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Evaluating the Women Entrepreneurship Training Programme: A South African study

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ABSTRACT

The paper addresses the lack of training and education as it is seen as South African entrepreneurs most severe barrier, especially for previously disadvantaged individuals such as women. Therefore, the purpose of this paper is to introduce and evaluate the Women Entrepreneurship Programme (WEP) as a training intervention. The WEP will be evaluated by measuring the skills transfer that took place and whether the participants' business performances increased after the intervention.

The sample consists of 180 women entrepreneurs where 116 respondents form the experimental group and 64 respondents, the control group. Factor analysis is executed to confirm the validity and reliability of the measuring instruments used. The Chi-square test, *t*-test for independent samples, *t*-test for paired samples, Mann-Whitney test, and Wilcoxon matched-pairs test are used to present the statistically significant differences between the experimental and control groups.

The findings highlighted that the WEP delegates gained new skills and knowledge relevant to running a business; increased their confidence in their entrepreneurial abilities, and improved their number of employees, turnover, productivity and profit. Furthermore it should be emphasised that it was statistically proven that the WEP, as a training intervention, is effective in training women entrepreneurs in South Africa.

INTRODUCTION

Everywhere in the world, entrepreneurship is seen as one of the most important solutions to unemployment, poverty and low economic growth. The creation of new ventures and growth of existing businesses are vital contributing factors to any economy. One way of enhancing the entrepreneurial activity in a country is by providing entrepreneurial training and education to potential and existing entrepreneurs. Orford, Wood, Fischer, Herrington and Segal (2003:17) interviewed several South African entrepreneurs to obtain information on the main obstacles they face. The results of their study indicated that the lack of education and training is South African entrepreneurs' most frequently mentioned weakness. Therefore it is imperative to focus on the training of entrepreneurs and in particular on the development of previously disadvantaged individuals, specifically women entrepreneurs (Van der Merwe, 2002: 48). Carter (2000: 331) agrees and suggests that the only way to encourage larger numbers of women into self-employment is to recognise that there is a clear need to widen access to business start-up and growth training and advice. Little emphasis is currently placed on the provision of after-care training and advisory service for the ongoing firms. Arguably, as many women lack the management experience and access to networks, they have a greater need for ongoing support.

Although education is not mandatory for new venture creation, it does provide one with the skills, contacts and opportunities vital for most successful businesses. Henry, Hill and Leitch (2003: 12) are of the opinion that entrepreneurship training can complement the early stage awareness-raising function of entrepreneurship education, as it provides the more practical skills that entrepreneurs require when they are ready to set up their business. Ladzani and Van Vuuren (2002: 156) agree to a certain extent, stating that organisations wishing to develop entrepreneurship by education presuppose that the lack of training of entrepreneurs is the main reason for venture failure. Furthermore, Pretorius, Nieman and Van Vuuren (2005: 424) add that the transfer of the requisite knowledge and skills is the easiest part of training and is incorporated in most training programmes. Changing the behaviour to engage in the start-up process is what really matters and is what is lacking as a pronounced outcome of most programmes.

From the above it is evident that while research in the area of entrepreneurship education and training is growing, one aspect into which little research has been conducted is that of evaluating the effectiveness of training interventions. This is surprising, given the fact that the development and running of courses and programmes is potentially expensive in terms of time and money, for both participants and sponsors. Indeed, many training initiatives do not actually appear to address the real needs of entrepreneurs. Therefore this paper addresses the training needs of women entrepreneurs by introducing the Women Entrepreneurship Programme (WEP) and indicates how this training intervention is evaluated.

