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Corporate Health and Wellness and the Financial Bottom Line

Evidence From South Africa

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Objective: The research objective was to test the hypothesis that corporate health and wellness contributed positively to South African companies' financial results. **Methods:** The past share market performance of eligible healthy companies, based on Discovery's Healthy Company Index, was tracked under three investment scenarios and compared with the market performance on the basis of the JSE FTSE All Share Index. **Results:** The evidence supports the hypothesis that a culture of health and wellness provides a financial advantage, in so far as the portfolio of healthy companies consistently outperformed the market over the selected simulations. **Conclusions:** Given the limitations of the investigation, namely small sample size, the brevity of the period of investigation, and the reliance on accessibility sampling, the research provides the first and preliminary evidence supportive of the direct financial benefits of companies' wellness programs.

There is a growing body of academic research that suggests that there is a positive link between a company's financial performance and its focus on promoting the workforce. The present study investigates whether there is a link between corporate health and wellness and the financial performance of companies in South Africa, with specific reference to Discovery's Healthy Company Index.¹⁻⁴

This research follows on a study that was completed in the United States (U.S.) by Fabius et al,³ which concluded that companies engaging in efforts to promote workforce well-being and safety yielded greater value to their investors through reduced health care costs, increased productivity, and improved financial performance. The study by Fabius et al³ tracked the market performance of a group of U.S. companies that had won awards for their health and safety programs. Between 1999 and 2012, an investment into this group of stock portfolios achieved a rate of return that outperformed the share market S&P 500 average. The arithmetic average annual excess return ranged from 3.03% to 5.27%, based on the four portfolios that Fabius et al³ considered.

South African companies included in this research project are selected from the Healthy Company Index (HCI), based on the research completed by Patel et al.⁵ Discovery invites companies to participate in the survey on a voluntary basis. Companies are then classified according to whether they are eligible for awards. This

study aims to benchmark the HCI companies' performance against the JSE FTSE All Share Index (ALSI) to determine whether a similar link exists in South Africa. It goes beyond the study of Fabius et al³ by assuring greater comparability between the sample and the ALSI, by also using risk-adjusted returns.

If a positive link between employee health and the financial performance of companies is established, it may encourage more South African employers to develop and implement health and wellness programs. There are many potential advantages of workforce wellness programs for both employers and employees. These include increased job satisfaction, increased productivity, and lower absenteeism.⁶ Furthermore, given that workforce health risks are reduced, the complications of chronic and other diseases may be reduced,^{4,7} which may result in reduced health care costs and improved company performance.⁸

The article is structured as follows: Section 2 provides a brief overview of the literature that relates workforce wellness to company performance; Section 3 discusses the data and methodology, while also focusing on underlying assumptions. The results are discussed in Section 4 and Section 5.

LITERATURE REVIEW

Employers have been concerned with the health education of their employees as far back as the 1920s.⁹ During the 1950s, employee assistance and health education typically took the form of labor relations, decreasing infectious diseases and assisting with personal problems, such as alcohol abuse.¹⁰ Since then, the concept of employee wellness has evolved significantly.

Carlson¹¹ noted that there have been significant developments in both the scope and quality of wellness programs offered to employees. The early waves of wellness programs, starting in the 1960s, were aimed at the reduction of employee health risks.¹¹ The programs typically included exercise schedules, health risk assessments, smoking cessation, stress management, and the provision of healthy food choices to employees.¹² More recently, there has been a shift toward wellness programs that promote both health and productivity.¹³ This new wave of wellness programs can be described as being more holistic in nature. The evolution of employee wellness programs can be partially accredited to the belief that an employer should take some responsibility for the health and welfare of the employee.¹⁴

Goldstein and Noyce¹⁵ provided evidence that well-designed employer-sponsored wellness programs lead to a healthier workforce, while Morgia¹² argued that it was through the identification of health risk factors that employees' productivity and commitment could be increased. Today it is understood that it is the combination of improved physical and psychological health that leads to improved employee well-being, and thus improved productivity.¹³

Previous studies demonstrate that employers enjoy various advantages that result from workforce wellness programs. These include heightened job satisfaction, increased productivity, and lower absenteeism.⁶ Furthermore, given that workforce health risks are reduced, the complications of chronic and other diseases can be

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reduced.^{7,4} This results in reduced health care costs and increased productivity and performance,^{8,16} leading to the idea that there is a positive contribution toward the financial performance and underlying stock price of the company, if the workforce is more productive.¹⁷ There is growing evidence that suggests that companies that focus on employee wellness and safety also make financial sense in terms of contributing positively to the financial bottom line.^{2-4,18} This suggests that the benefits of improved workforce productivity outweigh the costs associated with the implementation of workforce wellness programs.

