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rewards healthy living

EXTENDING
SHARED VALUE
TO EDUCATION

Executive summary

While the right to education is indisputable, many challenges persist that prevent equitable access to good quality education, particularly at tertiary and higher education levels.

The reality is that it can cost more than R2 million to educate a child from crèche through to the end of their tertiary education¹. For the average South African, this means that they would need to start saving a few years before their children are even born. However, people are not saving for education. It is estimated that around 56% of households in South Africa do not save for education¹². Consequently, many parents are turning to loan funding, and it is estimated that around 20% of all student loans in America are now issued to parents themselves². These factors are exacerbated by education inflation consistently exceeding salary inflation, creating a growing gap in parents' ability to provide for necessary education costs.

Moreover, with the demands of this competitive world making it increasingly popular to send children to school at a much earlier age, it is becoming progressively more difficult to build up sufficient savings before the commencement of a child's education journey. This is compounded by the trend to have children at a later stage in life, requiring parents to work longer into retirement or to consume built-up retirement savings.

With these difficulties in fully funding for education, if a life-changing event happens to an income earner in the family that impedes on their ability to work, this could significantly hamper their ability to provide for their children's education.

To counter this growing gap, many savings and protection vehicles are available on the market. Through saving, the value ultimately derived depends on the underlying performance of the investments underpinning the savings vehicle and on parents' commitment and ability to save each month. If parents are protecting for education against a life-changing event happening to them, benefit can only be derived on a claim, such as death.

In recognition of these challenges, this paper will provide a case that through providing appropriately aligned behaviour- changing incentives that resonate with parents' intrinsic motivations to best provide for their children's education, health and wellness behaviour is not just improved over the short term, but leads to healthy habit formation over the long term. The resultant long-term risk savings derived through this healthy habitual change can then be channeled into an education-financing mechanism that not just protects a child's full education, but channels their parents' improved health and wellness to fund their tertiary education.

¹Internal Discovery data projection and <https://goo.gl/9qfq3G>

^{##}<https://goo.gl/aXMkUD>

Key trends in education

Education leads to a more productive, healthier society that lives longer

Around the world there has been a clear shift in education. The focus has moved to a more outcomes-based journey as opposed to throughput, and the evidence for this is clear – investing in education isn't just about the feel-good factors, it's smart economics:

- Evidence shows that, on average, each additional year of education boosts a person's income by 10% and increases a country's GDP by 18%¹.
- Moreover, evidence shows that a 1% increase in the share of the workforce with a university degree raises the level of long-run productivity by 0.2 to 0.5%².
- While education benefits are often measured in economic terms, such as increased income and reduced poverty, even further-reaching effects are found in the health and social areas. Educated people and the children of educated parents tend to be healthier³.
- Education's influences are felt long after youth, and continue through all age groups. Extensive research in industrialised countries has shown a consistent decline in mortality levels with education that has been linked to behavioural, psychological and contextual differences among education groups⁵. Discovery Life has found that individuals with a tertiary education show a reduction in mortality in excess of 22% across all ages⁴.

While the impact of improved education outcomes on a macro level is evident, this need to improve education outcomes resonates with the parents of the student themselves.

Enrolling at a younger age

Growing competition to gain entry into tertiary education leads to increased competitiveness at school, starting at younger ages

For parents, the reason that education outcomes and good grades are so critical is obvious – during the past several decades, it has become increasingly difficult to gain entry into a tertiary education institution. Growing numbers of students compete for admission to tertiary education institutions, for example, the number of college applicants in America has doubled since the early 1970s, while school sizes have changed little⁵. This problem is not isolated to America alone. In the UK, application rates are increasing at around 2% year-on-year.

In South Africa, one of the National Development Plan's goals is to increase enrolments at Universities by at least 70% by 2030 so that enrolments increase to about 1.62 million from around 1 million at present⁵. This increase in the number of applicants, combined with relatively little growth in the number and size of tertiary education institutions, results in stringent entry requirements and the need for students to excel at primary and secondary school to gain admission to tertiary education.

