

THE PRICE OF *FREE* EDUCATION:
AN INVESTIGATION INTO THE VOLUNTARY DONATION FUNDING SYSTEM
IN NEW ZEALAND STATE SCHOOLS

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DEDICATED TO
MADGE EDGAR M^cMEEKAN

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ABSTRACT

This research program aimed to identify the factors that influence the *Voluntary Donation* payment decision in a cohort of parents ($N = 250$) with a child (or children) at a New Zealand state school. A voluntary donation is a charitable contribution to the running of the school collected from the parents of the school's students. A survey questionnaire was constructed to examine the attitudes parents hold towards the voluntary donation funding system, the current New Zealand Government and the school the respondent's child attends. The parents were 'naturally' separated into two conditions based on their last voluntary donation payment decision – *Paid* versus *Not Paid* – to compare the differences in attitudes on the various statements from the survey and their demographic composition. The results revealed that payment decision was positively correlated with educational achievement, annual household income and age. Individual contributions exhibited strong positive relationships with beliefs about the contributions of others, which was consistent with previous public goods field experiments. The research extended the existing public goods research by examining the social norms of voluntary donation behaviour and assimilating the results with theories of altruism, conditional cooperation and reciprocity. The strongest overall contribution to the prediction of payment decision was parents' attitudes towards the current Government and the voluntary donation funding system. The results identified that pressures existed in the voluntary donation environment, a result most prevalent in high decile schools. Additionally, a marginal level of comprehension of the voluntary donations characterised the majority of respondents. Overall, the research found that the best predictor of contribution was attitudes towards the voluntary donation funding system.

“What the best and wisest parent wants for his own child, that must the community want for all its children. Any other ideal for our schools is narrow and unlovely, acted upon, it destroys our democracy.”

- John Dewey, *‘The School and Society’*, 1915, p. 19.

INTRODUCTION

The policy of *free* education in New Zealand is currently under threat. The use of *Voluntary Donation* funding in state schools – which permits a school to request charitable contributions from the families of its students – is a controversial element of the education system in this country. The ability of a school to appeal for donations from families has divided public opinion because it challenges the right of all New Zealanders to a government provided education. Consequently, many education critics conclude that *free* schooling is now a myth (Nichols, 2007).

The state education system, and its voluntary donation source of funding, encompasses the features of a privately provisioned public good, allowing the investigation of public goods theory from an innovative perspective. While public goods are a thoroughly investigated empirical subject, the analysis of field experiments lacks the same extensive coverage. The current study aimed to investigate the voluntary donation funding system by examining the factors that influence the contribution decision of a parent, before assimilating the findings with current public goods theory.

The New Zealand Education System

According to the United Nation's *Education Index*, the education system in New Zealand is ranked the fourth highest in the world (United Nation's Human Development Report, 2008). New Zealand's adult literacy and school enrolment rates are among the highest of any global society, demonstrating the strength of the school system in this country. It is estimated that there are currently 764,398 children enrolled in New Zealand schools, which infers that nearly twenty percent of the population of this country is enrolled at a primary, intermediate or secondary education facility (Statistics New Zealand, 2010). The

government funded *State* and *State-Integrated* education systems cover about ninety-three percent of these school enrolments (Mallard, 2005). With an emerging trend of placing government spending under the microscope, the education system has become a fresh area for public scrutiny, highlighting the need for empirical investigation to arbitrate the associated media focus.

State School Funding

The *Education Act 1989* entitles every child, between the ages of five and nineteen, to the right of free enrolment and free education at one of New Zealand's 2,563 state schools (Ministry of Education, 2009). The privilege of free education is, however, currently under threat because the government funding provided to state schools is often considered insufficient. The New Zealand Council for Education Research (NZCER) released a report detailing the results from a 2006 – 2007 national survey on school resources. The survey found that “for all stakeholder groups (principals, teachers, school trustees and parents) in both primary and secondary schools, funding was identified as the major issue affecting schools,” (Wylie & King, 2009, p. xviii). An additional report on school funding, identified that many schools were “unable to meet all their operational costs by use of their government grant alone,” (Wylie & King, 2005, p. viii). The review found that only twelve percent of the state schools surveyed were in a comfortable financial position, and able to consider future development of their education programmes and infrastructure (Wylie & King, 2005). The NZCER report concluded that the pressures on school budgets remained problematic, and were intensifying (Wylie & King, 2009).

The New Zealand School Trustees Association (NZSTA) tracks the spending of schools and compiles financial information for Board of Trustees training and development.

A report from the Association found that one school had overspent its government provided budget by eleven percent in 2005, and that this amount had expanded to forty-two percent by 2007 (Kerr, 2007). Even though most schools possessed “robust systems of budget development and monitoring, and employed experienced administration staff to implement this, the majority still had problems meeting the financial demands of running a school.” The vast majority ran on “thin margins, and took a conservative approach to financial management and programme changes,” (Wylie & King, 2005, p. viii). The Wylie and King report also found that school administrations had to manage their finances very carefully, and were not able to cover all the support for students, which they considered they should be providing. Principals of fifty-five percent of the secondary schools surveyed and forty-seven percent of the primary schools noted shortfalls in funding. From the review, only one percent of secondary schools, and eleven percent of primary schools, considered they were adequately resourced. In addition, the Boards of Trustees of forty-five percent of schools expressed that their school had encountered financial management issues in the previous three years (Wylie & King, 2005).

All New Zealand schools have the right to raise additional capital to supplement the operational allowance received from the government. The amount raised by schools has increased substantially since the introduction of school self-management in 1989, which allowed schools to govern their own finances and boost additional funding from external sources when necessary. Statistics from the Ministry of Education found that state schools raised \$500 million in additional funding in 2005. This non-government financial support increased to \$712 million in 2007, which equates to over ten percent of annual school funding (Ministry of Education, 2009). An NZCER article extended this figure, reporting that, on average, state schools raised seventeen percent of their operational budgets from supplementary funding. In addition, twenty-six percent of secondary schools reported

collecting more from locally raised revenue, than they received from the Government (Schagen & Wylie, 2004). The majority of supplementary funding is sourced from grants, sponsorship, international students, community fundraising and parental voluntary donations (Education Review Office, 2007). This extra funding is becoming increasingly necessary as the population grows and education becomes more expensive. In the past several years, costs of support staff, information and communication technology, and property rents have all increased (Schagen & Wylie, 2004). Additionally, international student numbers have declined, cutting revenue upon which some secondary schools have come to rely on (Wylie & King, 2004). It has been widely publicised that without supplementary revenue, the majority of state schools would not remain financially viable (Rudman, 2008; Woulfe, 2008).

The Ministry of Education (2009) acknowledges that the government provided, operational budget may be insufficient to resource all schools, but contend that spending on education has increased appreciably over the past decade. The Government is consistently under pressure to increase funding for education, and negate the need for schools to raise additional funding. In addition, the current financial climate has placed the Government under considerable fiscal stress creating options, which circumvent taxes, particularly attractive. Voluntary contribution institutions, the voluntary donation system for example, offer this feature, and therefore represent a potentially viable option to supplement the tax-financed mechanism for providing public goods (Croson & Marks, 1998). John Morris, Headmaster of Auckland Grammar, concurs, “[g]overnment funding will never be enough to run schools and hence school donations are one way of being able to maintain [the] excellent standard of education that people expect,” (Cited In: Smith, 2009, p. 1).

Former Education Minister Trevor Mallard, clearly stated that, “compulsory attendance fees have no place in the state education system,” (Mallard, 2001), which illustrates that requesting a fee from parents is strictly prohibited. The Education Review

Office (ERO), a government funded research service of the Ministry of Education, is charged with reprimanding the schools that are caught breaking the rules. Frequent reviews of the voluntary donation system allow the Ministry to caution schools that request compulsory fees for core syllabus, or which pressure parents into paying the donations. In a recent report, the ERO inspectors found that eleven of the two-hundred and eighteen schools reviewed, called donations ‘fees’ or ‘term payments’, and did not make it clear that the payments were ‘optional’ donations (Education Review Office, 2007). The review inferred that thousands of other families in New Zealand were being charged incorrectly. The Ministry, however, has little power to punish the offending schools, except for pointing out the fault. Lorraine Kerr, president of the NZSTA, supports a schools right to request donations due to the shortfall in government funding. Kerr states that “trying to get money out of the community by whatever means – by calling a payment whatever name – is a [school] board’s desperate way of actually trying to top up [funding] inadequacy,” (Kerr, 2007, p. 1).

School Decile Rating Index

The New Zealand Government in conjunction with the Ministry of Education created the school’s decile rating system to assure equality of educational opportunities across all socio-economic communities (Ministry of Education, 2005). The *decile rating* system (decile) was developed to allocate targeted funding based on the socio-economic characteristics of a school (for a comprehensive explanation see the *Methodology* section). A school’s decile rating takes into account household income, employment status, educational achievement, income support and household size, and uses ten subdivisions, each containing ten percent of schools (Mallard, 2001). The decile of a school indicates the extent that the school draws its students from low socio-economic communities. Higher deciles reflect the

higher socio-economic status of the school's community. The existence of a ranked school funding system has divided academics who believe it 'stigmatises schools', and creates 'social segregation'. The critics propose that funding should instead be based on school performance (Langley, 2008). Thrupp (2008, p. 1) contends, stating, "decile funding is a way of partly compensating schools for socio-economic disadvantage. It provides low socio-economic schools with the extra funding needed to buy resources or employ support staff." Thrupp posits that decile funding is indispensable because of the recognised global trend that fewer children from low socio-economic backgrounds acquire school qualifications, compared to high socio-economic students. This observation creates an environment where disproportionate school funding, based on socio-economic requirements, is a necessary tool (Thrupp, 2008).

Under the decile rating system, the Government considered that schools with higher proportions of affluent families have a better chance of raising additional funding, specifically through parental voluntary contributions (Langley, 2008). The schools with the highest decile rating, therefore, receive the least government funding, because they will (theoretically) collect the balance from the voluntary donations. Over the past few years, this assumption has been disproven, with many high decile schools struggling with voluntary donation collection rates (Marvin, 2009; Smith, 2009). Media correspondence with school principals has revealed that high decile schools raise more than half of their funding from compulsory fees, international students and voluntary donations (Nichols, 2007), and the level of lost income from uncollected voluntary donations is severely affecting the schools. Some schools have even employed personal research in an attempt to understand the reasons for the decrease in donations (Personal Communication, 2010). Even though low decile schools receive higher per student subsidies from government funding, many require a substantial amount from the voluntary donations, or other sources of supplementary funding.

In addition, high decile schools commonly request much higher donations from parents to supplement the lack of government funding, compared to the donation requests of low decile schools.

The Voluntary Donation Funding System

As defined by the Ministry of Education (2009), the *Voluntary Donations* are charitable contributions to the running of the school collected from the parents or caregivers of the pupils attending the school. The majority of New Zealand state schools annually request a per-student contribution to supplement their government funding (Education Review Office, 2007). The voluntary donations are a substantial contributor to the supplementary funding collected by state schools.

In recent times, it has been well publicised by way of extensive media coverage, that many schools are struggling to promote a successful learning environment for pupils due to a lack of funding (*"The Cost of Free Education"*, 2009; Fea, 2009; Woulfe, 2009; Smith, 2009). A major cause of the deficit is the steady decline of the amount collected through the voluntary donations (Education Review Office, 2007; Smith, 2009). The latest NZCER national survey found that schools are continually attempting to raise additional income to help ease budget pressures. In the report, one in four secondary schools, and one in six primary schools, admitted to increasing the amount requested from the voluntary donations over the past two years. Although, many principals reported that a substantial number of parents did not pay (Wylie & King, 2009). Earlier reports state that increased resistance to paying the donations was becoming a more common problem for schools (Wylie & King, 2005; Woulfe, 2008). The reduction in donation rates has placed significant pressure on schools to remain financially viable and in some cases stay out of debt (Fea, 2009). Some

schools have stopped requesting a donation, as the cost and effort involved in collection was often going unrewarded (Smith, 2009). Voluntary donation payment rates have reached all time lows in recent years, (perhaps due, in part, to the global economic climate over the past 24 months) with a high decile school reporting a contribution rate of thirty-three percent (Fea, 2009). The majority of state schools declare that annual voluntary donations are a necessity due to financial shortcomings and are persistent that an “increased reliance on the [voluntary] donations has rendered the concept of free education a myth,” (Rudman, 2008, p. 1).

Standard voluntary donations range from around \$20 per student for low decile schools, to well over \$800 per student for more prestigious, high decile schools (Education Review Office, 2007; Woulfe, 2008). In 2005, the average contribution requested as a voluntary donation was \$125 per student for primary schools, and \$275 per student for secondary schools (Education Review Office, 2006). As a proportion of total supplementary funding, the voluntary donations comprised, on average, ten percent for primary schools, and fourteen percent for secondary schools (Education Review Office, 2007). The payments are requested quarterly (each term), six-monthly or as an annual lump sum. Many schools even allow part payments, or weekly instalments, in order to make the donations as affordable as possible. This researcher found that a general guideline for voluntary donation payment proportion is that schools, on average, collect between seven and nine percent of the voluntary donations they request, for every decile rating ‘point’. For example, a decile three school could expect a voluntary donation payment rate of between twenty-one and twenty-seven percent, whereas a school with a decile nine rating could expect a payment rate of between sixty-three and eighty-one percent (Personal Communication, 2009; 2010). Official accounts agree, with a recent report revealing secondary school collection rates at between twenty and ninety-five percent (Education Review Office, 2007). These statistics show that

there is huge variance in the proportion of families that do not pay the donation, especially in high decile schools (i.e. Decile 6 – 10) (Fea, 2009; Forbes, 2009).

The tension surrounding the voluntary donations has led schools to form impressions regarding the motivations of the parents who do not pay the donations. The prevailing conclusion is that two categories of non-contributing parents exist: those who cannot afford to cover the costs of the donations, and those who choose not to donate because there are no consequences for non-payment (Smith, 2009). From an economic perspective, this is unsurprising, but it is a concern for schools, and the Ministry of Education, due to the level of lost income.

The tension surrounding the voluntary donation funding system is most pertinent in the opinions of parents who are expected to contribute. The current investigation of a cohort of parents with children at a selection of state schools, examined parental attitudes towards the voluntary donation environment, to identify the factors that influence payment decision. The research aimed to lend additional empirical evidence to the private provision of public goods literature by using the voluntary donation funding system as an example of a social dilemma (Dawes, 1980). The researcher employed economic techniques in an attempt to assimilate the findings with current public goods research.

ECONOMIC THEORY

In the economic discipline, a myriad of research has focussed on the examination of public goods (For example: Ones & Putterman, 2007; Andreoni, 1990; 1995; Croson & Marks, 1998; Isaac & Walker, 1988; 1992; Battigalli & Dufwenberg, 2007; See: Ledyard, 1995 for a review). In particular, the private provision of public goods, and the behaviour of an individual within a group, is the focus of investigation for both theoretical and

experimental researchers. In his ground breaking book *The Logic of Collective Action*, Mancur Olson (1965, p. 2) introduces the idea that “rational, self-interested individuals will not act [together] to achieve their common or group interests”. Current research in the field attempts to build on Olson’s observations and provide better explanations for the behaviour of individuals, and the ‘group mentality’ that exists within collections of related and unrelated people. John Ledyard introduces one of the more influential reviews in the public goods literature by stating that “some of the most fundamental questions about the organisation of society centre on issues raised by the presence of public goods,” (Ledyard, 1995, p. 1). He continues, positing that “research on the voluntary provision of public goods must come to grips with this simple but still unanswered question about the fundamental nature of humankind – *Are people selfish or cooperative?*”

Important questions of whether we can depend on the market to provide an optimal amount of a public good, and how effectively we can rely on ‘natural’ processes, such as voluntary contributions, to solve environmental problems, come down to fundamental issues about human nature (Chen, 1999). The topic remains at the forefront of the rapidly expanding experimental landscape because at the most basic level, voluntary contributions to public goods defy fundamental economic theory (Chaudhuri, 2007). The debate centres on theories of dependent behaviour, private benefits and social pressures as economists, sociologists and psychologists attempt to draw conclusions from the surfeit of investigations that colour the academic terrain.

Public Goods

By the economic definition, a *Public Good* is a good or service that is non-rivalrous and non-excludable. The term *non-rivalry* implies that consumption of a good by an individual does not prevent simultaneous consumption from other individuals, and, in its

purest form, *non-excludability* infers that once a good has been produced, it is impossible to prevent individuals from gaining access to it (Blakeley et al., 2005). A *pure public good* has perfect non-rivalry of consumption, and consequently an increase in the number of consumers exploiting the good, does not reduce the marginal benefit available to other consumers (Berlemann et al., 2004). Additionally, pure public goods are non-excludable, as preventing the consumption of an individual or group, would incur prohibitive costs (Kaul et al., 1999). In contrast, *impure public goods* are non-excludable and impurely non-rivalled. From this definition, an impure public good can be utilised by multiple consumers, but an increase in the number of consumers may diminish the marginal benefit to each consumer. This explanation implies a negative relationship between the number of individuals who exploit the public good and the benefit received by each individual from consumption of the good (Isaac & Walker, 1988). A review of the public goods literature reveals that many economists contend the existence of perfect examples of pure public goods outside the laboratory. Accordingly, the majority of research into the phenomenon is through public goods games, in which manipulation of conditions, and experimental control, allow for causal judgement and theoretical inspection. In opposition, a growing number of researchers conclude that certain goods approximate the impure public good concept adequately for field analysis to be academically useful (Shang & Croson, 2009; Levin, 1987).