South Africa's first employee wellness programs were introduced during the 1980s by the Chamber of Mines of South Africa.¹⁹ Initially, employees were resistant to the programs because they did not trust their confidentiality and they saw the programs as being an additional demand on the employee, instead of being a benefit to them.¹⁹

Patel et al⁵ states that the scope of employee wellness programs in South Africa has often been limited to training in occupational safety, employee assistance and awareness, and management of HIV/AIDS and hence are not as wide reaching as they could be in terms of coverage and prevalence in the workplace. There is limited empirical research available on South African companies with employee wellness programs,²⁰⁻²² and more research is required in order to justify and promote employee wellness programs. An exception is the work of Churchill et al²³ who have investigated what employers deem attractive in terms of these programs and which types of incentives are most attractive to employees.

Employee wellness programs involve many stakeholders. These include employers, employees, health care providers, medical aid, and labor unions.²⁴ The views and ethical considerations of these stakeholders are important in the setting of employee wellness programs. Van Berkel et al²⁴ have argued that lifestyle is the responsibility of the employee, but that this responsibility depends on various stakeholders. The modern view on this subject is that health and wellness is a core business issue, aside from being part of human resources and corporate social responsibility. This is supported by the World Health Organization, indicating that the workplace is a priority setting for health promotion.²⁵ Research on ethical considerations and employee wellness remains scarce, reflecting that ethical governance has not always been up to the standards required in order to support this. In South Africa, the Institute of Directors of Southern Africa has formalized a code of corporate governance for listed companies' reporting requirements,²⁶ without addressing the issues comprehensively. There is, however, an expectation that an employer will support employee wellness to some extent as a duty of care. Furthermore, employee wellness programs will enable the employer to engage in an act of kindness, hopefully resulting in the employee demonstrating increased loyalty toward the

employer. This suggests that employee wellness programs can strengthen the bond between employee and employer.²⁷

DATA AND METHODOLOGY

In conducting the investigation, healthy companies' financial results were combined into an investment portfolio. Discovery's Healthy Companies Index provided the list of healthy companies that was used to construct the HCI investment portfolio. An initial theoretical investment of R100,000 (approximately US\$ 8000 based on the June 2015 exchange rate) was made into the various HCI investment portfolios. The stock market performance of the HCI investment portfolios was simulated over the chosen investment period. These results were benchmarked against the ALSI over the same period.

Discovery's HCI is an initiative to encourage South African companies to adopt workplace health and wellness programmes.⁵ The campaign aims to measure and promote workforce wellness in South Africa, by gaining a better understanding of the following aspects:

- the burden of disease and risk factors, including the impact of diet, smoking, and sedentary lifestyles;
- the link between employee motivation and health;
- how effective health and wellness programs are in getting employees engaged in their health and wellness;
- how the performance of companies compare that have workforce health and wellness programs through benchmarking; and
- whether there is financial justification for companies to implement health and wellness programs.

The last objective in the above list links directly to the research objective of this report, which includes developing a financial case for companies to invest in health and wellness programs.

Patel et al⁵ provide a detailed account of the campaign, including the methods used, the employer and employee survey, the list of participants, and a summary of the responses. The survey questionnaire is available on the HCI home page.²⁸ The American College of Occupational Medicine's (ACOEM's) Corporate Health Achievement Award (CHAA) has conducted similar studies in the U.S., the results of which were incorporated in the study by Fabius et al.³

Discovery conducted the Healthy Companies Survey in 2010 and 2014. The survey aimed to identify the healthiest companies in South Africa and formed part of a campaign to promote workforce wellness.⁵ The Survey included 88 companies in 2010 and 59 companies in 2014. These companies were eligible for awards on the basis of their rankings of various workforce health and wellness aspects. These included the ranking of employer facilities and measures of employee health (eating habits, body mass index, motivation, stress levels, and so on).

TABLE 1. Selected Healthy Companies List

Year	Company Name	Ticker symbol	Industry
2014	Cadiz Holdings Limited	CDZ	Investment banks
2010	Cargo Carriers Limited	CRG	Transport
2010	Discovery Holdings Limited	DSY	Life assurance
2010 and 2014	Ellies (Pty) Limited	ELI	Electrical equipment
2010 and 2014	Group Five Construction	GRF	Heavy construction
2010	JSE Limited	JSE	Investment banks
2014	Mediclinic International	MDC	Hospital Management and long-term care
2014	Mr Price Group Limited	MPC	Retailers—soft goods
2010 and 2014	Sasfin Bank Limited	SFN	Investment banks
2010 and 2014	Tongaat Hulett Limited	TON	Food processors

The companies investigated in this report form a combined subset of the 2010 and 2014 companies that were eligible for awards and were at the same time also publicly listed companies. There was no objective way to measure the financial performance of the unlisted companies; hence, the companies included in the HCI are those that are listed and therefore publish publicly available financial data, including stock prices. The healthy companies selected list is summarized in Table 1.

