Market Orientation and Performance in the Public Sector: The Role of Organizational Commitment

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ABSTRACT. Increased calls for transparency and accountability in government organizations underscores the need for a market orientation even in the public sector. The degree of market orientation and its effect on performance and on organizational commitment in government departments in three Australian states is considered. Results provide empirical support for a direct relationship between market orientation and performance and evidence of the mediating role of organizational commitment. Implications are drawn and directions for future research are discussed. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworthpressinc.com]*

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INTRODUCTION

Over the years the marketing discipline has evolved as the focus shifted from a managerial, to a consumer, an industrial and a service perspective

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(Fisk, Brown and Bitner, 1994). Traditionally marketing has been marginal to the provision of core public services, and at most only consisted of the use of particular techniques (Roberto, 1992). A fundamental tenet of the marketing concept is that it is relevant to both profit and non profit organizations (Kotler, 1972). The payment of taxes gives citizens their rights and government departments as custodians of citizen funds should, in a democracy, be transparent, "accountable and responsible to the people for the policies they adopt and the manner in which they implement them" (Bourn, 1992). A greater customer orientation of the Australian public sector is indicated from research that shows an increase in the number of marketing positions that have been advertised (Graham 1995). Moreover, the language of marketing in terms of segmentation, market position, marketing mix, and internal markets is being increasingly adopted. Helped by the rise of consumerism and the thinking of the New Right these developments are being increasingly formalized in Customer Charters (Walsh, 1994).

Mintzberg (1996) provides an interesting topology from a user perspective for classifying the various public services in a democracy. He argues that rather than talk of customers, it is possible to distinguish between *clients, citizens* and *subjects.* A business customer is one to which an organization sells as much as possible, with whom it maintains an arm's-length relationship controlled by supply and demand. However, because in many cases we are recipients of professional services, like education, we can better be described as clients. He goes on to argue that we are more than clients in the sense that as citizens we have rights. However, we do not just have rights as citizens but our relationship with the state is such that we also have obligations as subjects. We must pay taxes, can be asked to serve the country, and are subject to policing and regulatory agencies that can implement various sanctions, that can in serious circumstances culminate in the denial of citizen rights and a prison sentence.

While there is accumulating empirical support for a direct link between market orientation and performance in the private sector (Jaworski and Kohli, 1993; Narver and Slater 1990), and emerging support for this link in the non-profit sector (Caruana, Ramaseshan and Ewing, 1996) there is little evidence from the public sector. Mintzberg (1996) recognizes the importance of organizational commitment in the public sector. In the private sector, market orientation has been linked to organizational commitment (Jaworski and Kohli, 1993) that leads to a "cycle of success" (Schlessenger and Heskett, 1991). It may be that in the public sector organizational commitment is a mediating variable in the link between market orientation and performance.

This study set out to consider what a market orientation involves. Whether government departments that are more market oriented have higher levels of employee commitment. Whether departments that adopt a more market orientated approach perform better than those that do not and what constitutes a positive performance. The concepts of market orientation, organizational commitment and performance are first examined and a model of their interrelationships is constructed and investigated. Results of a survey relating the levels of market orientation in government departments to organizational commitment and to a number of performance variables are reported. Findings are discussed, implications are drawn and suggestions made for ongoing research.

MARKET ORIENTATION–THE CONSTRUCT

McGee and Spiro (1988) distinguish between marketing as a *philosophy* and as a *concept*. A philosophy can be distinguished from a concept in that philosophy is a broad umbrella that governs business life while concept is a recognized way of operating within the climate that the philosophy has set (Borch, 1964). Webster (1992) emphasizes the importance of these distinctions and notes that much of the confusion over the years about a definition of marketing and an understanding of the marketing concept can be traced to a failure to make these distinctions. There is broad agreement that market orientation as a philosophy is made up of three core aspects namely: (1) a customer orientation, (2) integration of effort and (3) objectives and profitability (Kohli and Jaworski, 1990; Kotler, 1991; McGee and Spiro, 1988; Runyon, 1980). A customer orientation necessitates an understanding of the psychological and social factors that determine the customer's actions. This is the first step to enable the firm to provide offerings that the customer wants. This understanding also enables the marketer to ask the right market research questions. Integration of effort enables the firm to provide value offerings that meet customer needs. This requires coordination at a brand level and at an organization level. The latter is important since market orientation is an organization-wide prescription requiring that the whole firm is organized and coordinated in the service of the customer. The commercial firm adopting the marketing concept seeks to serve the customer needs in order to meet its main need of making a profit. Market orientation, from the beginning, was conceptualized with a view to providing the organization with long-term direction (Felton, 1959; McGee and Spiro, 1988; Webster, 1988; Narver and Slater, 1990). However in non-commercial organizations other objectives will be salient. Kotler (1972) extends the generic concept of marketing, then still based on the "transaction," to all organizations that have customers and to all "publics."

