

**The incidence and perceived managerial merit
of customer accounting in New Zealand**

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Title Page.

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Abstract

Purpose – Two prior survey papers on the use and perceived merit of customer accounting practices, one in Australia and one in New Zealand, disclosed contrasting results with confusing elements. This survey replicates and extends the previous research to update and clarify our understanding of the use and perceived merit of Customer Accounting (CA) practices in New Zealand.

Design/methodology/approach – A mail questionnaire survey was sent to 136 companies quoted on the New Zealand Stock Exchange, resulting in 44 useable responses (32.4%).

Findings – This survey finds that mean scores for the usage and perceived merit of CA practices in New Zealand in 2009 are similar to those found in Australia in 2002, and much higher than those found in New Zealand in 2007. Also, a relationship between the use of activity-based costing (ABC) and the perceived merit of CA practices was found, but no relationship with actual CA usage. The research also found a strong positive relationship between the adoption of the customer concept of marketing management and the usage of customer profitability analysis at an individual customer level.

Research limitations/implications – The survey method prevents follow-up questions and clarification of ambiguities, but the survey results point to several areas warranting further research.

Originality/value – This survey provides academic researchers, teachers, and firms using, or considering the use of CA practices, improved understanding of the extent of current usage and perceived managerial merit of CA practices in New Zealand companies.

Keywords: Customer Accounting (CA); Customer Profitability Analysis (CPA); Customer Lifetime Value (CLV); Customer Equity (CE); Customer concept; Marketing concept; New Zealand.

Introduction.

In recent years, many firms have adopted a strategy based on customer intimacy (Treacy and Wiersema, 1993, Kaplan and Norton, 2004) and yet the accounting literature on customer accounting (CA) has been described as “little more than fledgling” (McManus and Guilding, 2008, p. 783), particularly when compared to the broader concern for customer focused metrics in the marketing literature. Gleaves *et al.* (2008) highlight confusion and contradiction in the marketing literature with respect to the understanding of customer profitability and conclude that marketing requires an input from management accounting (MA) to shore-up and clarify its CA measures. To date, such support appears to be lacking as Bates and Whittington (2009) discovered relatively minimal coverage of customer profitability analysis (CPA) in management accounting texts and nothing at all on the forward looking measures of customer lifetime value (CLV) and customer equity (CE). Only customers that are profitable in the long term will enhance shareholder value, hence some form of CA, preferably a forward looking metric, is necessary to enable firms to maximise shareholder value. Moreover, “Management accounting must serve the strategic objectives of the firm” (Kaplan, 1984, p 414), but the limited accounting literature on CA practices has highlighted a potential information gap, especially for firms following a customer-focused strategy.

The only two prior surveys that specifically concentrate on CA practices have produced contrasting results. Guilding and McManus (2002) identified five dimensions of CA and surveyed large Australian companies on the usage and perceived managerial merit of these CA practices. In particular, they found higher than expected usage rates, as mean scores for the usage of three of the five CA practices surveyed, were above the mid-point of their measurement scale. Interestingly the forward-looking measures of CLV and CE were the least used measures and yet a positive association between market orientation and CA usage was found. In contrast, Shanahan *et al.*'s (2007) replication survey in New Zealand found lower CA usage and perceived merit rates, and no significant association between market orientation and CA usage. The limited accounting literature on CA usage and the contrasting results from prior surveys on CA have prompted this replication and extension of the prior survey on the use and perceived merit of CA in New Zealand.

The remainder of this paper is organized as follows. Firstly a brief review of the literature on CA practices is conducted including an outline of the contrasting results of the two previously surveys of CA practices, in Australia and New Zealand. Subsequent sections present the research objectives, research method, survey findings and a comparison of results with those of the two previous surveys, followed by conclusions and suggested areas for future research.

The literature on customer accounting.

Rallying cries such as “the customer is king”, “putting the customer at the centre of the organisation”, and the “the customer drives what business does” have sounded throughout the business literature in the 1980s and 1990s (Boyce, 2000). The 1980s have been called the ‘decade of customer consciousness’ (Albrecht, 1992). Boyce, (2000) notes that many other researchers called this the era of ‘customer revolution’ and cites Peters and Waterman’s, ‘In Search of Excellence (1982)’ as awakened interest in the importance of getting close to the customer. But such customer proximity has its costs. For many firms, especially those that differentiate on the basis of customer intimacy (Kaplan and Norton, 2004), the costs to serve, and hence customer profitability (CP), can vary enormously from customer to customer. This is demonstrated by case study research on CP which shows that although the Pareto 80/20 rule may apply to revenues (i.e. 80% of revenues are generated by 20% of customers) when profits are considered the variation is much bigger. For example, Kaplan and Cooper (1998) highlight how in the Kanthal case (Kaplan, 1989) the most profitable 20% of customers generated 225% of profits, whilst the least profitable 10% of customers lost 125% of profits. Thus, any customer-focused firm, where costs to serve vary between customers or customer groups, needs to measure CP and provide CA metrics that will assist management make decisions about unprofitable, break-even and profitable customers. There are demands on the management accounting discipline for the “production of a quantified knowledge that transforms the customer into a novel, highly flexible calculable space inside the enterprise” (Miller, 1994, page. 240). Such demands have given rise to the use of various technical terminologies and valuation techniques within contemporary businesses and such terminologies have been included under the umbrella heading of ‘customer accounting’ by Guilding and McManus, (2002, page. 48) who say that ‘customer accounting’ “includes all accounting practices directed towards appraising profit, sales, or present value of earnings relating to a customer or group of customers”.

Kotler (2003) identifies how customer-focused firms require a change in emphasis from product to customer, and calls for a move from short term CPA to a focus on CLV. How has the MA function responded to this call? Kaplan and Norton (2004) seem to share Kotler’s (2003) view on the need for a shift in focus from product to customer as they discuss the trend away from a product driven economy, based on tangible assets, to a knowledge and service economy based on intangible assets. They argue that choosing the ‘customer value proposition’ is central to strategy. Hence, the balanced scorecard (BSC) has had a customer perspective from the outset (Kaplan and Norton 1992, 1993) and CP was quickly included (Kaplan and Norton 1996), although no specific guidance was given of how it should be measured. The necessary guidance should be in the costing literature, and Kaplan and Cooper (1998) do stress that manufacturing costs, and operating costs in service industries, can be strongly influenced by customer behaviour and demand. Moreover, Kaplan and Cooper (1998) claim that this ‘causes customer costing to become even more important than product costing (p. 189). This is consistent with Johnson (1992) who warns against the use of ABC to help reduce costs and raise margins whilst “doing business as usual” (p. 153), and stresses the need to assess processes “in terms of satisfying customer wants” (p. 152). Johnson (1992) suggests that

customer-focused firms may find customer-specific information on costs useful to assess the impact that relationship-building activities have on profitability, but claims that few companies have ever compiled such information.

A review of developments in MA's approach to profitability analysis highlights that although ABC product profitability analysis has developed at a sprint, CPA developments have been very sluggish by comparison. Shields (1997) conducts a seven-year content survey on major accounting journals but finds no articles on CA. Smith (2002) is surprised to find that over the 15 previous years surveyed there was not even one major academic paper on CPA published each year. The scant accounting literature mainly contains calls for the analysis of customer related costs and hence a historical CPA, for example: Bellis-Jones (1989) and Howell and Soucy (1990). Ward (1992) uses the alternative term customer account profitability (CAP). He prefers a marginal costing approach based on the contribution that customers make to common fixed costs. Smith (1993) calls for a move from a product profitability measure to CPA. Smith and Dikolli (1995) highlight the benefits of using ABC methodology to produce CPA. Kaplan and Narayanan (2001) describe how CPA, based on ABC methodology, can prompt management actions to transform unprofitable customers to profitable ones by process improvement, pricing adjustments and relationship management. Without actually using the term CLV, Kaplan and Narayanan (2001) suggest monitoring "the longitudinal variation of customers over time to calculate their total life-cycle profitability" (p. 13), thus providing one of the few mentions of the need for a forward looking CA metric (like CLV) to be found in the accounting literature.