THE WOMEN ENTREPRENEURSHIP PROGRAMME

In 2003 the Chair in Entrepreneurship at the University of Pretoria conducted a study on 174 women entrepreneurs in South Africa for a major bank. This was done to address some of the most severe barriers that women entrepreneurs face. This study consisted of a literature review, qualitative research in the form of focus groups and quantitative research in the form of a structured research questionnaire. The study focused on perceptions that women entrepreneurs had about financial institutions and the lack of access to financial assistance. An important research finding was that 68 % of the women entrepreneurs stated that they would like to receive some form of entrepreneurial training and education from commercial banks (Van der Merwe & Nieman, 2003: 35). Further results highlighted that women require training and advice on specific areas such as: compiling a business plan; market research; identifying business and market opportunities; marketing and advertising; entrepreneurial skills training; financial and cash-flow planning; empowerment and enrichment opportunities for women; networking opportunities; relationship-building programme, including mentoring, counselling and advice on managing a business; and risk management and taxation issues.

Commercial banks, however do not believe that it is their responsibility to train and educate entrepreneurs in business, management and entrepreneurial skills. Therefore the Women Entrepreneurship Programme (WEP) was developed to cater for the above needs. The development of the WEP was based on the training needs of women entrepreneurs (2003 study) as well as the work done by O'Neill and Viljoen (2001) and Stanger (2004); the phases of a business life cycle; and several training models and other entrepreneurship programmes.

EVALUATING THE EFFECTIVENESS OF A TRAINING INTERVENTION

Many researchers, including Curran and Stanworth (1989), Gibb (1987), Block and Stumpf (1992), Cox (1996) and Young (1997), as quoted by Henry *et al.* (2003: 102), have identified the need for evaluating entrepreneurship education and training programmes. Hill and O'Connell (1998: 3) have noted that only a few studies have investigated the effects of entrepreneurship education. Falkäng and Alberti (2000: 101) agree, suggesting that there is a need for much more research on methodologies for measuring entrepreneurship education effectiveness. McMullan, Chrisman and Vesper (2001:39) have argued that it is necessary to assess the effectiveness of entrepreneurship courses on a number of grounds:

- There is an expectation that the net benefits of entrepreneurship programmes should outweigh their costs and risks;
- Training programmes and courses can be expensive in terms of money from sponsors and time for participants;
- In addition to the more obvious costs highlighted by these authors there, are hidden costs which should also be taken into consideration when assessing a programme's effectiveness. For example, extra costs might be borne by guest speakers, mentors and unpaid consultants associated with programme delivery; and
- Participants may take additional risks if they decide to implement advice from entrepreneurship programmes. Thus, they suggest that central to such evaluations is an assessment of the cost-effectiveness of a particular programme as well as its opportunity costs.

A further opinion is expressed by Friedrich, Glaub, Gramberg and Frese (2003: 3) who state that programme objectives should be measured against programme outcomes. These authors summarise several often-quoted stages of success measurements of small business training:

- Knowledge and skills required;
- Delivery of training;
- Learning occurring in recipient;
- Behaviour change as a result of learning;
- Behaviour leading to a change in business performance; and
- Change in business performance measured.

To evaluate the effectiveness of a training programme, Kirkpatrick (1967: 98) suggests measurements on four different levels. In this paper, assessing training effectiveness of the WEP is done in line with these suggestions:

- Reaction measures are used to find out trainees' satisfaction with the training programme. This evaluation is done at the completion of the training programme and consists of a number of questions about the course that participants rate according to their level of satisfaction.
- Learning measures and behaviour measures assesses the effect of the training on the entrepreneurial factors. Learning measures are also used to assess the gain in training specific skills, increasing knowledge and changing attitudes.
- Behaviour measures are conducted to find out whether the participants were able to apply these skills to job situations.
- Post-training success measures are used to measure training outcomes in terms of economic factors such as profits, costs, productivity and quality.

According to May, Moore and Zammit (1990: 172), this type of evaluation, although potentially useful, has not been conducted frequently. The apparent problem with results evaluation is the large number of variables that the researcher must identify and isolate in order to establish that a given result was indeed attributable to the training programme, as opposed to other corporate activities. Donkin (2004: 18) mentions that attempting to calculate return on investment is a step beyond the Kirkpatrick model and usually involves some hard measuring. He suggests that the first step is to work out the desired results, such as increased output, more sales or reduced staff turnover or increased turnover. The next step is to quantify the costs associated with these issues.