Kohli and Jaworski (1990) have contributed by providing an operational definition for market orientation as a concept. In their study, they do this by comparing the three core elements of market orientation as a philosophy to the perceptions of practicing managers. In the end, the market oriented firm is one which successfully applies the marketing concept (Kohli and Jaworski, 1990; Narver and Slater, 1990; Shapiro, 1988). Their research enables them to define market orientation as a concept in the following way:

> Market orientation is the organizationwide *generation* of market intelligence pertaining to current and future customer needs, *dissemination* of the intelligence across departments and organizationwide *responsiveness* to it.

The definition by Kohli and Jaworski (1990) of market orientation focuses on activities and therefore enhances the ease with which the construct can be operationalized. Jaworski and Kohli (1993) use this definition to develop a 31-item scale, which they subsequently reduce to 20 items (Kohli, Jaworski and Kumar, 1993). Their instrument provided an alpha coefficient (Cronbach 1951) for each dimension greater than 0.70 and therefore acceptable for theory development according to the criteria set by Nunnally (1978). In developing their scale the procedures outlined by Churchill (1979) were followed. At least three other scales for measuring market orientation based on different emphasis in their definition of market orientation as a construct have also been developed (cf. Deshpandé, Farley and Webster, 1993; Narver and Slater 1990; Ruekert 1992).

ORGANIZATIONAL COMMITMENT

Porter et al. (1974) use a unidimensional behavioral conceptualization of organizational commitment involving "the relative strength of an individual's identification with, and involvement in, a particular organization." Meyer and Allen (1984) call this *affective commitment*. Here the employee is seen to be emotionally attached, identifies with the organization, and is therefore committed to pursue its goals. Basing themselves on Side-Bet theory (cf. Becker, 1960) these authors proceed to identify a further dimension of organizational commitment which they term *continuance commitment*. This views the employee as being less affective and more calculative considering the costs that would result in terms of interests such as pensions and security. This type of commitment has been measured with scales developed by Ritzer and Trice (1969) which where later amended by Hrebiniak and Alutto (1972). Allen and Meyer (1990) developed a conceptualization of organizational commitment that encompasses not only affective commitment and continuance commitment but also *normative commitment*. The latter refers to employees' feelings of obligation to stay with the organization. Such feelings of obligation result from a process of internalization of normative pressures either prior or following affiliation to an organization. This conceptualization of organizational commitment led to the development of a 24-item instrument, split into three sections, each of eight items, that capture all of the three dimensions (Allen and Meyer, 1990; Meyer and Allen, 1991).

PERFORMANCE

Organizational theory and strategic management offer much of the basis on which the performance construct is measured. Organizational theory provides three fundamental theoretical approaches to measuring organization effectiveness. In the goal based approach the organization is evaluated on the basis of the objectives it sets itself (Etzioni, 1964). The system approach improves on this by considering multiple, generic performance aspects (Georgopolous and Tannenbaum, 1957; Yuchtman and Seashore, 1967, Steers, 1975), while the multiple consistency approach considers the degree to which the different stakeholder performance goals are met (Connolly, Conlon and Deutsch, 1980; Pennings and Goodman 1977; Pfeffer and Salancik, 1978; Thompson 1967). Strategic management integrates these three views and considers multiple dimensions in terms of financial performance measures such as ROCE (Venkatraman and Ramanujam, 1986) together with operational performance measures such as market share (Hofer and Sandberg, 1987; Kaplan, 1983) and other measures that consider and capture multiple shareholder interests. Venkatraman and Ramanujam (1986) provide a comprehensive two-dimensional framework for classifying corporate performance measures integrating performance measures with collection methods. On the performance dimension, financial vs. non-financial or operational variables are considered while on the method of collection dimension, primary (questionnaire-interview) vs. secondary (archival) data sources are taken into account.

