



---

## A SCALE FOR MEASURING SME OWNER-OPERATOR OBJECTIVES

*A paper for the Small Enterprise Association of Australia and New Zealand 16<sup>th</sup> Annual Conference, Ballarat, 28 Sept-1 Oct, 2003.*

Rick Newby, John Watson and David Woodliff,  
The Department of Accounting and Finance,  
The University of Western Australia,  
35 Stirling Highway,  
Crawley, Western Australia, 6009,  
Australia  
Ph: +61 8 9380 2876  
Fax: +61 9 9380 1047  
Email: John.Watson@uwa.edu.au

David Woodliff and Rick Newby  
The Department of Accounting and Finance,  
The University of Western Australia,  
35 Stirling Highway,  
Crawley, Western Australia, 6009,  
Australia

### **Abstract**

Although much is known about the economic contribution of the SME sector, relatively little is known about how and why the performances of individual SMEs differ. We suggest that owner-operator objectives are central to an informed analysis of SME performance, particularly at the level of the individual firm. We describe the development, reliability, and preliminary nomological validity of a scale for measuring the importance of various objectives to SME owner-operators. We demonstrate the scale's predictive validity by showing how its relationship with the masculinity and femininity of owner-operators is consistent with expectations. In doing so, we find that biological sex may not be an appropriate proxy for gender within an SME setting.



---

## A SCALE FOR MEASURING SME OWNER-OPERATOR OBJECTIVES

### Introduction

Governments of most Western countries would acknowledge the important economic and social role played by the small business sector. However, while statistics on the contribution of this sector to national employment and gross domestic product are readily available, there does not seem to be an accepted method of measuring small and medium enterprise (SME) performance.

It has been argued that the economic measures routinely used for large firms may not be appropriate for assessing the performance of small owner-operated firms (Wärneryd 1988; Parasuraman, Purohit and Godshalk 1996). This questioning of traditional measurement techniques is based on the view that economic performance may not be valid in gauging what seem to be subjective constructs (Poiesz and von Grumbkow 1988). For example, Keats and Bracker (1988, p.53) noted that 'performance may have a different set of meanings for small firms than for large firms', and Buttner and Moore (1997, p.34) found that female small business owners measured success in terms of 'self-fulfillment and goal achievement. Profits and business growth, while important, were less substantial measures of their success.' It has also been found that many of the stated reasons for entering the small business sector are non-financial in nature (Stanworth and Curran 1976). This suggests that individual owner's goals and expectations will impact on how they evaluate their firm's performance and, therefore, the utility they derive from their business. Further, the lack of separation of ownership and management within SMEs allows the goals of the owners to become the goals of the firm (Naffziger, Hornsby and Kuratko 1994); particularly given the significant freedom 'being your own boss' provides SME owners in the pursuit of objectives (LeCornu, McMahon, Forsaith and Stanger 1996).

Therefore to adequately assess the performance of a SME, in terms of the utility (both financial and non-financial) it provides to its owners, we must first have an understanding of the major objectives of the owners of that SME; that is, whether their goals are 'hard' or 'soft' in the sense used by Parasuraman et al. (1996). However, there is no established scale that can be used to measure SME owner-operator objectives.<sup>1</sup> The existence of such an instrument could help us better understand how SME owner-operators trade-off their expectations of economic return against the benefits gained from being independently employed. It could help to explain why businesses run by women perform relatively poorly on some quantitative financial measures, even after controlling for confounding variables such as industry and age of proprietor (Rosa, Carter and Hamilton 1996; Watson 2001).

### Development of the SME Objectives Scale (SOS)

Two studies that have analyzed and classified SME owner-operator objectives are Kuratko, Naffziger and Hornsby (1997) and Woodliff, Watson, Newby and McDowell (1999). The two studies were conducted in separate countries and yet reported surprisingly similar results. Both argued that 'softer' measures of firm performance are important for SMEs because of the lack of separation of ownership and management. Kuratko et al. (1997, p.31) also noted that the relative importance of intrinsic goals emphasizes the fact that

---

<sup>1</sup> In the same way that accepted scales have been developed and are used in other disciplines, particularly psychology. For example: Rotter's (1966) 'Locus of Control' scale as used by Waddell (1983); the 'Minnesota Satisfaction Questionnaire' (Weiss, Dawis, England and Lofquist 1967) as used by Scarpello and Campbell (1983); and the 'Achievement Motivation Scale' (Steers and Braunstein 1976) as used in the small firm arena by Stewart, Watson, Carland and Carland (1999).



‘entrepreneurial success should not be solely measured in financial terms’.

Table 1 lists the factors, and the items that loaded onto those factors, for the two studies. Both sets of items were drawn from the literature: the Kuratko et al. (1997) set being derived from prior research on the entrepreneurial process; and the Woodliff et al. (1999) results being a parsimonious statistical reduction from an initial set of 74 owner-operator objectives based on the SME literature.

While most of the factors in the two studies were relatively similar, Kuratko et al. (1997) did not identify two of the factors identified in the Woodliff et al. (1999) solution (staff and customer relations, and time flexibility). The existence of these two additional factors may have been the result of differences in research design, as the Woodliff et al. (1999) results were based on retail firms, while the Kuratko et al. (1997) sample was not restricted to a particular sector. Nevertheless, the similarity in results from Kuratko et al. (1997) and Woodliff et al. (1999) suggests that either might be useful in examining owner-operator objectives. However, their divergence implies that further work is needed to identify a reliable scale for use in future SME research.