For an adequate understanding of public goods, it is prudent to provide an explanation of private goods. A *private good* is effectively the opposite of a public good, in that it is both excludable and rivalled (McEachern, 2009). Thus, the consumption of a private good by one consumer prevents simultaneous consumption by other consumers and, it is (reasonably) possible to exclude an individual or group from consumption of the good (e.g. non-contributors). The major difference between private and public goods is one of profitability. Due to the non-rivalry and non-excludability of a public good, it is impossible for private

enterprise to supply them for profit (McEachern, 2009). To solve this problem, society entrusts governments with the provision of the majority of public goods (Chaudhuri, 2007).

Funding Of Public Goods

A number of public goods rely on *private provision*, through voluntary contributions from individuals, to supplement (or substitute) the public provision received from the government. This causes a social dilemma for society, whereby individuals must decide whether to contribute to a public good or free ride (Rege, 2004). The game theoretic expectation is that there will be no contributions to the public good from rational, self-interested persons. Strictly logical thinking suggests that public goods that rely on voluntary contributions will cease to be available, illustrated by the classic *Tragedy of the Commons* (Hardin, 1968). This typically leads economists to call for the provision of public goods via tax revenue rather than depend on private contributions (Chaudhuri, 2007).

Government funding can have a direct effect on private contributions to public goods. Whilst government spending funds the majority of public goods, research has concluded that public provision may ‘crowd out’ the charitable contributions of individuals and be detrimental to total supply (Andreoni, 1993). A study from Abrams and Schmitz (1978) employed a longitudinal study and regressed private charitable donations on government expenditure for health-care, education, and welfare. Their estimates indicate that a one dollar increase in government funding had a strong crowding-out effect and lowered private charitable contributions by twenty-eight cents. Warr (1982) and Roberts (1984) presented theoretical evidence that government funding results in a ‘dollar for dollar’ reduction in private contributions to public goods, a finding that has been extended to subsidies (Bernheim, 1986; Andreoni, 1988). In theory, a partial government subsidy would create an environment in which society strictly enforces a social norm of voluntary contribution.

Contrastingly, complete government funding would remove the need for society to enforce private provision of a public good (Rege, 2004).

The accepted prediction of neo-classical economic theory is that, in general, public goods would be undersupplied by voluntary contributions. Nevertheless, economists have revealed that there are many important instances in which public goods are voluntarily supplied from private provision. The obvious example is contributions to charity (Roberts, 1984), but this can also be extended to the campaign funds of political parties (Bergstrom et al., 1985), public television broadcasting (Andreoni, 1995) and public radio stations (Shang & Croson, 2009).

Public Goods Games

Investigation of the theoretical implications of the private provision of public goods is through the very common experiments called *Public Goods Games*. A public goods game is a multi-person analogue of the *prisoner's dilemma* game, where participants must choose how to distribute an endowment between their personal fund and the public good account (Isaac & Walker, 1988). These laboratory experiments are designed to preserve neutrality and minimise social incentives in a controlled environment (Andreoni, 1995). The basic principle in a standard public goods game is that each participant begins with an endowment of resources (most commonly money), and can then choose to transfer a portion of their endowment to the public good, in much the same way as an individual would through charitable donations (For a review: Ledyard, 1995). The public good account is typically increased (e.g. double the total contribution), to provide an incentive for an individual to contribute, by improving the marginal per capita return from an individual's personal contribution. The public good account is then divided between all of the individuals, who each receive an equal distribution of the total (Hsu, 2008).

In a highly simplified version, three ‘players’ each begin with a \$20 endowment. Player A decides, that he will contribute \$10 of his endowment to the public good. Player B, in congruence with the free riding hypothesis, contributes \$0 of his endowment, and Player C contributes all of his endowment (\$20) to the public good. The contributions are collected (\$30), and the total doubled ($\$30 \times 2 = \60), before being divided equally between the group members. After distribution of the public good, Player A has \$30, the \$10 that was not contributed plus one third of the public good (\$20), Player B has \$40, the original \$20 that was not contributed and one third of the public good (\$20), and Player C only has the \$20 from the public good. According to game theory, free riding in public goods games will be the dominant strategy equilibrium (Chaudhuri, 2007) because the marginal per capita return for a one dollar contribution is always less than one dollar (Ledyard, 1995). It is theorised that participants in public good games will act rationally to maximise their personal gain by employing the theory of marginal per capita return to judge the potential benefit of contribution. The *marginal per capita return* (MPCR) from a public good is defined as the ratio of benefits to costs from an individual’s contribution to a public good (Laury et al., 1999). Put simply, every dollar of contribution yields a diminished benefit to the contributor, irrelevant of the contribution of the other group members. For the above example, the total contribution to the public good account is doubled, and divided by the number of participants (in this case three), therefore the benefit received by an individual from a contribution of one dollar is 66 cents ($\text{MPCR} = (\$1 \times 2) / 3$). Even though the prediction of perfect free riding is incorrect, individuals appear to respond to the marginal per capita return concept in a logical and mathematical way (Ledyard, 1995).

Generally, three significant observations are consistently replicated in public goods games (Eichberger & Kelsey, 2002). Individuals will contribute (on average) around half of their endowment to the public good, however the level of contribution will decrease (decay)

over repeated instances of the experiment (Andreoni, 1988). In addition, whilst free riding is often approximated, exact free riding is seldom realised (Isaac & Walker, 1988).

Public Goods Problems

An inspection of neo-classical game theory demonstrates that because individuals act with individualistic, self-oriented motivations, the desires of the group are often overlooked. The idea that groups will act in support of their group interests is supposed to follow logically from the widely accepted premise that the individuals within the group will be self-interested and rational (Olson, 1965). This is often not the case because the rationality of individuals is idiosyncratic and fundamentally selfish. An excerpt from the *Theory of Groups* summarises this point, “even if all of the individuals in a large group are rational and self-interested, and would gain if, as a group, they acted to achieve their common interest or objective, they will still not voluntarily act to achieve that common or group interest,” (Olson, 1971, p. 2).

The contentiousness surrounding the private provision of public goods exists because an individual has no incentive to contribute to the public good; put simply, a contribution does not produce a tangible marginal benefit for the contributor. Given the difficulty (and expense) of excluding non-contributors from the consumption of a public good, a common problem in the provision of public goods is the existence of free riding (Chaudhuri, 2007). Public goods theory predicts that, if reprisal is unlikely, rational individuals will avoid contributing to a public good by adopting free riding behaviour (Andreoni, 1988). The *free rider* hypothesis (See: Davis & Hold, 1993 for a review) forecasts that individuals tend to withhold contributing to a public good, in the hope that others will contribute (Andreoni, 1995; Champ et al., 1997). The theory posits that individuals act according to neo-classical game theory in order to maximise their personal wealth by not contributing to public goods. Andreoni (1995, p. 891) summarises this position, contributing that “theories of free riding

predict that public goods should have very few contributors, and the contributions should be very small”.

Free riding is termed a public goods ‘problem’ because it is an example of a social dilemma. Economists have long recognised the ‘dilemma’ – that individual incentives are at odds with group interests – at the theoretical level (Ledyard, 1995). A *social dilemma* develops when each individual in a group has a “clear and unambiguous incentive to make a choice that – when made by all members – provides poorer outcomes for all than they would have received if none had made the choice,” (Dawes & Messick, 2000, p. 111). In this reality, each individual receives a greater benefit from defecting than from cooperating, but the individuals would be better off if all cooperated rather than if all defected (Schroeder, 1995). In other words, the reasonable and rational behaviour of an individual results in each individual receiving fewer benefits than they would have if they had acted unreasonably and irrationally (Dawes & Messick, 2000).

The observations of public goods games, in conjunction with field research, have led to the creation of two dominant theoretical pathways as explanations for the behaviours observed within a typical experiment. Firstly, as outlined by the game theoretic hypothesis, *neo-classical economic theory* predicts that all individuals will free ride and not contribute anything to the public good (Ledyard, 1995). From this position, the public good would be under-funded by voluntary private provision alone. Conversely, the *behavioural-economic theory* – which encompasses a surfeit of behavioural models – predicts that the individuals in a group will contribute something to the public good, and this may extend to complete cooperation. Ledyard (1995) posits that the effect of social norms, cooperation or altruism will lead each participant to contribute a proportion of their endowment, reducing the conflict between individual and group motives, and approximating the group optimal outcome.

Research into public goods games has led economists and psychologists to reject both theories as inadequate for explaining the standard observation. Many researchers conclude that the evidence points towards a weak free rider hypothesis (Fischbacher & Gächter, 2006) and a common outcome from the literature is that total contributions are expected to rest mid-way between *no* contribution and the *group optimum* – complete contribution from all members (Ledyard, 1995). The complexity of private provision to public goods has led researchers to posit a ‘library’ of potential theoretical solutions to the public goods problem (For example: Brandt et al., 2003; Croson, 2007; Sefton et al., 2007). These theories aim to extend the public goods literature by providing resolutions to the inadequacy of neo-classical game theory, and clarifying the complexity of the behavioural models.

Solutions to the Public Goods Problem

The observations of public goods games, in conjunction with public goods field experiments, have led researchers to reassess the model of giving in order to rationalise the behaviour of individuals. Under neo-classical game theory (neo-classical theory), positive contributions to public goods are considered irrational (Fehr & Schmidt, 2005). Over the past two decades, advancements in the investigation of public goods have led both economists and psychologists to reject the predictions of neo-classical theory as insufficient to explain the behaviour of individuals (Brandt et al., 2003). Thus, new theories, which offer better solutions to the public goods problem, have become fundamental to the extension of knowledge in the field (Chaudhuri, 2007).

Rival theorists have posited multiple solutions to the social dilemma of public goods in order to explain the underlying motivations governing the psychology of giving. Research has shown that motives of human behaviour such as cooperation, altruism, warm-glow and kindness (Andreoni, 1990; Rege & Telle, 2004), and informational factors such as confusion

and identifiability (Andreoni, 1995; Croson & Marks, 1998), have a substantial influence on the likelihood of an individual to voluntarily donate money to a public good. In addition, the discipline is continually expanding to include the effects that behavioural motives, such as guilt aversion, fairness, reciprocity and conformity have on cooperation (Fehr & Schmidt, 2006). Olson (1965, p. 60) posits that, “people are sometimes motivated by a desire to win prestige, respect, friendship, and other social and psychological objectives,” and, as Becker (1974, p. 1083) observed, “apparent charitable behaviour can also be motivated by a desire to avoid the scorn of others or to receive social acclaim.” Whilst there are a vast number of theories and investigations, which attempt to solve the social dilemma of private provision to public goods, only the relevant mechanisms, and some of the major contributions to the literature, are reviewed in this section.

An exception to neo-classical theory that has gained recognition from economists is the study of simple altruism (Rabin, 1993). *Altruism*, where an individual derives personal utility from the combination of their own consumption and the consumption (or utility) of others (Shang & Croson, 2009), is surprisingly common amongst unrelated people even when no reciprocation is likely or forthcoming (Fletcher & Zwick, 2007). The theory relies on individuals gaining a private benefit from unselfishly placing the interests of the group ahead of their own, in an attempt to provide philanthropic benefit to society. Thus, an altruist is willing to sacrifice their own resources in order to improve the well-being of others (Fehr & Schmidt, 2006). An important consequence of altruism is that an individual’s contribution can be ‘crowded-out’ by the contributions of others (Roberts, 1984). As contributions from others (or from the government) increase, the utility gained from personal contributions to the public good will decrease, resulting in lower contributions from an individual (Shang & Croson, 2009). Nonetheless, altruism has support from many academics as a motivating factor for the voluntary contribution mechanism (Andreoni, 1990). Prevailing research has

concluded that altruism alone is ineffective at explaining deviations from neo-classical theory (Sugden, 1984) and investigation into new behavioural factors is thriving.

With altruism rejected as a sufficient explanation for cooperative behaviours, investigation has continued into inter-individual factors that encourage public good contributions (Fischbacher & Gächter, 2006). Past research proposed that social norms, which enforce cooperation in public good situations, lead to an increase in contributions (North, 1981; Andreoni, 1990; Hollander, 1990). A *social norm* is a rule of behaviour, which is enforced by social sanctions (Coleman, 1990). Axelrod (1986) suggests that the most common definitions of social norms are based upon expectations, values, and behaviour. The proposition is that a norm exists, in a given social setting, to the extent that individuals usually behave in a certain way, and are punished when others perceive them to be violating this behaviour. The social norm of an action is established by the enforcement of principles that groups use to govern appropriate and inappropriate behaviour. The observation of an individual's failure to obey these socially accepted behavioural norms may result in social disapproval from others in the group (Sefton et al., 2007). Alternatively, the observation that an individual is acting appropriately, in accordance with the social norm, may result in social approval from other members of the group.

The desire to receive positive affect and to avoid negative social discourse, or perhaps a combination of the two, is likely to be one of the major contributing factors that underlie public goods contributions. As Bergstrom et al. (1985, p. 26) states, "those who desire the good opinion of their neighbours may believe the size of their own contributions to have an importance beyond their effect on total supply." From this perspective, individuals derive a private benefit from contributing to a public good in the form of social approval. Social sanctions, of approval or disapproval, need not be direct and tangible to encourage cooperation. Simply the threat of reprisal, or the suspicion that others dislike a particular

behaviour, may constitute a significant social cost for somebody disobeying a social norm. Indirect social approval and disapproval are simply forms of intangible social sanctions that influence behaviour (Rege & Telle, 2004). Therefore, modifying inappropriate behaviour could simply be a response to the threat of negative sanctions, or the expectation of positive benefits, instead of direct punishment or reward (Sefton et al., 2007). Additionally, social norms can be sustained by internalisation, where a norm becomes so entrenched in a society that violating it causes psychological discomfort (Axelrod, 1986). Once enforced by internal sanctions, internalisation can manifest itself as feelings of self-satisfaction or guilt (Lindbeck, 1997). Therefore, cooperative behaviours exhibited in voluntary contribution situations may just be an internal affect of the societal pressures to conform, or a response to the coercive pressures of society through the action of social norms.

In order to be successful in adapting behaviour, a social norm needs to be enforced by costly punishments, which penalise socially inappropriate behaviour, or reinforced by social benefits that encourage acceptable behaviour. From this perspective, “[s]ocial sanctions require offenders to exhibit changes in behaviour in response to the sanction,” (Noussair & Tucker, 2005). The deterrents employed by individuals to discourage inappropriate behaviour vary widely, with dominant strategies involving both formal and informal sanctions (Masclet et al., 2003). *Informal sanctions* such as peer pressure, expressions of disapproval and social ostracism have been shown to have significant preventive affects on undesirable behaviours (Falk et al., 2005), as have *formal sanctions* including fines, incarceration and legally enforceable restrictions (Noussair & Tucker, 2005). In public goods games, *punishment* is observed even when there are no tangible benefits, and significant personal costs, to the punisher (Fehr & Gächter, 2000). The introduction of punishment into an experiment initially increases the overall rate of contribution, however, this effect often decays over successive trials (Fehr & Gächter 2000). In instances where formal (monetary) sanctions are available

for use as punishment for non-contribution, the observation is that individuals will use the deterrent even when some personal financial cost is incurred (Fehr & Gächter 2000; Noussair & Tucker, 2005). Punishments of this nature cause contributions to increase substantially, and similar results are shown for informal sanctions such as shame and social disapproval (Masclet et al., 2003). Sefton et al. (2007) extends the research by demonstrating that punishment is more successful at encouraging contributions than rewards, in public goods experiments. There is also abundant anecdotal evidence that individuals informally sanction those who engage in selfish activities at the expense of other group members (Sefton et al., 2007).

To enforce a sanction on inappropriate behaviour, the contribution decisions of an individual needs to be a matter of public knowledge. In social dilemma experiments, if the contribution of an individual is made publicly identifiable, the rate of observed cooperation will increase, relative to when the contributions remain anonymous (Croson & Marks, 1998; Rege & Telle, 2004). The theory of *identifiability* creates an environment in which social norms can more easily be enforced, allowing social disapproval and approval to influence behaviour (Croson & Marks, 1998). This insight is well established in the collection processes of charities that publicly list benefactors and their respective contributions (Rege & Telle, 2004). Similar anecdotal evidence of this phenomenon has been observed in individuals' donations to churches and schools.

In addition to the desire for material benefits, an individual is theorised to hold a preference for fairness when considering contributions to public goods (Falk et al., 2000). Rabin (1993) introduced the idea that members of a group will reciprocate cooperative behaviour, and retaliate against uncooperative behaviour. The theory of *fairness* dictates that if someone is kind to you, then you will be kind in return, or if that person is unkind, you will respond with unkindness (Rabin, 1993). In experiments, fairness intentions have been shown

to have an effect on both negative and positive reciprocal behaviours, which influence contributions to public goods (Falk et al., 2000).

Closely related to the concept of fairness is the *reciprocity motive*, which is especially evident in small groups of related or associated individuals. An individual conforming to the reciprocity motive would contribute to a public good as part of a response to the positive actions of others (Falk & Fischbacher, 2006). Other individuals within the same community may then contribute in return, hoping that all the members in the group develop an ongoing agreement to continue contributing. The agreement can be self-sustaining if all individuals understand that their withdrawal will cause the withdrawal of others (Croson, 2007). Thus, reciprocal interactions are not enforced by a contract, but rather by the hope of continued cooperation. Whilst cooperation is fundamentally motivated by the expectation of positive or negative reactions, it is important to note that the expectation of future benefits does not provoke reciprocity (Fehr & Fischbacher, 2003). Instead, reciprocity is reinforced by the combination of personal benefit to the individual and the (perceived) behavioural intentions of others (Fehr & Schmidt, 2006). A large body of anecdotal and experimental evidence suggests that these arrangements, while imperfect, are often effective. The reciprocity mechanism never requires an individual to contribute more than a fellow group member, thus removing the problem of ‘unfairness’ (Sugden, 1984).

Bernheim (1994) defines a similar principle of interdependent behaviour, *conformity*. The theory posits that an individual holds a propensity for public approval outside of their desire to maximise self-gain. The premise implies that individuals receive non-monetary utility from cooperative outcomes (Palfrey & Rosenthal, 1987). From this perspective, an individual’s desire for status, and the positive regard of others, can encourage contributions to public goods (Bernheim, 1994). If an individual believes that conforming to the social norm

will result in social approval, the contribution decisions of the other group members can influence the individual's behaviour.