In response to this increased micro- and macro-level competition, many countries, such as Australia, the United Kingdom and South Africa have started primary schooling from age 5 and sometimes even younger. Moreover, with crèche starting just after age one, the average child will need funding for 21 years of education.

¹<http://paa2013.princeton.edu/papers/132015>

²<https://www.ox.ac.uk/sites/files/oxford/3%20Economic%20Impact%20University%20Driven%20Growth.pdf>^c<https://goo.gl/vosskH>

³https://www.unicef.org/publications/files/Investment_Case_for_Education_and_Equity_FINAL.pdf

⁴Discovery Life Internal data

⁵http://www.huffingtonpost.co.uk/2016/03/09/pregnancy-around-the-world-age-of-new-mums_n_9416064.html

⁶<http://www.gov.za/sites/www.gov.za/files/Executive%20Summary-NDP%202030%20-%20Our%20future%20-%20make%20it%20work.pdf>

From technology to tutoring, it's not just school fees that need to be factored into education cost considerations

Resource intensive

It's not just the age at which schooling starts that's changing; the nature and manner in which education is taught has dramatically altered. Many schools have moved from paper-based learning to e-learning. A child cannot simply attend school with a notebook and a pencil; a laptop or tablet is almost as essential today as a notebook was a decade ago.

Furthermore, to supplement their children's education in response to increased competitiveness, many parents are turning to private tutoring to bolster their children's educational rigour⁷. Depending on the stage of education, the cost of tutoring can easily exceed R4 000 per month across a range of schooling subjects. This results in parents spending almost as much on their children's private tutoring as they do on their school fees.

Rising age of first-time mothers

Having children at older ages may require you to work into retirement

With the rapid pace of technological advancements, many couples are choosing to have children for the first time at much older ages. At Discovery Health, the average age of first-time mothers is now 30⁸. In the US, the mean age of a woman when she first gave birth was 24 years old 15 years ago⁹. Today this mean age sits at over 26⁹.

This trend is not restricted to South Africa and America. In the UK, more babies were born to mothers over the age of 35 than under the age of 25 in 2014⁹.

While having children at an older age may allow for a couple to build up more savings before the child is born, it also means that they are likely to have a financially dependent child by the time they reach retirement age. This could result in many individuals having to work longer into retirement or consume their retirement savings to pay for their children's tertiary education. Given how close they are to retirement, this gives them little time to build up sufficient retirement savings, which could leave them financially vulnerable at older ages.

⁷<https://goo.gl/1u1Vy7>

⁸<http://www.npr.org/sections/health-shots/2016/01/14/462816458/average-age-of-first-time-moms-keeps-climbing-in-the-u-s>

⁹<https://goo.gl/t2B8p5>

¹⁰<https://tradingeconomics.com/south-africa/personal-savings>

¹¹<https://goo.gl/vosskH>

¹²<https://goo.gl/j28tGR>

56% of households are not saving for education nor do they have education protection in place

Households are not saving

South Africans are notoriously bad savers. At the end of the first quarter of 2017, the household savings ratio in South Africa stood at -0.3%, up from -0.5% in the fourth quarter of 2016¹⁰. The household savings ratio refers to the income saved by households during a certain period of time. A negative household savings ratio means that households are spending more than they are saving. In addition, household debt as a percentage of household income now stands at approximately 74% (this includes loans, overdrafts, credit card debt, home loans and accounts)¹¹. According to surveys done, around 25% of households earning more than R40 000 per month, and around 40% of households earning between R20 000 and R40 000 per month, could not cover their monthly living costs with their salaries alone at least once in the last year¹².

These figures are compounded when it comes to education. According to research done, 56% of people are neither saving for education, nor do they have an education policy¹². Moreover, in times of need, people cut back on education spending to the tune of around 18%.