**Table 1: SME Owner-Operator Objectives**

WOODLIFF ET AL. (1999)	KURATKO ET AL. (1997)
<i>Financial Return</i> To earn as much profit as possible now To have as much disposable income as possible To achieve financial security now To build family wealth for the future	<i>Extrinsic Rewards</i> Acquire personal wealth To increase my personal income To increase my income opportunities
<i>Personal Satisfaction</i> To enjoy managing the business professionally To see things happen according to plan	<i>Independence/Autonomy</i> Maintain my personal freedom Personal security Self-employment To be my own boss To control my own employment destiny <i>Intrinsic Rewards</i> Gain public recognition Meet the challenge Enjoy the excitement Personal growth To prove I can do it
<i>Family</i> Personal development opportunities for family Employment opportunities for owner's family	<i>Family Security</i> Secure future for family members To build a business to pass on
<i>Time Flexibility</i> Flexibility of time for non-business activities Free time for non-business activity	
<i>Staff and Customer Relations</i> Loyalty from staff Security of employment for staff To provide high quality products / services	



In an attempt to confirm the conceptual validity of each of the factors identified by Kuratko et al. (1997) and Woodliff et al. (1999) we conducted a series of four focus groups.<sup>2</sup> The groups were drawn from businesses in the Perth metropolitan region of Western Australia and were deliberately chosen from a wide range of business and entrepreneurial types to maximize our chances of capturing all possible factors/dimensions associated with SME owner-operator objectives.

Results from the focus groups supported both the Kuratko et al. (1997) and Woodliff et al. (1999) factor sets. For example, in answering the question ‘*Why do people/did you go into business?*’ almost all of the factor dimensions identified in Table 1 were validated through comments made by the focus group participants.<sup>3</sup> When asked the questions ‘*Why do you stay in business?*’ and ‘*What specific goals do people/you have for a business?*’ the participants gave replies in complete accordance with all of the previously identified factors. The focus groups, therefore, indicated that the dimensions of owner-operator objectives postulated by the Kuratko et al. (1997) and Woodliff et al. (1999) studies might well be robust, credible and valid.

Following the focus group results, we developing our SOS by starting with the factor dimensions and descriptions identified by Kuratko et al. (1997) and Woodliff et al. (1999). This gave us a total of 28 potential scale items: seven for extrinsic rewards; 12 for personal satisfaction/independence/autonomy/intrinsic rewards; four for family/family security; two for time flexibility; and three for staff and customer relations. However, in the interests of parsimony, we decided to limit the number of items used to thirteen.<sup>4</sup> The items we chose are presented in Appendix 1 as part of the SOS instrument.<sup>5</sup> Our primary consideration in choosing these thirteen items was their face validity, that is, do the items ‘look like they measure what they are supposed to measure’ (Friedenberg 1995, p.251).

### **Evaluation of the SOS**

Subjects complete the SOS by rating items on a seven-point Likert-type scale, with higher scores indicating that the stated business objective is more important. Most participants complete the instrument in less than five minutes.

After pilot testing, the scale was then administered as part of a comprehensive survey of the attitudes and expectations of SME owner-operators in the greater metropolitan region of Perth, Western Australia. A total of 490 SME proprietors responded to our mail questionnaire (an overall response rate of 19.4 per cent).

The survey questionnaire comprised 16 pages and contained 247 items in seven sections. For this paper, our primary focus was on the section titled Your Goals and Expectations. This consisted of the SOS plus statements taken from Cummins’ (1997) Comprehensive Quality of Life Scale – Adult. The questionnaire also contained three other scales of interest: Costa and McRae’s (1992) short-form five-factor personality

---

<sup>2</sup> Two of the groups were conducted in a traditional manner, with the other two groups conducted using Group Support System technology (Sweeney, Soutar, Hausknecht, Dallin and Johnson 1997). All focus groups were conducted in November 1999.

<sup>3</sup> The exception was the staff and customer relations factor found in the Woodliff et al. (1999) study; but we suggest this did not appear because staff and customer relations may only become critical after business start-up.

<sup>4</sup> Eight of the items were modifications of Woodliff et al.’s (1999) items; in particular those relating to: financial security; family; time flexibility; and staff and customer relations. The remaining five items were adapted from the Kuratko et al. (1997) set and included items relating to: extrinsic rewards; independence/autonomy; and intrinsic rewards.

<sup>5</sup> Note that for the ease of the reader, Appendix 1 has the 13 items grouped under the headings which correspond to our preferred factor solution as discussed later.



---

inventory measure (NEO-PI); Kirton's (1981) adaptation of Budner's (1962) Tolerance of Ambiguity; and the short-form of Weiss et al.'s (1967) Minnesota Satisfaction Questionnaire.

#### Factor Analysis

The 13 SOS items were subjected to principal components factor analysis. We found that four factors had eigenvalues greater than one; this was one less factor than that suggested by the previous Australian study on SME owner-operator objectives (Woodliff et al. 1999). While this generated some initial concern, the factors increased to five when we restricted our analysis to retail firms only (as per Woodliff et al. 1999). Examination of these five factors revealed that they were all equivalent to those noted by Woodliff et al. (1999), thereby increasing our confidence that the results could be representative of the Australian SME population.