Surveys (for example Innes and Mitchell, 1995, Innes et al., 2000) do find evidence that practitioners use CA, and the need for CPA is often cited as a key reason for the adoption of ABC. However, such survey evidence is unclear on the level of sophistication of the CA metrics in use. A replication in New Zealand of Innes et al.'s (1999) UK survey found that 46.7% of the ABC adopters cited the need for CP as one of the purposes of ABC (Cotton et al., 2003). A key milestone in the CA literature is the first survey that specifically concentrates on CA or equivalent. Guilding and McManus (2002) attempted to delineate CA practices, identified five dimensions of CA and surveyed large Australian companies on their usage and perceived managerial merit of CA practices. They found scores for the perceived merit of CA to be significantly higher than reported usage rates and also highlighted a positive association between market orientation and CA usage. In contrast, Shanahan et al.'s (2007) replication survey found lower usage and perceived merit rates in New Zealand and no significant association between market orientation and CA usage.

On the other hand, the marketing literature on CA "is much more broad-ranging with much greater attention directed to less measurable facets of customer related performance, lifetime customer valuation analysis and also ways that CA measures can be used to further decision making and control" (McManus and Guilding, 2008, p. 785). Mulhern (1999) identifies no less than seven different ways that CP is referred to in the marketing literature and shows that the terms CP and CLV are often used interchangeably. Moreover, Jain and Singh (2002) report that the terms CE and CP are used to identify

what is actually CLV and found no consensus on a best method of calculation. Although the use of historical CPA is described as common (Blattberg and Deighton, 1991, Storbacka, 1997, Mulhern, 1999, Jacobs et al., 2001), in contrast to the accounting literature the marketing literature focuses much more on future oriented metrics like CLV and CE. The emergence of a literature on CE demonstrates that marketing is beginning to focus on the customer as an asset (Bell et al., 2002, Gupta and Lehmann, 2003, 2005, Storbacka, 2006). Blattberg and Deighton (1996) suggest that the CE metric is a key criteria in finding a balance between customer acquisition and retention and define it as the discounted value of individual customer's expected lifetime contribution to the company's fixed costs. In contrast, Bayón et al. (2002) measures CE based on profits not contribution. CLV is more prominent in the marketing literature but definitions vary considerably. Hoekstra and Huizingh (1999) measure CLV by discounting future income from customers. Berger and Nasr's (1998) CLV model does not include customer acquisition costs or fixed costs. This brief review of the marketing literature explains why Gleaves *et al.* (2008) highlight confusion and contradiction in the marketing literature with respect to the understanding of CP and conclude that marketing requires an input from MA to shore-up and clarify its CA measures.

The stark difference in coverage of CA in the MA and marketing literatures is of interest because it suggests that aspects relating to the nature of the two disciplines, and the actors within them, may affect the extent of cooperation and collaboration between them with respect to the development and utilisation of CA practices.

Shanahan et al. (2007) cited Lindsay (1994, 1995) as support for the importance of replication to establish the validity and significance of prior research findings, and to establish whether the results also hold under different conditions. Shanahan et al. (2007) therefore conducted a faithful replication in New Zealand of the Guilding and McManus (2002) Australian survey on the use and perceived merit of CA practices, but found contradictory results in several respects. In particular Shanahan et al. (2007) found lower usage rates and perceived merit scores in New Zealand, with statistically significant differences with respect to the mean usage of LCPA, CE and use of CA generally, and with respect to the perceived merit of all practices except CPA. Moreover, Shanahan et al. (2007) suggest an opportunity to improve the research method by not using an all inclusive category called 'customer accounting' as this appeared to cause confusion and thus produced distorted results. This advice is followed in the current research.

Using the independent variables competitive intensity, market orientation, and the square of competitive intensity, Guilding and McManus (2002) found statistically significant relationships for all usage and perceived merit regression equations formulated. In contrast, Shanahan et al. (2007) found no significant regression for the use of any of the five CA practices, and found significant regression equations for the perceived merit of only three CA practices. This led them to suggest that in future research other factors need to be investigated and their suggestions include competitive strategy, industry type and company size as worthy possibilities. This study takes their advice and also adds the use of ABC costing methodology and the adoption of Kotler's (1993) alternative concepts of marketing strategy as additional independent variable to be investigated.

Research objective

The aim of this research is to extend our knowledge on the usage and perceived merit of customer accounting by partially replicating the Shanahan *et al*, (2007) study whilst adjusting the methodology used to rectify the problems, identified above, that are evident in both the Guilding and McManus (2002) and the Shanahan *et al*, (2007) surveys. In the previous New Zealand study, only minor support was found for the relationship between the factors competition intensity and market orientation and the usage and perceived merit of customer accounting and the relationships were found to be much weaker than those found in the Australian study. This suggests the importance of examining various other factors that may have an effect on the usage and the perceived merit of customer accounting in New Zealand. Consequently research objective 1 is stated as follows:

To identify the extent of usage and the perceived merit of customer accounting practices in New Zealand, where customer accounting “includes all accounting practices directed towards appraising profit, sales or present value of earnings relating to a customer or group of customers” (Guilding and McManus, 2002, page. 48).

A review of the management accounting and the marketing literatures determined the CA terminologies that may be in use in New Zealand and identified the need to revise and redefine the CA terminologies that had been incorporated in the previous Australian and New Zealand surveys. For example, the terms CLV and CE were not previously used by Guilding and McManus (2002) and Shanahan *et al*, (2007) but were included in this study due to their prevalence in recent literature. This was considered necessary to enhance the correct identification process of the usage and the perceived merit of customer accounting practices.

The previous two studies examined the effect of only two factors (competition intensity and market orientation) on the usage and the perceived merit of customer accounting and in New Zealand found only a weak relationship was found. This research therefore investigates more factors that may have an effect on the usage and the perceived merit of customer accounting in order to gain a more comprehensive understanding of the contingent nature of customer accounting practices in New Zealand. Consequently research objective 2 is stated as follows:

To examine the effect of independent factors, such as, industrial sector, competitive strategy, environmental uncertainty, market orientation, company size and costing methodology, on the usage and the perceived merit of customer accounting.

A summary of the formulated hypotheses for testing against the survey results is provided in Table 2 below.

Table 2: Summary of the formulated hypotheses:

Hypotheses for CA usage	Hypotheses for CA perceived managerial merit
<i>Hypothesis 1a:</i> CA usage rates are higher in companies with a highly diversified competitive strategy.	<i>Hypothesis 1b:</i> the perceived managerial benefit of CA is greater in companies with a highly diversified competitive strategy.
<i>Hypothesis 2a:</i> CA usage is higher in organizations that conduct their marketing activities within the ‘marketing’ or the ‘customer’ concept.	<i>Hypothesis 2b:</i> the perceived managerial merit of CA is greater in organizations that conduct their marketing activities within the ‘marketing’ or the ‘customer’ concept.
<i>Hypothesis 3a:</i> CA usage rates are higher in companies which operate in an unstable environmental setting than in companies which operate in a stable environmental setting.	<i>Hypothesis 3b:</i> the perceived managerial benefit of CA is greater in companies which operate in an unstable environmental setting than in companies which operate in a stable environmental setting.
<i>Hypothesis 4a:</i> CA usage rates are higher in companies using ABC systems.	<i>Hypothesis 4b:</i> the perceived managerial benefit of CA is greater in companies using ABC systems.
<i>Hypothesis 5a:</i> CA usage rates are higher for larger companies.	<i>Hypothesis 5b:</i> the perceived managerial benefit of CA is greater in larger companies.
<i>Hypothesis 6a:</i> CA usage rates are higher in companies within the financial service industry than in other industries.	<i>Hypothesis 6b:</i> the perceived managerial merit of CA is greater in companies within the financial services industry than in other industries.

Method and variable measurement

Sampling procedures

The initial intention was to mail a questionnaire survey to the chief accountant (chief financial officers (CFO)/finance managers/management accountants) and marketing manager of all 156 organizations listed on the New Zealand stock exchange (NZX). To improve response rate initial investigations were conducted to identify survey respondents by name, and in the process 20 organizations were excluded from the study¹. The exclusion of these 20 companies from the survey is not expected to bias the sample in any way. Within two weeks of sending out the questionnaires, 17 responses were received. After follow up phone calls a further 35 responses were received. Of the 52 responses 8 questionnaires were not completed². Hence, from the 136 organisations

¹ Exclusions were for the following reasons: 9 potential contacts advised that they would not be able to participate in the study stating either time constraints or lack of relevance of the study to the organization as their reason. The other 11 organizations were found to be situated overseas, and as the research was focused on New Zealand operations they were excluded.