Therefore, to measure the effectiveness of the WEP even further, this paper also made use of the key performance measures that were adopted from a study conducted by Kalleberg and Leicht (1991: 148) on 400 entrepreneurs; these are:

- Primary performance measures (number of employees, growth in employees, number of customers, sales/turnover and value of capital assets);
- Proxy performance measures (geographical range of markets – national versus international markets, formal business and VAT registration);
- Subjective measures (including the ability of the business to meet business and domestic needs – confidence in running a business); and
- Entrepreneurial performance measures (the desire to start a business or the desire for growth and the ownership of multiple businesses).

The reason why the measurement levels of Kirkpatrick (1967) and Kalleberg and Leicht (1991) are used is due to a literature study revealed that other authors in studies of effectiveness most frequently used these levels successfully. Some of these authors include, Carter (2000: 330), Friedrich *et al.* (2003: 4) and Henry *et al.* (2003: 98).

METHODOLOGY

The sample consists of 180 women entrepreneurs. The sample includes respondents from different provinces and every ethnic group in South Africa. This

was done by running the WEP with six different groups (± 20 trainees per group) in the different provinces from January 2004 to October 2005. One part of the total group consists of an experimental group (116 respondents), while the other part is the control group (64 respondents). After six months the results of the experimental group would be compared with those of the control group. The control group are as far as possible similar to the experimental group in terms of age, experience, skills level and business owners, to name but a few factors. The factors that were taken into consideration when the sample was selected are known as the sampling frame and included the following:

- Determinant 1 – Already established, start-up or potential women entrepreneurs; In the GEM report, Orford *et al.* (2003: 9) distinguish these entrepreneurial firms by age. Potential entrepreneurs are those who are making a leap towards entrepreneurship by gathering information and obtaining resources to start a business in the near future. Start-up entrepreneurs are firms that have not yet paid wages and salaries for more than three months. Firms older than 42 months (3.5 years) are regarded as established entrepreneurs.
- Determinant 2 – Women entrepreneurs with high-growth or potential high-growth ventures;
- Determinant 3 – Women whose training needs matched the training content of the WEP.

RESEARCH DESIGN

The study consists of two parts, a literature review and empirical research. The empirical part consists of quantitative research in which three research questionnaires are used to obtain information from respondents. The first questionnaire was given to respondents before the actual training took place, to measure the respondents' level of knowledge and skills as well as training expectations and needs (this is referred to as O1). The second questionnaire was given to respondents to measure their behaviours and attitudes directly after they completed the WEP (this is referred to as O2) and the third questionnaire measured the respondents' business performance six months after they had completed the WEP (this is referred to as O3).

This study is based on a true experimental design which can be classified as the Pretest-Post-Test Control Group Design (Figure 1) in which:

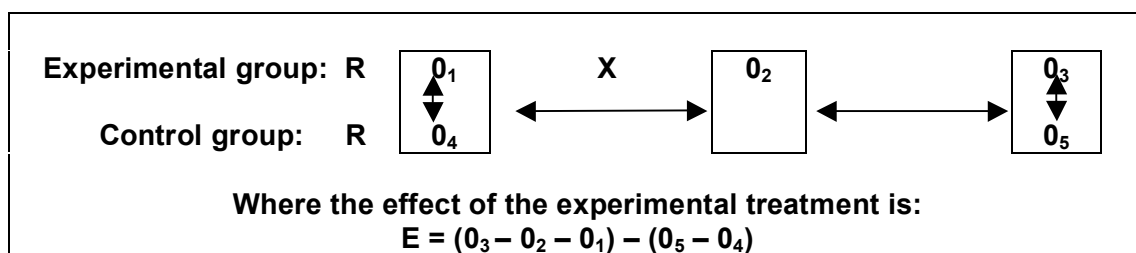
R = Randomly assigned group members to a group

X = Exposure of a group to an experimental treatment

O = Observation or measurement of the dependent variable

<<<<Place Figure 1 here>>>>

Figure 1: The true experimental design



Source: Own compilation, as adapted from Cooper and Schindler (2001: 406)

In extension of this design, a follow-up observation (six months after the training intervention) was added to strengthen the experimental design and improve the scientific contribution to the field of study. The experimental group received the treatment (X) in the form of a training intervention and was observed before the training (O1); directly after the training (O2); and approximately six months after the training (O3). The control group was observed (O4) at the same time as the experimental group was observed (O1) and again approximately six months after that period (O5). The control group did not receive the treatment (X).