Everett (1983) shows how the coefficient of comparability can be used to provide a direct and unambiguous method for determining the number of reliable factors that should be retained, and for assessing the appropriate rotation that should be used. The method is particularly appropriate for taxonomic factor analysis, where the factor scores are to be used as summary or classificatory measures (as is the case in this study).

Our data produced a four-factor, three-factor, and two-factor model. The four-factor solution gave coefficients ranging from 0.542 to 0.976, the three-factor solution had coefficients ranging from 0.926 to 0.993, and the two-factor solution generated coefficients of 0.936 and 0.979. Following Everett (1983), we rejected the four-factor solution given its low factor comparability, and conducted the remainder of our analysis on the highly stable three-factor solution. Table 2 shows the rotated factor pattern loadings, with the solution accounting for 58 per cent of the variance in the original correlation matrix.<sup>6</sup>

Examination of the results confirmed the financial return/extrinsic rewards factor from the Kuratko et al. (1997) and Woodliff et al. (1999) studies and the time flexibility factor in Woodliff et al. (1999). However, the items intended to separately measure personal satisfaction/intrinsic rewards, family, and staff and customer relations were combined into one factor. As this group of variables seemed congruent with what Parasuraman et al. (1996) described as 'softer' measures of success, we named this broad collection 'subjective rewards'. Interestingly, we found that the item measuring independence/autonomy ('Being your own boss') did not load highly on any factor.<sup>7</sup> One possible explanation for this result may be that although the wish to be one's own boss is a critical determinant in the decision to become a SME owner it may not have the same influence on those already in business. For example, it may be that 'being your own boss' becomes (at least partially) an achieved target (or given fact) when the already self-employed set their goals and expectations from business ownership.

---

<sup>6</sup> The overall Kaiser-Meyer-Olkin (Kaiser 1974) measure of sampling adequacy was a 'reasonable' 0.772 (Tabachnick and Fidell 1996, p.642)

<sup>7</sup> Loadings were 0.118 for subjective rewards, 0.261 for extrinsic rewards, and 0.328 for time flexibility.



**Table 2: Varimax Rotated Component Matrix<sup>a</sup>**

Item	FACTOR LOADINGS		
	Extrinsic rewards	Time flexibility	Subjective rewards
Building your personal wealth	0.847		
Having flexibility of time for non-business activities		0.884	
Increasing your personal income	0.871		
Having loyal staff			0.672
Providing development opportunities for your family			0.602
Giving employment opportunities to your family			0.551
Providing high quality products and/or services			0.622
Achieving financial security	0.840		
Having free time for non-business activities		0.903	
Being your own boss			
Providing security of employment for your staff			0.807
Proving you can do it (i.e., you can achieve)			0.508
Increasing your income opportunities	0.824		

a Loadings below 0.500 have been omitted.

### Reliability

Internal consistency of the high-loading items in each of the three factors was checked using the commonly accepted Cronbach's (1951) coefficient Alpha ( $\alpha$ ) and the less well-known split-half Spearman-Brown approach (Hunter and Schmidt 1990). Nunnally (1978, p.231) suggested that 'one saves time and energy by working with instruments that have only modest reliability, for which purposes reliabilities of 0.70 will suffice'; therefore, we considered an Alpha value of 0.700 to be our minimum requirement.

The results presented in Table 3 show that our reliability statistics ranged from a low of 0.700 (split-half, subjective rewards) to a high of 0.888 (Alpha and split-half, extrinsic rewards) for the three factors. We concluded, therefore, that the SOS demonstrated a satisfactory level of internal consistency. The p-values for Hotelling's T-squared (Eaton and Efron 1970) also confirmed that the items in each factor were scored differently to each other, indicating that while they were highly and reliably correlated they were not measuring the same specific concept. Tukey's estimate of power needed for additivity (Kirk 1995) showed that these three factors should not be summed, and hence factor scores using the factor coefficient matrix should be used in any analysis.<sup>8</sup>

<sup>8</sup> Scale items should only be added when the Tukey estimate is approximately 1.



**Table 3: Reliability Statistics**

	FACTOR		
	Extrinsic rewards	Time flexibility	Subjective rewards
Cronbach's (1951) Alpha	0.888	0.825	0.718
Split-half Spearman Brown (Hunter and Schmidt 1990)	0.888	0.825	0.700
Hotelling's T-squared p-value (Eaton and Efron 1970)	0.000	0.001	0.000
Tukey's estimate of power needed for additivity (Kirk 1995)	3.546	0.636	4.403

### Construct Validity

While reliability testing assesses the internal consistency of items measuring the same construct, it does not establish whether a scale actually measures what it intends to measure. To determine the construct validity of a new scale, it is recommended that the scores generated from the new scale be correlated with other scores from scales measuring the same or similar constructs. For example, where the new scale is an alternative to an existing measure, *congruent* validity would be demonstrated by a high positive correlation between the scores on the new scale and the scores on the existing scale (Friedenberg 1995). Where a new scale measures a different, but overlapping, construct to an existing scale, *convergent* validity would be demonstrated by a lower but still significant positive correlation between the scores on the new and existing scales (Friedenberg 1995).