²Reasons stated were: it was company policy not to respond to surveys, the company did not have a relevant customer base, the recipient was not the right person in the organization to be surveyed (this latter reason was mentioned mostly by marketing managers).

surveyed there were a total of 44 usable responses (a 32.5% response rate). There were 37 responses from chief accountants and 7 from marketing managers, all from different organisations.

Variable measurement.

The CA practices surveyed are defined in the “Glossary of Terms used in the Questionnaire” which was sent to all respondents and is reproduced in the appendix along with the survey instrument. The analysis of results is explained below.

CA usage.

The same instrument as employed by Guilding and McManus, (2002) and later in the replication by Shanahan et al, (2007) was applied in the questionnaire regarding ‘CA usage’ rates. Therefore, following the question, “To what extent does your company use the following practices?” the four CA practices, ‘CPA-IC’, ‘CSPA’, ‘lifetime CPA/CLV’ and ‘CE’, were listed in the questionnaire. Next to each practice, a likert scale ranging from 1 (“not at all”) to 7 (“to a large extent”) was provided. Also, the participants could indicate if a practice was not applicable to their organization, by ticking “N/A3”.

Each of the four CA practices has been operationalised as separate dependent variables in this study. Each of these variables, were coded between “1” to “7” (1 being the practice not being used at all and 7 being the practice used to a large extent), in the database that has been used to store all the survey responses⁴. The table below displays the dependent variables for CA practices and their corresponding proxies used for regression analysis.

Table 1: Dependent Variables- CA Practices

CA Practices	Proxies
Customer profitability analysis- individual customers	CPAic
Customer segment profitability analysis	CSPA
Lifetime CPA/Customer lifetime value	LifetimeCPA
Customer equity	CE

Perceived managerial merit of CA.

Again, the same instrument implemented by Guilding and McManus, (2002), and Shanahan et al, (2007) was employed in the questionnaire regarding the perceived managerial merit of CA. The construct, perceived managerial merit of the four CA practices was therefore measured using the same seven-point likert scale as described in the last paragraph. The question regarding the perceived managerial merit of CA had

³ The “N/A” option was included for questions 1 to 4, CA usage, and perceived managerial merit of CA, competitive strategy and market orientation, to indicate that the approach was not applicable to the organization at all. Participants reporting N/A were coded as “1”. The point to be noted here is that, both the “not at all”, and the “not applicable” options were coded as “1” in the data analyses phase. This was because; it was observed that re-analysing data by excluding the “N/A” option had minimal effects on the reported results.

⁴ SPSS version 16 has been used to prepare a database for the responses.

therefore been framed as “To what extent do you consider the following practices are or would be a useful aid to management in your company?”

The perceived managerial merit of the four CA practices had also been operationalised as separate dependent variables in this study. Again, each of these variables were coded between “1” to “7” (1 being perceived as not at all useful and 7 being perceived as useful to a large extent), in the database. The table below displays the dependent variables for the perceived managerial merit of the four CA practices and their corresponding proxies used for regression analysis.

Table 2: Dependent Variables- Perceived Managerial Merit of CA

Perceived managerial merit of CA	Proxies
Customer profitability analysis- individual customers	PMCPAic
Customer segment profitability analysis	PMCSPA
Lifetime CPA/Customer lifetime value	PMlifetimeCPA
Customer equity	PMCE

Competitive Strategy.

Following the question, “To what extent do you consider these types of competitive strategy are utilized by your company?” the five competitive strategies, ‘cost leadership’, ‘differentiation’, ‘focus-cost leadership’, ‘focus-differentiation’, ‘defender’, ‘prospector’, and ‘analyser’ were listed in the questionnaire. Again a likert scale, ranging from 1 (“not at all”), to 7 (“to a large extent”) was provided next to each competitive strategy.

There are seven independent variables that have been used for competitive strategy, each variable being coded between “1” to “7” in the database depending on the extent to which the seven different strategies, mentioned above are perceived to be employed in the organization. The table below displays the independent variables for competitive strategy and their corresponding proxies used for regression analysis.

Table 3: Independent Variables- Competitive Strategy

Competitive strategy	Proxies
Cost-leadership	CSCL
Differentiation	CSD
Focus-cost leadership	CSFCL
Focus-differentiation	CSFD
Defender	CSDF
Prospector	CSP
Analyser	CSA

Market Orientation.

For market orientation, a similar format of question was constructed. The five types of marketing orientation: ‘production concept’, ‘product concept’, ‘selling concept’, ‘market concept’, and ‘customer concept’, operationalised for this study were measured using the same seven-point Likert scale described earlier. The question for this construct was framed as, “To what extent do you consider these types of market orientation are adopted by your company?”

For market orientation, five independent variables have been used, each variable being coded between “1” to “7”, depending on the extent to which each of the five different types of market orientation are adopted by the organizations. The independent variables for market orientation and their corresponding proxies are displayed in the table below.

Table 4: Independent Variables- Market Orientation

Market orientation	Proxies
Production concept	PROC
Product concept	PC
Selling concept	SC
Market concept	MC
Customer concept	CC

Environmental Uncertainty.

Environmental uncertainty was represented as organizational structure in the questionnaire. Therefore regarding environmental uncertainty, the question that was asked was “Where do you consider your organization lies on the continuum between 1= ‘totally mechanistic’ to 7 = ‘totally organic’?” Again, a likert scale ranging from 1 to 7 had been provided between two extreme organizational structures ‘totally mechanistic’ to ‘totally organic’, for this construct. The proxy for independent variable environmental uncertainty (ORGST) represents organization structure, where the variable was coded between “1” to “7”, depending on the structure of the organization.

Costing Methodology.

The question regarding costing methodology had been framed in the questionnaire as “Does your organization use Activity-Based-Costing methodology for the determination of profitability cut by product, customer or otherwise?” Participants could either answer ‘yes’, or ‘no’. The independent variable for costing methodology is operationalised as ‘ABC’. This variable is dichotomous, taking a value of “1” if the organization uses ABC methodology and “0” if the organization does not use ABC methodology.

Company Size.

Turnover has been selected to represent company size. The participants had to select one among the four options of turnover in the questionnaire: “below \$NZ 5 Million”, “between \$NZ 5 Million and \$NZ 15 Million”, “between \$NZ 15 Million and \$NZ 50 Million”, and “above \$NZ 50 Million”. The instruction for company size was framed as, “Indicate the size of your organization based on its turnover in the last full accounting year.” The ranges for the turnovers were selected by going through the turnovers in the income statements of a random number of companies. It was observed that companies on NZX had a turnover of between \$NZ 5 Million to \$50 Million, which inspired the selection of this range for the question. The independent variable, company size, operationalised as ‘COMPSIZE’, is dichotomous taking on a value of “1” for organizations whose turnover were between \$NZ 15 million and \$NZ 50 million, and above \$NZ 50 million, and “0” for organizations whose turnover were below \$NZ 5 million and between \$NZ 5 million and \$NZ 15 million.

Industrial Sector.

For industrial sector, the participants had to select from a list of 17 different industrial sectors. The organizations were separated in the IRG database on the basis of industrial sectors, which assisted the selection process of a range of different industrial sectors in the questionnaire. In case the participants felt that their organization did not belong to any of the listed industrial sectors, the participants could specify in writing the industry their organizations belong to. The instruction for this construct was framed as, “Indicate which industrial sector your organization belongs to. If you have ticked ‘Other’, please specify the industry your organization belongs to in the space provided.” The independent variable for industrial sector, (IND) is dichotomous, taking on a value of “1” for finance organizations and “0” for any other organizations.

Results

The descriptive statistics of the CA usage rates are shown in Table 5. The CA practices are presented in the table in descending order of usage, with means ranging from 4.55 for ‘CSPA’ to 2.05 for ‘CE’. While the mean usage of the practices ‘CSPA’, and ‘CPA-IC’, scored above the midpoint of the measurement scale, the mean usage of the practices, ‘lifetime CPA/CLV’ and ‘CE’, scored below the midpoint of the measurement scale.