HYPOTHESES

The following hypotheses are stated:

Null hypothesis (H1o): Based on the evaluation of the WEP, entrepreneurial and business skills transfer did not take place.

H2o: The respondents' business performances did not increase when evaluated six months after the experimental group completed the WEP.

H3o: There are no significant differences between the experimental and control groups after the experimental group attended the WEP.

The acceptance or rejection of the above hypotheses together with all the measurement levels of effectiveness as identified by Kirkpatrick, Kalleberg and Leicht will be presented under the discussion of the results in the paper.

EMPIRICAL RESULTS

Many researchers, such as Antonites (2003: 178) and Friedrich *et al.* (2003: 9), who have worked with control and experimental groups, agree that the control and the experimental groups must exhibit the same demographic characteristics as far as possible. As mentioned in the introduction of this paper, the gender of all the respondents (both experimental and control groups) is female.

Personal demographics

The majority of the experimental group are well educated. More than half (57.76 %) of the respondents have a national diploma and/or other tertiary qualification. Many respondents (40.63 %) from the control group have only completed high school (Grade 12). The respondents are mostly English- and Zulu-speaking, probably due to the fact that most of the respondents live in Gauteng and KwaZulu-Natal Provinces and many of the respondents were trained in Gauteng.

Although all racial groups are included in the sample, the majority of the respondents in the experimental and control groups are black (83.33 %) and coloured (12.78 %). The majority of the respondents in both groups are married (56.11 %). There are no significant differences regarding the race composition and marital status between the experimental and control groups.

Table 1: Personal demographics of the respondents

Variable	Experimental group		Control group		Total sample	
	N	%	n	%	n	%
Education						
Less than Grade 12	23	19.83	20	31.25	43	23.89
High school (Grade 12)	26	22.41	26	40.63	52	28.89
National Diploma (3 years)	31	26.72	8	12.50	39	21.67
Baccalaureus Degree (3 years)	18	15.52	4	6.25	22	12.22
Post-graduate tertiary education	18	15.52	6	9.37	24	13.33
Total	116	100	64	100	180	100
Racial composition						
Black	91	78.45	59	92.19	150	83.33
Coloured	20	17.24	3	4.69	23	12.78
Indian	1	0.86	0	0.00	1	0.56
Caucasian	4	3.45	2	3.13	6	3.33
Total	116	100	64	100	180	100
Marital status						
Never married	25	21.55	13	20.31	38	21.11
Married	69	59.48	32	50.00	101	56.11
Divorced	14	12.07	12	18.75	26	14.44
Widowed	6	5.17	3	4.69	9	5.01
Living together	2	1.72	4	6.25	6	3.33
Total	116	100	64	100	180	100

n = Frequency % = Percent

Business demographics of the sample

The business demographics report information about the respondents' businesses. Data on the age of business, annual sales/turnover, value of the capital assets, number of employees and customers of the respondents' businesses were collected and are summarised below.

Table 2: Business ownership of the total sample

Variable	Experimental group		Control group		Total sample	
	n	%	n	%	n	%
Own a business	101	87.07	60	93.75	161	89.44
Do not own a business	15	12.93	4	6.25	19	10.56
Total	116	100	64	100	180	100

From Table 2 it is evident that the majority of the experimental and control groups were business owners (89.44 %), whereas only 19 (10.56 %) respondents (15 experimental and 4 control group) did not own businesses. The group who were not business owners were seen as potential women entrepreneurs, as already discussed.