Conversely, further checks on the validity of a new measurement instrument can be conducted through a comparison with dissimilar scales (Friedenberg 1995). Known as *discriminant* or divergent validity, the expected correlation between unrelated constructs should be close to zero. Alternatively, scales that measure opposite constructs would be expected to generate significant negative correlations.

Table 4 displays the pairwise correlations between the SOS factors and several other instruments. An adaptation of the short-form Minnesota Satisfaction Questionnaire (MSQ - Weiss et al. 1967) was used to assess our respondents job satisfaction;<sup>9</sup> part of Cummins' (1997) Comprehensive Quality of Life Scale was used to gauge the subjective importance our respondents placed on non-work objectives; Costa and McRae's (1992) NEO-PI was used to measure our respondents personality inventory; and Kirton's (1981) scale was used to estimate our respondents tolerance to ambiguity.

As the SOS is not intended as an alternative to an existing scale, we were unable to test for congruent validity. Therefore, the remainder of this section reports on our tests of convergent and discriminant validity.

*Convergent validity:* The short-form MSQ was designed to measure an employee's satisfaction with their job and has been used extensively since its creation (Cook, Hepworth, Wall and Warr 1981; Hirschfeld 2000). We anticipated that the MSQ would be highly positively correlated with the subjective rewards factor in our SOS, given that they measured the achievement of, and importance of, job satisfaction, respectively. As expected, Panel A of Table 4 shows that the correlation between the MSQ and the subjective rewards factor of the SOS was statistically significant ( $r = 0.279$ ), and represented the highest correlation of the MSQ with

<sup>9</sup> Our adaptation removed any items that referred to working with superiors given that our respondents were the principals of their firms.



any of the SOS factors.<sup>10</sup>

**Table 4: Correlation Matrix of Expected Convergent and Discriminant Scales**

	PEARSON'S r		
	Extrinsic rewards	Time flexibility	Subjective rewards
<b>Panel A: Convergent Scales</b>			
<i>Modified Weiss et al.'s (1967) MSQ</i>	0.075	0.205 <sup>a</sup>	0.279 <sup>a</sup>
<i>Cummins' (1997) subjective importance</i>			
The things you own (material well-being)	0.582 <sup>a</sup>	0.129	0.126
How safe you feel (safety)	0.348 <sup>a</sup>	0.076	0.322 <sup>a</sup>
Close relationships with family and friends (intimacy)	0.049	0.276 <sup>a</sup>	0.450 <sup>a</sup>
What you achieve in life (productivity)	0.370 <sup>a</sup>	0.200 <sup>a</sup>	0.339 <sup>a</sup>
Doing things with people outside your home (community)	0.124	0.270 <sup>a</sup>	0.382 <sup>a</sup>
Your health (health)	0.152 <sup>a</sup>	0.237 <sup>a</sup>	0.311 <sup>a</sup>
Your own happiness (emotion)	0.193 <sup>a</sup>	0.286 <sup>a</sup>	0.223 <sup>a</sup>
<b>Panel B: Discriminant Scales</b>			
<i>Costa and McRae's (1992) NEO-PI</i>			
Negative Emotion	0.048	-0.130	-0.040
Extraversion	0.125	0.129	0.164 <sup>a</sup>
Openness to experience	-0.170 <sup>a</sup>	0.203 <sup>a</sup>	-0.080
Agreeableness	-0.182 <sup>a</sup>	0.166 <sup>a</sup>	0.100
Conscientiousness	0.085	0.085	0.121
<i>Kirton's (1981) Tolerance of Ambiguity</i>	-0.149 <sup>a</sup>	0.040	-0.198 <sup>a</sup>

<sup>a</sup> Significantly correlated at the 5% level using Bonferroni (1936) corrected  $\alpha$  for 14 tests.

A number of SOS factors were also expected to be highly positively correlated with related constructs on Cummins' (1997) Comprehensive Quality of Life Scale. For example, it was anticipated that our extrinsic rewards factor would be highly correlated with Cummins' (1997) measure of material well-being (the things you own); that our time flexibility factor would be highly correlated with community (doing things with people outside your home); and that our subjective rewards factor would be highly correlated with intimacy (close relationships with your family and friends). Consistent with these expectations, the highest positive correlation in Table 4 was between the subjective importance of material well-being and the extrinsic rewards factor of the SOS ( $r = 0.582$ ). The next highest positive correlation on the Table was between the SOS's

<sup>10</sup> The time flexibility factor also had a significantly positive correlation with the MSQ, while the correlation between the extrinsic rewards factor and the MSQ was not statistically significant.



---

subjective rewards and intimacy ( $r = 0.450$ ). The correlation between our time flexibility factor and community was also significant ( $r = 0.270$ ).<sup>11</sup>

*Discriminant validity:* Costa and McCrae's (1992) NEO-PI is a 60-item self-report instrument designed to measure Norman's (1963) 'Big 5' factors of negative emotion, extraversion, openness to experience, agreeableness and conscientiousness. We anticipated that our SOS factors would be relatively uncorrelated with each of these 'Big 5' dimensions given there was no 'a priori' theory to suggest any systematic relationships between personality inventory and the SOS dimensions. The results in Panel B of Table 4 support this belief as the NEO-PI and SOS are generally unrelated. Of the 15 correlations tested, ten were not statistically significantly different to zero. Of the remaining five correlations two were negative (extrinsic rewards with both openness to experience and agreeableness), and all five had a common variance of less than 5 per cent. We also expected that our subjective rewards factor would be negatively correlated with Kirton's (1981) tolerance of ambiguity because subjective measurement is more uncertain.<sup>12</sup> Table 4 confirms this expectation.