A theory defined by Keser and van Winden (2000) proposes that the majority of humans are *conditional cooperators*, and that punishment may be the primary driving force behind sustaining cooperative norms in various social settings. Individuals who contribute to a public good are essentially behaving in a conditional manner, in the sense that what they contribute depends crucially on what they believe other members of the group will contribute (Chaudhuri, 2007). The contribution of a conditional cooperator is positively correlated to the beliefs they hold regarding the contributions of the other group members. These individuals behave in an intrinsically conditional manner where they use information about the average group contribution as a benchmark for their own future contributions (Chaudhuri, 2007). The observation of conditional cooperation has been extended to field experiments, with the charitable contributions of others exhibiting an influence over an individual's donation in real-world public goods scenarios (Shang & Croson, 2009).

It is established that the threat of punishment, or the expectation of reward, are significant motivating factors affecting voluntary contribution decisions. Analogous to these direct social sanctions is the supposition that beliefs about other's behaviour, or others' beliefs regarding one's own behaviour, may affect cooperation. The theory of *guilt aversion* presumes that individuals care about the expectations of others and will experience guilt if they believe that their actions fall short of those expectations (Charness & Dufwenberg, 2006). Furthermore, individuals may be motivated by their beliefs about the beliefs of others (Ellingsen et al., 2008). Put simply, guilt can motivate the behaviour of an individual through two distinct pathways. *Simple guilt* manifests when an individual cares about letting others down. Alternatively, *second-order guilt* is based on the inference that an individual is concerned with the beliefs that others hold towards them (Battigalli & Dufwenberg, 2007).

To summarise, if *I* believe that *you* hold an expectation on *my* behaviour, *I* am likely to feel guilty if *my* behaviour does not match *your* expectations. The guilt aversion model attempts to assimilate an individual's beliefs with their behavioural decisions. The experimental analysis of guilt aversion concludes that there is a strong correlation between beliefs and behaviour (Charness & Dufwenberg, 2006), a result that has been extended to second-order beliefs (Ellingsen et al., 2008), both of which influence contributions.

Following on from the explanatory limitations of altruism, other positive behaviours have been introduced into model of voluntary provision. *Warm-glow* – where the reinforcement is the positive emotion gained from the act of giving – and *kindness*, are examples of human motives that rely on 'giving being its own reward'. In contribution to public goods, warm-glow is the private good produced as a by-product of an individual's donation (Andreoni, 1990). An experiment by Andreoni reported that on average about half of all cooperative moves could be classified as kindness (Andreoni, 1995). This result implies that social propensities for kindness and altruism must clearly be very strong and can effectively motivate the behaviour of an individual (Andreoni, 1995). A fully satisfactory model should, therefore, accommodate the preferences of people who exhibit positive feelings from having 'done their bit' (Bergstrom et al., 1985).

Researchers in the laboratory and field endeavour to capture the tension between contributing to a public good and free riding through public goods games and real world investigations, in order to understand the factors that influence behaviour (Chaudhuri, 2007). Continued attempts to combine the theoretical control and causal propositions of public goods games, with the extensive inferences and complex insights of field analyses of behavioural-economic theories, have led to constant refinements of the private provision of public goods model. Persistence with investigations that combine the disciplines will aid in

the prediction of behaviour, and the extension of our knowledge into the intricacies human nature.

Voluntary Contribution Field Experiments

Public good field experiments offer a unique opportunity to observe the factors that influence voluntary contributions to public goods in a natural environment. Previous field research into charitable donations has enabled economists to extend, and refine, the theories created through the examination of public goods games. An experiment by Shang & Croson (2009) into charitable contributions to a public radio station demonstrated the influence of social information on individual donations. The researchers manipulated the information presented to participants regarding the size of previous contributions. The study reported a positive relationship between the contributions of others within the group and the donation of an individual. The result was most significant for new donors, for whom the contribution situation is the most uncertain (Shang & Croson, 2009). A similar trend was observed when downward social information was presented to participants (Shang & Croson, 2008). In this experiment, participants were presented information about another donor's contribution that was either above or below the participant's previous contribution. The manipulation altered the participant's contribution in the direction of social information, showing that it is possible to increase or reduce contribution sizes based on the contributions of others (Shang & Croson, 2008). The result supports theories of reciprocity, conformity and cooperation, as an individual's contributions are dependent on their perceptions regarding the contributions of others.

An earlier field experiment presented social information regarding contribution rates to the participants with the request for a donation. In this study, the perceived contribution rate had a positive effect on the participants' donations. The result revealed that the

respondents, who were informed that the majority of others in the reference group had donated to a charity, increased their contributions, relative to the respondents who were informed of a low contribution rate (Frey & Meier, 2004). The authors concluded that the participants were conditional cooperators, whether motivated by a desire to conform with the social norm, or through a preference for fairness and reciprocity (Frey & Meier, 2004).

In addition to the use of social information to elicit donations, research into charitable organisations has employed the use of compliance techniques in an attempt to improve contribution rates (Weyant, 1996). Field research into donations to non-profit organisations has shown that simple social psychology processes can improve the rate of contribution (Cialdini, 1988). Numerous theoretical techniques have been forwarded to help improve the rate and size of contributions from the public (For a review: Weyant, 1996) with the majority involving manipulation of the amount requested, or the arrangement of appeals for contributions of different sizes.

Voluntary Donations as an example of a Public Good

The New Zealand State Education system encompasses the definition of a public good as it is non-excludable – all New Zealand citizens between the ages of five and nineteen have the right to a free education – and non-rivalrous – one student receiving an education does not reduce the availability of an education for others. Therefore, the use of the voluntary donations to fund state education creates a field example of a privately provisioned, public good. It might be conjectured, however, that the state education system is not a perfect example of a public good, as education contains elements of rivalry after a threshold of consumption is reached. Whilst school education can be provided at no extra cost for many students, each student, above a certain number, may decrease the quality of education provided to all students. For example, a single teacher can successfully teach a classroom of

twenty-five students without neglecting the learning opportunities for any individual child. However, if the number of children increases to thirty-five, the students may not be afforded the same opportunities or environment in which to learn. Despite this theoretical limitation, the voluntary donation funding system can be considered an impure public good. This is common practice in field experiments because “[F]ew goods are purely public” and “many of the implications of [public goods] remain salient even when a good is only partly non-rival or partly non-excludable,” (Kaul et al., 1999, p. 4). The voluntary donation funding system is termed a social dilemma public goods situation because it is a continuous good, and is funded from discrete contributions (Croson & Marks, 1998). A *continuous* public good implies that an increase in contributions will increase the amount or quality of the good available (for this example: better funded school education from an increase in donations). A public good funded by *discrete* contributions indicates that an individual’s contribution decision is binary; either contribute or not contribute (for this example: an individual either pays the voluntary donation or does not) (Croson & Marks, 1998).

The present research attempted to broaden the existing literature on the private provision of public goods by using the voluntary donations as an illustration of a social dilemma situation. The investigation will integrate the previously described public goods research with the voluntary donation system and assess the validity of the appropriate theories on the voluntary contribution motivations of the respondents.

Free Riding in the Voluntary Donation funding system

A major limitation of the voluntary donation funding system is that the benefits received from payment are extremely hard to measure, both in an economic sense and in a tangible manner. With no incentive to pay, a proportion of parents choose to free ride by refusing to contribute to the voluntary donations. If all parents confronted by the social

dilemma of voluntary contribution were motivated purely by self-interest, the expectation would be that each parent would choose not to donate, in the hope that all other parents would pay the voluntary donation, thus negating any potential loss to their child, and minimising their personal costs. Nevertheless, many parents are prepared to pay the voluntary donations. In this reality, the focus of the current study is to evaluate the free rider hypothesis – those parents who do not pay the voluntary donations – and assess its relevance in the current academic climate by applying appropriate public good theories.

It is from this economic standpoint that the first research question arises. Why do parents contribute to the voluntary donations? Do these parents believe that the advantage to their children, from having a well-funded learning environment, is enough to warrant paying the donation? Is there a private benefit received from contributing? Alternatively, are there secondary factors, which coerce (or force) a family to pay the optional contribution? Additionally, do parents' motivations correspond to the behavioural-economic theories presented in the previous section?

The investigation aimed to answer these questions by analysing and interpreting parents' attitudes towards the voluntary donation funding system and the related environment. The study compared and contrasted two groups of parents of state school students: the parents who *paid* their voluntary donations and the parents who *did not pay* the donations. It was anticipated that the research would work to resolve the contentiousness around the voluntary donation funding system by affording schools the ability to understand their pupils and families better and ultimately forward possible techniques to increase the payment rate.

The Social Dilemma of Voluntary Donations

The voluntary contribution mechanism of the voluntary donation system is a problem awaiting sufficient explanation. The general approach in the study of voluntary contributions to public goods is to assume that individuals obtain a private benefit from some aspect of their own provision, and this encourages contributions beyond that, which would occur if benefits came from only the public good itself (Kotchen, 2006). Interpretations of the private benefits include a feeling of satisfaction, warm-glow, social approval and prestige. In addition, psychologists posit, “that societies are naturally cooperative through the evolution of social norms [and] altruism,” (Ledyard, 1995, p. 12). Through investigation of parental attitudes towards the various dimensions of the voluntary donations, the current research aimed to identify the factors that encourage (or discourage) contributions and discuss their relevance in relation to public goods theory. The literature review in the previous section identified several behavioural-economic theories, which may influence the voluntary donation environment.

The impact of social norms is regarded as a strong motivational factor when considering the voluntary contribution mechanism, as individuals have a preference for social approval (Rege & Telle, 2001). In accordance with the theory, social norms are enforced by the approval, or disapproval, from others within the group (Coleman, 1990). If the social norm of the voluntary donations is to contribute, then individuals can gain social approval, and avoid social disapproval, by paying the donation. In the present study, the social norm was assessed by asking parents to estimate the donation payment rate at their child’s school. It was hypothesised that payment decision would be positively correlated with a respondent’s estimate of the social norm (i.e. the *Paid* parents would estimate that the donation payment rate was higher than the *Not Paid* parents). A secondary hypothesis stated that, parents at

high decile schools would estimate that the rate of voluntary donation payment was higher, compared to parents at low decile schools.

A theory associated with the existence of social norms is the influence of interdependent behaviour. Contributions that are dependent on the behaviour of others include observations of reciprocation and conditional cooperation, where the contribution of an individual is directly dependent on the contributions of others (in the group). “Conditional co-operators are people who are willing to contribute more to a public good, the more others contribute,” (Chaudhuri, 2007, p. 7). This conditional response is a form of reciprocity, where people will not free ride when others in the group are contributing (Sugden, 1984). From this perspective, parents will contribute to the voluntary donations if they believe that the majority of other parents at their child’s school also contribute. If voluntary donation payment is believed to be the social norm behaviour, an individual will contribute in order to reciprocate the contributions of others or cooperate to reduce unfairness. It was hypothesised that parents would anchor their payment decision according to their perception of the contribution rate of others.

Supplementary to the approval and disapproval received from external sources, the personal satisfaction gained from a voluntary contribution may be the motivation necessary to reinforce contribution behaviour. Internalisation of the social norm may manifest as a feeling of satisfaction from payment of the voluntary donation, or a feeling of guilt from non-payment. Internal satisfaction from having ‘done their bit’ may be the motivation necessary for some parents to pay their donation. Alternatively, the desire to avoid the guilt associated with nonconformity might encourage a parent to contribute to the school.

The existence of external pressures from the school or the community, which coerce parents into paying the voluntary donation, has been a source of contention when considering the school funding topic. Bill Rudman, an education commentator, proposed the existence of

social pressures, positing that the donations are “simple extortion” and verifying that “schools play the guilt card, telling parents their kids will suffer through life [without the voluntary donations],” (Rudman, 2008, p. 1). Whilst it is against the confidentiality agreement for anyone outside of the school’s administration to know who pays the donation, and who does not, it is understood that the information can ‘leak’ into the wider community in an attempt to encourage payments. Reporter and education critic John Minto stated that in some schools the “names of paying parents [are] listed in the school newsletter as a way of naming and shaming those who haven’t [paid],” (Minto, 2009, p. 1). A study by Croson and Marks (1998, p. 172) into voluntary contributions revealed, “individual and identifiable information [about contributions] leads to higher cooperation rates compared to anonymous information”. Identification of the parents who do not pay may motivate the parents to contribute, in order to avoid the guilt and social disapproval associated with non-contribution. It was hypothesised that the parents who paid the voluntary donations would be more aware of the pressures associated with payment identification, because the effectiveness of the potential social sanctions would have encouraged their payment. The non-payers, however, would be unaware of the pressures associated with identification of payment.

In the 2008 election debate, current Prime Minister John Key admitted, “[parents] are made to feel embarrassed if they don’t pay [the voluntary donations].” Former Prime Minister Helen Clark agreed, acknowledging, “parents don’t have to, but are obliged to pay the donation,” (Key & Clark, 2008). Anecdotal evidence suggests that schools, and their communities, especially in higher socio-economic areas, apply pressure to families who refuse to pay the voluntary donations, by excluding the parents from meetings and functions (Minto, 2009; Personal Communication, 2009). In addition, the children of families who refuse to contribute are excluded from extra-curricular activities such as class trips, social outings, or camps, and from collecting school diplomas, reports, magazines or yearbooks

(Minto, 2009; Personal Communication, 2009; 2010). Further, schools have been known to send students home at the start of the year to get unpaid donations for the previous year and some schools have resorted to hiring debt collectors to obtain the donations (Woulfe, 2008). It was hypothesised that the respondents who paid the voluntary donations would hold affirmative attitudes towards the existence of formal pressures in the voluntary donations environment. The parents who do not pay the donations, however, would be less aware of the sanctions used to encourage payment, and would therefore be unaffected by the pressures to pay. A further hypothesis proposed that the presence of pressure would be more pronounced in high decile schools, compared to low decile schools.

Human motives such as warm-glow, altruism and kindness have been forwarded as possible solutions to the voluntary contribution problem (Bernheim, 1986). The supposition is that an individual's contribution to a public good produces a private good of positive internal emotion (Rege, 2004). Motives such as warm-glow and altruism are likely to have an effect on the voluntary donation contributions of parents because they provide an incentive to donate. The current research predicted that the respondents who contribute to the voluntary donations will be more likely to return their questionnaires, compared to those respondents who do not pay the donations. As the research bears no direct benefits to those participating, return rate will act as an unofficial measure of respondents' altruism.

Attitudes and Behaviour

The proposition that intentions are good predictors of specific behaviours has forced researchers to include *attitudes* in many contemporary theories of human social behaviour. From the start of the twentieth century, psychologists have theorised that the determinants of behaviour are guided largely by a reasoned action approach, which assumes that the

behaviour of an individual follows reasonably from their beliefs, attitudes, and intentions (Ajzen & Fishbein, 2005). Empirical research into an explanation of human behaviour has shown that future behaviour can be successfully predicted from compatible measures of attitudes towards the behaviour (Ajzen & Fishbein, 1980; Ajzen & Fishbein, 2005). These attitudes are seen as unique mental processes, which determine an individual's actual responses to behavioural decisions.

Ajzen and Fishbein presented major contributions to the literature on the way attitudes affect behaviour for more than of three decades (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 2005). Their first major contribution was the conception of the *Theory of Reasoned Action*, which was forwarded as an attempt to explain the factors that motivate volitional behaviour (Fishbein & Ajzen, 1975). The theory of reasoned action encompasses three factors that are theorised to cumulatively predict future behavioural decisions: behavioural intentions, attitudes and subjective norms (Hale et al., 2002). According to the theory, *behavioural intent* – the combination of one's attitude toward performing the behaviour, and the social norm associated with that behaviour – is the most important determinant of the behaviour of an individual. A *social norm* (similar to the economic definition) aids in the motivation of action by reinforcing those behaviours that are viewed as receiving approval from significant others in society, and by reducing the desire to perform acts that will gain disapproval (Fishbein & Ajzen, 1975). The intention to behave in a certain way depends upon the product of the measures of attitudes and the social norm of the behaviour. A positive product indicates positive behavioural intent, and a negative product shows negative behavioural intent (Trafimow, 2009).

One of the greatest limitations of this theory was that it overlooked the ability, or volition, an individual has when executing actions in a prospective situation (Hale et al., 2002). This element is the concept of *perceived behavioural control*, and regards an

individual's perception of their ability to carry out an action when they have incomplete volitional control (Ajzen, 1991). The addition of this factor resulted in an extension of the theory, known as the *Theory of Planned Behaviour*. According to the theory of planned behaviour, perceived behavioural control, together with behavioural intent, can be used to directly predict future behavioural action (Ajzen & Fishbein, 2005). Empirical results displayed in a review of the theory (Ajzen, 1991) illustrate that the attitudes towards performing an action, when combined with the social norms and perceived behavioural control, successfully predict intentions to perform the behaviour and account for considerable variance in actual, observed behaviour (Ajzen & Fishbein, 2005). This theory confirms that the measurement of attitudes is a successful criterion for the discrimination and prediction of behavioural decisions. The current research incorporated the theory of planned behaviour, by constructing a survey that measured respondents' attitudes towards a range of positive and negative statements concerning the voluntary donation funding environment in order to predict the payment behaviour of the respondents.