The HCI consists of these 10 JSE listed companies from various industries (sectors). The study by Fabius et al³ study included 17 listed companies. In both studies, the sample is small and the sampling method can best be described as accessibility sampling. Hence, it cannot be argued that the sample is fully representative of either the full population of companies or even mirrors the sectoral distribution of JSE companies. To partly address this shortcoming, the current study incorporated risk-adjusted returns in an effort to obtain increased comparability between sample and population.

The benchmark index chosen as a proxy for the market performance was the JSE FTSE All Share Index (ALSI). The ALSI reflects the movement of the total South African equity market. It represents 99% of the full market capital value of all ordinary securities listed on the main board of the JSE, which qualify under the rules of eligibility. The ALSI is a market capitalization weighted index.

A time series of total return data for the healthy companies list was obtained from Bloomberg Professional Service. Total return data were used because it allows for dividend reinvestment on the day that dividends are received. The ALSI total return data were used to ensure consistency with the construction of the HCI investment portfolio. It is noted that Fabius et al³ used price data, which ignored the reinvestment of dividends as a simplifying assumption. The method used in this study should therefore provide more accurate and realistic portfolio values.

The total return data for each of the companies in the HCI investment portfolio were compiled. The performance of three HCI investment portfolios was then simulated as if an investor had owned that portfolio for the selected period of time (Table 2).

Fabius et al³ also computed results for Portfolios 1 and 2, as described above. However, they also included two other portfolios that have not been replicated here for the following reasons:

- A portfolio excluding the best and worst performers: Fabius et al³ worked with 17 listed companies, whereas this study analyzed only 10. Therefore, the decision was made not to replicate this portfolio because the sample of companies was already small.
- A portfolio based on healthy company rankings: the healthy company awards used in the study by Fabius et al³ was ranked. However, the Discovery's Healthy Companies Survey does not provide details with respect to rankings.

TABLE 2. HCI Investment Portfolio Descriptions

Portfolio Number	Investment Portfolio Description
1	Portfolio 1 invested equally in all companies in the HCI at the start of the investment period. This is the featured portfolio, given that it is the most informative method of calculation.
2	Portfolio 2 invested equally in all companies in the HCI and was rebalanced annually and at the time of new healthy company listings.
3	Portfolio 3 invested in all companies in the HCI, weighted by market capitalization.

The decision was made to rather include Portfolio 3, an investment portfolio weighted by market capitalization in order to provide further insights. The chosen investment periods were 3, 5, and 10 years, all terminating at the most recent calendar year, namely 2014. For the 10-year period, it had to be assumed that all the companies selected had already been engaged in promoting employee wellness as early as 2005. This could be confirmed for only five companies (Cadiz, Group Five, JSE, Mediclinic, and Tongaat Hulett), as many companies did not include this information in their annual reports, especially in earlier years. The assumption does not appear to be unrealistic, as an effective wellness strategy cannot be implemented over a short time span.

Rebalancing for Portfolio 1: Equal-Weighted Portfolio

The investment portfolio was created at the start of the investment period by investing an equal amount of the portfolio in each of the companies. Two of the companies, namely Ellies (Pty) Limited and JSE Limited, only listed and therefore became available for investment during the course of the 10-year investment period. At the time of their listing, an equal percentage of all the holdings in the portfolio was sold to invest in the newly listed company.

Rebalancing for Portfolio 2: Equal-Weighted Portfolio With Annual Rebalancing

The investment portfolio was rebalanced annually on the last day of each calendar year and when a company was listed. The latter was done to accommodate Ellies (Pty) Limited and JSE Limited. It is noted that Fabius et al³ assumed that the portfolio was rebalanced on the close of each business year.

Rebalancing for Portfolio 3: Portfolio Weighted by Market Capitalization

The rebalancing for Portfolio 3 followed the same methodology as for Portfolio 1 with the investment in each company weighted by the relative market capitalization rather than in equal proportions.

RESULTS

The accumulated values of the respective HCI investment portfolios for the various investment periods are rounded to the nearest Rand and investment returns are rounded to the second percentage decimal, where applicable. The healthy companies alpha (HC-alpha) is defined in this report as the outperformance of the portfolio of healthy companies relative to the ALSI. The term "alpha" is typically used in the investment industry to describe the excess return of a fund's performance relative to a benchmark index. The Sharpe ratio (S) is a measure of risk-adjusted returns for a portfolio.²⁹ The ratio calculates the additional return generated per unit of risk. This means that investors prefer a higher Sharpe ratio, given that it indicates a more attractive return for the risk taken on. Sharpe's definition²⁹ is:

$$S = (\bar{u}_p - u_f) / \sigma_p$$

where

\bar{u}_p is the expected portfolio return,
 u_f is the risk-free rate,
 σ_p is the portfolio standard deviation.