To counter growing challenges in education financing, many households are turning to debt funding. In America, outstanding student debt now sits at over \$1 trillion. In South Africa, this figure sits at around R1 billion, but with the National Student Financial Aid Scheme underfunded to the tune of around R30 billion. In the UK, student loan debt reached a record £100 billion in 2017¹⁰.

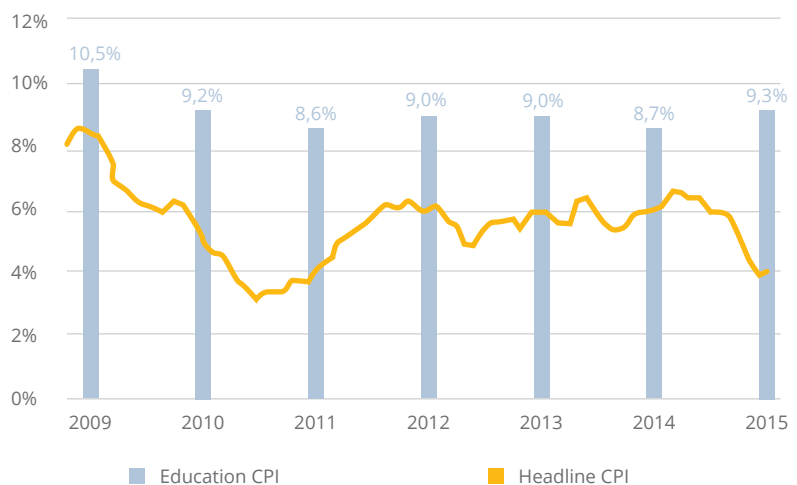
Rising education costs

With growing competition and an increased emphasis on the education space by many governments, theory would dictate that this would drive efficiencies and lower costs. While that may be happening in a few isolated places, for the most part, education costs have been rapidly rising both locally and globally.

Education inflation is outpacing salary growth

In South Africa, education inflation has outpaced headline CPI by around two to four per cent per annum, on average. From 2010 to 2015 alone, the cost of education rose by around 50% nationally.

Education CPI compared with headline CPI (annual rate of change)



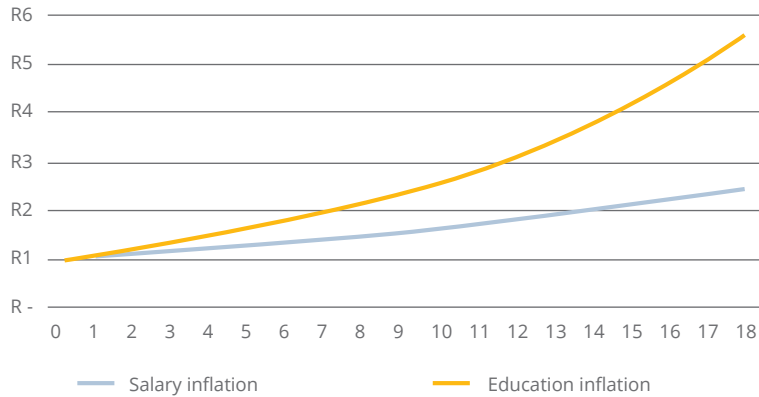
Source: Consumer price index | <http://www.statssa.gov.za>

¹³<https://goo.gl/XetlBA>

The consequence of education inflation consistently outpacing salary growth rates is that the relative cost of a unit of education gets exponentially higher and more unaffordable relative to one's salary as time goes on. The graph below illustrates this by looking at the cost of a unit of education in today's terms (2017) compared with the cost of a unit of education in 18 years' time (assuming both are the same at present).