Scale Hypotheses

Whilst this research was essentially exploratory, it was hypothesised that there would be a marked difference in respondents' attitudes towards the voluntary donations, the views on their child's current school and appraisal of the current New Zealand Government, between voluntary donation contributors and non-contributors. A survey questionnaire was employed to measure parental attitudes towards these factors in an attempt to predict the payment decision of the respondents. The crux of the research aimed to create three attitude scales within the framework of the voluntary donation funding system. The first of the three hypothesised scales was a construct that aimed to measure respondents' attitudes towards the voluntary donations and factors related directly to the payment system. The purpose of the

scale was to develop a measure of the factors that may affect payment decision. These factors include: comprehension – the information regarding the donations is clear and concise; – human motives – the positive and negative feelings gained from contribution or non-contribution; – external pressures – whether the sanctions imposed by the school or community affect payment decision; – and financial – whether the donation places financial pressure on the respondent. The researcher hypothesised that respondents' attitudes towards the voluntary donation funding system would correlate positively with payment decision.

The second scale was designed to measure respondents' attitudes towards the school their child currently attends. One of the original theories on payment motivation was that a parent's view of their child's teacher, principal and the overall learning environment of the school would influence voluntary contributions. The scale included seven questionnaire items. The third, hypothesised construct was designed to allow respondents' an opportunity to appraise the government with respect to the education system. This selection of statements assessed respondents' views on the current New Zealand Government, the Prime Minister and the Ministry of Education. This scale included eight questionnaire items. The hypotheses stated that payment decision would have a positive correlation with respondents' views towards the school and the Government.

The researcher hypothesised that the two groups – the *Paid* and the *Not Paid* respondents – would naturally differ in their demographic constitution. Intuitive observations proposed that the respondents' annual household income, educational achievement and age would be positively related to payment decision (i.e. contributors would be older, more educated and earn a higher annual income than non-contributors). In contrast, no differences were expected between the groups on the dimensions of gender, ethnicity, family size or the amount of time the children have left at their current school.

METHODOLOGY

Participants

The researcher selected twenty schools from the Christchurch City district for inclusion in the study. The fundamental selection criterion was school decile rating with consideration given to roll size, community composition and geographic position. The schools were instructed to randomly select a sample of the parents of their students to participate in the study, based on the condition of voluntary donation payment decision. Each school randomly selected forty parents, twenty from each of the two conditions (*Paid* the voluntary donation versus *Not Paid* the voluntary donation), for an overall sample of 800 participants. An analysis of the respondents' demographic characteristics is included in the *Sample* section. For a detailed description of the collection process used to select participants and schools, see the *Procedure* section.

Decile Rating Index

The New Zealand decile rating system aims to assure equality of educational outcomes across all socio-economic groups (Ministry of Education, 2005). The decile rating system was developed by the Ministry of Education to allocate targeted funding based on the socio-economic characteristics of a school. A school is assigned a decile rating based on the socio-economic composition of the catchment area of the school, categorised according to the data received from the most recent New Zealand census. The decile rating system takes into account household income, employment status, educational achievement, income support and household size, and uses ten subdivisions, each containing ten percent of schools (Ministry of Education, 2008). A school's decile indicates the extent to which the school draws its students from low socio-economic communities. Decile one schools are the ten percent of schools with the highest proportion of students from low socio-economic communities,

whereas decile ten schools are the ten percent of schools with the lowest proportion of low socio-economic students (Ministry of Education, 2009). A school's decile does not indicate the overall socio-economic mix of the school, but represents the community in which the families of the pupils reside. In its early stages, the scale made use of the original Elley-Irving Index (1972). The decile rating index is extensively used for selecting school samples, and for analysing results of regional and national surveys of achievement. Thus, the National Educational Monitoring Project (NEMP) surveys of achievement consistently show marked differences in performance levels between schools of different decile levels (Crooks & Flockton, 2002).

Questionnaire

Participants completed a questionnaire survey made up of thirty-seven statements separated into three scales and a section of demographic information. The first scale, items 1.1 – 1.7, was designed to assess the participants' political attitudes and their opinions on the current New Zealand Government. The second scale, items 2.1 – 2.8, focuses on the school currently attended by the child (or children) of the respondent. In the situation where a respondent had children at more than one state school, the participant was instructed to consider their responses, concerning the school that their youngest school aged child attends. The third scale, items 3.1 – 3.14, aimed to measure respondents' attitudes towards the voluntary donation funding system. The final section, items 4.1 – 4.8, collected demographic information from the respondents on a variety of dimensions. To differentiate between the two conditions the *Paid* questionnaires were printed on *Blue* paper and the *Not Paid* questionnaires printed on *Yellow* paper.

Measures

The respondents were ‘naturally’ assigned to one of the two experimental conditions based on their voluntary donation payment decision. The research used a unique survey questionnaire for each of the two conditions. The survey questionnaires are attached as Appendix A (*Paid*) and B (*Not Paid*). The questionnaires from both conditions consisted of: (a) an information sheet informing respondents of the research aims, instructions and confidentiality agreement; (b) statements measuring respondents’ attitudes to the current New Zealand Government and education system; (c) statements assessing respondents’ attitudes towards their child’s current school; (d) statements regarding respondents’ attitudes towards the voluntary donations funding system; and, (e) demographic information. Version 1 (*Paid*) was completed by those parents who paid the voluntary donation and Version 2 (*Not Paid*) completed by those parents who did not pay the voluntary donation. The two versions of the questionnaire contained a different question in Section D, with Item 3.12 modified for each variation. Payment decision was coded with 1 = *Paid* and 0 = *Not Paid*.

Listed below are the actual questions, each under the appropriate heading:

Political and current New Zealand Government Appraisal scale (Items 1.1 – 1.7)

The statements in this section aimed to gauge respondents’ attitudes towards the Government and education system. Respondents indicated their attitudes towards the current New Zealand Government, current Prime Minister, the education system and their view on the Ministry of Education.

Respondents were asked to consider the following seven statements:

- a. The current Government is competent
- b. The current Prime Minister is doing his job well

- c. The educational policies of a political party are important when I decide who to vote for
- d. Free education is a right that all New Zealanders deserve
- e. Education should be compulsory for all children in New Zealand
- f. The Ministry of Education organises the education system in New Zealand successfully
- g. Overall the education system in New Zealand is well administered

Each item was scored on a seven-point Likert-type rating scale, anchored at 1 = ‘Strongly disagree’ and 7 = ‘Strongly agree’ with a midpoint of 4 = ‘neither agree nor disagree’.

Views on the current School scale (Items 2.1 – 2.8)

The statements in this section were designed to assess the respondents’ perceptions of, and attitudes towards, their child’s current school. The items explore the views of the school by seeking responses to positive and negative statements on varying school dimensions.

Respondents were asked to consider the following eight items:

- a. The school is well organised
- b. The teachers are competent and passionate
- c. The administration of the school is well governed and managed
- d. I have contemplated withdrawing my child from the school
- e. The school operates effectively with the funding it receives
- f. The school has the right to request money from families to supplement government funding
- g. In general the school has a successful learning environment
- h. I understand the school decile rating system and how it affects government funding to schools

Each item was scored on a seven-point Likert-type rating scale, anchored at 1 = ‘Strongly disagree’ and 7 = ‘Strongly agree’ with a midpoint of 4 = ‘neither agree nor disagree’.

Attitudes towards the Voluntary Donation Funding System scale (Items 3.1 – 3.14)

The third section was the longest and most innovative element of the current research. The scale was designed to measure the respondents’ attitudes towards the voluntary donations that their child’s current school requested. The statements examined the respondents’ comprehension of the voluntary donations, their views on the existence of pressures and sanctions associated with their payment decision, and their overall perception of the voluntary donation funding system.

Respondents were asked to consider the following fourteen items:

- a. Sufficient information is supplied by my child’s school about the Voluntary Donations
- b. I understand what the Voluntary Donations are used for
- c. I understand from the information provided that the Donations are completely optional
- d. I would rather participate in fundraising ventures for the school than pay the Voluntary Donations
- e. The Voluntary Donations are necessary for the successful operation of my child’s school
- f. I am aware that a tax exemption is available on the money I pay as a Voluntary Donations
- g. Even though the Donations are anonymous I feel my payment decision could impact on my child
- h. It is difficult for me to find the money to pay the Voluntary Donations

- i. External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision
 - j. The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision
 - k. I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school
 - l. I enjoy the feeling of satisfaction I get when I pay the Voluntary Donations (*Paid*)
- or*
- I find it easy to forget about paying the Voluntary Donation (*Not Paid*)
 - m. I am made to feel guilty if I don't pay the Voluntary Donation
 - n. The school withholds extra-curricular activities (e.g. Camps or Trips) from my child if I don't pay the Donation

Each item was scored on a seven-point Likert-type rating scale, anchored at 1 = 'Strongly disagree' and 7 = 'Strongly agree' with a midpoint of 4 = 'neither agree nor disagree'.

Demographic Information of the Respondents (Items 4.1 – 4.8)

The first item in the demographic information section asked respondents to estimate the proportion of parents who paid the donation, at their child's current school (Item 4.1). The answers were entered by circling one of five possibilities, which was coded: 1 = 20% or less, 2 = 21 – 40%, 3 = 41 – 60%, 4 = 61 – 80% and 5 = 81 – 100%.

The remainder of the questions in this section aimed to collect demographic information and investigate the influence that static socio-economic variables have on voluntary donation payment decision. Respondents indicated their gender, age, ethnicity, annual household income and highest educational qualification. They were also asked to identify the number of children they financially supported and the number of years their

children had remaining at their current school. The responses to the questions concerning the number of children financially supported and years remaining at the current school (Items 4.2 and 4.3, respectively) were entered by circling the corresponding number: 1, 2, 3, 4, or 5 or more (5 or more was coded as a 5 in the analysis). Gender (Item 4.4) was coded: 1 = Female, 2 = Male and 3 = Both Male and Female respondents. Age group (Item 4.5) was coded: 1 = 20 – 28 years, 2 = 29 – 37 years, 3 = 38 – 46 years, 4 = 47 – 55 years, 5 = 56 – 64 years and 6 = 65 years or over. Ethnicity (Item 4.6) was coded: 1 = NZ European, 2 = Māori, 3 = Pacific Islander, 4 = Asian and 5 = Other (particulars not specified) with respondents instructed that they could identify more than one ethnic group if necessary. The respondents who answered with a combined ethnicity were coded: 6 = NZ & Māori, 7 = NZ & Pacific Islander, 8 = NZ & Other and 9 = NZ, Māori & one other ethnicity. Annual household income after tax (Item 4.7) had eight response categories, with answers coded: 1 = 20,000 or under, 2 = 20,001 – 35,000, 3 = 35,001 – 50,000, 4 = 50,001 – 65,000, 5 = 65,001 – 80,000, 6 = 80,001 – 95,000, 7 = 95,001 – 110,000 and 8 = 110,001 or over. The respondents' highest educational qualification (Item 4.8) responses were coded: 1 = No formal qualification, 2 = High School Qualification, 3 = Tertiary Diploma/Certificate, 4 = Under-Graduate Degree and 5 = Post-Graduate Qualification. A combination of two categories was coded as the higher of the two categories (e.g. No Qualification and High School Qualification was coded: 2 = High School). School decile rating was recorded using a colour-coded mark on each questionnaire prior to delivery to the designated school.

The following eight items made up the demographic scale:

- a. What percentage of parents, at the school your child attends, do you believe pay the Voluntary Donation?
- b. How many children, under the age of 18, do you financially support?

- c. How many years do you expect your youngest child to continue attending their current school including this year?
- d. What is your gender?
- e. What age group do you belong to?
- f. What Ethnic group do you identify with (you may select more than one)?
- g. What is your annual household income (combination of you and your partner after tax)?
- h. What is the highest level of educational qualification you have achieved?

Procedure

Ethics approval was obtained from the University of Canterbury Human Ethics Committee prior to the collection of any data (Attached Appendix C).

The twenty schools used in the research were selected from the primary, intermediate and secondary school domains. Of the twenty schools, fourteen were primary schools, three were intermediate schools and three were secondary schools. Two of the three secondary schools were male only facilities, whereas all of the other eighteen schools were co-educational. The selection of schools was random, but was mediated by the willingness of the school to participate in the research. It is estimated that about one hundred schools were initially contacted by telephone, with the researcher meeting with twenty-six schools until the target of twenty had been achieved. Each decile was represented by two schools (except for decile seven – one school – due to the lack of availability in the Christchurch area, and decile six – three schools – to replace the missing decile seven). In order to preserve the privacy and confidentiality of the participants, and the schools, used in this research, neither party will be named.

The initial contact with the schools was by telephone. If the school administration was interested in the research, an introductory meeting was held with the principal at the school (and in some cases, other interested parties as organised by the school) to discuss the research. The principals were offered the opportunity to raise concerns, or recommend improvements, about the questionnaire at this initial meeting. In many instances, the principal conferred with the Board of Trustees, Parent Teacher Association or other concerned parties to discuss participation in the study. The twenty schools each received forty 'Questionnaire Envelopes', twenty for the *Paid* condition and twenty for the *Not Paid* condition, which they delivered to the participants by mail. The researcher decided to use mail delivery because it allowed information to be acquired from a large sample, gave respondents time to consider their responses, removed interviewer bias and preserved the anonymity of the respondents (Greer et. al, 2000). The envelopes included a questionnaire (dependent on condition), an information sheet for the respondents to keep, a self-addressed return envelope and a one-dollar *Scratch 'n' Win* ticket. The parental information sheet is attached as Appendix D.

Before administering the questionnaire to the participants, the survey was piloted through a selection of current teachers, principals and parents, who were asked to identify any problems with the questionnaire, or any extensions, which they believed would benefit the research. Revisions were made based on their suggestions.

The twenty schools received an information sheet notifying the administration of the confidentiality agreement between the researcher and the school, and distribution instructions, for their own records (attached Appendix E). The school administrations were instructed to address and mail the postage-paid envelopes containing the *Blue* questionnaires to twenty families whom had already paid the voluntary donation, and the envelopes containing the *Yellow* questionnaires to twenty families whom had not paid the voluntary donations.

Schools vary greatly in the collection policy used for the voluntary donations. Whilst many schools choose to afford parents the option of lump-sum payment or quarterly term-payments, others prefer to break payments up into more affordable monthly or weekly payments. A number of schools allow parents to pay the whole amount (or a final instalment) at the end of the school year. The difference in collection procedures and the variance in date of payment, made it very difficult to identify those families who would not pay the voluntary donations. The researcher, therefore, instructed schools to deliver the *Not Paid* questionnaires to those parents who had not paid the voluntary donations (at that time) and, who historically (in previous years at the school) did not pay the donation.

The number of questionnaires delivered totalled eight hundred – four hundred from each of the two conditions – between the twenty schools. Schools were directed to select a random sample of parents for each of the conditions, however, selection process was at the discretion of the school, as it would have violated the terms of the ethics agreement, for the researcher to interfere with sampling. The researcher did not have any contact with the participants during the research. All twenty schools reported that they had mailed the questionnaires to the agreed number of parents.

The questionnaires were mailed by the school's administrations to the respondents no later than the 11th of June 2010. Collection of the returned questionnaires ceased on the 13th of August 2010. It was presumed that two months presented sufficient opportunity for the majority of potential respondents to complete and return the questionnaires. The questionnaires were self-administered and the respondents returned the completed survey by mail to the Psychology Department at the University of Canterbury.

Sample

Two hundred and fifty questionnaires of the eight hundred delivered were collected; a return rate of 31.25%. Of those two hundred and fifty respondents, five were omitted from the data analysis. Participants # 49, # 50, # 51 and # 185 were excluded from the final data analysis because they failed to complete the first page of the questionnaire (missed 19% of the survey questions). Participant # 228 was excluded because they failed to complete the demographic section of the questionnaire (missed 22% of the survey questions).

Table 1 summarises the respondents' demographic characteristics including gender, age, ethnicity, number of children financially supported, years their child has left at the school they currently attend, educational achievement and annual income. It should be noted that not all participants responded to all of the demographic questions.

Table 1.*Demographic Classification of Respondents.*

Gender	Paid	Not Paid	Total
Female	132	63	195
Male	27	21	48
Both	1	1	2
Age Group (years)			
20 – 28	1	4	5
29 – 37	28	31	59
38 – 46	107	38	145
47 – 55	24	11	35
56 – 64	0	1	1
Ethnicity			
New Zealand European	128	53	181
Māori	7	10	17
Pacific Islander	5	8	13
Asian	1	0	1
Other	9	3	12
NZ & Pacific Islander	4	10	14
NZ & Māori	3	0	3
NZ, Māori & Other	2	0	2
NZ & Other	1	1	2
Annual Household Income (\$)			
< 20,000	8	8	16
20,001 – 35,000	8	24	32
35,001 – 50,000	29	17	46
50,001 – 65,000	21	14	35
65,001 – 80,000	34	4	38
80,001 – 95,000	20	1	21
95,001 – 110,000	18	8	26
> 110,001	19	6	25
Number of Children Financially Supported			
1	25	18	43
2	88	25	113
3	30	31	61
4	12	8	20
> 5	5	2	7
Highest form of Educational Achievement			
No Formal Qualification	12	19	31
High School Qualification	53	26	79
Tertiary Diploma/Certificate	49	28	77
Under-Graduate Degree	24	5	29
Post-Graduate Qualification	22	7	29
Years child has left at Current School			
1	23	11	34
2	23	16	39
3	26	13	39
4	16	10	26
> 5	72	35	107

RESULTS

Data Transformations

The researcher created six additional variables for use in the univariate and multivariate exploratory analyses included later in this section. Four of these were reverse coded survey items: 2.4 *I have contemplated withdrawing my child from the school*, 2.6 *The school has the right to request money from families to supplement government funding*, 3.1 *Sufficient information is supplied by my child's school about the Voluntary Donations* and 3.5 *The Voluntary Donations are necessary for the successful operation of my child's school*.

The other two variables were modifications of selected demographic variables. School decile rating was separated into *Low Decile* (coded as 1) and *High Decile* (coded as 2), with the two groups populated by those respondents from deciles 1 – 5 and deciles 6 – 10, respectively. This variable was named *High vs. Low Decile rating*. The last additional variable employed a median-split of respondent's annual household income. An income of \$65,000 or less was defined as *Low Income* (coded as 0) and an income of \$65,001 or more was termed *High Income* (coded as 1). This variable was named *High vs. Low Income*.