The majority of the respondents in the experimental and control groups indicated that their businesses were categorised in the service/retail industry, the construction industry and the food/catering industry. This was not due to sampling, as sector/industry was not a parameter of interest as part of the sampling design. It is interesting to find that many women are entering the construction and manufacturing sectors (73.77 % of the respondents in the control group).

The majority of the respondents (54.94 % and 61.00 %, respectively) indicated that their annual sales/turnover was in the 0 – R150 000 (0 - US\$ 25 000) interval and their value of capital assets was in the 0 – R100 000 (0 - US\$ 16 667) interval. It is evident that there is a good distribution between the remaining intervals.

The experimental group has on average more employees per business and more customers per month than the control group, but the standard deviation for both groups is very large, which indicates that there is substantial variability in the dataset.

Validity and reliability of the measuring instruments

To confirm the validity and reliability of the research questionnaires used, factor analysis was executed. Factor analysis was performed on the three sets of variables and seven factors were generated as can be seen in Table 3. In this paper, 0.600 was used as the benchmark to measure the Cronbach alpha values against.

From the 13 items, posed on a 5-point Likert scale, the derived first three factors delivered excellent Cronbach Alpha results. A value of 0.9019 was obtained for all the variables used. Factor analysis was performed on the second set of variables in the research questionnaire used, on one, two and three factors, which resulted in unsatisfactory loadings and eigen values as well as too high correlations between the factors. A decision was taken to rerun the factor analysis, resulting in one acceptable factor (Entrepreneurial and business skills factors). The first four factors were used to determine whether skills transfer took place and can be seen in Table 4. From the 16 items, posed on a 4-point Likert scale, the derived last three factors delivered excellent Cronbach Alpha results. A value of 0.9020 was obtained for all the variables used.

Table 3: Factor analysis

Factor labels	Factors generated	Eigen values	Cronbach alpha
Four skills transfer factors	Entrepreneurial characteristics	6.01185	0.8528
	Entrepreneurial orientation	1.36281	0.8294
	Business knowledge	1.00010	0.8012
	Entrepreneurial and business skills	10.8915	0.9558
Three business improvement factors	Business systems and strategies	6.58098	0.8440
	Financial indicators	2.11727	0.8783
	Change orientation	1.23911	0.8839

Testing the statistically significant differences

The independent *t*-test (Mann Whitney U test) and Chi-square test were used to illustrate the statistically significant differences between the experimental and control groups. The paired-sample *t*-test, Wilcoxon matched-pairs test and Chi-square test were used to measure the experimental groups before and after the training intervention (WEP).

Table 4: Paired sample *t*-test: Comparison of the experimental group before and after the WEP on the four skills transfer factors

Factor	Mean		Std. Deviation		t-statistic	P-value
	Before WEP	After WEP	Before WEP	After WEP		
Entrepreneurial characteristics	4.2804	4.434	0.5220	0.4170	2.99	0.0035***
Entrepreneurial orientation	4.3846	4.5024	0.5362	0.4274	2.18	0.0318***
Business knowledge	3.5529	4.0673	0.9215	0.6612	5.39	< 0.0001***
Entrepreneurial and business skills	2.3104	3.5283	0.6481	0.4165	19.14	< 0.0001***

P * Statistically significant difference**

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

Table 4 highlights that there are statistical significant differences between the means before and after the WEP of the experimental group for **all the skills transfer factors** identified. This indicates that skills transfer took place successfully and that the experimental group gained entrepreneurial and business skills and knowledge after the completion of the WEP. These findings emphasise that the content of the WEP is effective in improving the entrepreneurial and business knowledge and skills of women entrepreneurs.