Goodhue (1998, p.124) describes nomological validity as 'the extent to which predictions from an accepted network of theory are born out in new measures', such that where new scales behave in ways consistent with this body of theory, confidence in these scales will increase. In summary, our findings indicate that the SOS fits within the broad context of a nomological network in which the importance of working life can be placed (Nunnally and Bernstein 1994). This has been illustrated through our tests for construct validity, as evidenced by a comparison of our SOS with similar (convergent) and dissimilar (discriminant) scales.

### **Applying the SOS: The Impact of Gender**

For constructs and domains in early stages of development, however, the likelihood of well-developed theories and measurement instruments is lessened, making it more difficult to fully test nomological validity. Under these circumstances it is often considered appropriate to add tests of predictive validity in addition to checking for nomological validity (Goodhue 1998). Therefore, we continue our assessment of the SOS by asking the following question:

*Does the SOS vary in expected ways with changes in the characteristics of individual SME owner-operators?*

To test the predictive validity of our SOS, we chose to examine the relationship between the gender of owner-operators and our SOS factors. This continues a long tradition of studies on the impact of gender on the performance of SMEs (for example, see Fernald and Solomon 1987; Sexton and Bowman-Upton 1990; Brush and Hisrich 1991; Chell and Haworth 1992; Fagenson 1993; Carter, Williams and Reynolds 1997; Boden and Nucci 2000; Du Rietz and Henrekson 2000; Watson 2002).

---

<sup>11</sup> A number of other correlations between Cummins' (1997) domains and the SOS factors also revealed significant associations with high common variances (5 per cent or greater). As each of these correlations appears logical, we consider them consistent with, and offering support for, the convergent validity of our SOS factors.

<sup>12</sup> We expected a negative relationship as higher values on Kirton's (1981) scale indicated lower tolerance to ambiguity.



---

What do we mean by gender? SME studies have generally treated gender as equivalent to biological sex, thereby subordinating it to a single bipolar variable.<sup>13</sup> However, we have taken a different approach, as our treatment of gender consists of two separate dimensions: masculinity and femininity (Constantinople 1973). We measured these dimensions with the 30-item short-form version of the Bem Sex-Role Inventory (BSRI, Bem 1994), described by its creator as:

an instrument that treats masculinity and femininity as two independent dimensions rather than as opposite ends of a single dimension; in doing so, it allows an individual to say that he or she is both masculine and feminine. (Bem 1977, p.83)

The two dimensions measure the amount by which a person self-reports qualities generally regarded as advantageous either for males or for females. Masculine traits and behaviors including task focus and assertiveness ('getting the job done', O'Neill and Blake-Beard 2002, p.55) and feminine qualities include a relationship focus and expressiveness ('concern for the welfare of others', O'Neill and Blake-Beard 2002, p.55).

Cromie (1987, p.251) found that female business owners were less concerned with making money than their male counterparts, and saw 'entrepreneurship as a means of meeting simultaneously their own career needs and the needs of their children'. Buttner and Moore (1997) revealed that female small business owners preferred to measure success in non-economic terms rather than by profits and growth. Both these results indicate that for the SOS to be valid, the extrinsic rewards factor should be more highly positively correlated with the masculinity dimension than with the femininity dimension. Given Cromie's (1987) observation, we would also expect the time flexibility factor to be significantly positively correlated with femininity (but less so for masculinity). For the subjective rewards factor, we would expect a significant positive correlation with both masculinity and femininity, as this SOS factor captured intrinsic elements of task achievement ('Proving you can do it'; 'Providing high quality products and/or services') and relationships (the staff and family items).

Table 5 shows the pairwise correlations between the SOS factors and the BSRI dimensions of masculinity and femininity, and provides support for our expectations. We found that masculinity was significantly positively correlated with extrinsic rewards ( $r = 0.224$ ) while femininity was not ( $r = 0.021$ ). Similarly, femininity was significantly positively correlated with time flexibility ( $r = 0.224$ ) but masculinity was not ( $r = 0.092$ ). Femininity proved to have the more significant correlation with the subjective rewards factor ( $r = 0.304$ ) but the correlation between masculinity and subjective rewards was still statistically significant. We suggest that these results, together with the tests for convergent and discriminant validity reported earlier, are persuasive evidence of both the predictive and nomological validity of the SOS.

---

<sup>13</sup> Our review of the literature found only one exception to this, Waddell's (1983) use of Bem's (1977) masculinity scale.



**Table 5: Correlation Matrix of the BSRI and the SOS**

	PEARSON'S r		
	Extrinsic rewards	Time flexibility	Subjective rewards
<i>Bem's (1994) 30-item Sex-Roles Inventory</i>			
Masculinity	0.224 <sup>a</sup>	0.092	0.162 <sup>a</sup>
Femininity	0.021	0.224 <sup>a</sup>	0.304 <sup>a</sup>

a Significantly correlated at the 5% level using Bonferroni (1936) corrected for 2 tests.