The average bond yield for the South African R186 bond over the various investment periods was used as the risk-free rate. The 3-, 5- and 10-year yields were calculated as 7.95%, 8.20%, and 8.18%, respectively. The data were extracted from Bloomberg Professional. The R186 government bond has a suitably long-term duration in order for it to be used as the risk-free rate for equities, given that equities are also a long-term asset class.

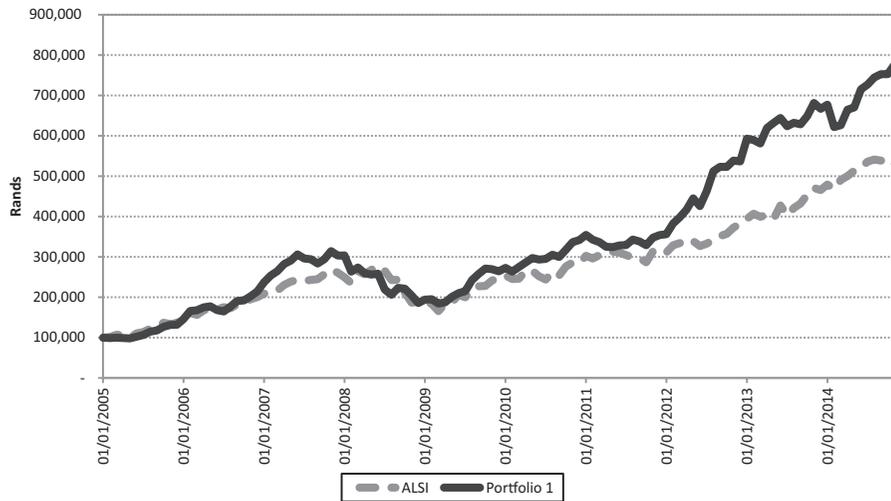


FIGURE 1. Equal-weighted portfolio versus ALSI (10-year period).

Portfolio 1: Equal-Weighted Portfolio (Featured Portfolio)

Portfolio 1 required equal investment in all companies in the HCI. It was rebalanced at the start of the investment period and at the time of new healthy company listings. This was applicable to the JSE Limited on June 1, 2006 and Ellies (Pty) Limited on September 1, 2007. This is the featured portfolio.

Portfolio 1: Ten-Year Investment Period

The results over the investment period, January 1, 2005, to December 31, 2014, are as follows (Fig. 1):

- The initial investment of R 100,000 grew to R 816,127. This is equivalent to a total return of 716.13% over the 10-year period. Over this same period, the equivalent ALSI investment grew to R 532,303, which is a total return of 432.30%.
- The annualized return over the period for Portfolio 1 was 23.36% and 18.20% for the ALSI.
- The HC-alpha for Portfolio 1 over the period was 5.16%.
- The Sharpe ratio for Portfolio 1 over the period was 0.910 and 0.629 for the ALSI.
- Portfolio 1 outperformed the ALSI over a 10-year period.

Portfolio 1: Five-Year Investment Period

The results over the investment period, January 1, 2010, to December 31, 2014, are as follows (Fig. 2):

- The initial investment of R 100,000 grew to R 278,347. This is equivalent to a total return of 178.35% over the 5-year period. Over this same period, the equivalent ALSI investment grew to R 209,587, which is a total return of 109.59%.
- The annualized return over the period for Portfolio 1 was 22.72% and 15.95% for the ALSI.
- The HC-alpha for Portfolio 1 over the period was 6.77%.
- The Sharpe ratio for Portfolio 1 over the period was 1.190 and 0.638 for the ALSI.
- Portfolio 1 outperformed the ALSI over a 5-year period.

Portfolio 1: Three-Year Investment Period

The results over the investment period, January 1, 2012, to December 31, 2014, are as follows (Fig. 3):

- The initial investment of R 100,000 grew to R 202,798. This is the equivalent to a total return of 102.80% over the 3-year period. Over this same period, the equivalent ALSI investment grew to R 171,285, which is a total return of 71.28%.