Hensher and Waters (1993) describe three types of measures of productive efficiency in organizations in the public sector. These are: (1) econometric model estimation, (2) non-parametric Data Envelopment Analysis (DEA), and (3) non-parametric Total Factor Productivity (TFP). Because non-parametric TFP measures, such as number of parking tickets given by a warden each day, are relatively easy to calculate or obtain, they are extensively employed to assess many government departmental activities. However, even what initially appears to be a straightforward measure of output may be quite complicated. Thus if the area the warden patrols is a busy parking area the results may be simply a reflection of this rather than efficiency. The alternative is of course to have multiple measures. However, it has been argued that the proliferation of performance targets can conceal rather than enhance the ability to assess quality through making it hard to focus, and make clear judgment of overall performance difficult (Walsh, 1994). Mintzberg (1996: 79) attacks the myths of measurement in government; an ideology, which he holds, is embraced with religious fervor by the Management movement. He notes that many of the benefits of measurement do not lend themselves to government entities and that many activities are in the public sector precisely because of measurement problems.

MARKET ORIENTATION, ORGANIZATIONAL COMMITMENT AND PERFORMANCE

Previous studies of the antecedents and consequences of organizational commitment have often relied on a unidimensional, conceptualization of the construct. Many of the relationships that have been identified in the meta-analysis of psychological literature by Mathieu and Zajac (1990) suffer from this limitation. Similarly, statistically significant findings from the marketing literature linking market orientation to organizational commitment by salespersons (Siguaw, Brown and Robert, 1994) and SBU's managers (Jaworski and Kohli, 1993) may need to be reassessed as they are also based on a unidimensional conceptualization of commitment. In terms of consequences, organizational commitment has been linked, via "working hard" and "working smart" to sales force performance in Singaporean life insurance agents (Leong, Randall and Cote, 1994). Among public sector organizations Zeffane (1994) reports that organizational size has a moderately negative effect on organizational commitment and that this tends to be lower than in the private sector.

Until recently the link between a market orientation and performance appeared to have been taken for granted by both academics (Houston, 1986; Kotler, 1991; McGee and Spiro, 1988; Webster, 1988) and practitioners (Kohli and Jaworski, 1990). Of late empirical support for a direct link between the level of market orientation in certain U.S. firms, at the SBU level, and performance has been confirmed in a number of studies (Jaworski and Kohli, 1993; Narver, Park and Slater, 1990; Narver and Slater, 1990; Ruekert, 1992). Deshpandé, Farley and Webster (1993) also confirm this relationship in Japan while Pitt, Caruana and Berthon (1996) provide evidence for this relationship from the UK and Malta.

Schlessenger and Heskett (1991) highlight the importance of employee commitment arguing that this leads to a "cycle of success" with increased awareness of employees role in customer satisfaction, their integration into winning teams, a concentration on quality at the service core and ultimately enhanced performance. Mintzberg (1996) argues that control in the public sector is normative and it is attitudes grounded in values and beliefs that matter. He holds that there is no substitute for human dedication and an organization without human commitment is like a person without a soul. Government services such as health care and education can never be better than the people who deliver them. This highlights the critical role of organizational commitment that possibly acts as a key intermediate variable.

It has long been argued that a market orientation is relevant not only to profit making institutions but also to not for profit organizations (cf. Kotler 1972). The appropriateness of a market orientation for government departments appears to be very relevant yet it has not received any attention in the literature. Similarly, we have been unable to find literature linking market orientation in government departments with organizational commitment or any performance measure. On the basis of the above we set out to test two alternative sets of hypothesis, as follows:

H1a: Market orientation in the public sector is positively related to performance.

H1b: Market orientation in the public sector is positively related to organizational commitment.