Excepting for ‘CE’⁵, reported mean usage rates of all the CA practices showed higher scores than those reported by Shanahan et al, (2007), which are stated in table 6⁶. In the Shanahan et al survey all the means were below the midpoint of the measurement scale, ranging from ‘CPA-IC’ at 3.98 to ‘lifetime CPA’ at 2.37, whereas in this study the mean scores of two practices out of the four (‘CSPA’ and ‘CPA-IC’), were above the mid-point of the measurement scale.

The holistic term ‘customer accounting’ used in the two prior studies, was excluded from the list of CA practices used in this study. ‘Customer accounting’ had the highest usage score in the Australian study, but only ranked third in the New Zealand study. Since ‘customer accounting’ was defined in a holistic way in both prior studies it should have had the highest score in both and therefore participants in the New Zealand study clearly misinterpreted the term and this produced distorted results. The higher usage scores reported in the present study, in comparison to the prior New Zealand study, may therefore indicate that exclusion of ‘customer accounting’ from the list of CA practices has improved the survey methodology.

The mean scores of the CA usage rates indicate that New Zealand companies are using CA practices much more than the results shown by the earlier study. Table 5 and 6 show that the results of this study are more comparable to the Australian than to the prior New Zealand study. The order of usage of CA practices in this study and the Australian study

⁵ Previously “CE” was cited as “valuation of customers or customer groups as assets”, in both Guilding and McManus, (2002) and Shanahan *et al*, (2007).

⁶ Table 10, on page 61 reports the descriptive statistics of the CA usage rates of Guilding and McManus, (2002) and Shanahan and Lord, (2007) studies.

are the same, ranging from ‘CSPA’ with the highest mean to, ‘CE’⁷ with the lowest mean. Also, the mean usage scores of the individual CA practices of this study are comparable to the mean scores of the individual CA practices in the Australian study. Consistent with the results of the Australian study, the first two practices, ‘CSPA’ and ‘CPA-IC’ in this study are above the mid-point of the measurement scale, whereas the last two practices, ‘lifetime CPA/CLV’ and ‘CE’ are below the mid point range. This contrasts with Shanahan et al.’s (2007) findings that ‘CPA-IC’ had the highest mean score and ‘lifetime CPA’ had the lowest. T-tests were used to see if the scores in each study were significantly different from each other, and it was found that: the mean usage of ‘lifetime CPA’, ‘valuation of customers or customer groups as assets’ and ‘customer accounting’ were all significantly higher in the Australian study than in the prior New Zealand study (t-stat 6.61, 5.42 and 3.69 respectively, $p < 0.001$ for all). However, no significant differences in mean usage scores were observed between the practices in this study and the Australian one. On the other hand, the use of ‘CSPA’, was found to be significantly higher in this study than in the prior New Zealand study, (t-test 2.917, $p < 0.01$). The results of the t-tests further confirm that CA practices are used to a greater extent in New Zealand than was earlier reported.

The final test that had been carried out is the Wil-coxon, two-related samples test. This test examines if the mean usage scores of the four practices in this study were significantly different from each other. First the highest used practice, ‘CSPA’, was compared to all the other practices in the list presented in table 5 chronologically, starting with the next highest ranking practice and ending with the least used one. The same step was repeated for the other practices in the list. This approach reveals several statistically significant observations and these are: that ‘CSPA’ is used significantly more than ‘lifetime CPA/CLV’ and ‘CE’ ($p < 0.001$) and ‘CPA-IC’ is used significantly more than ‘lifetime CPA/CLV’ and ‘CE’ ($p < 0.001$).

Table 5: Descriptive statistics for CA usage rates

	Mean	Standard Deviation
Customer Segment Profitability analysis	4.55	1.92
Customer Profitability analysis	4.30	2.10
Lifetime CPA/CLV	2.65	1.96
Customer Equity	2.05	1.65

Table 6: Descriptive statistics for CA usage rates for Guilding and McManus, (2002) and Shanahan et al, (2007) studies

	Mean	Standard Deviation
Guilding and McManus, (2002)		
Customer Accounting	4.22	2.14
Customer Segment Profitability analysis	4.12	2.14
Customer Profitability analysis	4.03	2.10
Lifetime customer profitability analysis	2.64	1.89
Valuation of customers or customer group as assets	2.58	1.96

⁷ Previously, “CE” was cited as “valuation of customers or customer group as assets”, in Shanahan et al, (2007).

	Mean	Standard Deviation
Shanahan et al, (2007)		
Customer profitability analysis	3.98	2.04
Customer segment Profitability analysis	3.70	2.11
Customer accounting	3.08	1.73
Valuation of customers or customer group as assets	2.58	1.73
Lifetime customer profitability analysis	2.37	1.50

The descriptive statistics of the perceived managerial merit of CA practices are shown in Table 7. Again, the mean merit scores are presented in the table in descending order of usage, ranging from 5.59 for 'CSPA' to 3.48 for 'CE'. The rank order of the CA practices is the same for perceived merit as was for usage. All the mean scores, except for 'CE', are above the midpoint of the measurement scale. The mean perceived merit scores for each of the four practices are significantly higher than their usage rate scores. Wil-coxon related samples test have been used to determine this (for each CA practice, $p < 0.001$).

Also a comparison using Wil-coxon related sample test between the perceived merit mean scores of the CA practices revealed that: the perceived managerial merit of 'CPA-IC' was significantly higher than the perceived merit of 'lifetime CPA/CLV' ($p < 0.005$) and 'CE' ($p < 0.001$), the perceived merit of 'CSPA' was significantly higher than 'lifetime CPA/CLV' ($p < 0.001$) and 'CE', ($p < 0.001$) and the perceived merit of 'lifetime CPA/CLV' was significantly higher than 'CE', ($p < 0.005$).

Table 8 lists the perceived merit scores of the CA practices of the Australian study and the prior New Zealand study. T-tests were used to examine if there were any significant differences in the mean scores in the perceived managerial merits of the CA practices between the three studies. The mean scores of four out of five CA practices in the Australian study were higher than those of the New Zealand study: 'customer accounting' (t-stat 4.37, $p < 0.001$), 'CSPA' (t-stat 2.83, $p < 0.01$), 'Lifetime CPA' (t-stat 2.55, $p < 0.02$) and 'valuation of customers or customer groups as assets' (t-stat 1.93, $p < 0.1$). However, there were no significant differences in the perceived managerial merits of the CA practices between this study, and the Australian study. This suggests that New Zealand businesses are becoming more aware of the merits of using CA practices than was reported before. Excepting for 'CE', the perceived merit scores of the CA practices in this study are all greater than the perceived merit scores of the CA practices reported by Shanahan et al, (2007). Comparison of means with t-tests suggests that perceived managerial merit of 'lifetime CPA/CLV' of this study was significantly higher than the perceived merit of 'lifetime CPA' of the prior New Zealand study ($t = 3.037$, $p < 0.005$). This indicates that organizations in New Zealand are increasingly becoming aware of the merits of using the CA practices that take account of how profitable customers are over their entire lives with the organizations.

Table 7- Descriptive statistics for perceived managerial merit of CA

	Mean	Standard Deviation
Customer Segment Profitability analysis	5.59	1.56
Customer Profitability analysis	5.36	1.87

Lifetime CPA/CLV	4.30	2.08
Customer Equity	3.48	2.14

Table 8: Descriptive Statistics for perceived managerial merit of CA usage rates for Guilding and McManus, (2002) and Shanahan et al, (2007) study.