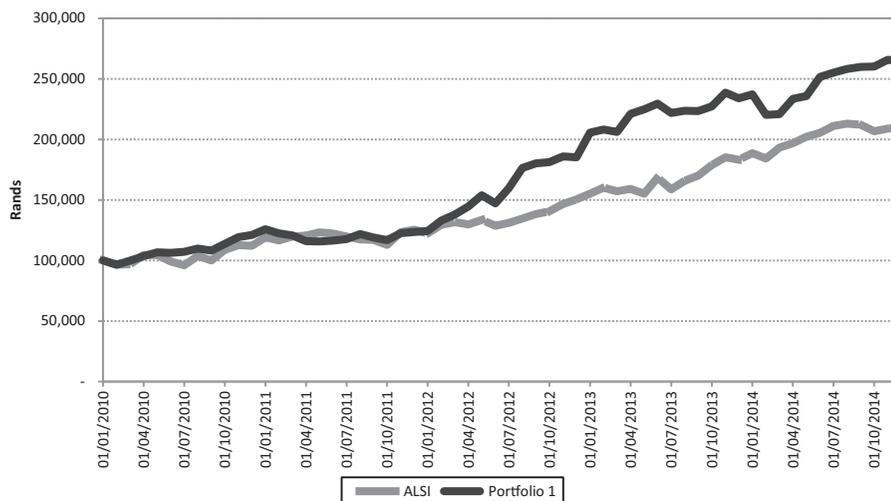


FIGURE 2. Equal-weighted portfolio versus ALSI (5-year period).

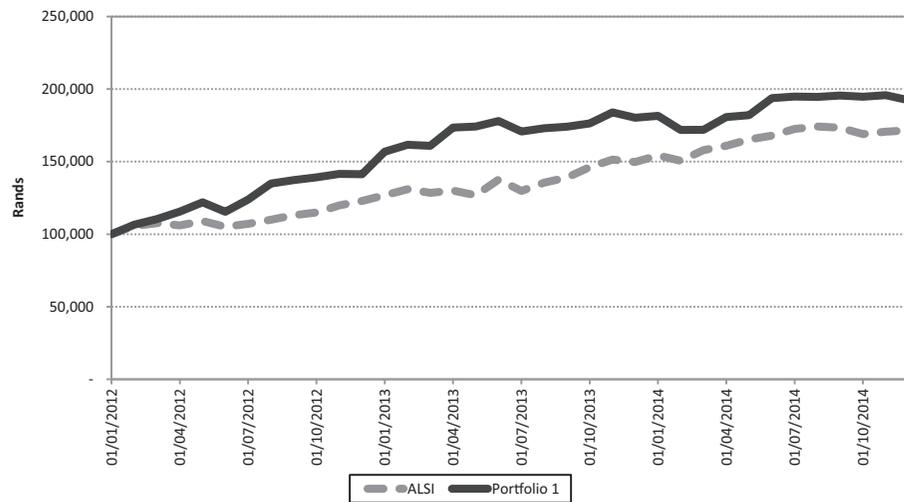


FIGURE 3. Equal-weighted portfolio versus ALSI (3-year period).

- The annualized return over the period for Portfolio 1 was 26.58% and 19.65% for the ALSI.
- The HC-alpha for Portfolio 1 over the period was 6.93%.
- The Sharpe ratio for Portfolio 1 over the period was 1.425 and 1.173 for the ALSI.
- Portfolio 1 outperformed the ALSI over a 3-year period.

On the basis of the results of the equal-weighted portfolio, healthy companies outperform the market. This supports the research hypothesis that workforce health and wellness programs contribute positively to a company’s financial bottom line.

Portfolio 2: Equal-Weighted Portfolio With Annual Rebalancing

Portfolio 2 required equal investment in all companies in the HCI and was rebalanced annually and at the time of new healthy company listings. This latter assumption was applicable to the JSE Limited on June 1, 2006, and Ellies (Pty) Limited on September 1, 2007.

Portfolio 2: Ten-Year Investment Period

The results over the investment period, January 1, 2005, to December 31, 2014, are as follows (Fig. 4):

- The initial investment of R 100,000 grew to R 774,211. This is equivalent to a total return of 674.21% over the 10-year period.

Over this same period, the equivalent ALSI investment grew to R 532,303, which is a total return of 432.30%.

- The annualized return over the ‘0-year period for Portfolio 2 was 22.71% and 18.20% for the ALSI.
- The HC-alpha for Portfolio 2 over the period was 4.51%.
- The Sharpe ratio for Portfolio 2 over the period was 0.937 and 0.629 for the ALSI.
- Portfolio 2 outperformed the ALSI over a 10-year period.

Portfolio 2: Five-Year Investment Period

The results over the investment period, January 1, 2010, to December 31, 2014, are as follows (Fig. 5):

- The initial investment of R 100,000 grew to R 264,492. This is equivalent to a total return of 164.49% over the 5-year period. Over this same period, the equivalent ALSI investment grew to R 209,587, which is a total return of 109.59%.
- The annualized return over the 5-year period for Portfolio 2 was 21.47% and 15.95% for the ALSI.
- The HC-alpha for Portfolio 2 over the period was 5.52%.
- The Sharpe ratio for Portfolio 2 over the period was 1.170 and 0.638 for the ALSI.
- Portfolio 2 outperformed the ALSI over a 5-year period.

