

Research Paper
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The background of the cover is a composite image. The top half shows a city skyline with a prominent bridge and a tall building under a blue sky with white clouds. The bottom half shows a person in athletic wear running on a green lawn in front of a stone building. A semi-transparent blue banner is overlaid across the middle of the image, containing the title text.

Physical Activity:
Born & Bread.
Converting Attitudes to Behaviour.

Research Extract 2016

The below extract is a summary of a yearlong dissertation Angela undertook on behavioural change in relation to physical activity. The purpose of the research is to analyse and understand the influence of attitudes, motivation and inertia upon intentions and future exercise behaviour. The research uncovers significant findings for increasing physical activity in Australia.

Introduction and Background

Physical activity is an essential component of overall health for mental and physical stimulation. Despite its proven scientific benefits, physical *inactivity* is on the rise. The proportion of overweight and obese Australians in the last twenty years is increasing significantly (Australian Institute of Health and Welfare 2003). The Australian Government acknowledges physical activity benefits five out of the six current Australian National Health Priorities (Bauman, Bellew, Vita, Brown, Owen 2002) but little success has been made on increasing exercise among Australians.

Beyond individual benefits, society also profits from an increase in physical activity and subsequently healthier citizens. Physical *inactivity* is responsible for an estimated 8,000 deaths per year in Australia. A recent Government report (ACT Government 2011) illustrates a lack of activity costs the health system at least \$7 billion per annum nationally in direct health care costs. These figures do not include the indirect costs such as time off work, the social costs of inactivity, and many other subsidiary factors.

Businesses will also benefit from more active employees. Medibank Private (2005) conducted a survey on the health of Australia’s workforce finding:

- 10% of Australian workers are inactive
- 40% of Australian workers do minimal exercise
- 46% of Australian workers live on high fat diets
- 53% of Australian workers felt overwhelmed with stress and pressure for a significant proportion of the time
- 56% of Australian workers are participating in risky behaviours (including smoking, drinking and lack of sun protection) at medium to high-risk levels
- More than half of Australian workers do not get enough sleep

Research shows significant social and economic impacts from inactive and unhealthy employees, particularly when compared with their healthy counterparts. For instance, research shows healthy employees are almost **three times more productive** than their unhealthy colleagues (Medibank Private 2005).

Elevated absenteeism, loss of productivity and high staff turnover have a significant correlation with low employee morale, stress, lack of physical activity and excess weight (Medibank Private 2005).

The table below highlights some of the differences between healthy and unhealthy employees:

Unhealthy Employees	Healthy Employees
18 days annual sick leave	2 days sick leave
Self-rated performance 3.7 out of 10	Self-rated performance of 8.5 out of 10
49 effective hours worked per month	143 effective hours worked per month
Low energy levels and poor concentration	Fit, energetic and alert
Irregular sleep patterns	More attentive at work and better sleep patterns
Poor stress management techniques	Actively manage stress levels

Global research uncovers that actively caring for employee health and wellness increases the percentage of engaged employees from 7% to 55% (Right Management 2009). This same research also shows self-reported creativity and innovation increases from 20% to 72%.

Many behavioural and social cognition theories propose to identify the factors influencing people to engage in physical activity. Little progress seems to be made here in Australia to overcome these issues. This research paper creates a model to better explain the phenomenon.

While an established relationship between attitudes and a certain behaviour currently exists, a gap still occurs. Theorised intention to engage in certain behaviour does not necessarily lead to the actual performance of that behaviour. As a result, this research established a new model that strengthens the predictability power of future exercise behaviour, through the inclusion of inertia and motivation as mediators.