With education inflation consistently outstripping salary growth, every year education will consume a larger portion of an individual's salary

Divergence between salary and education inflation



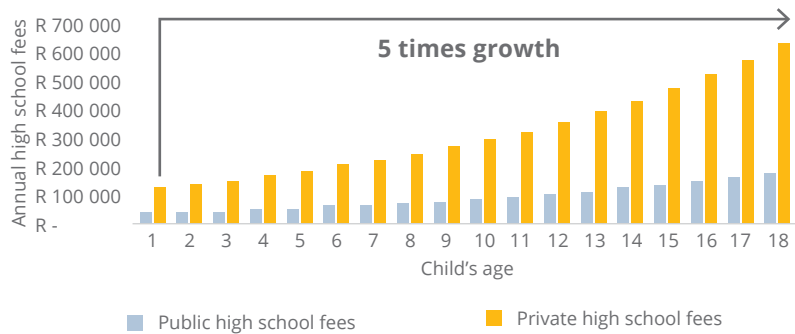
Assuming the cost of a single unit of education is R1 at present and an individual currently earns R1, in 18 years' time that single unit of education will cost R5.56, whereas a unit of one's salary will have only grown to R2.41. In other words, the cost of education will have outgrown salary increases to by around 2.3 times. In other words, if a household is putting 10% of their salary towards education each month now, in 18 years' time they will need to put 23% of their salary for the same unit of education.

Rising tuition fees

Currently, average tuition fees across public and private primary schools sit at around R20 000 and R100 000 respectively. Frighteningly, the tuition fees at the most expensive public and private high schools in South Africa can exceed R40 000 and R250 000 per annum respectively. Given the current pace of education inflation, this means that for a child born today (2017), their final year of schooling will cost around R600 000 alone at the average private high school.

The present value of the cost of education increases by 50% between birth and starting school

Expected growth in school fees 2017 to 2034



It can cost in excess of R6.8 million to educate a child at an Ivy League college in America

Using average school fees across both public and private schooling at every stage of education puts the expected present value of the cost of a single child's education career born today at between R500 000 and R1 million for public and over R1.5 million for private schooling respectively (assuming public schooling, tertiary education). However, in five years' time these values will more than double. For example, the present value of a child's education could increase by as much as 50% between birth and actually starting primary school.

These rising costs of educating a child are not restricted to South Africa alone. In America, for example, a single year's tuition at an Ivy League college can cost around \$60 000 per year. Taking residence and other living expenses into account, this cost increases to around \$130 000 per year or \$526 000 for a four-year degree (around R6.8 million)¹¹. This is compounded by the fact that college tuition fees are rising at about 4% per annum, whereas US inflation is sitting at around 2%¹³.

Once again, in America, these high costs aren't restricted to tertiary education alone. While the public school system in America is generally at no cost to the parent, or at a limited tuition, private schooling costs around \$13 000 per year on average (R170 000)¹². A single year of crèche in New York, for example, can cost in excess of \$30 000 (R390 000).

Rising ancillary education costs

The statistics above only included costs of tuition and ignored any other expenses that may be incurred in educating a child. Given the necessity of technology (such as laptops and iPads), these annual costs will increase significantly. A single iPad can cost around R6 000, a pair of soccer boots between R500 and R4 000, a school blazer around R1 000. Combined with this is the increasing prevalence of private tuition to supplement a child's education. A single lesson can cost in excess of R300 per hour.

Combining all these ancillary education costs could increase the present value of the cost of a child's education by as much as 20%. It is because of these excessive costs that many young South Africans (around 30%) claim to not attend an education institution¹⁶.

¹⁴<https://trends.collegeboard.org/college-pricing/figures-tables/average-estimated-undergraduate-budgets-2016-17>

¹⁵<https://www.privateschoolreview.com/tuition-stats/private-school-cost-by-state>

¹⁶<http://www.statssa.gov.za/?p=4460>

Current mechanisms to fund for education

With continuously evolving trends and rising education costs, current education-financing mechanisms available on the market face a growing challenge in their ability to keep pace.

Saving for education

The current average cost of private schooling across each stage of education is displayed below[#].