Research Design

The researcher evaluated inferential statistics in the following section against an alpha level of .05, unless otherwise stated.

The following analytic investigation aimed to examine respondents' attitudes towards the voluntary donation funding system, the school their child currently attends, and the current Government, by evaluating their responses to a range of positive and negative statements. The analyses first outlined the respondents' attitudes to each of the statements and then examined the differences between the two payment decision conditions. The research employed a between-groups, quasi-experimental design with the respondents 'naturally' separated on levels of payment decision (two groups). The group of respondents who paid

their voluntary donation were referred to as the *Paid* condition, and the respondents that did not pay their donation were named the *Not Paid* condition.

Return Rate for Questionnaire Surveys

Of the 245 valid returns, 160 (65% of total returns) were from the *Paid* condition and the remaining 85 (35% of total returns) were from the *Not Paid* condition. The return rate of the two groups was significantly different, as illustrated by the z -ratio for difference between two independent proportions, $z = 5.75$, $p < .001$. The return rates, as a proportion of the total questionnaires delivered per condition, were 40% for the *Paid* condition and 21% for the *Not Paid* condition, for an overall return rate of 31%. This result was observed as an informal measure of parental support for the current study into the voluntary donation funding system, with a reasonable respondent return rate highlighting the contentiousness of the issue.

Decile Breakdown

A similar set of analyses were conducted for return rates as a function of school decile rating. The breakdown of questionnaire returns by school decile rating is shown in Table 2. As mentioned in the *Methodology*, three schools represented decile six, and one school represented decile seven. To adjust for the differences in sample size, the quantity of returns was multiplied by two-thirds for decile six, and by two for decile seven. After transformation, decile six had 26.67 returns and decile seven had 26 returns. A Chi-square test found that the return rates of the payment decision groups were not significantly different when separated by High vs. Low Decile rating, $\chi^2 (1) = 1.63$, $p = .2012$. This result demonstrated an even distribution of returns by school decile rating. The t -test for independent means, which measured whether school decile rating differed for those who paid the donations and those

who did not pay (*Paid* $M = 5.89$, $Sd = 2.70$; *Not Paid* $M = 5.29$, $Sd = 3.07$), was also non-significant, $t(243) = 1.56$, $p > .12$. The analysis showed that the socio-economic status of the school was unrelated to payment of the voluntary donations.

Table 2.
Questionnaire Return Rate by Decile

Decile Rating	Number Returned			Percentage Returns	
	Paid	Not Paid	Total	Of total returns	Of total delivered
1	6	13	19	7.76%	23.75%
2	10	6	16	6.53%	20.00%
3	24	11	35	14.29%	43.75%
4	15	7	22	8.98%	27.50%
5	16	8	24	9.80%	30.00%
6	29	11	40	16.33%	33.33% *
7	10	3	13	5.31%	32.50% *
8	15	9	24	9.80%	30.00%
9	10	5	15	6.12%	18.75%
10	25	12	37	15.10%	46.25%
Totals	160	85	245	100%	—

* Proportion adjusted for differences in sample size.

EXPLANATION OF RESULTS

Questionnaire Items

A series of *t*-tests for independent means were performed to examine the relationship between payment decision and attitudes towards the individual questionnaire items. The explanations of the results for the *t*-tests are included in the appropriate sections.

To improve the understanding of the factors that influence payment decision, a series of single sample *t*-tests were also conducted for all questionnaire items (for both groups). These tests analysed the difference between the mean response for each item and the neutral response, to observe if the respondents' attitude towards the statement was significantly different to "neither agree nor disagree". A vast majority of the statements were significant for the single sample *t*-test showing that respondents held clear attitudes towards these statements.

A general comparison of the groups revealed a substantial effect of payment decision on the attitudes of the respondents. The parents who *Paid* the voluntary donations held significantly more positive attitudes towards the current Government, and the voluntary donation funding system, than the *Not Paid* respondents. Both the *Paid* and *Not Paid* respondents held positive views of the school their child currently attends.

'Political/Government Appraisal' Individual Survey Items

In general, the results of the *t*-tests for independent means suggest that the parents who *Paid* the voluntary donations held a more positive view of the Government, compared to the *Not Paid* respondents. The *Paid* respondents exhibited positive attitudes towards the current Government, current Prime Minister, the education system in New Zealand, and the Ministry of Education, whereas the *Not Paid* respondents held neutral views towards these political factors. Both groups believed that education should be compulsory for all children, and that free education is a right that all New Zealanders deserve. Refer to Table 3 for the descriptive statistics, and *t*-tests for independent means and single samples, for the political appraisal survey items.

Table 3.

Political/Government Appraisal Scale Survey Items - Means, Standard Deviations and t-tests

Questionnaire Items	Paid (N = 160)		Not Paid (N = 85)		T -tests	
	Mean	Sd	Mean	Sd	t -value	p
The current Government is competent	4.43 ***	-1.53	3.72	-1.57	3.42	0.001
The current Prime Minister is doing his job well	4.73 ***	-1.62	4.08	-1.61	2.99	0.003
The educational policies of a political party are important when I decide who to vote for	5.54 ***	-1.25	5.42 ***	-1.31	0.67	0.505
Free education is a right that all New Zealanders deserve	6.48 ***	-1.01	6.72 ***	-0.81	-1.86	0.064
Education should be compulsory for all children in New Zealand	6.83 ***	-0.57	6.85 ***	-0.72	-0.26	0.792
The Ministry of Education organises the education system in New Zealand successfully	4.43 ***	-1.36	4.15	-1.07	1.63	0.104
Overall the education system in New Zealand is well administered	4.51 ***	-1.27	4.13	-1.18	2.26	0.025

Note: Items measured on scale from 1 (Strongly Disagree) to 7 (Strongly Agree) with neutral point of 4 (Neither Agree nor Disagree).

The single sample *t*-test results are significant if the mean response is statistically different to the neutral midpoint of the scale.

*** Denotes that attitude is significantly different to the neutral midpoint (4) at $p < .001$

‘Views on the current School’ Individual Survey Items

Generally, both groups of respondents held a positive view of the school their child currently attends. The two groups exhibited similar attitudes towards the teachers, principal, administration, and the learning environment of the school. Few parents from either group had contemplated withdrawing their child from the school, and the majority believed that the school operated effectively with the funding it received. Overall, the respondents from both groups held similarly affirmative views on all the factors associated with the school. Refer to Table 4 for the descriptive statistics, and *t*-tests for independent means and single samples, for the views on the current school survey items.

Table 4.

Views on the current School Scale Survey Items - Means, Standard Deviations and t-tests

Questionnaire Items	Paid (N = 160)		Not Paid (N = 85)		T -tests	
	Mean	Sd	Mean	Sd	t -value	p
The school is well organised	5.69 ***	-1.26	5.79 ***	-1.26	-0.56	0.577
The teachers are competent and passionate	5.72 ***	-1.21	5.71 ***	-1.15	0.08	0.936
The administration of the school is well governed and managed	5.66 ***	-1.24	5.75 ***	-1.29	-0.57	0.567
I have contemplated withdrawing my child from the school (R)	6.02 ***	-1.76	5.94 ***	-1.83	0.32	0.746
The school operates effectively with the funding it receives	5.17 ***	-1.41	5.11 ***	-1.50	0.34	0.738
In general the school has a successful learning environment	5.79 ***	-1.11	5.72 ***	-1.15	0.51	0.613
I understand the school decile rating system and how it affects government funding to schools	5.36 ***	-1.59	5.20 ***	-1.89	0.67	0.503

Note: Items measured on scale from 1 (Strongly Disagree) to 7 (Strongly Agree) with neutral point of 4 (Neither Agree nor Disagree).

The single sample *t*-test results are significant if the mean response is statistically different to the neutral midpoint of the scale.

*** Denotes that attitude is significantly different to the neutral midpoint (4) at $p < .001$

(R) denotes reverse scored items.

'Attitudes towards the Voluntary Donations' Individual Survey Items

The statements in this section aimed to measure the respondents' attitudes, motivations and comprehension towards the voluntary donation funding system (See Table 5 for the *t*-tests and descriptive statistics).

In general, the *Paid* respondents held significantly more positive attitudes towards the voluntary donations, and viewed them as more necessary for the successful operation of the school. The *Paid* parents were also more inclined to agree that requesting a donation was within the rights of the school, and more likely to be aware of the availability of a tax exemption on the money paid as a donation. The parents in the *Not Paid* condition were more motivated to assist the school with fundraising ventures instead of paying the voluntary donation and found paying the donations more financially difficult.

The statements that measured perceptions of the pressures on contributions, divided the respondents. Firstly, the *Paid* respondents held firm beliefs that external pressures (from the school or other parents) did not affect their payment decision. The *Not Paid* respondents, however, were more circumspect on the existence of external pressure in regards to their voluntary donations. The *Not Paid* respondents perceived that the schools' awareness of payment decision caused substantial pressure on payment of the donations, and felt more pressure to pay due to the invoices and reminders sent by the school, than the *Paid* respondents. In addition, the non-payers reported being made to feel guilty if they did not pay the donations. These results suggest that the threat of reprisal from the school or community affected the non-payers' payments more than the payers.

Table 5.*Attitude towards the Voluntary Donations Scale Survey Items - Means, Standard Deviations and t-tests*

Questionnaire Items	Paid (N = 160)		Not Paid (N = 85)		T -tests	
	Mean	Sd	Mean	Sd	t -value	p
The school has the right to request money from families to supplement government funding ^(R)	4.69 ***	-1.81	3.56 *	-1.89	4.54	0.000
Sufficient information is supplied by my child's school about the Voluntary Donations ^(R)	4.67 ***	-1.61	4.37	-1.78	1.33	0.184
I understand what the Voluntary Donations are used for	4.60 ***	-1.78	4.59 **	-1.86	0.05	0.957
I understand from the information provided that the Donations are completely optional	5.41 ***	-1.79	5.04 ***	-1.89	1.51	0.134
I would rather participate in fundraising ventures for the school than pay the Voluntary Donations	2.43 ***	-1.48	4.36	-2.12	-8.28	0.000
The Voluntary Donations are necessary for the successful operation of my child's school ^(R)	5.81 ***	-1.32	4.63 **	-1.92	5.62	0.000
I am aware that a tax exemption is available on the money I pay as a Voluntary Donations	5.52 ***	-2.04	4.80 **	-2.21	2.55	0.012
Even though the Donations are anonymous I feel my payment decision could impact on my child	4.31	-2.12	4.80 ***	-1.90	-1.78	0.077
It is difficult for me to find the money to pay the Voluntary Donations	3.10 ***	-2.04	4.82 ***	-2.15	-6.18	0.000
External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision	2.66 ***	-2.04	3.55 *	-2.07	-3.20	0.002
The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision	3.33 ***	-2.26	4.06	-2.17	-2.43	0.016
I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school	3.39 **	-2.33	4.71 **	-2.34	-4.22	0.000
I am made to feel guilty if I don't pay the Voluntary Donation	3.25 ***	-2.00	3.92	-2.22	-2.35	0.019
The school withholds extra-curricular activities (e.g. Camps or Trips) from my child if I don't pay the Donation	2.62 ***	-1.85	2.64 ***	-1.99	-0.07	0.943
I enjoy the feeling of satisfaction I get when I pay the Voluntary Donations	4.71 ***	-1.83			—	—
I find it easy to forget about paying the Voluntary Donation			3.71	-2.31	—	—

Note: Items measured on scale from 1 (Strongly Disagree) to 7 (Strongly Agree) with neutral point of 4 (Neither Agree nor Disagree).

The single sample *t*-test results are significant if the mean response is statistically different to the neutral midpoint of the scale.

* Denotes that attitude is significantly different to the neutral midpoint (4) at $p < .05$

** Denotes that attitude is significantly different to the neutral midpoint (4) at $p < .01$

*** Denotes that attitude is significantly different to the neutral midpoint (4) at $p < .001$

^(R) denotes reverse scored items.

Whilst differences between the two groups allowed for the identification of factors that may influence payment decision, it is often just as interesting to examine the variables that seemingly have no effect on the contributions of the parents (items with non-significant group differences).

The majority of respondents exhibited a moderate understanding of the overall voluntary donation funding system. Both groups of respondents revealed similar attitudes regarding their understanding of the school decile rating system, and the overall information provided by the school. The respondents from both conditions also exhibited similar understanding of what the donations were used for, and that the donations were optional. It is noteworthy, however, that the respondents' comprehension of the voluntary donations was only slightly positive. The results revealed that the respondents' attitudes towards the overall level of information provided by the school, regarding the voluntary donations, were marginally adequate.

Null results were observed for two of the statements that measured attitudes toward the pressures on payment of the donation. Both groups of respondents held similarly neutral views on whether their payment decision impacted on their child. In addition, neither group believed that the school withheld activities from their child because of non-payment. The results suggest that the majority of parents did not perceive any retaliatory actions from the school because of voluntary donation non-payment, either through the exclusion of pupils from extra-curricular activities, or the use of formal sanctions.

Effect of School Decile Rating

The respondents' attitudes towards the pressures associated with voluntary donation payment were more pronounced in high decile schools, than in low decile schools. Few respondents with children at low decile schools perceived pressure on their payment decision,

showing that external pressures and sanctions had little effect on their voluntary donation payments. In contrast, significant differences between the *Paid* and *Not Paid* respondents were revealed in the group comparisons of the high decile schools (See Table 6 for the *t*-tests for independent means). The results identified that the *Not Paid* respondents, at high decile schools, perceived that the community and other parents imposed pressures and informal sanctions to encourage payment of the voluntary donations. The non-payers felt that their child was affected by their payment decision, and that the school used reminders and invoices to pressure their payment of the donation. In addition, the non-payers experienced more guilt because of their contribution decision, than the payers. The *Paid* parents exhibited neutral attitudes towards the perceived use of pressure to encourage the payment of voluntary donations.

Table 6.

Pressures and Sanctions Survey Items - Means, Standard Deviations and t-tests for High Decile Schools (6 - 10)

Questionnaire Items	Paid (N = 89)		Not Paid (N = 40)		T -tests	
	Mean	SD	Mean	SD	t -value	p
The Voluntary Donations are necessary for the successful operation of my child's school ***	5.84	1.30	4.25	1.89	-5.56	0.000
Even though the Donations are anonymous I feel my payment decision could impact on my child *	4.28	2.06	5.13	1.86	2.22	0.028
External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision ***	2.44	1.89	3.79	2.13	3.60	0.000
The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision *	3.37	2.19	4.30	2.15	2.24	0.027
I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school ***	3.34	2.32	5.18	2.14	4.26	0.000
I am made to feel guilty if I don't pay the Voluntary Donation **	3.21	1.91	4.44	2.15	3.22	0.002

· * Denotes significantly different at $p < .05$

· ** Denotes significantly different at $p < .01$

· *** Denotes significantly different at $p < .001$

Demographics of the Respondents

The results identified a significant relationship between payment decision and respondent's age, annual income, and highest level of education achievement. The *t*-tests for independent means for the demographic variables, which revealed significant differences between the groups, are included in Table 7. The *Paid* respondents were older ($M = 37.64$ years), had a significantly higher income ($M = \$57,900$), and had higher levels of education ($M = 2.94$) than the *Not Paid* parents, who were younger ($M = 35.21$ years), earned a lower annual income ($M = \$38,550$), and had lower levels of education ($M = 2.47$). A Chi-square test found a significant effect of High vs. Low annual Income on payment decision, $\chi^2 (1) = 22.80$, $p < .001$. The other demographic variables (Ethnicity, Gender, Number of Children financially supported and Number of Years their Child has left at their Current School) did not exhibit significant differences from the comparisons of payment decision group.

Table 7.

T-tests for independent means and Mann-Whitney U Tests of Demographic Variables and Estimation of Social Norms

Item	Item Content	Paid (N = 160)		Not Paid (N = 85)		T- tests	
		Mean	Sd	Mean	Sd	t -value	p
30	What percentage of parents, at the school your child attends, do you believe pay the Voluntary Donation (%) *	59.40	11.40	53.20	11.60	-2.19	0.030
34	Age Group (Years) **	37.64	21.80	35.21	23.69	-2.97	0.003
36	Annual household Income (\$) ***	57900	16050	38550	14400	-4.73	0.000
36 (a)	Annual household Income - High Versus Low ***	0.58	0.42	0.23	0.50	-5.41	0.000
37	Highest Level of Educational Achievement **	2.94	1.15	2.47	1.16	-3.05	0.003

* Difference between Paid and Not Paid conditions is significant to $p < .05$

** Difference between Paid and Not Paid conditions is significant to $p < .01$

*** Difference between Paid and Not Paid conditions is significant to $p < .001$

Unique Items

Both questionnaires included a single item, which was unique to that condition. These items were excluded from all other analyses, as they did not allow comparisons between groups. Two *t*-tests for single samples were performed to examine any differences between the means and the neutral response for the statements (Refer to Table 5). The item from the *Paid* condition, *I enjoy the feeling of satisfaction I get when I pay the Voluntary Donations* produced a significant single sample *t*-test. This result implied that the feeling of satisfaction attained from donating might influence the payment decision of those parents who paid the voluntary donations, or previous payment may have produced a feeling of satisfaction, which reinforced future behaviour. The item from the *Not Paid* condition, *I find it easy to forget about paying the Voluntary Donation* produced a non-significant single sample *t*-test showing that the respondents were statistically neutral on the statement.

Social Norms

The questionnaire included an item that assessed the estimated social norm of payment decision. For this question, respondents were required to estimate the voluntary donation payment rate at their child's current school. The *Not Paid* parents estimated that a lower proportion of parents paid the donation ($M = 53.2\%$, $Sd = 11.6\%$), compared to the estimates of the *Paid* respondents ($M = 59.4\%$, $Sd = 11.4\%$). See Table 7 for the *t*-test for independent means of this result.