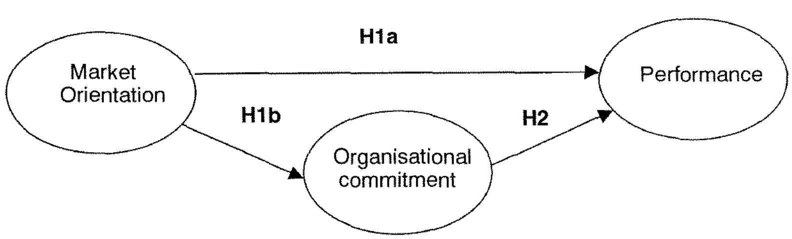
H2: The interaction between market orientation and organizational commitment will explain more in the variance in performance than the direct influence of either market orientation or organizational commitment.

These alternative hypotheses are shown in the mediational model in Figure 1.

CONSTRUCT MEASURES AND DATA COLLECTION

To be able to investigate the relationship between market orientation, organizational commitment and performance in government departments, a

FIGURE 1. Model: Alternative Research Hypotheses



research design was employed that involved postal questionnaires to a cross-section of head of departments in the three states of Victoria, Queensland and Western Australia. The final questionnaire was made up of forty-eight items that consisted of measures for market orientation, organizational commitment, and performance. A number of classificatory variables were also collected.

The Research Instrument

Market orientation (MO) was measured using the 20-item MARKOR as reported in Kohli, Jaworski and Kumar (1993). Their original instrument was amended to reflect the situation in Government departments as opposed to business units. The key used involved substituting department for business unit; macro environment for industry; sections for departments; and, services for products. Each item was described by 7-point Likert type scales anchored by 1 = Strongly disagree to 7 = Strongly agree. In the original MARKOR instrument 5 point scales were used. The number of scale points has been increased to 7, as this generally helps scale reliability (Churchill and Peter, 1984) and does not affect its psychometric properties (Nunnally, 1978). Higher scores on this scale (when reverse scored items are suitably amended) indicate higher levels of market orientation. In their studies the authors (Jaworski and Kohli 1993; Kohli, Jaworski and Kumar, 1993) report results of two single informant samples and reliability alpha (Cronbach, 1951) of between 0.89 to 0.96 for market orientation and of between 0.71 to 0.82 for intelligence generation, intelligence dissemination and responsiveness respectively. Evidence for the scale's convergent, discriminant and nomological validity is also provided (Kohli, Jaworski and Kumar, 1993).

To measure organizational commitment (OC) use is made of the 24-item instruments developed by Allen and Meyer (1990). To maintain consistency in our overall measure the original 5 point Likert scales were converted to 7-point scales with 1 = Strongly Disagree and 7 = Strongly Agree. The reliability of the scales measuring the three dimensions of organizational commitment ranged from 0.69 to 0.89 (Allen and Meyer, 1991) and confirmatory factor analysis has provided strong support for the instrument which exhibits discriminant and convergent validity (Hackett, Bycio and Hausdorf, 1994). Moreover confirmatory factor analysis by Dunham, Grube and Castañeda (1994) confirms that the continuance commitment dimension splits into two sub factors that have been termed "personal sacrifice" and "lack of alternatives."

To measure performance (PERF) it was thought impractical to expect busy departmental heads to collect actual performance data, even if they were agreeable to divulging such information. Obtaining such data from archival sources, such as trade and other publications, was not seen to be a viable alternative. Dess and Robinson (1984) who looked at the accuracy of such data hold that it is of minimal use in explaining variation in performance between firms and recommend that researchers consider using questionnaire or interview based perceptual measures of organization performance. Pearce, Robbins and Robinson (1987) show that such questionnaire based evaluations are reliable means for measuring performance. Mintzberg (1996) argues that many of the most common activities in government require soft judgments, something that hard measures cannot provide. A main reason for this is that for many government sectors the appropriate output measures are not clear. To determine performance a scale that utilized perceptual measures developed by Dess and Robinson (1984) was used. This consisted of four items originally measured with a five-point Likert scale. To maintain overall consistency 7-point scales are used, described by 1 = Very Poor to 7 = Very Good. The items were suitably amended to reflect the situation in government departments. The respondents were asked to make these evaluations on the basis of their experience in the last three years. Details of all items appear in the Appendix.