It is noteworthy to mention that all the individual items included in the **business knowledge** as well as **entrepreneurial and business skills factors** showed statistically significant differences ($p < 0.0001$) before and after the WEP. These items are: drawing up financial statements, human resource management, business failure signs and causes, financial and cash-flow management, break-even analysis, risk orientation, general management, marketing of business/products/services, managing growth of the business, opportunity identification, sustainable competitive advantage, compiling a business plan, compiling a feasibility study, creativity and innovation, creative problem solving, legal aspects – business forms and registration, using role models for support and assistance, using mentors and counsellors, making use of networking opportunities and ability to obtain financial assistance for the business. This indicates that the respondents are now able to draw up an adequate business plan for their businesses as well as apply it practically to their businesses. This finding further illustrates that the WEP is also effective in improving the respondents' operation of their businesses, which also leads to better general management.

The Wilcoxon matched-pairs test was used to compare the experimental group before and after the WEP on the three business improvement factors and the results are indicated in Table 5.

Table 5: Wilcoxon matched-pairs test: Comparison of the experimental group before and after the WEP on the three business improvement factors

Factors	Mean		Std. Deviation		Wilcoxon***
	Before WEP	After WEP	Before WEP	After WEP	
Business systems and strategies	1.7956	3.2089	0.4144	0.5245	< 0.0001***
Financial indicators	1.6432	3.1181	0.5114	0.8032	< 0.0001***
Change orientation	1.8854	3.5304	0.4644	0.6539	< 0.0001***

*** Statistically significant difference

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

It is apparent that there were statistical differences between the before and after measurement of the experimental group regarding the three business improvement factors. This shows that the respondents did improve regarding their business systems and strategies, financial indicators and change orientation after they attended the WEP. The improvement of the business systems and strategies factor illustrates the fact that the experimental group were able to improve their systems in their businesses and facilitate strategies for improvement in the future. It should also be noted that the respondents' financial indicators: turnover, profit, return of investment and assets, increased significantly after the six-month period. This is unexpected, as six months is a very short period and improvement was only expected 12 to 18 months after the training intervention. The improvement of the last factor, change orientation, indicated that the entrepreneurs' attitude, management style and outlook were more positive after the WEP. The next step is to compare the experimental group against the control group regarding **the three business improvement factors** (Table 6).

Table 6: Independent t-test: Comparison of the experimental and control groups after the WEP on the three business improvement factors

Factor	Mean		Std. Deviation		Mann-Whitney***
	Experimental group	Control group	Experimental group	Control group	
Business systems and strategies	1.4133	0.2729	0.4816	0.4661	< 0.0001***
Financial indicators	1.4748	0.2733	0.7413	0.5345	< 0.0001***
Change orientation	1.6449	0.2283	0.6665	0.4829	< 0.0001***

*** Statistically significant difference

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

From the above table it is evident that the means of the **three business improvement factors** were much higher for the experimental group than for the control group. This illustrates that the experimental group improved more than the control group regarding their business systems and strategies, financial indicators and change orientation. Due to the fact that this measurement was done after the experimental group received the training intervention it is obvious that the experimental group improved significantly after they attended and completed the programme. It is worth mentioning that the WEP did not only have a psychological effect (change orientation factor) on the respondents, but they also indicated that their physical business operations (business systems and strategies and financial indicators factors) had improved six months after the training intervention took place.

It can now be concluded that the experimental group improved after they attended the WEP on **all seven factors** identified in the factor analysis. This confirms the WEP as a national and international benchmark that can be used by other organisations and institutions against which to measure the content of their entrepreneurial programmes.

Business performance indicators

This section exclusively deals with the post-training success measures (Kirkpatrick, 1967) and the primary performance measures (Kalleberg & Leicht, 1991) by focussing on the business performance indicators of the respondents businesses. These business performance indicators will give an indication of whether the respondents' businesses had grown six months after the experimental group attended the WEP.

Table 7: Chi-square test: Comparison between the before and after measurement of the experimental group regarding business performance indicators

Variable	Frequency (n)	Chi-Square value	P-value
Annual sales/turnover	88	98.9070	< 0.0001***
Value of capital assets	89	52.5964	< 0.0001***
Success of the businesses	88	22.7349	0.0068***
Profitability of the businesses	87	29.8625	0.0005***
Break-even point	77	38.9736	< 0.0001***
Satisfaction of the customers	88	12.1906	0.2028

P * Statistically significant difference**

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

The Chi-square test (Table 7) was used for all the variables that were categorical (ordinal) data and the Wilcoxon matched-pairs test (Table 8) was used for the ratio/interval data.