Readers might be interested to note that the significant associations between gender and the SOS factors were not invariant to alternative measures of gender, as can be seen in Table 6. The independent sample t-tests based on biological sex revealed no statistically significant differences in the raw factor scores,<sup>14</sup> confirming Bem's (1974) view that gender is not the same as biological sex. We conducted an independent samples t-test for masculinity and femininity, grouped by biological sex, and found that there was almost no difference between male and female SME owner-operators for masculinity, although there was a difference for femininity. This result is consistent with the findings of Twenge (1997) and Auster and Ohm (2000) that womens' penchant for, and self-rating of, masculine traits has risen since the mid-1970s. Certainly, evidence suggests that female managers may consider the display of masculine traits necessary for their career progression (Kolb 1999; Tharenou 2001; Kirchmeyer 2002). We suspect this may also be the view of the female self-employed.<sup>15</sup>

**Table 6: Independent Sample Tests of Means**

	FACTOR SCORES		
	Extrinsic rewards	Time flexibility	Subjective rewards
Male (n = 375)	5.072	5.679	7.678
Female (n = 104)	4.967	5.857	7.702
p-value	0.398	0.134	0.858

## Conclusion

This study set out to develop an instrument to measure the relative importance of a number of business objectives for self-employed owner-operators. We found the SOS to be a sufficiently reliable instrument for obtaining this information, with each of the three factors reporting a Cronbach's (1951) Alpha of 0.71 or greater. In addition, preliminary tests of convergent and discriminant validity demonstrated that the SOS was appropriately placed within a nomological network of attitudinal and expectational scales. Evidence was also

<sup>14</sup> A surprising result given that most SME studies take this bipolar perspective.

<sup>15</sup> As evidenced by each quartile of the masculinity score having 25 per cent of the total number of women and 25 per cent of the total number of men.



provided on the predictive validity of the SOS given that the SOS scores behaved in a way that was consistent with existing views of gender roles in business.

However, scale validation should always be seen as a continuous process. In order to further validate the SOS, future studies should examine the scale using samples from differing geographical and cultural settings. Nevertheless, we believe that the SOS is a promising tool for understanding individual differences in the objectives of SME owner-operators.

We also suggest that a better understanding of the goals and expectations of the self-employed, and how these may vary across individuals, is a necessary prerequisite to policy in the SME sector and to practitioners offering advice in this area. We expect that the SOS developed in this study will help to increase our understanding of the motivations of SME owner-operators, and trust that such an understanding will reduce the likelihood of inappropriate policy decisions, and increase the quality of any advice offered. We therefore invite other SME researchers to use our scale to explain differences in the behavior of SME owner-operators and the performances of their firms.



---

## References

- Auster, C. J. and S. C. Ohm (2000), "Masculinity and Femininity in Contemporary American Society: A Re-Evaluation Using the Bem Sex-Role Inventory", *Sex Roles*, 43(7,8), pp499-528.
- Bem, S. L. (1974), "The Measurement of Psychological Androgyny", *Journal of Consulting and Clinical Psychology*, 42, pp155-162.
- Bem, S. L. (1977). "Bem Sex-Role Inventory (BSRI)" in *The 1977 Annual Handbook for Group Facilitators*. Ed. J. W. Pfeiffer and J. E. Jones, University Associates: San Diego, CA, USA. pp83-85.
- Bem, S. L. (1994), *Short-Form Bem Sex-Role Inventory (BSRI)*, Consulting Psychologists Press, Inc.: Palo Alto, California, USA.
- Boden, R. J., Jr. and A. R. Nucci (2000), "On the Survival Prospects of Men's and Women's New Business ventures", *Journal of Business Venturing*, 15(4), pp347-362.
- Bonferroni, C. E. (1936), *Teoria Statistica Delle Classi E Calcolo Delle Probabilita*, Liberia Internazionale Seeber: Florence, Italy.
- Brush, C. G. and R. D. Hisrich (1991), "Antecedent Influences on Women-Owned Businesses", *Journal of Managerial Psychology*, 6(2), pp9-16.
- Budner, S. (1962), "Intolerance of Ambiguity as a Personality Variable", *Journal of Personality*, 30(1), pp29-50.
- Buttner, E. H. and D. P. Moore (1997), "Women's Organizational Exodus to Entrepreneurship: Self-Reported Motivations and Correlates with Success", *Journal of Small Business Management*, 35(1), pp34-46.
- Carter, N. M., M. Williams and P. D. Reynolds (1997), "Discontinuance Among New Firms in Retail: The Influence of Initial Resources, Strategy, and Gender", *Journal of Business Venturing*, 12(2), pp125-145.
- Chell, E. and J. M. Haworth (1992), "The Competitive Performance of SMEs in the UK Clothing Industry", *International Small Business Journal*, 10(3), pp11.
- Constantinople, A. (1973), "Masculinity-Femininity: An Exception to a Famous Dictum", *Psychological Bulletin*, 80, pp389-407.
- Cook, J. D., S. J. Hepworth, T. D. Wall and P. B. Warr (1981), *The Experience of Work: A Compendium and Review of 249 Measures and Their Use*, Academic Press: London, England.
- Costa, P. T. and R. R. McCrae (1992), *Revised NEO Personality Inventory (NEO PI-R)*, Psychological Assessment Resources, Inc.: Odessa, FL, USA.
- Cromie, S. (1987), "Motivations of Aspiring Male and Female Entrepreneurs", *Journal of Occupational Behaviour*, 8(3), pp251-261.
- Cronbach, L. J. (1951), "Coefficient Alpha and the Internal Structure of Tests", *Psychometrika*, 16, pp297-334.
- Cummins, R. A. (1997), *Comprehensive Quality of Life Scale - Adult: Manual*, Deakin University: Geelong, VIC, Australia.
- Du Rietz, A. and M. Henrekson (2000), "Testing the Female Underperformance Hypothesis", *Small Business Hosted by University of Ballarat, Ballarat, Australia*