Five classificatory variables were also used. These consisted of: the name of the department; the number of employees; the size of the budget administered; whether the department had anyone with marketing or customer care responsibility; and whether the respondent or any of his reports possessed formal qualifications in marketing.

Survey of Head of Departments

Five hundred and one postal questionnaires were sent to 218, 153 and 130 heads of (state) government departments in the states of Queensland, Victoria and Western Australia respectively. Heads of departments where chosen because only one individual per organization was being contacted and it was felt that the top manager should have a good feel for his organization. All respondents come from organizations that provide client or citizen services (Mintzberg, 1996). The survey was conducted during September 1996 and by the cutoff date, three weeks later, a total of 171 usable replies where obtained representing an overall effective response rate of 34.1%. The response rate for Queensland, Victoria and Western Australia was 36.7%, 34.6% and 29.2% respectively. The relatively good response rates appear to have been, in part, a consequence of the interest that the subject matter generated.

Descriptives

In terms of the number of full time employees, one third had between 2 and 119, one third between 120 and 1,499 and one third had between 1,500 and

40,000 employees. Similarly in terms of budget, one-third had between US $million 0.02 and 8.8, one third between US $million 9.0 and 16.5 and a final third between US $million 17.0 and 3,565. These findings indicate sufficient depth of the sample and we proceeded to check for non-response bias. An "extrapolation procedure" was used to assess non-response bias. This assumes that "late" respondents are similar to the "theoretical" non-respondents (Armstrong and Overton, 1977). Independent *t*-tests where used to determine whether significant differences between the mean for the sum of the constructs for market orientation, organizational commitment and performance, differed between the two sub-samples consisting of respondents in the first and last quartile. No significant differences where found between the two sub samples for any of these variables. The results suggest that there appears to be no difference between respondents and non-respondents for the variables under study and the sample can be considered sufficient to draw conclusions about Australian government departments for the issues under study.

ANALYSIS

The mean and standard deviation for all items in the measures are provided in the Appendix. The coefficient alpha (Cronbach, 1951) for each of the dimensions and overall for the three constructs was computed. Results for the information gathering, information dissemination and responsiveness dimensions and for the entire market orientation scale were 0.701, 0.757, 0.853 and 0.889 respectively. Similarly, results of 0.877, 0.809 and 0.756 were obtained for each of the affective, continuance and normative components respectively and of 0.821 for the entire organizational commitment scale. Items 4, 12, 18 and 24 that had item to total correlations less than 0.35 were eliminated (McKelvey, 1967). This resulted in improved alphas for the dimensions of organizational commitment of 0.900, 0.817, 0.796 respectively. The coefficient alpha obtained for the performance items was 0.883. All alpha coefficients are greater than 0.7 and therefore acceptable (Nunnally, 1967).

The dimensionality of each of the constructs was investigated using confirmatory factor analysis. Table 1 provides reasonable fit statistics for both the market orientation and organizational commitment constructs and an excellent fit to the performance construct. The incremental fit indices of TLI (Tucker and Lewis, 1993) and NFI (McDonald and Marsh, 1990) which are both not effected by sample size (Tucker and Lewis, 1993) are both greater than 0.8 and therefore acceptable (Hair et al., 1992). The results confirm that the market orientation construct is found to consist of a complex factor structure with a general dimension that is orthogonal to its three correlated

TABLE 1. Confirmatory factor analysis for constructs in the study: goodness of fit statistics.

	χ^2	df	GFI	rmsr	TLI	RNI
MO	315.05	147	.844	.142	.809	.852
Null MO	1,328.89	190	.352	.661		
OC	321.22	167	.828	.238	.867	.883
Null OC	1,505.12	190	.392	.683		
Perf	1.49*	2	.996	.015	–	–
Null Perf	320.68	6	.457	.662		

*p = 0.474

dimensions (Kohli, Jaworski and Kumar, 1993); the organizational commitment construct consists of three correlated dimensions (Dunham, Grube and Castañeda, 1994; Hackett, Bycio and Hausdorf, 1994); while the performance construct is unidimensional (Dess and Robinson, 1984).