	Mean	Standard Deviation
Guilding and McManus, (2002)		
Customer segment profitability analysis	5.28	1.87
Customer accounting	5.21	1.93
Customer profitability analysis	5.08	2.04
Lifetime customer profitability analysis	4.38	2.08
Valuation of customers or customer group as assets	4.19	2.07
	Mean	Standard Deviation
Shanahan et al, (2007)		
Customer profitability analysis	4.86	2.11
Customer segment Profitability analysis	4.35	2.13
Customer accounting	3.82	1.95
Valuation of customers or customer group as assets	3.57	1.95
Lifetime customer profitability analysis	3.56	1.93

Regression Results

The results of the regression analysis, where the CA practice usage rates are the dependent variables, are presented in table 12 (appendix). Out of the four regression equations⁸, three are statistically significant ($p < 0.15$ and less). The adjusted R2s of the equations range from 9% to 50%. The results of the regression analysis, where the CA practice perceived merit rates are the dependent variables, are presented in table 13 (appendix). Out of the four regression equations⁹, three are statistically significant ($p < 0.01$). The adjusted R2s of the equations range from 13% to 56%. The regression results are discussed below.

Competitive Strategy.

Minimal support was obtained for both hypothesis relating to competitive strategy (1a and 1b). The reports provided a plethora of different findings, across the different CA practices, with some providing support and others opposing the two hypotheses. Inspection of individual responses indicates that one likely reason for such unusual findings is that some respondents were not fully able to understand the strategy definitions used in the survey and/or relate them accurately to their own company's strategy. Another possible reason is that organizations are complex, consisting of many different departments, operations, and products (Vaivo, 1999), and therefore participants may have faced difficulty in articulating one single answer regarding competitive strategy for the whole organization.

Market Orientation.

⁸ The regression equation where 'lifetime CPA/CLV' is the dependent variable is not significant.

⁹ The regression equation where 'lifetime CPA/CLV' is the dependent variable is not significant.

Strong support was obtained for the hypotheses concerning market orientation (2a and 2b). Both the factors, 'market concept' and 'customer concept' revealed positive and significant relationships with CA usage rates and the perceived merit of CA. The results demonstrated that companies that operate their marketing activities within the 'product concept', highly disregard the usage of CA practices. These findings indicate that companies which are product-centric neither currently use or perceive a benefit from the use of customer-centric management accounting practices, whereas those companies that are market-centric and customer-centric do. Some support was also found for the factor, market orientation in the Australian and the prior New Zealand study and the similar or stronger support obtained for the relationship between market orientation and CA usage and perceived merit, in this study adds weight to the conclusion that it is highly likely that there is a strong relationship between the factor, market orientation and the usage and the perceived merit of CA.

Companies that operate a marketing orientation of the 'customer concept', "go beyond a focus on customer segments to shaping offers and services to individual customers" (Kotler, 2003). These companies are therefore likely to benefit from the use of CPA for individual customers and CLV (Bates and Whittington, 2009). Support has been found for this theory as the regression results show that the factor, 'customer concept', demonstrates a strong positive relationship with the usage of 'CPA-IC'. The regression analysis also reveals that companies operating under the 'customer concept' perceive high potential benefits from the use of practices that take account of the future profitability of customers (CLV and CE). It is interesting to note that companies within New Zealand that use CA practices mostly undertake their marketing activities within the 'market concept' rather than the 'customer concept', as stronger support was obtained for the relationship between 'market concept' and the usage and the perceived merit of CA. However, the adoption of the 'customer concept' was found to be significantly positively related to the use of 'CPA-IC' and this is consistent with the researchers' belief that companies that have moved on from the 'market concept' (a focus on customer segments) to the 'customer concept, (a focus on individual customers) would benefit from a CPA system focused on individual customers.

Contrary to the hypotheses, it was observed that companies which operate their marketing activities within the 'production concept', do use CA practices like 'CPA-IC', and 'CE', and also perceive that the usage of 'CPA-IC' would benefit management. This was an unexpected finding, given that 'production-oriented' companies usually only focus on mass producing a single commodity at a low cost, and therefore would not appear to need CA practices at all. In order to identify the reasons for this, the companies which had identified themselves strongly as production oriented were isolated and their company websites were checked. In all the cases it was observed that the companies were involved in producing many different types of product and therefore could not be described as entirely 'production-oriented'. This suggests that respondents may have misinterpreted the meaning of 'production concept' in the survey, and not appreciated that companies that operate their marketing activities within the 'production concept' are not customer centric.

Costing Methodology.

No support was found for the relationship between the usage of ABC and the usage of CA practices (hypothesis 4a). However support was found for the relationship between the usage of ABC and the perceived merit of CA (hypothesis 4b). The findings suggested that companies using CA perceive the usage of 'CSPA' and 'lifetime CPA/CLV' as highly beneficial. The CA literature suggests that companies often implement ABC for the sole purpose of using CA (Innes and Mitchell, 1995, Innes et al., 2000, Cotton et al., 2003, Kaplan and Narayanan, 2001). Adoption of ABC methodology provides companies with the means to accurately measure customer profitability for individual customers and report on how each customer differentially use resources (Bates and Whittington, 2009). Therefore, the reason why no significant relationship was found between the usage of ABC and CA, could be because, organizations comprising the sample may not be entirely clear about how to implement CA practices using ABC. Several papers have highlighted that organizations that have implemented ABC for product profitability measurement still struggle to measure customer profitability (Bates and Whittington, 2009, Hinterhuber, 2008). Since support was found for the relationship between usage of ABC and the perceived managerial merits of CA, this suggests that although some companies using ABC have not yet implemented CA they are aware of the potential benefits. Moreover, the results indicate that these companies are also aware of the potential benefits of practices that take account of the future profitability of customers. This suggests that companies that make use of ABC methodology have greater scope of using CA practices in the future, especially those practices that also take account of future profitability of customers. There is a need for future research to confirm this prediction.

Company Size.

No support was found for the hypothesis regarding company size (hypothesis 5a and 5b). The reason for this could be because the construct 'turnover', may not have been a relevant measure of company size for the purpose of this study even though 'turnover' is normally a good measure for company size, as shown by prior studies¹⁰. A more appropriate measure of company size for this study may have been 'number of customers'. Out of the many complexities that a large organization faces, one source of complexity for such organizations could be the existence of a large customer base. Chenhall (2003) argued that the complexity regarding the presence of a large customer base could be handled by making use of CA practices. Therefore 'number of customers' would probably have been a more relevant measure for company size in this study.

Industrial Sector .

No significant finding relating to the factor 'industrial sector' was found. On the basis of prior literature on CA usage in the financial services industry (For example Mitchell, 2004; Kaplan and Narayanan, 2001), it was hypothesized that CA usage rates are high in

¹⁰ Prior studies like Guilding and McManus, (2002), Shanahan *et al*, (2007) and Coelho and Easingwood, (2007) have referred to, or suggested the usage of 'turnover' as the measure for company size.

companies within the financial service industry in comparison to other industries. There are only 14 companies within the financial service industry in New Zealand and out of the 44 responses obtained only 4 were received from financial services companies. The sample size for this construct is therefore very small and this could explain the lack of significant finding relating to industrial sector. As a larger population may provide more reliable results it is recommended that future researchers consider examining this factor within a survey on a larger population.

Environmental Uncertainty.

No significant relationship was observed for the independent factor, 'environmental uncertainty'. This could be because of the flaws in the way the factor 'environmental uncertainty' had been represented in this study. It is possible that 'organizational structure' was not the best construct to use for capturing the notion of environmental uncertainty for this study. As mentioned above, one source of uncertainty for organizations is the presence of a complex customer base and it could be argued that firms facing customer related complexities might benefit from the use of CA practices. Hence, a construct more representative of customer level complexities for the measure of 'environmental uncertainty' could have been a better and more direct model to use. Lopez et al, (2006) highlights that one of the sources of threat or uncertainty that a firm face from a customer base is the propensity of switching to another firm. Future researchers may consider examining the construct 'environmental uncertainty', by using a model which can capture customer switching trends, as this construct could be a better indicator of the need for CA.

Future research.

This survey discovered that the usage rates of CA practices in New Zealand companies in 2009 were similar to the usage rates of CA practices in Australia in 2002 (Guilding and McManus, 2002), but higher than previously reported in New Zealand (Shanahan et al , 2007). As this survey used an amended methodology from Shanahan et al (2007) (in relation to excluding the previously misinterpreted holistic measure of CA) it is not clear whether these increased usage rates actually indicate increased usage over time, or are due to more accurate results, or some combination of these and other factors. Moreover, since 2002 the usage of CA in Australian companies may have changed. Hence, future researchers should consider carrying out a comparative study to investigate CA usage rates in Australia and New Zealand at the same time. Similar arguments could be applied to investigation of the perceived merit of CA practices.