Table 8: Wilcoxon matched-pairs test: Comparison between the before and after measurement of the experimental group regarding business performance indicators

Factor	Mean		Std. Deviation		Wilcoxon***
	Before WEP	After WEP	Before WEP	After WEP	
Number of employees	8.8256	19.7558	15.3961	60.3242	< 0.0001***
Number of customers	88.7564	104.5000	208.7524	224.8285	0.0201***

*** Statistically significant difference

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

It is interesting to find that there are statistically significant differences regarding all the above business performance indicators, between before and after the respondents attended the WEP, except for the satisfaction of the respondents' customers. The reason for this is that the majority of the respondents stated before the WEP that their customers were satisfied with the service and/or products that they received from their businesses. 87.88 % of the respondents stated that their customers were satisfied before the WEP, and 94.57 % of the respondents stated that their customers were satisfied six months after the WEP. One shortcoming of the chi-square test as a statistical technique is that it does not measure finely enough to bring out small but significant differences. However, all the other business performance indicators improved significantly, though the satisfaction of the customers did not improve as radically. This is a remarkable finding, as it was expected that the relatively short six-month time period would not have time to show improvement regarding the business performance indicators. This in actual fact proves that the WEP assisted the experimental group to grow their businesses.

The respondents' degree of improvement or deterioration was also measured in terms of the above business performance indicators after the six-month period. For the experimental group, improvement took place in all the above-mentioned variables, except the value of capital assets and the break-even point, where the majority of the respondents stayed the same. For the control group, improvement took place in the number of employees and customers as well as the profitability and break-even point of their businesses. Satisfaction of their customers was the variable where deterioration took place radically for the control group.

In Table 8 the significant differences between the experimental group and control group with regards to the business performance indicators are compared.

Table 9: Chi-square test: Comparison of the experimental and control groups regarding their business performance indicators

Variable	Frequency		Chi-Square value	P-value
	Experimental group	Control group		
Annual sales/turnover	92	50	7.4561	0.0240***
Value of capital assets	93	48	1.6480	0.4387
Success of the businesses	91	50	7.5547	0.0229***
Profitability of the business	91	50	0.4376	0.8035
Satisfaction of the	92	50	5.3746	0.0681
Break-even point	90	50	0.5748	0.7502

P * Statistically significant difference**

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

The Chi-square test (Table 9) was used for all the variables that were categorical (ordinal) data and the Wilcoxon matched-pairs test (Table 10) was used for the ratio/interval data.

Table 10: Mann Whitney U test: Comparison of the experimental and control groups regarding their business performance indicators

Factor	Mean		Std. Deviation		Mann-Whitney***
	Experimental group	Control group	Experimental group	Control group	
Number of employees	8.8256	9.8158	15.3961	11.6291	0.0024***
Number of customers	88.7564	4.0000	208.7524	6.5053	0.0424***

***** Statistically significant difference**

$\alpha < 0.05$ (95 % confidence level)

$\alpha < 0.001$ (99 % confidence level)

The four variables that indicated statistically significant differences between the experimental and control groups were: Annual sales/turnover, success of the business, number of employees and number of customers. These findings are interesting yet contradictory in view of the previously indicated tables in which there were significant differences between the before and after six-months measurement within the experimental group. This indicates that the control group also improved to a certain degree with regard to the value of their capital assets, profitability of the businesses and break-even point. It can be concluded that these findings were not caused by the WEP because the control group did not attend the programme. This occurrence could be due to various reasons, such as the favourable economic situation in South Africa, inflation, seasonality of businesses and the fact that the

majority of the control group fell in the construction industry (73.77 %) as this sector enjoyed enormous growth in 2004 and 2005.

Discussion of the results

Table 11 and 12 summarises the findings of each measurement level (Kirkpatrick, 1976) and the key performance measures (Kalleberg & Leicht, 1991) that were used to determine the effectiveness of the WEP in this paper.