Phase of school	Number of years	Cost of each year
Crèche	3	R30 000
Pre-primary	2	R60 000
Primary	7	R90 000
High	5	R100 000
Tertiary*	4	R45 000
Tertiary residence	4	R25 000

*Average public tertiary education costs

According to the Monthly Earnings Report from StatsSA, the average monthly income for a professional is R35 000¹⁴. Assume a household of young professionals wants to send their new-born child to private education, where the costs of sending their child to school at each stage of education are displayed in the table above. If such a household decides to save 10% of their combined salary each month towards their child's education from birth, using these savings alone these parents would only be able to afford up until their child's second last year of high school^{##}. The graph on the next page displays these findings.

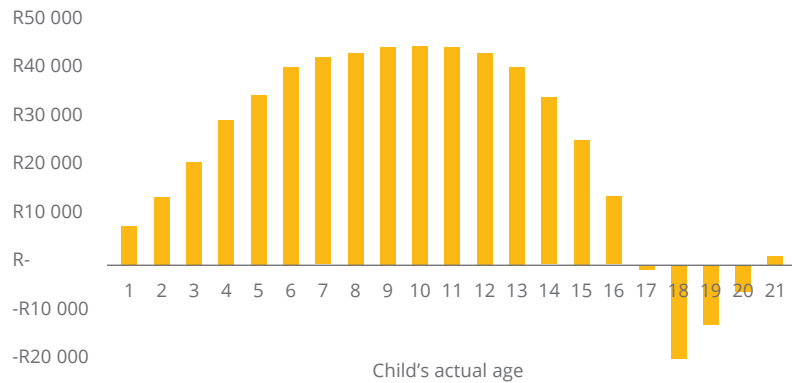
¹⁴<http://www.statssa.gov.za/publications/P02112/P021122010.pdf>

[#]Internal Discovery investigation using manually obtained school fees

^{##}This assumes that the parents will pay for the costs of education through these savings alone and with their savings growing at a rate of 10% per year.

High secondary school fees eat into education savings and hamper parents' ability to provide for tertiary education

Savings surplus/deficit taking only education tuition costs into account



Assumptions: Child starts education at age 2. Salary inflation is 8%, Monthly savings rate is 10%, Investment return rate is 10%, Education inflation is 10%

Moreover, this statistic ignores the cost of other ancillary education requirements, such as technological needs and textbooks. Assume a prudent average cost of these ancillary education requirements amounts to the below cost per year, per stage of education.

Phase of school	Number of years	Ancillary costs of education each year	Total cost of education
Crèche	3	R8 000	R38 000
Pre-primary	2	R8 000	R68 000
Primary	7	R8 000	R98 000
High	5	R10 000	R110 000
Tertiary	4	R10 000	R75 000

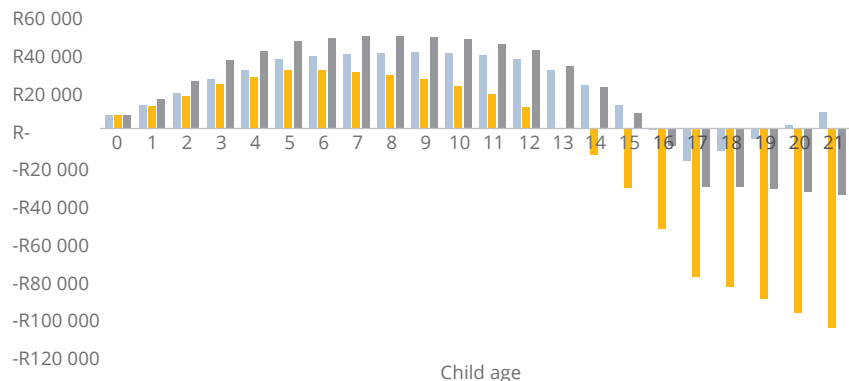
Ancillary costs of education significantly increases the amount parents needs to save

The younger a child starts school, the harder it is to use savings to pay for their education

After taking these costs into account, the average professional parent would either need additional funding to send their child to a private high school, or they would be required to consider sending their child to a lower-cost school. Moreover, this child would also have no funding for their tertiary education.