This study identified different strengths of relationship between the factors, 'market orientation' and 'competitive strategy' and the usage and perceived merit of CA practices to the previous studies. In fact this study highlighted a plethora of different findings, across the different CA practices, with some providing support and others opposing the two hypotheses being tested. There is therefore scope for future researchers to re-examine in detail the effect of 'competitive strategy', and 'market orientation' on the usage and the perceived merit of the various CA practices. There is also a need to re-examining the

effect of the factors 'company size' and 'environmental uncertainty' on CA usage and perceived merit. It is suggested that 'number of customers' is used instead of turnover, as a more relevant indicator of company size for such research and also, in respect of 'environmental uncertainty, it would be worth investigating the relationship between customer switching trends and the use and perceived merit of CA practices.

Given that the need for CA measures is often cited as a key reason for the adoption of ABC, it was surprising that no support was found for a relationship between the usage of ABC and the usage of CA practices. However, support was found for a relationship between the usage of ABC and the perceived merit of CA. This anomaly certainly warrants follow up research, as it suggests that companies that make use of ABC methodology have greater scope for using CA practices in the future, especially those practices that also take account of the potential future profitability of customers. There is a need for future research to confirm this prediction.

Further research of CA practices would be useful to increase understanding of what CA practices are being utilised in what circumstances. In particular, such research could explore the use of CA practices in countries other than Australia and New Zealand.

It had originally been the intention in this research to investigate any differences in attitude towards CA between respondents from accounting and marketing disciplines and hence the survey questionnaire was sent to both chief accountants and marketing managers in each organization. Unfortunately, this objective could not be pursued as in no cases did both the chief accountant and marketing managers respond. Future research, of a survey or case study nature, could specifically investigate differences in usage of, and attitudes towards, CA practices between the two disciplines.

Conclusions

The limited accounting literature on CA usage and the contrasting results from prior surveys on CA have prompted this replication and extension of the prior survey on the use and perceived merit of CA in New Zealand.

The current survey found that mean scores for the usage and perceived merit of CA practices in New Zealand in 2009 are similar to those found in Australia in 2002, and much higher than those reported two years previously by Shanahan et al. (2007). Also, in line with the Australian study, but in contrast to the prior New Zealand study, strong support was found for the relationship between market orientation and the usage and perceived merit of CA practices. Additional findings of the current survey include support for a relationship between the use of activity-based costing (ABC) and the perceived merit of CA practices, but no support for a relationship between the use of ABC and the reported use of CA practices. Kotler (2003) advises firms that adopt the customer concept of marketing management, and hence forge a one to one relationship with their customers, to measure individual customer profitability. In line with this the current survey found a strong positive relationship between the adoption of the customer

concept of marketing management and the usage of customer profitability analysis at an individual customer level.

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Appendix

Glossary of Terms used in the Questionnaire.

Customer Accounting “includes all accounting practices directed towards appraising profit, sales, or present value of earnings relating to a customer or group of customers” (Guilding and McManus, 2002, P. 48).

Customer Profitability Analysis-Individual Customers (CPA-IC), also sometimes called **customer account profitability** or **customer profitability** (Weir and Watt, 2008), involves calculating profit earned from a specific customer. The profit calculation is based on costs and sales that can be traced to a particular customer. This technique allows for the identification of the most profitable customers. (Guilding and McManus, 2002).

Customer Segment Profitability Analysis (CSPA) is the practice of performing customer profitability analysis (as defined above), on a segment or customer group basis rather than on individual customers like that for CPA-IC.

Lifetime CPA, also known as **customer lifetime value (CLV)**, involves extending the time horizon for customer profitability analysis to include future years. The practice focuses on all anticipated future revenue streams and costs involved in servicing a particular customer or customer group (Guilding and McManus, 2002).

Customer Equity (CE) refers to the valuation of customers or customer groups as assets which involves the calculation of the value of customers for the company (Guilding and McManus, 2002). Customer equity is also commonly described as the sum of individual discounted lifetime values of both present and future customers for the duration of time that they continue to transact with the company (Watt and Weir, 2008).

Competitive Strategy relates to each business unit of the organisation and focuses on how individual strategic business units (SBU) compete within their particular industries and the way each SBU positions itself in relation to competitors. (Chapman, 1997).

Types of Competitive Strategy:

- **Cost leadership:** implies that the organisation aims to become the lowest cost provider in its industry. The source of its competitive strategy may arise from factors such as economies of scale, access to favourable raw material prices, and superior technology (Chapman, 1997).
- **Differentiation:** companies with a differentiation strategy focus on providing products and services with attributes that are highly valued by its customers. These include quality or dependability of product, after-sales service, the wide availability of the product and product flexibility. (Chapman, 1997).
- **Focus:** in a focus strategy a company dedicates itself to a segment of the market that has special needs that are poorly served by the competitors in the industry. Competitive advantage is based on either cost leadership or differentiation (Chapman, 1997)

- Defenders: defenders have a narrow product range and undertake little product or market development. The functions critical for organisational success are finance, production and engineering with less emphasis on marketing and research and development (Chapman, 1997).
- Prospectors: prospectors are described as continually searching for market opportunities and as being the creators of change and uncertainty to which their competitors must respond. The marketing and research and development functions dominate finance and production, so efficiency and profit performance are not as important as maintaining industry leadership in product innovation (Chapman, 1997).
- Analysers: analysers combine the strongest characteristics of defenders and prospectors (Chapman, 1997).
-

The Company's Orientation towards the Market Place:

- Production Orientation: in production-oriented businesses consumers prefer products that are widely available and inexpensive. These businesses concentrate on achieving high production efficiency, low costs and mass distribution (Kotler and Keller, 2006).
- Product Orientation: in product-oriented businesses consumers favour products that offer the most quality, performance or innovative features. Managers in these organisations focus on making superior products and improving them over time (Kotler and Keller, 2006).
- Selling Orientation: selling-oriented businesses hold that consumers, if left alone, won't buy enough of the organization's products. The organisation must therefore, undertake an aggressive selling and promotion effort. The selling oriented concept is practiced most aggressively with unsought goods, goods that buyers normally do not think of buying (Kotler and Keller, 2006).
- Market Orientation: a market oriented business starts with a well-defined market, focuses on customer needs, coordinates all activities that will affect customers and produces profits by satisfying customers. These businesses focus on customer segments rather than on individual customers. The organisational goals of such businesses require them to be more effective than competitors in creating, delivering and communicating superior customer value to their chosen markets (Kotler and Keller, 2006).
- Customer Orientation: Customer-oriented businesses follow the same philosophy adopted by market-oriented businesses. However, the main difference between customer-oriented and market-oriented businesses is that, customer-oriented businesses focus on individual customers rather than on customer segments (Kotler, 2003).

Organisational Structure¹¹:

- Mechanistic: the mechanistic organisation is seen as a suitable response to a stable environment. Its activities are broken down into specialized parts which are integrated by means of vertical hierarchy. In these organisations activities need not always be planned in advanced or adjusted unduly as events unfold and the vertical hierarchical structure represents a highly efficient framework for allowing the co-ordination of necessary activity (Chapman, 1997).
- Organic: this structure arises in response to an unstable environment. In an unstable setting, a “mechanistic” response, as described above, is inappropriate. In these organisations, pre-planning is virtually impossible and individuals have to carry out their job with the knowledge of overall purpose and the situation of the company as a whole. In this setting, different sub-units are required to mutually adjust their operations in-order to achieve the overall goal of the organisation (Chapman, 1997).

Activity-Based-Costing (ABC): an ABC system overcomes the distorted product cost inherent in traditional volume based cost systems by focussing on activities rather than products and by using many secondary stage bases to allocate costs to products. Some of these bases are used to trace inputs that vary directly with the number of items produced, while others are used to trace inputs whose consumption does not vary with quantity (Kaplan, 1984).

Turnover: annual sales volume net of all discounts and sales taxes

¹¹ Organisations normally lie on the continuum between ‘mechanistic’ and ‘organic’.