---

*Economics*, 14(1), pp1-10.

- Eaton, M. L. and B. Efron (1970), "Hotelling's T-Square Test Under Symmetry Conditions", *Journal of the American Statistical Association*, 65(330), pp702-711.
- Everett, J. E. (1983), "Factor Comparability as a Means of Determining the Number of Factors and their Rotation", *Multivariate Behavioural Research*, 18, pp197-218.
- Fagenson, E. A. (1993), "Personal Value Systems of Men and Women Entrepreneurs Versus Managers", *Journal of Business Venturing*, 8(5), pp409-430.
- Fernald, L. W. and G. T. Solomon (1987), "Value Profiles of Male and Female Entrepreneurs", *Journal of Creative Behavior*, 21(3), pp234-247.
- Friedenberg, L. (1995), *Psychological Testing: Design, Analysis, and Use*, Allyn & Bacon: Needham Heights, MA, USA.
- Goodhue, D. I. (1998), "Development and Measurement Validity of a Task-Technology Fit Instrument for User Evaluation of Information Systems", *Decision Sciences*, 29(1), pp105-138.
- Hirschfeld, R. R. (2000), "Does Revising the Intrinsic and Extrinsic Sub-Scales of the Minnesota Satisfaction Short Form Make a Difference?", *Educational and Psychological Measurement*, 60(2), pp255-270.
- Hunter, J. E. and F. L. Schmidt (1990), *Methods of Meta-Analysis*, Sage: Newbury Park, CA, USA.
- Kaiser, H. F. (1974), "An Index of Factorial Simplicity", *Psychometrika*, 39, pp31-36.
- Keats, B. W. and J. S. Bracker (1988), "Toward a Theory of Small Firm Performance: A Conceptual Model", *American Journal of Small Business*, 12(4), pp41-58.
- Kirchmeyer, C. (2002), "Gender Differences in Managerial Careers: Yesterday, Today, and Tomorrow", *Journal of Business Ethics*, 37(1), pp5-24.
- Kirk, R. E. (1995), *Experimental Design: Procedures for the Behavioral Sciences*, Brooks/Cole: Pacific Grove, CA, USA.
- Kirton, M. (1981), "A Re-Analysis of Two Scales of Tolerance of Ambiguity", *Journal of Personality Assessment*, 45(4), pp407-414.
- Kolb, J. A. (1999), "The Effect of Gender Role, Attitude Toward Leadership, and Self-Confidence on Leader Emergence: Implications for Leadership Development", *Human Resource Development Quarterly*, 10(4), pp305-320.
- Kuratko, D. F., J. H. Hornsby and D. W. Naffziger (1997), "An Examination of Owner's Goals in Sustaining Entrepreneurship", *Journal of Small Business Management*, 35(1), pp24-33.
- LeCornu, M. R., R. G. P. McMahon, D. M. Forsaith and A. M. J. Stanger (1996), "The Small Enterprise Financial Objective Function", *Journal of Small Business Management*, 34(3), pp1-14.
- Naffziger, D. W., J. S. Hornsby and D. F. Kuratko (1994), "A Proposed Research Model of Entrepreneurial Motivation", *Entrepreneurship Theory & Practice*, 18(Spring), pp29-42.
- Norman, W. T. (1963), "Toward an Adequate Taxonomy of Personality Attributes: Replicated Factor Structure in Peer Nomination Personality Ratings", *Journal of Abnormal and Social Psychology*, 66(574-