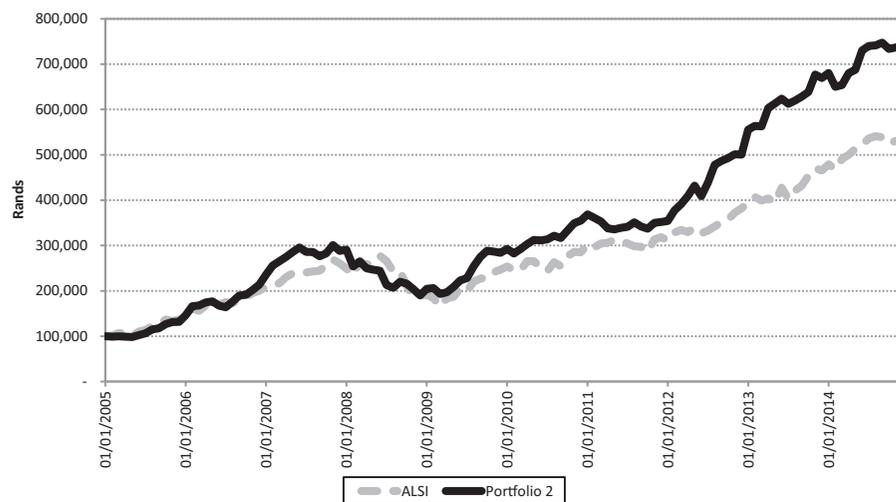


FIGURE 4. Equal-weighted portfolio with annual rebalancing versus ALSI (10-year period).

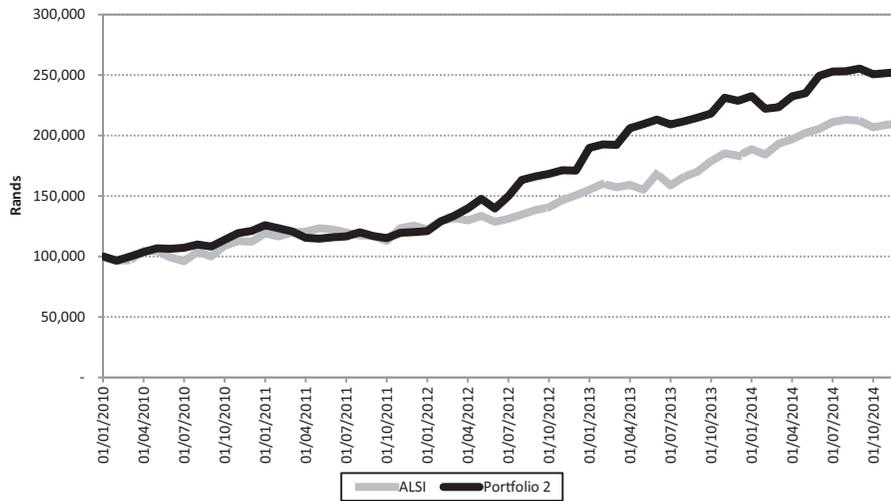


FIGURE 5. Equal-weighted portfolio with annual rebalancing versus ALSI (5-year period).

Portfolio 2: Three-Year Investment Period

The results over the investment period, January 1, 2012, to December 31, 2014, are as follows (Fig. 6):

- The initial investment of R 100,000 grew to R 218,575. This is equivalent to a total return of 118.58% over the 3-year period. Over this same period, the equivalent ALSI investment grew to R 171,285, which is a total return of 71.28%.
- The annualized return over the 3-year period for Portfolio 2 was 29.78% and 19.65% for the ALSI.
- The HC-alpha for Portfolio 2 over the period was 10.13%.
- The Sharpe ratio for Portfolio 2 over the period was 1.792 and 1.173 for the ALSI.
- Portfolio 2 outperformed the ALSI over a 3-year period.

On the basis of the results of the equal-weighted portfolio rebalanced annually, healthy companies outperform the market. This supports the research objective hypothesis that workforce health and wellness programs contribute positively to a company’s financial bottom line.