Questionnaire

Survey of the Usage and Perceived Merit of Customer Accounting in New Zealand

Consent to Participation in Research

Title of the Project: *Usage and perceived merit of Customer Accounting.*

Please tick the boxes below:

- I have understood an explanation of this research project.
- I have had an opportunity to ask questions and have them answered to my satisfaction.
- I understand that any information I provide will be kept confidential to the researcher and the supervisor.
- I understand that the research project may be published in an academic journal
- I understand that published results will not use my name and that no opinions will be attributed to me in any way that will identify me.
- I understand that my questionnaire will be destroyed one year at the end of the project, which is 16th October' 10, unless I indicate that I would like them returned to me.
- I agree to take part in this research.

If you would like to receive a summary of the results of this research please tick the box below:

- I would like to receive a summary of the results of this research when it is completed.

Participant Name: _____

Designation of Participant: _____

Organisation Name: _____

For questions 1 to 4 please circle one number, on the scale ranging from 1 = 'Not at all' to 7 'To a large extent', that is most applicable to your organization. If you consider that the question is not applicable to your organization please circle N/A and explain your reasoning in BOX A on page 3.

1. To what extent does your company use the following practices?

a. Customer Profitability Analysis - Individual customers	1	2	3	4	5	6	7	N/A
b. Customer Segment Profitability Analysis	1	2	3	4	5	6	7	N/A
c. Lifetime CPA/Customer Lifetime Value	1	2	3	4	5	6	7	N/A
d. Customer Equity	1	2	3	4	5	6	7	N/A

2. To what extent do you consider the following practices are or would be a useful aid to management in your company?

a. Customer Profitability Analysis- Individual Customers	1	2	3	4	5	6	7	N/A
b. Customer Segment Profitability Analysis	1	2	3	4	5	6	7	N/A
c. Lifetime CPA/Customer Lifetime Value	1	2	3	4	5	6	7	N/A
d. Customer Equity	1	2	3	4	5	6	7	N/A

3. To what extent do you consider these types of competitive strategy are utilized by your company?

a. Cost Leadership	1	2	3	4	5	6	7	N/A
b. Differentiation	1	2	3	4	5	6	7	N/A
c. Focus- Cost Leadership	1	2	3	4	5	6	7	N/A
d. Focus- Differentiation	1	2	3	4	5	6	7	N/A
e. Defender	1	2	3	4	5	6	7	N/A
f. Prospector	1	2	3	4	5	6	7	N/A
g. Analyser	1	2	3	4	5	6	7	N/A

4. To what extent do you consider these types of market orientation are adopted by your company?

a. Production Orientation	1	2	3	4	5	6	7	N/A
b. Product Orientation	1	2	3	4	5	6	7	N/A
c. Selling orientation	1	2	3	4	5	6	7	N/A
d. Market Orientation	1	2	3	4	5	6	7	N/A
e. Customer Orientation	1	2	3	4	5	6	7	N/A

5. Where do you consider your organisation lies on the continuum between 1 = 'Totally Mechanistic' to 7 = 'Totally Organic'?

Totally-Mechanistic	1	2	3	4	5	6	7	Totally-Organic
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6. Does your organization use Activity-Based-Costing methodology for the determination of profitability cut by product, customer or otherwise?

- YES
- NO

7. Indicate the size of your organisation based on its 'turnover' in the last full accounting year.

- Below \$NZ 5 Million
- Between \$NZ 5 Million and \$NZ 15 Million
- Between \$NZ 15 Million and \$NZ 50 Million
- Above \$NZ 50 Million

8. Indicate which industrial sector your organisation belongs to. If you have ticked 'Other', please specify the industry your organisation belongs to in the space provided.

- | | |
|--|---|
| <input type="checkbox"/> Agriculture and Fishing | <input type="checkbox"/> Investment |
| <input type="checkbox"/> Building Materials and Construction | <input type="checkbox"/> Leisure and Tourism |
| <input type="checkbox"/> Consumer | <input type="checkbox"/> Media and Telecommunications |
| <input type="checkbox"/> Energy Processing | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Equity Trust and Funds | <input type="checkbox"/> Ports |
| <input type="checkbox"/> Finance | <input type="checkbox"/> Property |
| <input type="checkbox"/> Food and Beverages | <input type="checkbox"/> Textile and apparels |
| <input type="checkbox"/> Forestry and Forest Products | <input type="checkbox"/> Transport |
| <input type="checkbox"/> Intermediate and Durables | |

Other (please state) _____

For questions 1 to 4, if you have indicated N/A, please give a brief explanation in Box A.

Box A

Thank you for taking your time to participate in this survey.

Table 9 Explanation of the abbreviations used in table 14 and 15

Abbreviation	Explanation
CPA-IC	Customer profitability analysis- individual customers
CSPA	Customer segment profitability analysis
Lifetime CPA/CLV	Lifetime customer profitability analysis/customer lifetime value
CE	Customer equity
CS-CL	Competitive strategy, cost leadership
CS-diff	Competitive strategy, differentiation
CS- focus CL	Competitive strategy, focus cost leadership
CS- focus diff	Competitive strategy, focus differentiation
CS-defender	Competitive strategy, defender
CS- prospector	Competitive strategy, prospector
CS- analyser	Competitive strategy, analyser
Proc	Production concept
PC	Product concept
SC	Selling concept
MC	Market concept
CC	Customer concept
EU	Environmental uncertainty
CM	Costing methodology
CS	Company size
IND	Industrial sector

Table 10- Pearson product moment correlation coefficients for the CA usage rate variables and the independent variables

	CPA- IC	CSPA	Lifetime CPA/CLV	CE	CS-CL	CS- diff	CS-focus CL	CS-focus diff	CS-defender	CS-prospector	CS-analyser	Proc	PC	SC	MC	CC	EU	CM	CS	
CPA-IC																				
CSPA	0.669**																			
Lifetime CPA/CLV	0.493**	0.536**																		
CE	0.311*	0.197	0.555**																	
CS-CL	0.267	0.131	0.205	0.133																
CS- diff	0.275	0.032	0.009	-0.136	0.168															
CS-focus CL	0.284	0.142	0.190	0.144	0.749**	0.159														
CS-focus diff	0.117	0.169	0.023	-0.004	0.076	0.402**	0.234													
CS-defender	0.064	-0.021	0.208	0.366*	0.029	-0.133	0.242	0.243												
CS-prospector	0.427**	0.264	0.289	0.021	0.015	0.576**	0.129	0.129	-0.223											
CS-analyser	0.513**	0.465**	0.380*	0.080	0.167	0.483**	0.345*	0.381*	0.163	0.648**										
Proc	0.147	0.180	0.175	0.270	0.180	-0.004	-0.025	-0.024	-0.015	-0.204	0.029									
PC	0.102	0.018	-0.216	-0.189	0.049	0.484**	0.097	0.289	0.022	0.276	0.208	-0.051								
SC	-0.10	0.003	0.165	-0.069	0.219	0.085	0.073	0.267	-0.040	-0.020	0.070	0.231	0.081							
MC	0.295	0.443**	0.132	-0.122	0.119	0.177	0.128	0.487**	0.058	0.025	0.147	0.125	0.129	0.393**						
CC	0.347*	0.155	0.095	0.12	0.069	0.142	0.138	0.212	-0.049	0.162	0.199	-0.069	0.398**	0.412**	.287					
EU	0.083	-0.045	0.154	0.276	0.057	0.277	0.159	0.022	0.180	0.350*	0.383*	-0.019	0.084	.117	-0.182	.224				
CM	0.149	0.217	0.005	0.167	0.012	0.090	-0.041	0.010	-0.125	0.059	0.015	0.088	0.142	0.486**	.033	-	-0.161			
CS	0.168	0.273	0.090	-0.022	-0.005	0.074	-0.149	0.045	-0.084	0.005	-0.018	0.059	0.080	-0.111	.166	-	-0.011	.153		
IND	-0.122	0.006	-0.083	-0.050	-0.10	-0.070	0.70	-0.062	-0.036	-0.005	0.125	-0.081	-0.079	.134	-0.01	.151	0.331*	-	-	.024

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 11- Pearson product moment correlation coefficient for the CA perceived merit variables and the independent variables