The above scenarios assume that the child begins schooling at age 2, when they first attend crèche. To assist in reducing the cost of education over time, some parents may consider sending their child to school at a later date, when they start pre-primary or primary school. Repeating the above scenario but under the assumption that the child's schooling career starts at age 5, results in the average parent only being able to afford up until their child's second last year of high school. These scenarios are displayed in the graph below.

Surplus or deficit in education savings each year



■ Savings surplus/deficit taking only education costs into account, starting at age 2
 ■ Savings surplus/deficit with ancillary costs included, starting at age 2
 ■ Savings surplus/deficit with ancillary costs included, and starting at age 5

Assumptions: Child starts education at age 2. Salary inflation is 8%, Monthly savings rate is 10%, Investment return rate is 10%, Education inflation is 10%.

For an average family with 2.29 children, the total cost of educating the children from crèche to the end of their first degree could exceed R2.8 million

This unaffordability towards the end of secondary school is driven by the significantly higher fees at this stage of education, which outpace expected salary growth over time. While one could take out a loan or switch to a lower-cost school to ensure affordability, it is clear that the challenge in using savings alone to provide for the costs of education is concentrated in coming up with an alternative form of education financing that can be used to supplement these costs at later durations.

The findings above provide an illustrative scenario for a new family, however, it ignores the likely event that this family will have more than one child. In South Africa, the average family will have 2.29 children*. Taking this larger family size into account results in the estimated total cost of this family's education rising to over R2.8 million. Moreover, for a family with three children, the total cost of education could exceed R4.6 million.

Number of children	Estimated total cost of education in today's value
1	R1.2 Million
2	R2.8 Million
3	R4.6 Million

** Assuming the same costs of education as was displayed in the prior table and education inflation at 10%.*

Protecting for education

Two mechanisms are available on the market with which one can protect a child's education against a life-changing event to one or both of the income earners in a family: a life insurance policy or an education protection policy.

A life insurance policy may not accurately match the actual costs of education over time, resulting in shortfalls or excesses in cover, necessitating regular policy management

Life insurance policies

In theory, one can set the initial amount of life, severe illness and disability cover (depending on the life-changing event that an individual wishes to protect against) as the present value of the cost of educating a child at that point in time. However, this presents a number of challenges.

Given that education inflation (10%) exceeds even the steepest of benefit growth options (8%) on the market, it becomes difficult to ensure that the amount of cover selected exactly matches the cost of education as time goes on. This is compounded by the fact that for every year of education that passes without a claim the present value of the cost of education goes down, in theory requiring a reduction in life cover.

Combining these factors means that in some years, an individual may have surplus cover but in other years an individual could be severely under insured. The consequence of these factors is that if an individual wishes to fully protect these education costs, the individual would have to actively manage their life insurance policy by servicing up or down respectively each year, in line with education inflation and the age of their children. The alternative would require one to set the initial amount of life cover at the highest possible present value of education costs that one will experience at any point in time in the future, so as to ensure that the costs of education will always be covered. However, this could result in significant over insurance in certain years.

Education protection policies more accurately match rising education costs

Education protection policies

Education protection policies allow an individual to cover the actual costs of education, should the individual or their spouse suffer a severe illness, disability or pass away. The difference between this policy and a life insurance policy is that this type of policy is only for a specified term, typically expiring when the child is 24 years old. In addition, these policies will cover the actual costs of a child's education on an indemnity basis, up until specified maximums. Given that these types of policies grow in line with the costs of education each year and will also cover the actual costs of education, they more accurately match the education protection need.

However, these policies are traditionally limited in that they will only pay out on a claim event. Together with the rising costs of education, hampering an individual's ability to save, the reality is that households may be forced to choose between either saving or protecting for education, which will leave the family vulnerable.