The hypotheses of this study suggest that the relationship between market orientation and performance is contingent upon the level of commitment by employees. Such relationships can be tested with moderated regression analysis (cf. Darrow and Kahl 1982; Schoonhoven 1981). This technique offers a "straight forward and the most general method for testing contingency hypothesis in which an interaction is implied" (Arnold 1982). The sum of the scales for each of the three dimensions of market orientation and organizational commitment (less the deleted items) together with performance were computed. A moderation is demonstrated if three conditions are fulfilled (Robinson, 1996). The first condition stipulates that the independent variable and the proposed moderator must each be significantly related to the dependent variable when considered separately. This is confirmed from the results reported in columns two and three in Table 2, with significant adjusted R^2s of 0.37 and 0.07 respectively. The second condition requires the independent variable to be significantly related to the proposed mediator. This is established in column 4, Table 2, and shows that the market orientation and organizational commitment link provides an adjusted R^2 of 0.07. The last condition stipulates that the relationship between the independent variable and the dependent variable should be weaker or non-significant when the proposed mediator is in the regression equation than when not. Column 5 in Table 2 confirms the moderating effect of organizational commitment on the link between market orientation and performance. The regression provides a higher adjusted R^2 of 0.37, with the moderator effect (MO*OC) replacing

TABLE 2. Results of regression analysis with the market orientation, organizational commitment and performance constructs.

y =	Perf	Perf	OC	Perf
R^2	0.371	0.076	0.079	0.382
Adj R^2	0.367	0.070	0.073	0.374
F	89.728***	13.735***	13.158***	45.818***
B*x1* = MO	0.609***	n/a	0.281***	0.436**
B*x2* = OC	n/a	0.276***	n/a	ns
B*x3* = MO*OC	n/a	n/a	n/a	0.212*

Note: B*xn* refers to the standardized beta for each of the independent variables.
* = p < .05 ** = p < .01 *** = p < .001 ns = not significant

organizational commitment and resulting in a lower beta coefficient for market orientation.

The construct of market orientation has been conceptualized as consisting of three components: information gathering (IG); information dissemination (ID); and responsiveness (RE) while the construct of organizational commitment consists of an affective (AC); continuance (CC) and a normative (NC) component. Further analysis was carried out to determine whether any of the dimensions played a more significant role. Results showed that it is only the RE dimension in market orientation that had an effect on the AC component (Adjusted R^2 = 0.21) in organizational commitment (Table 3, Column 2). None of the market orientation dimensions had an effect on the other two dimensions of organizational commitment. Regression of the three dimensions of organizational commitment with performance confirms that it is again the AC component that is significantly related to performance (Adjusted R^2 = 0.16). The moderated regression of AC, RE with performance provides an adjusted R of 0.41 which is in line with the results presented in Table 2 (Column 5), with RE having a significant direct effect on performance and a further smaller effect through the AC component of organizational commitment.

DISCUSSION

The results support *H1a* and provide empirical support for the basic tenet of the marketing discipline that the market oriented organization will enjoy better levels of performance. However, the results provide support for the alternative hypothesis *H2* only in part in that while market orientation (principally the responsiveness dimension) has been found to affect performance

TABLE 3. Results of regression analysis for the dimensions of market orientation, organizational commitment and performance.

	y = AC x1 = IG x2 = ID x3 = RE	y = Perf x1 = AC xz = NC x3 = CC	y = Perf x1 = RE xz = AC x3 = ACRE
R^2	0.223	0.165	0.413
Adj R^2	0.214	0.160	0.405
F	22.582***	10.998***	54.842***
Bx 1	ns	0.406***	0.345***
Bx 2	ns	ns	ns
Bx 3	0.256**	ns	0.329**

via the mediating effect (of the affective component) of organizational commitment, this effect on performance does not replace the strong direct effect of market orientation on performance but does result in a lower beta coefficient value. The results point out to the operation of multiple mediating factors. There is little doubt that performance has multiple causes and a realistic goal in investigating mediating effects is to seek mediators that significantly decrease the direct link between market orientation and performance rather than eliminate the relation between these two variables altogether (cf. Baron and Kenney, 1986). As noted earlier, Mintzberg (1996) prefers not to use the term customers in the case of public sector firms and distinguishes between clients, citizens and subjects. Clients are recipients of direct professional service like education while citizens also have rights that allows them to benefit indirectly from various parts of the public infrastructure, e.g., the physical infrastructure that includes roads and ports. However, as subjects individuals also have obligations towards the state being subject to policing and regulatory agencies and may have to serve the country. Our sample consisted exclusively of public sector entities that offered client and citizen services. It was not thought to be useful to ask market orientation questions to entities that viewed customers as subjects (e.g., prisons).