	CPA-IC	CSPA	Lifetime CPA/CLV	CE	CS-CL	CS- diff	CS-focus CL	CS-focus diff	CS- defender	CS-prospector	CS-analyser	Proc	PC	SC	MC	CC	EU	CM	CS	
CPA-IC																				
CSPA	0.571**																			
Lifetime CPA/CLV	0.469**	.448**																		
CE	0.421*	.234	0.617**																	
CS-CL	0.234	-.047	-.018	-.046																
CS- diff	0.342*	.139	.306*	-.028	.168															
CS-focus CL	0.251	.029	.011	-.086	.749**	0.159														
CS-focus diff	0.312*	.278	.091	.089	.076	0.402**	0.234													
CS-defender	-0.123	-.086	-.019	.202	.029	-.133	0.242	0.243												
CS-prospector	0.316*	.197	.403**	.177	.015	0.576**	0.129	0.129	-0.223											
CS-analyser	0.384*	.305*	.225	.158	.167	0.483**	0.345*	0.381*	0.163	0.648**										
Proc	0.248	.109	.197	.089	.180	-0.004	-0.025	-0.024	-0.015	-0.204	0.029									
PC	0.214	.258	.072	-.149	.049	0.484**	0.097	0.289	0.022	0.276	0.208	-0.051								
SC	0.223	.032	.210	.123	.219	0.085	0.073	0.267	-0.040	-0.020	0.070	0.231	0.081							
MC	0.478**	.489**	.268	.094	.119	0.177	0.128	0.487**	0.058	0.025	0.147	0.125	0.129	.393**						
CC	0.344*	.149	.042	.138	.069	0.142	0.138	0.212	-0.049	0.162	0.199	-0.069	.398**	.412**	.287					
EU	-0.176	-.168	.039	-.034	.057	0.277	0.159	0.022	0.180	0.350*	0.383*	-0.019	0.084	.117	-.182	.224				
CM	0.222	.296	.226	.153	.012	0.090	-0.041	0.010	-0.125	0.059	0.015	0.088	0.142	-.486**	.033	-.071	-.161			
CS	0.039	.128	.022	-.030	-.005	0.074	-0.149	0.045	-0.084	0.005	-0.018	0.059	0.080	-.111	.166	-.028	-.011	.153		
IND	-0.287	-.247	-.244	-.216	-.010	-0.070	0.70	-0.062	-0.036	-0.005	0.125	-0.081	-0.079	.134	-0.011	.151	.331*	-.107	-.024	

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 12 CA usage rates regression analysis^a

	Customer segment profitability analysis	Customer profitability analysis	Lifetime CPA/CLV	Customer Equity
Constant	1.823 (1.085)	-2.256 (-1.417)	-0.418 (-0.203)	-1.070 (-0.652)
Competitive strategy, cost leadership	0.076 (0.312)	0.054 (0.231)	0.139 (0.421)	0.103 (0.431)
Competitive strategy, differentiation	- 0.608***(-1.976)	0.215 (0.737)	-0.242 (-0.625)	-0.313 (-1.310)
Competitive strategy, focus-cost leadership	- 0.061 (-0.238)	0.078 (0.321)	-0.053 (-0.151)	0.011 (0.044)
Competitive strategy, focus-differentiation	-0.099 (-0.386)	-0.478*** (-1.967)	-0.212 (-0.673)	0.207 (0.825)
Competitive strategy, defender	- 0.170 (-0.850)	0.024 (0.125)	0.425** (1.717)	0.363** (1.861)
Competitive strategy, prospector	0.189 (0.662)	-0.054 (-0.201)	0.539* (1.542)	0.435* (1.566)
Competitive strategy, analyser	0.314 (1.224)	0.0432 (0.135)	0.052 (0.164)	-0.449** (-1.790)
Production concept	0.275 (1.604)	0.334*** (2.059)	0.194 (0.926)	0.463*** (2.772)
Product concept	0.146 (0.776)	-0.048 (-.271)	-0.351* (-1.529)	-0.136 (-.741)
Selling concept	-0.288 (-1.4)	-0.193 (-.987)	0.142 (0.554)	-0.131 (-0.654)
Market concept	0.669**** (3.422)	0.497**** (2.680)	0.111 (0.465)	-0.011 (-0.056)
Customer concept	0.209 (0.909)	0.532 *** (2.439)	0.349 (1.240)	0.258 (1.149)
Environmental Uncertainty	- 0.043 (-0.183)	0.109 (0.495)	-0.127 (-0.443)	0.309 (1.368)
Costing methodology	0.081 (0.104)	0.321 (0.436)	0.421 (0.402)	0.773 (1.018)

Organization size	0.278 (1.279)	-0.002 (-0.007)	0.302 (1.141)	-0.010 (-0.049)
Industrial sector	0.037 (0.049)	-1.151 (-1.612)	-0.268 (-0.606)	-0.192 (-0.261)
Adjusted R ²	0.414	0.503	0.097	0.198
F	2.722	3.468	1.254	1.602
P	0.014***	0.003****	0.306	0.147*
VIF	1.421	1.421	1.466	1.421
Tolerance	0.704	0.704	0.682	0.704

a. Each cell in the table above presents the regression coefficients, followed by the t-value in brackets. All t-tests are two-tailed tests of significance

*p<0.15

** p< 0.10

*** p< 0.05

****p< 0.01

Table 13 CA perceived merit regression analysis^a

	Customer segment profitability analysis	Customer profitability analysis	Lifetime CPA/CLV	Customer Equity
Constant	3.522**** (2.729)	0.157 (0.112)	-0.678 (-0.40)	0.492 (0.225)
Competitive strategy, cost leadership	-0.125 (-0.665)	-0.137 (-0.671)	-0.256 (-1.035)	0.141 (0.441)
Competitive strategy, differentiation	-0.412** (-1.743)	0.225 (0.877)	0.136 (0.438)	-0.298 (-0.744)
Competitive strategy, focus-cost leadership	-0.037 (-0.189)	0.145 (0.678)	0.104 (0.400)	-0.288 (-0.859)
Competitive strategy, focus-differentiation	-0.046 (-2.32)	-0.260 (-1.215)	-0.168 (-0.649)	0.310 (0.928)
Competitive strategy, defender	-0.178 (-1.162)	-0.126 (-0.756)	0.406*** (2.014)	0.589*** (2.266)
Competitive strategy, prospector	0.131 (0.599)	-0.058 (-0.243)	1.040**** (3.622)	0.994**** (2.681)
Competitive strategy, analyser	0.140 (0.711)	0.372** (1.739)	-0.515**** (-1.988)	-0.503* (-1.505)
Production concept	0.091 (0.690)	0.232* (1.623)	0.258 (1.491)	0.268 (1.2)
Product concept	-0.350*** (-2.426)	0.060 (0.385)	-0.122 (-0.644)	-0.409* (-1.673)
Selling concept	-0.160 (-1.012)	0.173 (1.011)	0.294 (1.415)	0.072 (0.267)
Market concept	0.580**** (3.859)	0.412*** (2.531)	0.239 (1.213)	-0.056 (-0.221)
Customer concept	0.104 (0.591)	0.260 (1.356)	0.115 (0.498)	0.485* (1.618)
Environmental Uncertainty	-0.081 (-0.457)	-0.157 (-0.811)	-0.251 (-1.303)	-0.413 (-1.367)
Costing methodology	0.332 (0.555)	1.221** (1.885)	1.361** (1.735)	1.149 (1.135)

Organization size	0.088 (0.526)	-0.153 (-0.811)	0.274 (1.250)	0.145 (0.515)
Industrial sector	-0.806 (-1.392)	-0.153 (-0.811)	-0.582 (-0.765)	-0.540 (-0.550)
Adjusted R ²	0.467	0.561	0.447	0.131
F	3.140	4.117	2.967	1.369
P	0.006****	0.001****	0.009****	0.240
VIF	1.421	1.421	1.421	1.421
Tolerance	0.704	0.705	0.704	0.704

a. Each cell in the table above presents the regression coefficients, followed by the t-value in brackets. All t-tests are two-tailed tests of significance

- * p<0.15
- ** p< 0.10
- *** p< 0.05
- **** p<0.01