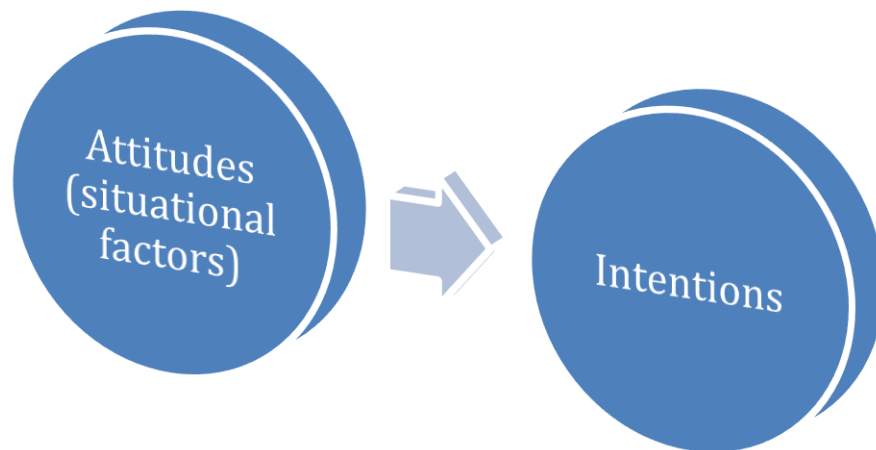
Methodology

A quantitative questionnaire was administered to n=500 respondents via the consumer panel provider Research Now. The questionnaire includes a variety of established and validated scales appropriated to a physical activity context. Statistical analysis using ANOVA and partial least squares regression helps decipher the results.

The Models

This research builds on existing behavioural research. This research quantified a significant relationship between attitudes to exercise and the intention to do so. Exercise intention was captured through a scale of confidence of the individual for intending to exercise in the future.

Situational factors influencing attitudes significantly correlate with the intention to exercise. In particular, medical conditions prescribing exercise, upcoming weddings, and having a baby. These are seemingly “unknown factors” influencing people to switch their behaviour apparently randomly (Lees, Garland, Wright 2007). This is predominantly the case among Non-Exercisers tempered by external influences to exercise.

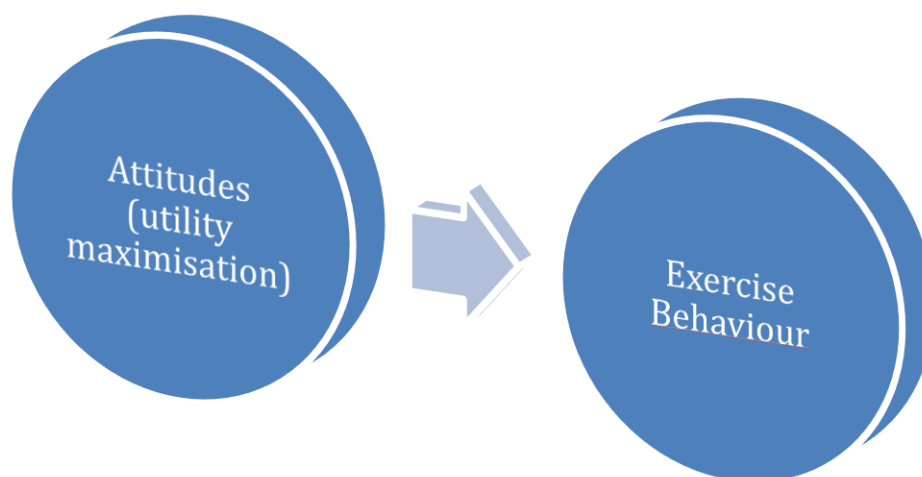


The literature identifies an ‘intention-behaviour gap’ that reflects the space determined by underlying psychological processes (Sniehotta, Scholz and Schwarzer 2005). Essentially, there is an unexplained phenomenon when positive intentions towards exercise are not translated into actual behaviour. Between 30-50% of those with a positive intention to exercise fail to act upon these intentions (Bruijn 2010). Intention generally explains only 30% of the variance, leaving 70% unaccounted for.

A meta-analysis of studies using intention to explain behaviour found average correlations between intention and future behaviour of 0.47 (Hausenblas, Caron and Mack 1997). This forms the basis of further exploration in this paper in an attempt to reduce the intention-behaviour gap. Consequently, an investigation of the predictors of *future* exercise behaviour based on *current* activity levels as the dependent variable is tested as a more effective method for enacting change. Exercise behaviour is defined as actual levels of physical activity, based on

number of days exercised, time spent exercising and the intensity of this exercise.

The lack of conversion from intention to actual exercise behaviour may be partially explained by the excuse of searching for an easier option. The utility maximisation theory rationalises this. This theory asserts people are consistently searching for a better 'utility' (good or service) and when they succeed they will change behaviours (Lee et. al 2007). As such, the search for alternative or easier options is negatively correlated with exercise behaviour. In other words, the 'excuse to search' reduces the likelihood that people will exercise.



The concepts of motivation and inertia are included as mediating variables to enhance the predictability power of the model. Motivation relates to internal and external forces leading to initiation, direction, intensity and persistence of behaviour (Vallerand and Thill 1993). Of the top five reported obstacles to physical activity, lack of motivation is ranked as one of the most prominent contributing factors (Public Health Agency of Canada 2003). Furthermore, motivation is held as a key determinant of physical activity (Troost, Owen, Bauman, Sallis and Brown 2002).

