extracted for the final factor solution: the Kaiser criterion indicating Eigenvalues greater than 1.0, Cattell's scree test, and the interpretability of the solution. The items were orthogonally rotated to the varimax criterion to extract factor solutions. Based on the minimum factor loading cut-off set at 0.4, 19 of the 20 items loaded on one or more factors yielding a solution of three factors. Item 7 did not load on any factor at the required cut-off point and was dropped. Item 11 emerged as a fourth factor, not loading on any of the other three factors. Since this did not present an easily interpretable solution, item 11 was dropped. The remaining 18 items to factors were assigned to the factors on which they most highly loaded. The final three-factor solution, accounted for 40% of the variance. Table 4 presents the percentages of explained variance for each of the three factors.

Table 4: Characteristics of Factorially Derived Career Belief Scales

Factors	Number of items	Cronbach's alpha Coefficient	% of Variance	Eigenvalue
Factor 1: Proficiency Beliefs	8	0.76	27.24	4.90
Factor 2: Control and Self-Direction Beliefs	7	0.67	6.14	1.10
Factor 3: Persistence Beliefs	3	0.31	5.98	1.07

The first factor labelled *Proficiency Beliefs* was composed of 8 items. The vignettes in this factor appear to tap the respondent's beliefs about the importance of acquiring qualifications and skills that enhance personal proficiency for an occupation before entering the world of work. The second factor consists of 7 vignettes and was called *Control and Self-Direction Beliefs*. These items describe circumstances reflecting the individual's sense of control over his or her life situation and orientation to directing his or her life. Factor 3 comprises 3 items and was titled *Persistence Beliefs*. The content of these vignettes reflects persistence toward future career goals in spite of difficulties and barriers encountered during the process of career preparation.

Scale Characteristics

The Cronbach's alpha coefficient was used to estimate the internal reliability of the three sub scales. The obtained values were 0.76 for Proficiency Beliefs, 0.67 for Control and Self Direction Beliefs and 0.31 for Persistence Beliefs (see Table 4 for details).

An examination of the difference between an item's correlation with its assigned scales and its correlation with other scales (item-scale correlation) showed that each of the eighteen items demonstrated their highest correlations with the scales to which they were assigned. This analysis of convergent validity attested that the items conformed to the scales indicated by the principal-components analysis.

Lastly the intercorrelations between the three scales were computed. Intercorrelations between the scales were moderate and significant at the 0.01 level as follows: Factors 1and 2, r = 0.63, Factors 2 and 3, r = 0.37 and Factors 3 and 1 r = 0.35. Table 5 provides an item-wise report of the factor loadings obtained.

In its final form, the CBPS comprises 18 vignettes designed to reflect negative career planning beliefs. Respondents are required to indicate on a 7- point scale, the extent to which they 'agree' or 'disagree' with each vignette. Higher scores reflect higher negativity in career beliefs (see Table 5 for further details).

Table 5 Career Belief Patterns Scale (CBPS) items and factors loadings obtained (N = 1366)

CBPS items	Factor 1	Factor 2	Factor 3
1. Ramesh has studied and got a degree. He still does not have a job. Therefore studying after high school is no use *(Factor 1)*	.60	.41	.23
2. I am not a good student. I get very low marks. Therefore I cannot get a good job *(Factor 2)*	.31	.58	.15
3. All exams are too difficult to pass. So, it is better to try for a job without trying to pass exams *(Factor 1)*	.57	.34	.18
4. Ravi keeps on failing in Mathematics and Science. Therefore, getting a job will be difficult for him *(Factor 2)*	.35	.59	.16
5. Raju can earn almost Rs. 1000 per month, working in a petrol pump. So there is no need for him to go to school *(Factor 1)*	.61	.35	.22
6. Sunder received his weekly wages today. He need not go back to work until he needs more money *(Factor 1)*	.67	.42	.26
7. Going to a training programme means, I cannot earn during the training period. Therefore I cannot go to any training programmes *(Factor 2)*	.40	.60	.16
8. Rajan is very poor. His father is a coolie (labourer). Therefore, it would be very difficult for Rajan to build a secure future *(Factor 2)*	.34	.59	.18
9. Sunil has failed High School, but luckily he got a job that pays him Rs.800 per month. Since he has a job, he need not try to complete High School *(Factor 1)*	.64	.38	.25
10. Sujeeth has the chance to go for a free 12 months training in carpentry. He also likes carpentry. So he went for 1 week and found that the bus fare is almost Rs. 10 per day. It also means he must leave the job he has now, as a shop assistant. So, for the next one year he will be spending, not earning money. There is very little money at home. It is better Sujeeth continues earning through the job he already has, rather than spend money on the carpentry course *(Factor 3)*	.29	.25	.67