583),

- Nunnally, J. (1978), *Psychometric Theory*, Mc-Graw Hill: New York, NY, USA.
- Nunnally, J. C. and I. H. Bernstein (1994), *Psychometric Theory*, McGraw-Hill: New York, NY, USA.
- O'Neill, R. M. and S. D. Blake-Beard (2002), "Gender Barriers to the Female Mentor - Male Protege Relationship", *Journal of Business Ethics*, 37(1), pp51-63.
- Parasuraman, S., Y. S. Purohit and V. M. Godshalk (1996), "Work and Family Variables, Entrepreneurial Career Success and Psychological Well-Being", *Journal of Vocational Behavior*, 48(3), pp275-300.
- Poiesz, T. B. C. and J. von Grumbkow (1988). "Economic Well-Being, Job Satisfaction, Income Evaluation and Consumer Satisfaction: An Integrative Attempt" in *Handbook of economic psychology*. Ed. G. M. v. V. K.-E. W. W. Fred van Raaij, Kluwer Academic Publishers, Dordrecht, Netherlands: pp570-593.
- Rosa, P., S. Carter and D. Hamilton (1996), "Gender as a Determinant of Small Business Performance: Insights from a British Study", *Small Business Economics*, 8, pp463-478.
- Rotter, J. B. (1966), "Generalized Expectancies for Internal Versus External Control of Reinforcement", *Psychological Monographs*, 609(1), ppall.
- Scarpello, V. and J. P. Campbell (1983), "Job Satisfaction: Are All the Parts There?", *Personnel Psychology*, 36(3), pp577-600.
- Sexton, D. L. and N. Bowman-Upton (1990), "Female and Male Entrepreneurs: Psychological Characteristics and Their Role in Gender-Related Discrimination", *Journal of Business Venturing*, 5(1), pp29-36.
- Stanworth, M. K. J. and J. Curran (1976), "Growth and the Small Firm - An Alternative View", *Journal of Management Studies*, 13(2), pp95-110.
- Steers, R. M. and D. N. Braunstein (1976), "A Behaviorally-Based Measure of Manifest Needs in Work Settings", *Journal of Vocational Behavior*, 9(251-266),
- Stewart, W. H., Jr., W. E. Watson, J. C. Carland and J. W. Carland (1999), "A Proclivity for Entrepreneurship: A Comparison of Entrepreneurs, Small Business Owners, and Corporate Managers", *Journal of Business Venturing*, 14(2), pp189-214.
- Sweeney, J. C., G. N. Soutar, D. R. Hausknecht, R. F. Dallin and L. W. Johnson (1997), "Collecting Information From Groups: A Comparison of Two Methods", *Journal of the Market Research Society*, 39(2), pp397-411.
- Tabachnick, B. G. and L. S. Fidell (1996), *Using Multivariate Statistics*, HarperCollins College Publishers: New York, NY, USA.
- Tharenou, P. (2001), "Going Up? Do Traits and Informal Social Processes Predict Advancing in Management?", *Academy of Management Journal*, 44(5), pp1005-1017.
- Twenge, J. M. (1997), "Changes in Masculine and Feminine Traits Over Time: A Meta-Analysis", *Sex Roles*, 36(5,6), pp305-325.
- Waddell, F. T. (1983), "Factors Affecting Choice, Satisfaction, and Success in the Female Self-Employed", *Journal of Vocational Behavior*, 23(3), pp294-304.



- Wärneryd, K. E. (1988). "Introduction to Part III (Business Behavior)" in *Handbook of economic psychology*. Ed. G. M. v. V. K.-E. W. W. Fred van Raaij, Kluwer Academic Publishers, Dordrecht, Netherlands: pp361-367.
- Watson, J. (2001), "Examining the Impact on Performance of Demographic Differences Between Male and Female Controlled SMEs", *Small Enterprise Research*, 9(2), pp55-70.
- Watson, J. (2002), "Comparing the Performance of Male- and Female-Controlled Businesses: Relating Outputs to Inputs", *Entrepreneurship Theory & Practice*, 26(3), pp91-100.
- Weiss, D. J., R. V. Dawis, G. W. England and L. H. Lofquist (1967), *Manual for the Minnesota Satisfaction Questionnaire*, University of Minnesota: St Paul, MN, USA.
- Woodliff, D., J. Watson, R. R. Newby and C. McDowell (1999), "Improving Survey Instrument Validity and Reliability: The Case of SME Owner Objectives", *Small Enterprise Research*, 7(2), pp55-65.



### Appendix 1: The SME Objectives Scale

Listed below are a series of potential objectives. Use the scale provided to indicate how important these objectives are to you.

1	2	3	4	5	6	7
Not important	Of little importance	Slightly important	Neutral	Somewhat important	Quite important	Very important

***Extrinsic rewards***

Increasing your personal income<sup>K</sup>

\_\_\_\_\_

Building your personal wealth<sup>K</sup>

\_\_\_\_\_

Achieving financial security<sup>W</sup>

\_\_\_\_\_

Increasing your income opportunities<sup>K</sup>

\_\_\_\_\_

***Time flexibility***

Having free time for non-business activities<sup>W</sup>

\_\_\_\_\_

Having flexibility of time for non-business activities<sup>W</sup>

\_\_\_\_\_

***Subjective rewards***

Providing security of employment for your staff<sup>W</sup>

\_\_\_\_\_

Having loyal staff<sup>W</sup>

\_\_\_\_\_

Providing high quality products and/or services<sup>W</sup>

\_\_\_\_\_

Providing development opportunities for your family<sup>W</sup>

\_\_\_\_\_

Giving employment opportunities to your family<sup>W</sup>

\_\_\_\_\_

Proving you can do it (i.e., you can achieve)<sup>K</sup>

\_\_\_\_\_

Being your own boss<sup>K b</sup>

\_\_\_\_\_



- K Selected from items in Kuratko et al. (1997).
- W Selected from items in Woodliff et al. (1999).
- a Please note that the order of the SOS items should be randomised before inclusion in any survey questionnaire.
- b Users of the SOS might choose to omit this item given its failure to load above 0.500 of any of the SOS's three factors.