Conversely, inertia is the inactive position due to an inherent resistance to change. More simply, inertia is the barriers preventing people from taking

action. Conceptually two types of barriers exist - internal and external. Internal barriers relate to being too lazy, being too busy (i.e. lack of time), not enjoying exercise, enjoying the 'bad behaviour' and lacking willpower. External barriers include lack of facilities, lack of money, and the preferences and behaviour of friends and family. Research shows those who plan how to cope with barriers, are more likely to perform and maintain a newly adopted behaviour in the face of difficulties (Soares, McIntyre, and Sniehotta 2009).

The below graphic illustrates the constructs with a correlation to exercise behaviour.



Watching the [link](#) with this graphic is the best way to understand how the model works. However in simple terms, you can see the correlations between attitudes, motivation and inertia with current exercise behaviour.

Motivation significantly influences intention and current exercise behaviour, plus acts as a strong mediator for increasing the predictability of the model. This research highlights both internal and external motivation increase the propensity to exercise.

External motivation includes drivers such as (those displayed on the top left):

- “Exercising because others say they should”
- “Exercising because their friends/family/spouse say they should”
- “Exercising because others will be displeased if they don’t”
- “The pressure from friends and family to exercise”

External motivation includes drivers such as (those displayed on the top right):

- “I value the benefits of exercise”
- “It’s important to me to exercise regularly”
- “I think it’s important to make the effort to exercise regularly”
- “I get restless if I don’t exercise regularly”

An established link also exists between inertia and exercise behaviour. Inertia also has indirect effects when mediating the relationship with attitudes. The inclusion of motivation and inertia as post-volitional variables significantly increases the predictability of the theoretical model to $R^2=0.572$. Ultimately, [current](#) behaviour is a heightened predictor of potential [future](#) exercise behaviour.

The significant elements found in relation to inertia included:

- “Taking up exercise would be difficult”
- “I find it difficult to find the best type of exercise for me”
- “In general, it would be inconvenient and a hassle to take up exercise”
- “Exercise is difficult and too tiring”

- “I never have enough energy to exercise”

Outcomes from the Results

Levels of physical inactivity are increasing, with significant growth in the proportion of overweight Australians (AIHW 2001). Physical *in*activity is responsible for thousands of deaths per year, costs the health system hundreds of million of dollars, and thus impacts the economy. If increases to the levels of physical activity were realised, the benefits to individual wellbeing coupled with the savings to healthcare costs are immeasurable. Some research shows for a mere one per cent gain in the proportion of the population sufficiently active, savings of over \$8 million in direct healthcare costs follow (Stephenson, Bauman, Armstrong, Smith, and Bellow 2000).

Beyond the costs to health care, significant savings within the corporate world also dominate. There is an established link between health and wellbeing with **employee turnover**. If an organisation does not manage its employee’s health and wellbeing, research shows the company is four times more likely to lose talent within the next twelve months (Right Management 2009). The Australian Human Resources Institute (AHRI HR Pulse 2008) shows staff turnover is on the rise and estimated the cost to almost \$20 billion. They also modelled the cost of replacing an employee. It costs **at least 75% of the employee’s annual salary** and may be as much as 150% in some cases.

Absenteeism rates in Australia’s corporate world are increasing, up from 8.5 days per person in 2006 to 9.87 per person in 2010 (Direct Health Solutions 2011). Workplace **absences** are unnecessary and expensive for employers. Absenteeism is estimated to cost on average \$3,741 per employee per year in 2010. Illness explains 75% of absences, so the correlation between employee health and absenteeism is clear.

Finally, productivity costs are estimated to be \$30 billion to the Australian economy, while costing employees 6.5 days of productivity per employee per

year (Medibank Research 2011). With traditional cost cutting measures often creating more issues than they solve, using wellness as a way to increase productivity is not only a cost saving mechanism, but also promotes employee engagement.

With a considerable proportion of the population employed (unemployment at 5.8% in June 2016 ABS), workplace health and wellbeing programs are a crucial way to increase the health of the Australian population while also improving productivity of organisations. Research proves organisations that implement health promotion strategies have excellent return on investment (Chapman 2007):

- Reducing workers health risk factors by 56%
- Decrease sick leave absenteeism by 25.3%
- Increase productivity by 15%
- Save \$5.81 for every \$1 invested in employee health and wellbeing

There is considerable evidence for the need for health and wellness within our nation, and wellness programs could be a key way to begin achieving this. Programs need to incorporate existing attitudes, promote motivations and remove barriers to promote behavioural change within the community.

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