Investigating this point further, an additional *t*-test for independent means was conducted to understand the effect High versus Low Decile rating had on the estimates of the social norm. The result of the *t*-test indicated a significant effect of High versus Low Decile, $t(239) = 6.35$, $p < .001$. This result revealed that parents with children at a high decile school estimated that the voluntary donation payment rate was greater ($M = 65.0\%$, $Sd = 8.4\%$), than

the estimates of parents with children attending a low decile school ($M = 48.6\%$, $Sd = 11.6\%$).

Scale Construction

Factor Analysis

The analyses in the previous section identified a number of significant differences between the two payment decision conditions, in attitudes regarding many of the individual questionnaire items. While these comparisons allow for the identification of factors that influence payment decision, the fundamental purpose of the survey was to integrate the items into distinct scales within the voluntary donation framework. It was hypothesised that there would be three distinct constructs in the questionnaire: a political/government appraisal scale, a scale measuring the respondents' views of the school their child currently attends, and a scale assessing the attitudes towards the voluntary donation funding system.

A principal factor analysis was conducted using the twenty-eight survey items (Items 1.1 – 3.14, see Table 8 for full list) that make up the bulk of the questionnaire (the unique items were excluded from this analysis – item 3.12 in both conditions). A scree-plot (Figure 1) identified a three-factor solution as the most suitable model of the data. The analysis measured the communalities using *Multiple R*² with a factor loading cut-off of 0.45. The factors were rotated in a variance-maximizing (“varimax-raw”) rotation of the variable space. An index of factor loadings, that exceeded 0.45, is included as Table 8.

Table 8.*Factor Matrix for the Attitudes to the Voluntary Donation Funding System Survey Questionnaire*

Item	Item Content	Factor		
		1	2	3
1	The current government is competent			0.842
2	The current Prime Minister is doing his job well			0.797
6	The Ministry of Education organises the education system in New Zealand successfully			0.642
7	Overall the education system in New Zealand is well administered			0.639
8	The school is well organised		0.856	
9	The teachers are competent and passionate		0.730	
10	The administration of the school is well governed and managed		0.871	
11	I have contemplated withdrawing my child from the school ^R		0.684	
12	The school operates effectively with the funding it receives		0.504	
14	In general the school has a successful learning environment		0.778	
19	I would rather participate in fundraising ventures for the school than pay the Voluntary Donations	0.506		
22	Even though the Donations are anonymous I feel my payment decision could impact on my child	0.455		
23	It is difficult for me to find the money to pay the Voluntary Donations	0.561		
24	External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision	0.723		
25	The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision	0.771		
26	I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school	0.773		
28	I am made to feel guilty if I don't pay the Voluntary Donation	0.687		
13	The school has the right to request money from families to supplement government funding ^(R)	0.468		
16	Sufficient information is supplied by my child's school about the Voluntary Donations ^(R)	0.511		
20	The Voluntary Donations are necessary for the successful operation of my child's school ^(R)	0.517		

^(R) denotes reverse scored items.

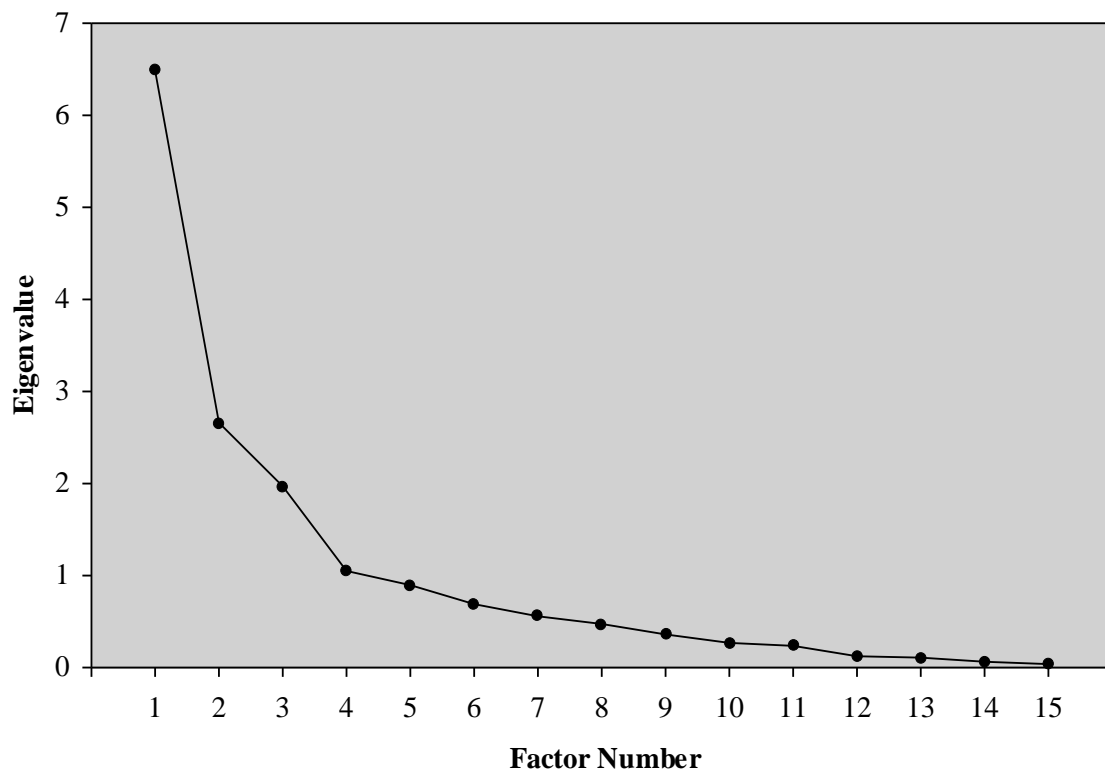


Figure 1.
Scree Plot of eigenvalues from Factor Analysis

Analysis of Scales

‘Attitudes towards the Voluntary Donations’ scale

The first factor fitted closely with the hypothesised ‘Attitudes towards the Voluntary Donations’ scale, and included ten items from the questionnaire: 2.6^(R), 3.1^(R), 3.4, 3.5^(R), 3.7 – 3.11, 3.13 (See Table 8). The scale had an overall eigenvalue of 6.49 and explained 23.16% of the total variance of the questionnaire. The reliability analysis produced a Cronbach’s $\alpha = .86$ and a mean item-total correlation = .39. Note: ^(R) denotes reverse scored items.

‘Views on the current School’ scale

The second factor was similar to the hypothesised ‘Views on the current School’ scale and incorporated six items from the questionnaire (See Table 8). It included items: 2.1, 2.2, 2.3, 2.4^(R), 2.5, 2.7. The scale produced an eigenvalue of 2.66 and explained 9.50% of the

total variance in the questionnaire. The reliability analysis generated a high Cronbach's $\alpha = .88$ and a high mean item-total correlation = .59.

'Political/Government Appraisal' Scale

The third and smallest of the factors was the 'Political/Government Appraisal' scale which included four questionnaire items: 1.1, 1.2, 1.6, 1.7 (See Table 8). This scale produced an eigenvalue of 1.97 and explained 7.04% of the total variance. The reliability analysis produced a Cronbach's $\alpha = .82$ and a high mean item-total correlation = .58.

All Scales

The total percentage of variance accounted for by the three scales was 39.70%. The constructs identified in the factor analysis were arranged into separate scales by averaging the scores of the contributing items, for each of the scales. The three scales created through this modification were referred to as the 'Attitudes towards the Voluntary Donations' scale, the 'Views on the current School' scale, and the 'Political/Government Appraisal' scale, throughout this paper. The value of the scales could range from one to seven, with a high score indicating a positive view of the construct, and a low score indicating a negative view of the factor. The Cronbach's α and mean item-total correlations confirmed the reliability of the scales and showed that each was an adequate measure of the specific construct.

Scales Relationships with Dependent Variables

A series of 2 x 2 factorial analysis of variance (ANOVA) tests were used to evaluate the relationship between payment decision, school decile rating, and the interaction effects of payment decision and decile rating, for the three scales.

For the 'Attitudes towards the Voluntary Donations' scale the results of the ANOVA indicated a significant effect of payment decision $F(1, 234) = 37.48, p < .001$, a non-

significant effect of high versus low decile rating $F(1, 234) = 1.03, p = .31$, and a non-significant interaction between payment decision and decile $F(1, 234) = 3.44, p = .06$. The solitary significant result showed that the *Not Paid* participants responded more negatively towards the ‘Attitudes towards the Voluntary Donations’ scale, than the *Paid* respondents.

For the ‘Views on the current School’ scale, the ANOVA produced a non-significant effect of payment decision $F(1, 239) = 0.00, p = .95$, a non-significant effect of school decile rating $F(1, 239) = 0.01, p = .94$, and a non-significant interaction between payment decision and decile rating $F(1, 239) = 2.65, p = .10$. These results revealed that payment decision and school decile rating had seemingly little effect on the views respondents have towards their child’s current school.

For the ‘Political/Government Appraisal’ scale, the results of the ANOVA displayed a significant effect of payment decision $F(1, 241) = 9.53, p < .01$, a significant effect of high versus low decile rating $F(1, 241) = 8.01, p < .01$, and a significant interaction between payment decision and decile $F(1, 241) = 6.03, p < .05$. The graph of the interaction (Figure 2), illustrates the minimal difference in the responses to the scale for three of the four conditions. Respondents in the *Not Paid – High Decile* group, the *Not Paid – Low Decile* group, and the *Paid – Low Decile* group all exhibited similarly neutral attitudes on the scale. The respondents in the *Paid – High Decile* condition, however, held significantly more positive views of the Government.

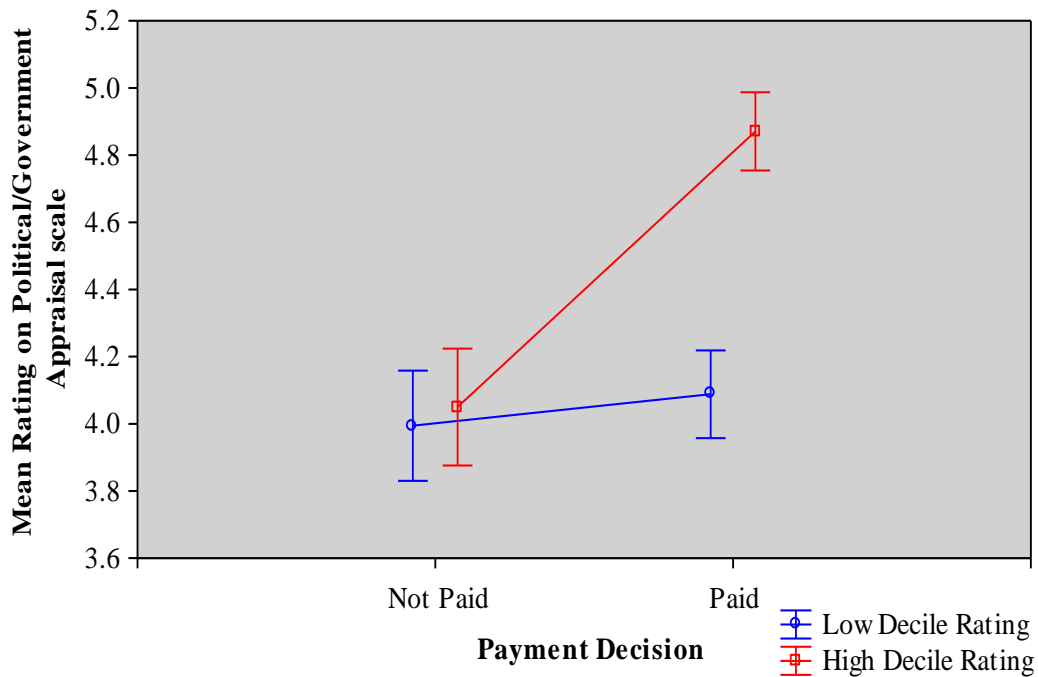


Figure 2.
Interaction Effects of High Vs. Low Decile Rating and Payment Decision on the Political /Government Appraisal Scale

Note: Error bars deonte +/- standard error.

Payment Decision Prediction Model Construction

Discriminant Function Analysis

As a final step of the analysis, the three scales and a selection of demographic variables were combined in an attempt to predict the voluntary donation payment decisions of the respondents.

A backwards stepwise discriminant function analysis was employed to generate a predictive model by initially including the three scales, and the independent variables that were shown to have predictive power on group membership. The stepwise analysis sequentially removed the variables that failed to reach the criterion cut-off score of $F \geq 3.50$. The independent variables included in the initial model were: the ‘Attitudes towards the Voluntary Donations’ scale, the ‘Views on the current School’ scale, the ‘Political/Government Appraisal’ scale, Educational Achievement, Age, estimated Social Norm, High vs. Low School Decile rating and High vs. Low Annual Income. The initial

model created from this analysis encompassed the eight variables listed above and produced a significant, $F(8, 221) = 7.72, p < .001, \lambda = .78$. The full backwards stepwise analysis model is shown in Table 9. The model produced as a result of the backwards analysis was the combination of variables that effectively predicted payment decision group membership, while minimising the inclusion of variables that predict group membership by chance.

Table 9.
Backwards Stepwise Discriminant Function Analysis.

Variables Removed	Step	No. of Variables in Model	<i>F</i> to Remove	Wilks' Lambda	F-value of Model after Removal	<i>df</i> 1	<i>df</i> 2	<i>p</i> -value
Full Model	0	8	—	0.78	5.72	8	221	0.000
High vs. Low School Decile Rating	1	7	0.11	0.78	8.85	7	222	0.000
Estimation of Percentage of Parents who Pay	2	6	0.31	0.78	10.30	6	223	0.000
Political/Government Appraisal scale	3	5	1.34	0.79	12.08	5	224	0.000

Note: Complete model produced after third step, including five variables.

A Fishers Linear Discriminant Function (FLDF) analysis model (Table 10) was used as the final step of this process, to determine the combination of variables that best discriminated between respondents from the two payment decision groups. The 'Attitudes towards the Voluntary Donations' scale was the cornerstone of the model, providing an $F = 21.48, p < .001$ in the finished model, with the other four variables in order of additional predictive power: High vs. Low Annual Income, Age Group, 'Views on the current School' scale and Educational Achievement.

Table 10.*Summary of Fisher Linear Discriminant Function Analysis*

Variables	Wilks' Lambda	Partial Wilks' Lambda	F-remove (1, 223)	p -value	Toler.	1-Toler. (R ²)
Attitudes towards the Voluntary Donations Scale	0.86	0.91	21.48	0.00	0.82	0.18
High vs. Low Annual Income	0.81	0.97	7.14	0.01	0.88	0.12
Age Group	0.80	0.98	4.30	0.04	0.99	0.01
Educational Achievements	0.80	0.98	3.60	0.06	0.94	0.06
Views on the current School Scale	0.80	0.98	3.70	0.06	0.87	0.13

The model produced an overall, $F(5, 224) = 12.08$, $p < .001$, $\lambda = .79$. The final model correctly categorised 75.00% of the respondents. The Classification Matrix produced by the FLDF is included as Table 11. An overall group classification of $\geq 25\%$ better than chance level is considered successful discrimination between groups. The sensitivity of differentiation between the two groups produced a $d' = 1.19$ with a criterion score = 0.79 (the minimum level of internal certainty needed for the observer to decide that a respondent was in the *Not Paid* group).

Table 11.*Classification Matrix for Fishers Linear Discriminant Function Analysis*

Group	Not Paid	Paid	Percent Correct %
Not Paid	42	36	53.85
Paid	22	132	85.71
Total	64	168	75.00

GENERAL DISCUSSION

The current research programme extended our understanding of the voluntary donation funding system through the identification of a number of factors that affect the payment decision of parents, and the subsequent analysis of their relative influence. The findings isolated substantial differences in attitudes, beliefs, and comprehension, concerning the voluntary donation system, between the parents who *paid* and the parents who *did not pay* the donations. Closer examination revealed a significant relationship between attitudes towards the overall voluntary donation environment and the payment decisions of the respondents. The significant results for the group comparisons facilitated the identification of the parents who are most likely not to pay the voluntary donations, and enabled the successful prediction of the respondents' payment decisions.

Inspection of the attitudes of respondents uncovered a strong positive correlation between payment decision and views of the voluntary donation funding system. Similarly, positive correlations, with voluntary donation payment, were identified in attitudes towards the current New Zealand Government and the estimates of the social norm of behaviour. The majority of respondents, in both conditions, held affirmative views of the school that their child attends. In addition, the results revealed significant positive relationships between payment decision and annual household income, level of educational achievement, and age.

The following section attempted to assimilate the findings from the current exploratory field research with existing public goods literature. The research first identified the motives and attitudes that influenced voluntary donation payment decisions, and subsequently matched the respondents' behaviour with theoretical solutions to the public goods dilemma.

Explanations of Key Results

The results identified strong positive relationships between payment decision and attitudes towards the voluntary donation funding system, and the New Zealand Government. A positive appraisal of the Government and education system was an effective predictor of voluntary donation payment, whereas neutral political attitudes correlated with non-payment. Overall, the *paid* respondents were substantially more positive towards the voluntary donation funding system, rejected the proposition that pressures affected their payment decision, and held a better understanding of the donations. In contrast, the *not paid* respondents were significantly more negative towards the voluntary donations, believed that external pressures affected their payment decision, and found the donation more financially difficult. Generally, the respondents' views of the school (that their child currently attends) exhibited little influence over payment decision, with the majority of parents displaying affirmative attitudes towards the school.