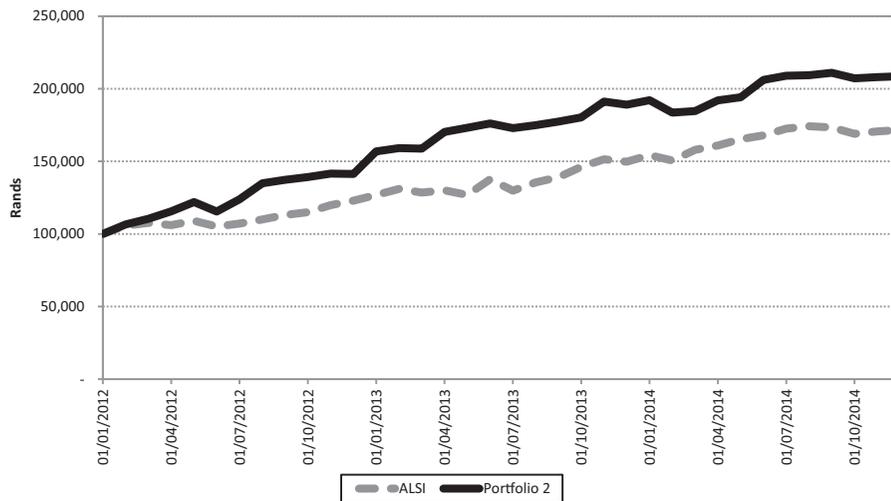


FIGURE 6. Equal-weighted portfolio with annual rebalancing versus ALSI (3-year period).

Portfolio 3: Portfolio Weighted by Market Capitalization

Portfolio 3 required weighted investing in all companies in the HCI on the basis of market capitalization. The market capitalization for each of the HCI constituents was calculated as the number of shares in issue multiplied by the closing share price as at the start of the 3, 5, and 10-year investment periods.

The rationale for this portfolio is that it is consistent with how the ALSI is calculated. This means that larger companies account for a great portion of the ALSI and HCI investment portfolio, respectively.

Portfolio 3: Ten-Year Investment Period

The results over the investment period, January 1, 2005, to December 31, 2014, are as follows (Fig. 7):

- The initial investment of R 100,000 grew to R 1,005,000. This is equivalent to a total return of 905.00% over the 10-year period. Over this same period, the equivalent ALSI investment grew to R532,303, which is a total return of 432.30%.

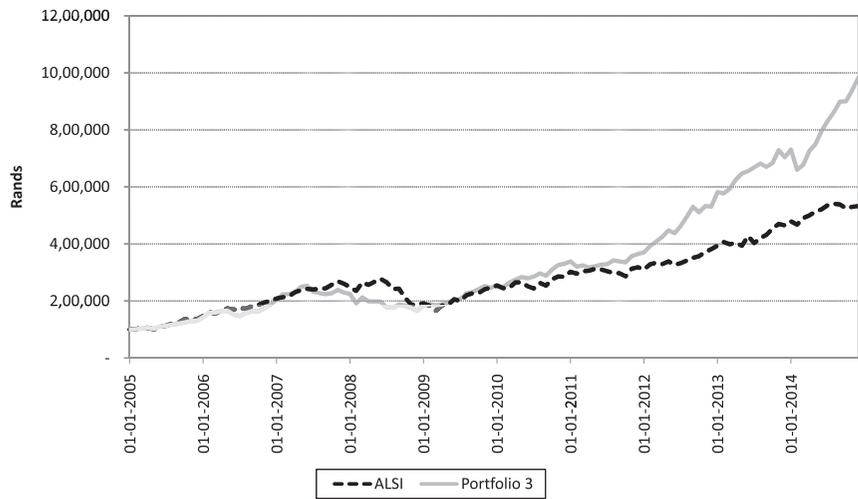


FIGURE 7. Portfolio weighted by market capitalization versus ALSI (10-year period).

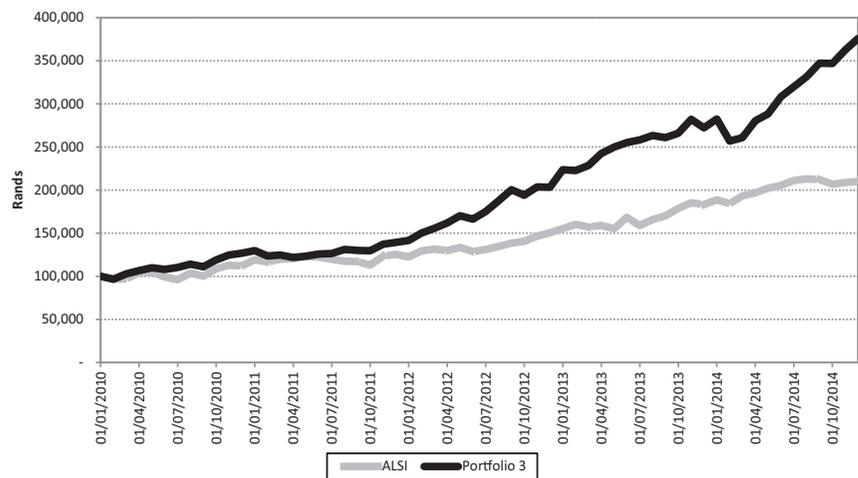


FIGURE 8. Portfolio weighted by market capitalization versus ALSI (5-year period).