Table 11: Measurement levels used to determine the effectiveness of the WEP on the experimental group

Type of measurement level	Findings
Reaction measures	104 (98.12 %) respondents were satisfied with the WEP and indicated that they would recommend the programme to a friend or colleague.
Learning measures	The p-value for all four skills transfer factors (0.0035 ^{***} , 0.0318 ^{***} , <0.0001 ^{***} and <0.0001 ^{***} , respectively) confirmed statistically significant differences between the before and after measurement (Table 4).
Behaviour measures	The Wilcoxon statistic for all three business improvement factors was $p < 0.0001^{***}$, respectively (Table 5). The respondents applied and improved various skills in their businesses, of which improving the management and operations of their businesses and improving motivation and confidence were the most frequently mentioned areas.
Post-training success measures	The Wilcoxon statistic for all three business improvement factors was $p < 0.0001^{***}$, respectively (Table 5). Refer Tables 6 and 7 for p-values of business performance indicators.

P * Statistically significant difference**

Table 12: Key performance measures used to determine the effectiveness of the WEP on the experimental group

Key performance measures	Findings
Primary performance measures	Refer post-training success measures (Table 11).
Proxy performance measures	Refer methodology (sampling frame).
Subjective measures	Change orientation factor ($p < 0.0001^{***}$). There was a statistically significant difference in the respondents' behaviour before and after the WEP.
Entrepreneurial performance measures	Five (33.33 %) potential women entrepreneurs started a business and 36 (33.96 %) start-up and already established women entrepreneurs started multiple businesses. After six months, all of the start-up and already established respondents in the experimental group owned the same business that they had owned before the WEP, whereas two respondents (4 %) from the control group did not own a business any more after six months.

P * Statistically significant difference**

From Tables 11 and 12 it is evident that the WEP, as a training intervention, was evaluated effectively on all measurement levels.

Finally, it is necessary to revisit the hypotheses stated earlier in the paper. Based on the empirical findings, summarised in Tables 11 and 12, all the null hypotheses are rejected and the alternative hypotheses accepted.

CONCLUSION AND RECOMMENDATIONS

Various important elements within the field of entrepreneurship and specifically in the context of education and training programmes were introduced.

Four skills transfer and **three business improvement factors** were identified in this paper and it was pointed out that the experimental group improved significantly regarding these factors after they attended the WEP. This paper statistically proved that the WEP is not only effective in providing skills to women entrepreneurs and improving their business performance indicators but also encouraged potential women entrepreneurs to start their own businesses and start-up as well as established entrepreneurs to start multiple businesses.

Although the paper aimed at evaluating various levels of effectiveness of the training intervention, it was only a starting point and it is therefore acknowledged that there are limitations. One of those limitations is that the six-month period after the training intervention took place is too short to fully measure the impact of the WEP on the delegates' businesses. It was not practically possible to widen the timeframe of the study due to budget and time constraints. It is recommended that the experimental group be evaluated again after 18 months and again after three years to really determine the impact that the WEP had on the experimental group's businesses. Another limitation is that one could make the criticism that the changes and improvements that occurred within the respondents' attitudes and behaviours, as well as the growth of their businesses, were not due to the WEP only. It can be suggested that these occurrences could have been influenced by other external factors such as a favourable economic situation or the entrepreneur's personal life. Therefore, it is suggested that effectiveness studies that make use of longitudinal designs should incorporate a co-variance model within the study. The purpose of such a model is to keep all external factors, such as the economy, inflation, and seasonality, constant in order for the researcher to determine that the changes in respondents' businesses were due to the training programme and not due to other factors.

Finally, this paper has made a significant contribution to the science as it is the first time in South Africa that a training programme has empirically been proven to be effective on all the factors evaluated and that the participants' skills and business performances improved on all levels measured. Furthermore, this paper could be used to point out to potential funders and sponsors the benefits and values of providing funding for such a training intervention.

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