Views towards the current School

Comparison of the payment decision conditions revealed that the survey items designed to measure attitudes towards the school received similarly positive responses from the majority of parents. Both payers and non-payers held positive views of their child's teacher, principal and the school's learning environment, and were unlikely to consider withdrawing their child from the school. A high proportion of parents believed that the school operated effectively with the funding it received, and had a firm understanding of the school decile rating system and the effect it has on government funding. The results conclusively rejected the hypothesis that attitudes towards the school would correlate positively with payment decision. The findings concluded that parents' attitudes towards the school did not appear to influence voluntary donation payments.

Political/Government Appraisal

A parent's positive attitude towards the Government was significantly correlated with voluntary donation payment. In addition to exhibiting more positive attitudes towards the 'Political/Government Appraisal' scale, the *paid* parents were significantly more positive towards the Prime Minister (The *Rt. Hon. John Key* during the research), the Government (the *National Party*), and the overall education system, than the *not paid* parents. These positive political attitudes may have motivated the parents to pay the donations. In contrast, the *not paid* parents exhibited neutral political opinions, which may have influenced (or reinforced) their decision not to pay the voluntary donations. The political attitudes of a respondent revealed a marginal level of predictive value on voluntary donation payment decision.

Attitudes towards the Voluntary Donations funding system

The present findings indicate that attitudes towards the voluntary donation funding system was the major determinant influencing payment decision. The 'Attitudes towards the Voluntary Donations' scale predicted the most variance in the *payment decision prediction model* and was the strongest overall contributor to the prediction of payment decision.

In general, the results supported the hypothesis that attitudes towards the voluntary donation funding system would positively correlate with payment of the donations. The strongest predictors of payment were a belief that the request for a donation was within the rights of the school, and that the donations are necessary in the successful operation of the school. Affirmation of the existence of external pressures, which complicate voluntary donation payment decisions, was strongly correlated with non-payment.

Comprehension of the Voluntary Donation funding system

Attitudes towards the general comprehension of the voluntary donation system were moderately positive for the majority of parents. The strong positive correlation between the perceived necessity of the donations and payment, suggests that a non-payer's beliefs that the donations were unnecessary for school funding could have influenced their decision not to contribute. In addition, payment was positively related to a belief that the request for donations was within the rights of the school and an awareness of the tax exemption available on the donations. These observations suggest that an explicit understanding of the indispensability of the voluntary donations to school funding, and that requests for donations are within the rights of the school, would theoretically improve the contribution rate of the donations. Encouraging parents to exploit the tax benefits available on charitable contributions, may have a similar effect on increasing the voluntary donation payment rate.

Fundraising Participation

The research identified that a parent's attitude towards the use of an alternative to the donations was dependent on payment decision. The parents who did not pay the donations believed that schools should allow parents the opportunity to participate in fundraising ventures for the school, as an alternative to paying the donation. In contrast, the parents who paid were opposed to the idea. Perhaps an alternative for schools is to offer non-contributing parents the opportunity to donate their time to school enterprise as a substitute for their voluntary donations.

External Pressures on Payment Decision

Contention surrounds the existence of external influences that have an effect on payment of the voluntary donations. Substantial anecdotal (and media) evidence

acknowledges the existence of pressures on the voluntary contributions of parents to state schools (Rudman, 2008; Minto, 2009) and the charitable contributions to churches (Soetevent, 2005). The present study found that a parent's identification of pressure, in the payment decision process, was negatively correlated with payment. In particular, a parent's belief that their payment decision impacts on their child, a belief that the school's awareness of contributions affected payment decision, and a perception of pressure due to the number of reminders sent by the school, were strong predictors of voluntary donation non-payment. These results suggest that the threat or actuality of punishment from the school influenced the payment decision of the non-payers more than the payers. The evidence refutes the presumption that payments were enforced via formal punishments, but rather informal sanctions from the school, such as social disapproval or an implication of guilt.

External Pressures evident in High Decile Schools

The most substantial evidence for the existence of coercion techniques and pressures on payment was observed in high decile schools. The parents with a child at a low decile school (i.e. 1 – 5) held firm beliefs that the school, and community, did not use punishments or sanctions, to influence their voluntary donation payment decisions. Conversely, in high decile schools (i.e. 6 – 10) the perception of external influences and informal sanctions was negatively correlated with payment. Analogous to the results identified regarding the general existence of pressure on donations, the most predictive factors in high decile schools were regarding informal sanctions imposed by the school. The belief that their child was negatively affected by the parent's payment decision, and that they were made to feel guilty for not paying the donation, revealed strong negative relationships with payment. Additionally, a belief that the school used invoices and reminders to pressure the parents was a stable predictor of non-contribution. A parent's belief that the school administrations' awareness of

contributions caused pressure on their payment decision was also positively related to non-payment of the donation.

The prevalence of decile-dependent attitudes towards pressure suggests that high decile schools – where the voluntary donations are essential to supplement government funding – use informal social sanctions to pressure parents into paying the donations. The findings showed that the pressures on payments were imposed predominantly by the school, as opposed to coming from the community or other parents. The increased reliance on pressure to encourage payments in high decile schools, whether intentional or unintentional, might be a school's desperate attempt to raise the additional funding needed to sustain a successful learning environment (Woulfe, 2009), or an expectation that parents from more affluent communities can more easily afford to help with funding.

Effect of Demographic Factors on Payment Decision

The present study identified that payment of the voluntary donations had a strong positive relationship with age, and annual household income. The results are consistent with the findings of List (2004), who reported that age positively correlated with charitable giving, and Hochman and Rodgers (1973), who found that giving to local charities was highly sensitive to the distribution of income within the community. The research also established a significant positive correlation between level of educational achievement and payment of the voluntary donations.

Income was confounded by respondents' age and educational achievement. Older, well-educated parents earn a higher annual income compared to younger, less educated parents. It is intuitive that parents with a higher salary would have more disposable income to spend on the voluntary donations. In addition, parents who have a higher level of educational achievement might place greater value on the education of their children, and contribute to

the donations more readily. While income was highly positively correlated with payment of the donations, it was only the second largest contributor to the *payment decision prediction model* (preceded by attitudes towards the voluntary donation system).

RESPONSE TO ECONOMIC THEORY

Extensive observations of natural and laboratory examples of public goods have concluded that many individuals will voluntarily contribute to the provision of public goods (Andreoni, 1990). The general approach when studying the voluntary contribution mechanism is to assume that individuals receive a private benefit from their personal contribution, in addition to the marginal benefit received from their use of the public good. This private benefit is presumed to encourage contributions above the level that would be expected if benefits were derived from the use of public good alone. Explanations of the private benefits that motivate voluntary contributions range from behavioural factors, such as altruism, and warm-glow to complex theories of interdependent behaviour, which stimulate social approval and disapproval, such as cooperation, and reciprocity (Kotchen, 2006). The current research aimed to assimilate the major determinants of voluntary donation payment, with the solutions to the public goods problems presented in the *Introduction*.

Social Norms

Public goods research has demonstrated that, even in situations without negative sanctions, social comparison information can affect the contributions of individuals (Shang & Croson, 2008). In a recent field experiment, Frey and Meier (2004) identified a positive correlation between beliefs about the contribution rate of the reference group (the proportion of a group who donated to a charity) and an individual's behaviour. The authors found that the overall contribution rate of the participants decreased when they were informed that forty-

six percent of the reference group contributed, and increased when they were informed that sixty-four percent contributed. Instead of informing the participants of the overall contribution rate (the manipulation Frey and Meier used to facilitate contributions), the current study elected to examine respondents' perception of the social norm by asking them to estimate the voluntary donation contribution rate at their child's school.

Consistent with previous research on interdependent behaviour, a parent's estimate of the overall payment rate was positively correlated with voluntary donation payment. Specifically, the respondents who paid the donations estimated that the payment rate at their child's school was significantly higher (59.4%), than the respondents who did not pay (53.2%). The current result is in line with Frey and Meier's findings that an individual's contribution reacts to relatively small changes in the (perceived) contribution rate of a reference group. This observation is consistent with other public goods field studies, which identified that social information about the contributions of others positively influences an individual's contribution (Shang & Croson, 2009; Fehr & Gächter, 2006).

For voluntary donation payments, the social norm may not be consistent across all domains. In different schools or communities, the norm may vary depending on the group enforcing the payment, and the value placed on the contributions. The existing research on social norms seldom analyses how the norm develops in a certain situation (Vesterlund, 2006). The present study, however, identified a theoretical pathway for the establishment of social norms in voluntary donation contributions. For this situation, the school and community enforced the social norm. The existence of distinct social norms in different socio-economic communities was supported by the parents' decile-dependent estimates of payment proportion. Specifically, the respondents' estimates of payment proportion were greater in high decile schools (65%), than the estimated rate in low decile schools (49%).

In high decile schools (where per student government subsidies are the lowest), payment of the donation is essential to supplement the funding received from the government (Marvin, 2009). Therefore, the administrations of high decile schools attempt to enforce the payment more ardently, and may manipulate the social norm to encourage parents to pay the voluntary donations. The current study found that many parents, in high decile schools, perceived the existence of pressures, especially informal sanctions, in relation to their voluntary donation payments. This finding is consistent with anecdotal evidence that schools use informal punishments and peer pressure, to encourage the payment of the donations (Minto, 2009). In contrast, low decile schools require less from parents through the voluntary donations because they receive a higher government subsidy per student. Consequently, these schools can afford to employ a ‘pay if you can’ philosophy regarding the donations. Enforcement of the social norm in low decile schools reflected the perceived necessity of the donations. The present findings support this theory, as very few parents identified the use of pressures or sanctions in low decile schools. Thus, the parents with children who attend a low decile school may align their voluntary donation payment decision with the perceived social norm of non-payment, resulting in the lower payment proportion observed in these schools.

Cooperation and Reciprocity

Confirmation of functional social norms in the voluntary donation system, allowed the extension of the findings to related theories of interdependent behaviour. Fischbacher and Gächter’s (2006) examination of cooperation in a public goods game found that eliciting estimates of the average contribution of a reference group, allowed the identification of positive and stable correlations between beliefs and contributions. The authors concluded that the effect was the result of conditionally cooperative individuals. Consistent with previous field research (Shang & Croson, 2008; 2009; Fehr & Gächter, 2006), the present findings

revealed that perceptions of the contributions of others positively influenced an individual's contribution to the voluntary donations. The positive relationship between social norms and payment decision infers that the parents who chose to pay the donations were behaving in accordance with their perceptions of the contribution rate of the school. Therefore, their payment of the donation was a reciprocal or conditionally cooperative response to the contributions of other parents. The non-payers perceptions of a lower voluntary donation payment proportion, however, allowed them to free ride without the guilt or social disapproval associated with non-conformity.

Punishment and Counter-Punishment

Whilst a parent's identification of coercive sanctions and punishments that influence payment decision was negatively related to voluntary donation payment, the results were inconclusive on the way in which perceived reprisal influenced behaviour. It was expected that the payers would be more aware of the sanctions associated with the influence of voluntary donations than the non-payers. From this perspective, the payers would be motivated to contribute to the donations by their awareness of the sanctions used to encourage behaviour, and their desire to avoid the associated social punishments. The results, however, conclusively rejected this hypothesis by demonstrating that a perception of pressure was positively correlated with non-payment. The findings suggest that the sanctions were either insufficient to influence the payment decision of the non-payers or the effect of pressure galvanised their payment decision, and actively discouraged contribution.

Consistent with this observation, non-contribution could be an individual's response to the punishments and sanctions associated with non-payment of the voluntary donations. Public goods games have examined the use of counter-punishment in the laboratory and observed that non-contributors will use 'anti-social' punishment to retaliate against the

sanctions imposed by contributors (Nikiforakis, 2008). Thus, counter-punishment is a response to the punishment meted out on uncooperative individuals, and often results in a substantial reduction in contribution (Chaudhuri, 2007). Following from this theory, free riding in the voluntary donation system may be an individual's retaliation to the sanctions imposed by the school, which could contribute to the lower payment rate observed in the parents who perceived punishments for non-payment.

The Impact of Guilt and Shame

Analogous to the economic perspective of guilt aversion (Charness & Dufwenberg, 2006), a parent who desires the approval of others within the school community (e.g. the administration or other parents), will experience guilt if they believe their payment decision fails to comply with the socially accepted behaviour (i.e. paying the voluntary donation). In the present study, a parent's perception of the influence of guilt on their payment decision was positively correlated with non-payment. This observation was substantially more pronounced in the group comparisons of high decile schools, revealing that the guilt on non-contribution was more evident in higher socio-economic schools, than in low decile schools.

In the voluntary donation system, the implication of guilt from an external source did not motivate an individual to correct or modify their socially undesirable behaviour (i.e. non-payment). Instead, similar to the observation of counter-punishment, the perception of guilt appeared to actively discourage payment of the voluntary donations. This observation is consistent with the psychological distinction between guilt and shame. The implication of guilt motivates an individual to 'repair' or 'amend' their socially undesirable actions. In contrast, shame evokes a negative reaction to the source of the shame, and often results in retaliatory anger (Tangney et al, 1992). Thus, a parent's internal response to the implication

of guilt is likely to manifest as a feeling of shame, which stimulates anger towards those who enforce the social norm, and reinforces their non-contribution.

Altruism

The research used the return rate of the questionnaires as an informal measure of altruism. All respondents received the same incentives for participating in the research, but the payers responded at nearly twice the rate of their non-paying counterparts, revealing a strong correlation between return rate and the payment decisions of parents. Whilst this is not a perfect measure of the altruistic tendencies of a parent, it is reasonable that, because no tangible benefit was gained from responding to the research, the parents who returned their questionnaires were more motivated by altruism, or a feeling of kindness, than the parents who did not return the questionnaires. Thus, the altruism that initiated questionnaire completion and return might also be an influencing factor in the payment of the voluntary donations.

Identifiability

Identification as a non-contributor has a significant effect on encouraging cooperation in public goods games (Croson & Marks, 1998). Removal of the anonymity of a contribution decision compounds the feeling of guilt associated with non-contribution, and causes pressure through the implication of social disapproval. A school administration's awareness of an individual's payment decision concerned the non-payers, more than payers. Identification as a parent who does not pay the voluntary donations had a weak relationship with payment decision, a trend that was more prominent in high decile schools. The statement did not attract the strength of opinion expected, but some respondents chose to include unsolicited comments regarding payment identifiability. For example, one respondent commented, "the

donations are not as anonymous as you think”, and another concluded, “the payments are not anonymous and its unfair [sic]”. This suggests that some non-paying parents are particularly negative towards the pressures associated with payment identification.

A school’s use of invoices and reminders to elicit payment of the donations had a strong influence on payment decision. The perception of pressure associated with the use of reminders was positively correlated with non-payment. This sanction may have had a function beyond the attempted encouragement of payment, as it informally identified a non-contributing parent, and was likely to discourage the voluntary donations. Predictably, this effect was substantially more pronounced in high decile schools with non-payers holding attitudes that pressure from this source influenced their payment decision. The proposition that identification of payment decision discourages donations is consistent with the previous evidence on counter punishment, whereby parents are using non-contribution as retaliation against sanctioning from the school.

Limitations

In the opinion of the researcher, the current study was successful in extending our understanding of the factors that influence the voluntary donation funding system. The research was, however, not without its limitations, some of which may affect the generalisability of the findings.

Firstly, the sample of schools was not randomly selected. The study intentionally employed few criteria for selecting schools. The selection process, however, was mediated by the schools’ willingness to participate. It was presumed that many of the schools that chose to participate in the study had an interest in voluntary donation research, which may correlate with a previous problem regarding the collection rates of the parental contributions. This may

introduce an element of bias, whereby the participating schools were appreciably different to the general school population.

The schools were only selected from the Christchurch City district because of the proximity to the researcher. The research, therefore, excluded schools from rural areas or other New Zealand cities. Whether a school is located in an urban area, or in a less densely populated rural area, may affect its scale of operations, or the level of support received from the community. For example, rural communities may see the school as a focus of community involvement (Alexander & Jaforullah, 2004). In addition, the selection process yielded differences in the proportion of schools from the single-sex and co-educational domains, and included significantly more primary schools than intermediate or secondary schools. Future research could employ a more representative sample of New Zealand schools to improve the generalisability of the findings.

The selection of participants was at the discretion of the schools. The school administration organised the delivery of the questionnaires to a selection of the parents of their students. Even though the schools were given clear instructions to randomly select participants from the entire school population, it was impossible (and would violate the terms of the ethics agreement) for the researcher to interfere with the distribution samples. The researcher's lack of control over selection resulted in a disproportionate number of female respondents compared to males, and substantially more New Zealand Europeans compared to other ethnicities. The disparity in demographic samples could reflect the actual composition of the selected schools, or reflect a problem with the comprehension of the language used in the questionnaire by non-European New Zealanders.

A respondent's concern that their responses could be discovered by their school's administration, and reflect negatively on their child or family, may have resulted in the positive trend observed in attitudes towards the school. Even though response anonymity was

assured, the fact that the school controlled questionnaire distribution may have influenced responses, especially towards the ‘Views of the current School’ scale survey items.

An element of nonresponse bias may have an effect on the generalisability of the results, even though the return rate of the current research was higher than anticipated. Academics contend that a response rate of below sixty percent creates difficulty in making representative judgements because of the introduction of nonresponse bias (Schutt, 1999). The nonresponse bias causes problems in extending the conclusions from the research to the entire population because the individuals who did not respond may be appreciably different to the respondents (Hager et al., 2003). It was hypothesised that an overall return rate of between ten and fifteen percent was likely due the contentiousness of the issue and the personal nature of the information requested. Compounding the problem, mail surveys are especially difficult to administer and enforce. A recent study on attitudes to debt, which surveyed debtors and creditors, had an overall return rate of five percent for a similarly contentious issue (Mewse et al., 2010). Therefore, the current return rate (31%) was reasonable, given the collection process and the delicate nature of the information sought, which may reflect the respondents’ genuine interest in the topic.