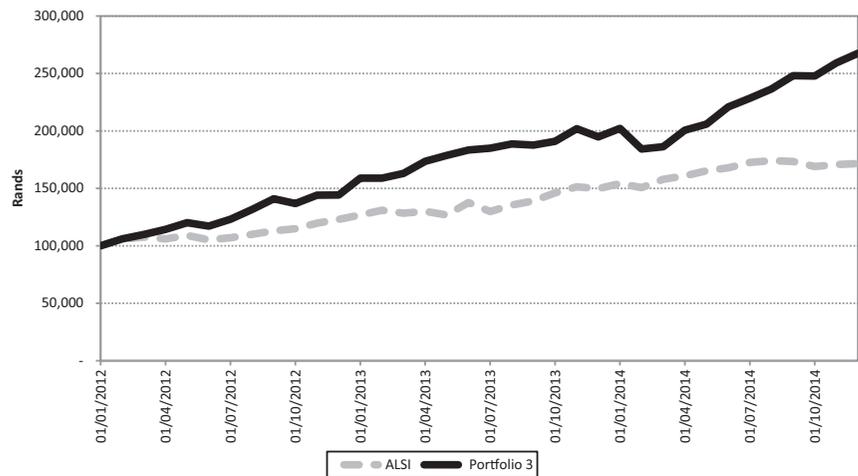


FIGURE 9. Portfolio weighted by market capitalization versus ALSI (3-year period).

- The annualized return over the period for Portfolio 3 was 25.96% and 18.20% for the ALSI.
- The HC-alpha for Portfolio 3 over the period was 7.76%.
- The Sharpe ratio for Portfolio 3 over the period was 1.110 and 0.629 for the ALSI.
- Portfolio 3 outperformed the ALSI over a 10-year period.

Portfolio 3: Five-Year Investment Period

The results over the investment period, January 1, 2010, to December 31, 2014, are as follows (Fig. 8):

- The initial investment of R 100,000 grew to R 386,218. This is equivalent to a total return of 286.22% over the 5-year period. Over this same period, the equivalent ALSI investment grew to R 209,587, which is a total return of 109.59%.
- The annualized return over the period for Portfolio 3 was 31.03% and 15.95% for the ALSI.
- The HC-alpha for Portfolio 3 over the period was 15.08%.
- The Sharpe ratio for Portfolio 3 over the period was 1.878 and 0.638 for the ALSI.
- Portfolio 3 outperformed the ALSI over a 5-year period.

Portfolio 3: Three-Year Investment Period

The results over the investment period, January 1, 2012, to December 31, 2014, are as follows (Fig. 9):

- The initial investment of R 100,000 grew to R 275,525. This is the equivalent to a total return of 175.53% over the 3-year period. Over this same period, the equivalent ALSI investment grew to R 171,285, which is a total return of 71.28%.
- The annualized return over the period for Portfolio 3 was 40.19% and 19.65% for the ALSI.
- The HC-alpha for Portfolio 3 over the period was 20.54%.
- The Sharpe ratio for Portfolio 3 over the period was 2.520 and 1.173 for the ALSI.
- Portfolio 3 outperformed the ALSI over a 3-year period.

On the basis of the results of the portfolio weighted by market capitalization, healthy companies outperform the market. This supports the research hypothesis that workforce health and wellness programs contribute positively to a company's financial bottom line.

CONCLUSION

This research adds to a growing body of knowledge that supports employee health promotion through corporate wellness programmes.^{30–32} It provides first and preliminary evidence that there may also be financial incentives for South African companies to do so. It is notable that for the nine different investment scenarios that were tested, all nine outperformed the ALSI benchmark, providing the first evidence from employers in South Africa that workforce health and wellness programs are positively associated with companies' financial bottom lines. In time, it is hoped that the HCI will provide sufficient baseline data to provide conclusive evidence in this regard.

Given the paucity of current data, however, the limitations of the current study have to be emphasized, the most important of which is to be found in the limited sample size, the limited period under analysis, and the reliance on accessibility sampling. A further limitation is to be found in the possibility of reverse causation—financially successful companies can afford to introduce wellness programs. Although the limitations of the current and similar international studies are acknowledged, the weight of the current independent international evidence tends to confirm the

hypothesis that corporate wellness leads to improved financial outcomes.

In order to strengthen the results, it is recommended that the investment simulation be repeated once Discovery's HCI contains more listed companies. Furthermore, this study should be repeated every 5 to 10 years, to either provide further validation or alternatively falsify the hypothesis of employee wellness supporting financial outcomes.

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