**<https://goo.gl/dYtPMR>*

A case study in connecting health, wellness and education

Given these rapidly rising costs, the move towards starting education at an earlier age, and the increase in competition requiring more costly educational resources, the challenge shifts towards coming up with alternative forms of education financing that draw funding from other, previously unused sources, that can assist in meeting these growing challenges.

Optimising the shared-value insurance model

Discovery Life operates a shared-value insurance model whereby all parties involved benefit from the positive behaviour of its members. By encouraging policyholders to manage their health and wellness through the Vitality programme, Discovery Life experiences lower claims, lower lapses and positive selection that provide value that is then returned to policyholders. Policyholders enjoy better value through discounted premiums, PayBacks and comprehensive benefits.



*2010-2016 Discovery Life claims data

**2016 Discovery Life Diamond Zone White Paper

Tailored rewards maximising behaviour change

Discovery data has shown an overall increase in physical activity of 25% for clients with Active Rewards

Together with the Vitality Active Rewards programme, which incentivises members to increase their level of physical activity through shorter-term, personalised goals, Vitality has been proven to significantly improve health and wellness behaviour. However, despite the success of Vitality, analysis of Discovery Life experience to date shows that through providing more tailored, longer-term rewards in conjunction with these shorter-term incremental rewards, members engage even more and for significantly longer periods, reinforcing and building habit formation.

These findings align with international research in this area. Studies suggest that it is possible to improve habit formation through incentive programmes if the incentive period is long enough to enable members to move past the minimum time required to build lasting habits¹⁸.

As an illustration of these findings, clients with Discovery Life's Buy-up Cash Conversion benefit, which provides a cash payout on retirement of up to 200% of a client's Cover and Financial Integrator Funds have the highest levels of Vitality engagement across the Discovery Life base. This benefit converts a client's improved health and wellness over a long period of time, through annual increases to their Cover and Financial Integrator Funds, into a significant financial asset that can be used to supplement their retirement savings.

Tailored rewards incentivise increased and longer-term health and wellness behaviour change and habit formation

As a consequence of clients recognising that through sustained, long-term health management they can receive significant cash payouts on retirement, across all age bands we see an overall increase in Diamond Vitality status clients of over 112% for clients with the Buy-up Cash Conversion compared with Discovery Life clients without Buy-up Cash Conversion.

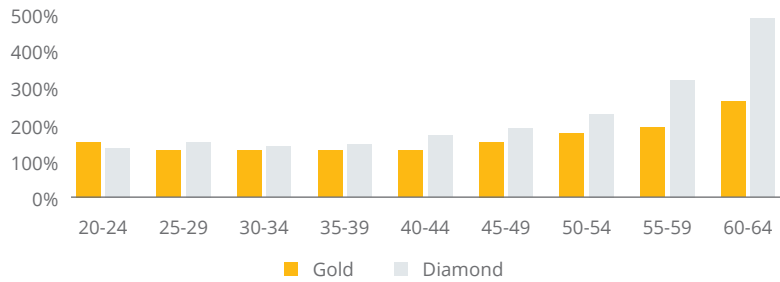
¹⁸Internal Discovery Vitality Active Rewards White Paper

¹⁹<https://goo.gl/wj1VMj>

There are 3.85 times as many Diamond Vitality status members in the age band 60 – 64 for clients with Buy-up Cash Conversion compared with clients who don't have the Buy-up Cash Conversion Benefit

More significantly, we see that clients with Buy-up Cash Conversion engage for longer. In fact, for the Buy-up Cash Conversion benefit, the age band of clients aged 60 to 64 has the highest proportionate number of clients on Diamond Vitality status. This clearly demonstrates that clients closer to retirement are more motivated by a supplement to their retirement savings than clients where retirement feels further away.