While it is apparent that field research holds an important place in economic and psychological study, the discipline does have limitations. The quasi-experimental nature of the present study reduced the researcher’s ability to define causal relationships between attitudes and behaviour. In addition, the scope for generalisability is limited, as the conclusions drawn from this research may apply only to the voluntary contributions in the state schools of New Zealand. Further research is needed to extend the current study to other voluntary contribution mechanisms in impure public goods institutions, with the introduction of experimental control to allow causal judgements.

The current research excluded the state-integrated school system. Schools from this system are privately owned, and have a ‘special character’ usually based upon a religious or educational philosophy. These educational institutions have very different voluntary donation collection processes, compared to state schools, and all collect fees or attendance dues as part of their enrolment (Ministry of Education, 2008).

PRACTICAL IMPLICATIONS

How can Schools Encourage the Voluntary Donations?

An intuitive, yet surprisingly understated, solution to the problem of dwindling voluntary donation payment rates is to make it more salient that the donations are indispensable for school funding. In general, the results indicated that parents had a moderate understanding of the donations, but that the majority of non-paying parents did not perceive the donations as necessary to fund the school. This is consistent with the findings of Kemp (1998), who reported that the perceived necessity of a good is strongly related to the desire to regulate its distribution, especially if the good is underprovided. Educating parents to understand that the money received from parental contributions is essential in supporting a well organised and successful school environment, may improve voluntary donation payment rates.

The attitudes that parents hold towards the voluntary donation funding system was the best predictor of payment decision in the current study. Therefore, managing the views of the donations would theoretically have a strong effect on encouraging contributions. A general improvement in the quality, and availability, of the information provided to parents about the voluntary donations would reduce any chance of misinterpretation of the payments. The information presented to parents should clearly explain that schools have the right (under the law) to request money from parents to supplement government funding. The explanation

should also illustrate that without funding from the voluntary donations, the quality of education provided would be significantly reduced. Informing parents of the availability of a tax exemption may also encourage payment of the voluntary donations.

In order to increase the voluntary donation payment rate, it is advisable for schools to have an understanding of the theoretical difference between public and private benefits. The contribution decision of an individual is dependent on the combination of benefits received from their personal use of the public good and extraneous private benefits. Theoretically, an individual only contributes to a public good if they perceive an increase in the quality of the good from their personal contribution (Rose-Ackerman, 1996). Specifically, if a parent were solely concerned for the education of their child, that parent would not contribute to the school if they were unable to distinguish between the quality of education provided in the presence, and absence of their donation. It is proposed that more parents would contribute to the voluntary donations if they perceive that their contribution returns a marginal benefit to their child. Providing information regarding the specific benefits of a charitable contribution has been found to increase donations in public goods contexts (Vesterlund, 2006). Therefore, schools need to inform parents of the hypothetical benefits afforded to each child from a parent's contribution. For example, a school could state that one parent's voluntary donation would allow the employment of an extra support teacher for a day, or the purchase of innovative learning software for the school's computer system.

The present research found that an individual's charitable contribution to a school was influenced by the contributions of others. This is consistent with previous field experiments that have demonstrated a positive correlation between an individual's contribution and their beliefs regarding the contributions of the group (Shang & Croson, 2009; Frey & Meier, 2004). Shang and Croson (2008) found that presenting information regarding recent contributions strongly influenced payment decision, especially if the previous contributor was

similar to the individual. From this perspective, a school could increase the proportion of parents who pay the voluntary donations by informing the parents of a payment rate that exceeded the school's current collection percentage. While the researcher does not condone direct deception, a school could reveal the payment rate of a similar school in the area that receives a higher proportion of their voluntary donations. Alternatively, informing the parents of a high contribution rate in a previous year, could influence the impression of the social norm, and encourage payment of the donations.

Finally, the examination of external pressures on payment decision revealed that the schools that employed the use of sanctions in an attempt to encourage payment, often had the opposite effect on contributions. The findings proposed that pressures and sanctions from the school galvanised the payment decision of the non-payers, instead of persuading the parents to donate. Encouraging contributions from the parents who do not pay could be achieved by reducing or removing any implication of pressure associated with the donations. Allowing parents to make an informed decision on whether or not to donate without the influence of coercive sanctions could facilitate an increase in contributions.

CONCLUSIONS

The current research was important given the lack of previous empirical research into the voluntary donation funding system of New Zealand state schools. Substantial media scrutiny on the topic has highlighted the controversy surrounding the requests for contributions from parents, and has divided public opinion on the existence of a *free* education in this country.

The current investigation extended our knowledge of the voluntary donation funding system through the identification of a number of factors that affect the payment decision of parents. The research revealed a strong correlation between attitudes and voluntary donation

payments, suggesting that payment decisions are dynamic, and therefore, changeable. The findings identified that a combination of demographic factors and dynamic attitudes effectively predicted payment decision. The strongest overall predictor of voluntary donation payment was respondents' attitudes towards the voluntary donation funding system. This factor was significantly more important in the identification of non-contributors, than income, which suggests that attitudes are more instrumental in the decision making process of a parent than financial means. In general, this thesis should be viewed as an innovative interpretation of an impure public goods field experiment, which cautiously supports current economic theory.

A school principal, Board of Trustees member, Parent Teacher Association affiliate, or any other interested party attempting to increase voluntary donation payment rates should understand that a parent's voluntary donation payment decision is largely based on beliefs and attitudes, and, as such, is compliant to manipulation. With the right motivation, the majority of parents can be persuaded to comprehend the indispensability of the donations, which may ultimately lead to an increase in contributions.

In general, the study allowed for a deeper understanding of the factors that motivate individuals to pay a voluntary donation to state schools. It also acts as a steppingstone for future research that aims to investigate the effects attitudes and social influences have on the prediction, and explanation, of human behaviour, especially in the New Zealand education system.

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APPENDIX A

Department of Psychology



QUESTIONNAIRE

Attitudes towards the Voluntary Donation system of New Zealand State Schools

This questionnaire is part of a research program carried out into **Attitudes towards the ‘Voluntary Donations’ requested by NZ state schools**. The Voluntary Donations are optional contributions to the running of the school. Schools request the donations from parents and families to supplement the funding they receive from the government.

Please refer to the information sheet provided for a more detailed description of this research project.

The questions on the next five pages ask for your opinion of the current New Zealand government, your attitudes regarding the school your child currently attends and your views on the Voluntary Donations that your child’s school collects. **If you have children at more than one State school please answer about your youngest child and his/her school.** On each of the following five pages you will be asked your opinion on various statements that assess the three categories. **Answer by circling the number which indicates how strongly you agree or disagree with each statement.**

The project has been reviewed *and approved* by the UC Human Ethics Committee.

By completing the questionnaire it is understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

Following is a list of seven statements concerning the current New Zealand government and education system. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | |
|--|---|
| 1. The current government is competent | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 2. The current Prime Minister is doing his job well | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 3. The educational policies of a political party are important when I decide who to vote for | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 4. Free education is a right that all New Zealanders deserve | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 5. Education should be compulsory for all children in New Zealand | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 6. The Ministry of Education organises the education system in New Zealand successfully | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 7. Overall the education system in New Zealand is well administered | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |

Next is a list of eight statements regarding the school your child currently attends. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | |
|---|---|
| 8. The school is well organised | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 9. The teachers are competent and
passionate | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 10. The administration of the school
is well governed and managed | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 11. I have contemplated withdrawing my
child from the school | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 12. The school operates effectively with
the funding it receives | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 13. The school has the right to request
money from families to supplement
government funding | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 14. In general the school has a successful
learning environment | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 15. I understand the school decile rating
system and how it affects
government funding to schools | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |

The following fourteen statements (on the next two pages) relate to the ‘Voluntary Donations’ your child’s school requests. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | | | |
|--|---------------------------|-------------------|----------------|
| 16. Sufficient information is supplied by
my child’s school about the
Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 17. I understand what the Voluntary
Donations are used for | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 18. I understand from the information
provided that the Donations are
completely optional | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 19. I would rather participate in
fundraising ventures for the school
than pay the Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 20. The Voluntary Donations are
necessary for the successful
operation of my child’s school | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 21. I am aware that a tax exemption
is available on the money I
pay as a Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |

Please read each of the following eight statements and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | | | |
|--|---------------------------|-------------------|----------------|
| 22. Even though the Donations are anonymous I feel my payment decision could impact on my child | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 23. It is difficult for me to find the money to pay the Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 24. External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 25. The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 26. I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 27. I enjoy the feeling of satisfaction I get when I pay the Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 28. I am made to feel guilty if I don't pay the Voluntary Donation | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 29. The school withholds extra-curricular activities (e.g. Camps or Trips) from my child if I don't pay the Donation | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |

Finally, eight **demographic** questions:

30. What percentage of parents, at the school your child attends, do you believe pay the Voluntary Donation?

20% or less 21 – 40% 41 – 60% 61 - 80% 81% - 100%

(Please circle one)

31. How many children, under the age of 18, do you financially support?

1 2 3 4 5 or more

(Please circle one)

32. How many years do you expect your youngest child to continue attending their current school including this year?

1 2 3 4 5 or more

(Please circle one)

33. What is your gender? Male Female

(Please circle one)

34. What age group do you belong to?

20 – 28 29 – 37 38 – 46 47 – 55 56 – 64 65 or over

(Please circle one)

35. What Ethnic group do you identify with (you may select more than one)?

NZ European Māori Pacific Islander Asian Other

(Please circle one)

36. What is your annual household income (combination of you and your partner after tax)?

Under 20,000 20,001 – 35,000 35,001 – 50,000 50,001 – 65,000
65,001 – 80,000 80,001 – 95,000 95,001 – 110,000 110,001 or over

(Please circle one)

37. What is the highest level of educational qualification you have achieved?

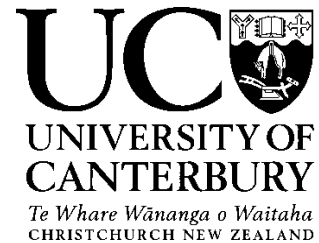
No formal qualification High School qualification Tertiary Diploma/Certificate
Under-Graduate Degree Post-Graduate Qualification

(Please circle one)

Thank you very much for completing this questionnaire.

APPENDIX B

Department of Psychology



QUESTIONNAIRE

Attitudes towards the Voluntary Donation system of New Zealand State Schools

This questionnaire is part of a research program carried out into **Attitudes towards the ‘Voluntary Donations’ requested by NZ state schools**. The Voluntary Donations are optional contributions to the running of the school. Schools request the donations from parents and families to supplement the funding they receive from the government.

Please refer to the information sheet provided for a more detailed description of this research project.

The questions on the next five pages ask for your opinion of the current New Zealand government, your attitudes regarding the school your child currently attends and your views on the Voluntary Donations that your child’s school collects. **If you have children at more than one State school please answer about your youngest child and his/her school.** On each of the following five pages you will be asked your opinion on various statements that assess the three categories. **Answer by circling the number which indicates how strongly you agree or disagree with each statement.**

The project has been reviewed *and approved* by the UC Human Ethics Committee.

By completing the questionnaire it is understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

Following is a list of seven statements concerning the current New Zealand government and education system. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | |
|--|---|
| 1. The current government is competent | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 2. The current Prime Minister is doing his job well | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 3. The educational policies of a political party are important when I decide who to vote for | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 4. Free education is a right that all New Zealanders deserve | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 5. Education should be compulsory for all children in New Zealand | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 6. The Ministry of Education organises the education system in New Zealand successfully | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 7. Overall the education system in New Zealand is well administered | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |

Next is a list of eight statements regarding the school your child currently attends. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | |
|---|---|
| 8. The school is well organised | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 9. The teachers are competent and
passionate | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 10. The administration of the school
is well governed and managed | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 11. I have contemplated withdrawing my
child from the school | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 12. The school operates effectively with
the funding it receives | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 13. The school has the right to request
money from families to supplement
government funding | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 14. In general the school has a successful
learning environment | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |
| 15. I understand the school decile rating
system and how it affects
government funding to schools | 1 2 3 4 5 6 7 |
| | Strongly disagree Strongly agree |

The following fourteen statements (on the next two pages) relate to the ‘Voluntary Donations’ your child’s school requests. Please read each one and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | | | |
|--|---------------------------|-------------------|----------------|
| 16. Sufficient information is supplied by
my child’s school about the
Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 17. I understand what the Voluntary
Donations are used for | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 18. I understand from the information
provided that the Donations are
completely optional | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 19. I would rather participate in
fundraising ventures for the school
than pay the Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 20. The Voluntary Donations are
necessary for the successful
operation of my child’s school | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 21. I am aware that a tax exemption
is available on the money I
pay as a Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |

Please read each of the following eight statements and indicate how much you agree or disagree with that statement. The scale goes from 1 = strongly disagree to 7 = strongly agree. The neutral point is 4 = neither agree nor disagree. Please consider each statement carefully and answer as honestly as possible.

- | | | | |
|--|---------------------------|-------------------|----------------|
| 22. Even though the Donations are anonymous I feel my payment decision could impact on my child | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 23. It is difficult for me to find the money to pay the Voluntary Donations | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 24. External pressures (e.g. from the school or other parents etc.) impacted on my Voluntary Donation payment decision | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 25. The school administration's awareness of who pays the Voluntary Donations impacts on my payment decision | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 26. I feel pressured to pay the Voluntary Donation by the number of invoices or reminders sent out by the school | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 27. I find it easy to forget about paying the Voluntary Donation | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 28. I am made to feel guilty if I don't pay the Voluntary Donation | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |
| 29. The school withholds extra-curricular activities (e.g. Camps or Trips) from my child if I don't pay the Donation | 1 2 3 4 5 6 7 | Strongly disagree | Strongly agree |

Finally, eight **demographic** questions:

30. What percentage of parents, at the school your child attends, do you believe pay the Voluntary Donation?

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(Please circle one)

31. How many children, under the age of 18, do you financially support?

1 2 3 4 5 or more

(Please circle one)

32. How many years do you expect your youngest child to continue attending their current school including this year?

1 2 3 4 5 or more

(Please circle one)

33. What is your gender? Male Female

(Please circle one)

34. What age group do you belong to?

20 – 28 29 – 37 38 – 46 47 – 55 56 – 64 65 or over

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35. What Ethnic group do you identify with (you may select more than one)?

NZ European Māori Pacific Islander Asian Other

(Please circle one)

36. What is your annual household income (combination of you and your partner after tax)?

Under 20,000 20,001 – 35,000 35,001 – 50,000 50,001 – 65,000
65,001 – 80,000 80,001 – 95,000 95,001 – 110,000 110,001 or over

(Please circle one)

37. What is the highest level of educational qualification you have achieved?

No formal qualification High School qualification Tertiary Diploma/Certificate
Under-Graduate Degree Post-Graduate Qualification

(Please circle one)

Thank you very much for completing this questionnaire.

APPENDIX C

Ref: HEC 2010/53

12 May 2010

Andrew Crerar
Department of Psychology
UNIVERSITY OF CANTERBURY

Dear Andrew

The Human Ethics Committee advises that your research proposal “An investigation into the voluntary donation system of New Zealand state schools” has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 7 May 2010.

Best wishes for your project.

Yours sincerely

Dr Michael Grimshaw
Chair, Human Ethics Committee

APPENDIX D

Department of Psychology



Information Sheet

You are invited to participate in a research project into *Attitudes towards the 'Voluntary Donations' system of NZ state schools* by completing the enclosed questionnaire. The Voluntary Donations are optional contributions, from parents and families, to the running of the school which supplement government funding.

Your participation in this research is completely anonymous and any information you supply is private. The results of the project may be published, but you can be assured of the complete confidentiality for data gathered in this investigation. The information you supply will not be available to your child's school administration and your choosing not to participate will have no consequence for your child. Participation is optional and you may withdraw your participation, including withdrawal of any information you have provided, at any time until your questionnaire has been returned to the researcher. Please note that completed theses are available to the public through the University of Canterbury (UC) library database.

On completion, place the questionnaire in the postage-paid, pre-addressed envelope provided and post directly to the researcher. A \$1 Scratch 'N Win Ticket has been included with this survey in appreciation of your time and assistance with this research.

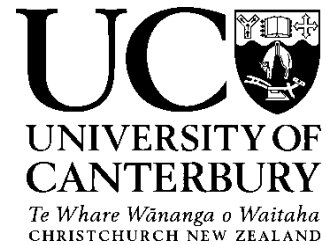
The project is being carried out as a requirement of a Master of Arts by **Andrew Crerar** under the supervision of **Professor Simon Kemp**. The researchers can be contacted at 03 356 2900 and 03 364 2968 respectively. They are pleased to discuss any concerns you may have about participation in the project.

The project has been reviewed *and approved* by the UC Human Ethics Committee.

By completing the questionnaire it will be understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

APPENDIX E

Department of Psychology



Information Sheet

You are invited to participate in a research project into *Attitudes towards the 'Voluntary Donations' system of NZ state schools* by assisting the researchers in the contact of your student's parents and families. Research questionnaires (approved by your school) will be posted to a random sample of parents as arranged between the researchers and the school.

Your participation in this research is completely anonymous and any information you supply is private. The results of the project may be published, but you can be assured of the complete anonymity of data gathered in this investigation. The information that is supplied by the parents and families of your students will not be available to you (the principal) or your school's administration. Participation is optional and you may withdraw your participation, including withdrawal of any information you have provided, until the questionnaires have been posted to the participants. Contact of the participants will be mediated by the school administration and at no time will the researchers be informed of the identities of any participants.

Participants will post the completed questionnaires directly to the researchers (unless otherwise arranged). A \$1 Scratch 'N Win Ticket will be included with each questionnaire.

The project is being carried out as a requirement of a Master of Arts by Andrew Crerar under the supervision of Professor Simon Kemp. The researchers can be contacted at 03 356 2900 and 03 364 2968 respectively. They are pleased to discuss any concerns you may have about participation in the project.

Please note that completed theses are available to the public through the University of Canterbury (UC) library database. The final report will be made available to each participating school at the completion of the research

The project has been reviewed *and approved* by the UC Human Ethics Committee.