11. Raj has joined a polytechnic where he is learning many subjects. He finds the subject of 'drawing', very difficult. He often fails and his teacher scolds him. Raj feels the course is not good and thinks he should leave *(Factor 3)*	.36	.37	.62
12. Sanjay went to learn to welding. After a few days he fell sick. He feels welding is not suitable for him and he must stop *(Factor 3)*	.08	.07	.65
13. Siddharth got a job as an office boy, even though he failed High School. Therefore passing High School is not important *(Factor 1)*	.65	.39	.25
14. People who work in factories and on machines, look dirty and their clothes get spoiled. Therefore, such type of work does not require much training *(Factor 1)*	.62	.43	.22
15. Mr. Sukumar has been working as a machine operator. But he goes to work on a cycle. Therefore, such types of jobs do not pay well *(Factor 2)*	.32	.53	.23
16. On the 3rd day of his training, the supervisor scolded Amar. He felt very bad and feels he will not do well in the training *(Factor 2)*	.52	.65	.28
17. Sunil has the chance to learn a job free of cost. But he has to change two buses to reach the spot and it takes him one and a half hours to travel one way. He feels this is too far and does not want to join the course *(Factor 2)*	.37	.59	.29
18. Harish has been learning a job at a training centre for the last 2 weeks. He finds he is slower than his friends. Harish feels he is no good and should leave the course *(Factor 1)*	.63	.44	.25

All correlations were significant at the 0.01 level (2-tailed).

Norms for interpretation

The total sample (N = 1366) was divided into two groups based on their SES. Individuals who had been categorised as belonging to Level 1 and 2 on the SESSQ were combined and this group was called the Lower SES Group (N=704; 51.5%) of the total

sample. Those categorised as belonging to Levels 3, 4 and 5 on the SESSQ were combined to form the Higher SES Group (N = 664; 48.5%) of the total sample. Table 6 provides normative data based on which an individual's score can be interpreted in terms of percentile ranks.

Table 7: Percentile Norms for the Scores on the
Career Belief Patterns Scale by SES (N = 1366)
Minimum - Maximum Score = 18 - 126
Interpretation: Percentile level 5 = very low career belief distortion, 10 = low, 25 = low average, 50 = average, 75 = high average, 90 = high, 95 = very high

Percentile	*5*	*10*	*25*	*50*	*75*	*90*	*95*
Low SES (score)	*39*	*43*	*51*	*61*	*70*	*85*	*96*
High SES (score)	*23*	*26*	*33*	*39*	*48*	*55*	*62*
Full Sample (score)	*26*	*31*	*38*	*50*	*63*	*76*	*86*

Limitations of the current version of the CBPS and indications for future research

The three-factor solution obtained in this study, explains only 40% of the variance leaving a significant amount of common variance unexplained. It is quite likely therefore that various other factors could influence the career beliefs of the sample. It is beyond the scope of this research given its exploratory nature, to provide answers to the question of what these other influential factors could be. However one of the factors that could play an influential role is *caste*. It has been noted for example that while a person from a 'lower caste' may be able to break through the material disadvantages inflicted by caste, socio-cultural forces may continue to influence mind sets and beliefs (Ilaiah, 1994). Other influences such as family structure, family occupation, the educational system, are all examples of factors that could have contributed to the unexplained common variance noted in this study. Information obtained from the current analyses points to an area of

research that requires further examination and the need for tools that have a higher sensitivity to picking up the nuances of career belief patterns.

The third factor (Persistence Beliefs) was included in the final version of the CBPS although this factor's internal consistency was low. Low persistence toward career goals is a career counselling issue that has begun to appear with increasing frequency in counselling situations across the range of SES levels. The cost of dropping out of courses and training programmes is high both to the individual and the sponsoring agency. Reviews of government sponsored training programmes indicate a fairly high drop out rate before the course has been completed (e.g. Desai & Whiteside, 2000). Techniques to address the unwillingness or the inability to persist toward a career goal are urgently required. Hence this factor has been retained in the scale with the view to encouraging further investigations into beliefs linked to persistence. It is emphasised however that scores from the Persistence Scale of this version of the CBPS must be interpreted with caution.