Proportionate increase in the number of clients on Gold and Diamond Vitality with Buy-up Cash Conversion, compared with those without this benefit



Incentives that match clients' intrinsic motivations amplify shared value and build long-term habit formation

These findings are backed up by international research that has found that a significant contributing factor as to why many individuals fail to exercise consistently is a lack of sufficient motivation or the dominance of externally-driven motivators, which is unlikely to lead to sustained physical activity¹⁸.

Moreover, results from various studies that examine the adoption of behaviour indicate that individuals who have some form of intrinsic motivation are more likely to maintain that behaviour over a longer term¹⁹. These individuals experience internal satisfaction by engaging in the particular activities²⁰. To bring about long-term maintenance of the behaviour, programmes need to motivate individuals to engage in the activity long enough for the individual to start experiencing intrinsic satisfaction from the activity²¹.

²⁰Levinsohn, J. A., Dinkelman, T., & Majelantle, R. (2006). *When Knowledge Is Not Enough: Hiv/Aids Information And Risky Behavior In Botswana*. Nber Working Paper No. 12418. Retrieved From http://www.nber.org/papers/w12418.pdf?new_window=1

²¹Deci El: *Intrinsic Motivation*. New York: Plenum; 1975.

²²Elizabeth L. Merrick Phd, Msw , Dominic Hodgkin Phd & Constance M. Horgan Scd (2014) *Incentives To Shape Health Behaviors: How Can We Make Them More Person- Centered?*, *Journal Of Workplace Behavioral Health*, 29:1, 19-31, Doi: 10.1080/15555240.2014.868721

The case for extending shared value to education

Providing an education-financing incentive will amplify and reinforce the effectiveness of the shared-value model

This paper has shown that while the value of education is indisputable for parents and society, with rising education costs and evolving education trends it is becoming increasingly difficult for current education-financing mechanisms to keep pace and address these challenges. However, this paper has also shown that through providing members with more appropriately aligned incentives that match their intrinsic motivations, they are encouraged to change their behaviour even more and over a much longer duration.

Combining these findings, it should be expected that through providing members with an incentive to fund their children's tertiary education if they lead a healthier lifestyle, Discovery Life will experience an exponential change in behaviour and significantly enhanced health and wellness engagement over the long term. This will not only accelerate the shared-value insurance model, but compound its effectiveness over the long term to benefit all stakeholders.

Members will benefit through extended improved health and wellness, more productive lives and a reduced education expenditure burden at a time when they need it most. Discovery Life benefits through extended lower lapse and claim rates and significantly enhanced long-term risk savings. In addition, not only is society healthier, but it is more educated and productive. This will create self-fulfilling and reinforcing positive behavioural change cycle.

A healthy lifestyle can now be converted into a financial asset to fund up to 100% of a child's tertiary education fees

Discovery Life's new Global Education Protector uses these findings through a refinement of the shared-value model. By providing the ability for parents to fund up to 100% of their children's tertiary education fees through positive health and wellness management, clients will be incentivised to better manage their long-term health and wellness. This long-term health and wellness will then provide the necessary long-term risk savings to enable Discovery Life to fund the child's tertiary education fees. Moreover, the parents will be assured that their children's full education will be covered if something happens to them. This new education policy takes life insurance to the next level by using policyholder-generated health and wellness surplus to fund tertiary education.

Conclusion

The findings of this paper show that the consequence of the changing nature of education is an increase in its implicit cost starting at a much earlier age. Moreover, current education-financing mechanisms were shown to fall short in accurately matching these growing challenges. Savings will not last until tertiary education and protection only pays out on a life-changing event.

In recognition of these challenges, a case study was presented highlighting the efficacy of the Discovery Shared Value model and how it can be tailored to meet these growing education funding challenges. Through providing appropriately aligned, tailored long-term behaviour changing incentives that build on members' intrinsic motivations, Discovery Life can amplify and compound the effectiveness of its Shared Value insurance model, to help fund tertiary education.