This research represents an application of the MARKOR scale to the public sector and helps extend and further develop the theoretical foundation of the marketing discipline. A market orientation as conceptualized here has been shown to be relevant to the public sector. It confirms that a market orientation is a worthwhile management goal to pursue in the public sector as it has worthwhile consequences. Results indicate that it is responsiveness that is the key element that managers in the public sector must focus on. It emphasizes the importance for public sector organizations to monitor changes and respond to customer needs. It highlights the need for inter organizational coordination as well as timely implementation of changes requested by customers. The results also highlight the importance of organizational commitment, particularly affective commitment that primarily acts in the mediating role. Organizational commitment has other benefits in terms of increased productivity and lower turnover.

The research has a number of limitations. First, the conceptualisation of the market orientation and particularly the performance construct may not be sufficiently capturing the multi-faceted aspect of these constructs, especially for organizations in the public sector. Moreover, the performance construct is operationalized by an indirect measure that may not sufficiently reflect actual performance. Notwithstanding this, the confirmatory factor analysis provides evidence of construct validity for the concepts as defined in this study. Second, the sample utilized was taken from three Australian states and though this appears fairly diverse and has been tested for non-response bias, generalization of findings to all Australian states and particularly to other countries must be done with caution. Different public sectors have different traditions. The public sector tradition of countries that have emerged in the last half a century or so is often determined by public sector practices in the country that provided independence. In the case of Australia, where this study is focussed, there is little doubt that the British influence has left an important mark on the public sector.

Finally the changes in R^2 values noted in the current research while statistically significant are modest. Notwithstanding the results are not insignificant as they highlight that a market orientation and organizational commitment are critical in the performance of public sector organizations. There are a number of directions for further research that can be considered. More work may be required to refine the market orientation construct. A further direction for research could be to elaborate and investigate some of the antecedent constructs to market orientation and organizational commitment in the public sector and to investigate other possible consequences.

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APPENDIX. Mean and standard deviations for instruments and scale items used.

MARKOR scale	**Mean**	**Std Dev**	**N**
1. In this department we meet with customers at least once a year to find out what products or services they will need in the future.	5.14	1.54	171
2. In this department, we do a lot of in-house market research.	3.92	1.54	170
3. We are slow to detect changes in our customers' product preferences. (R)	4.60	1.29	166
4. We survey customers at least once a year to assess the quality of our products and services.	4.87	1.81	169
5. We are slow to detect fundamental shifts in the macro environment (e.g., technology, economic, social). (R)	4.95	1.44	171
6. We periodically review the likely effect of changes in our macro environment (e.g., technology) on customers.	4.91	1.41	171
Intelligence Generation	**28.42**	**5.62**	**164**
7. We have interdepartmental meetings at least once a quarter to discuss market trends and developments.	4.52	1.87	171
8. Customer care personnel in our department spend time discussing customers' future needs with *other* departments.	4.17	1.61	168
9. When something important relating to the department happens, everyone in the department knows about it within a short period.	4.94	1.69	171
10. Data on customer satisfaction are disseminated at all levels in this department on a regular basis.	3.95	1.85	170
11. When one section within our department finds out something important, it is slow to alert other sections in the department. (R)	4.36	1.60	171

MARKOR scale	Mean	Std Dev	N
Intelligence Dissemination	**21.85**	**5.93**	**168**
12. It takes us forever to decide how to respond to new customer needs. (R)	4.97	1.52	169
13. For one reason or another we tend to ignore changes in our customer's service needs. (R)	5.08	1.44	171
14. We periodically review our service development efforts to ensure that they are in line with what customers want.	5.15	1.16	171
15. Several sections within our department get together periodically to plan a response to changes taking place in the macro environment.	5.19	1.36	171
16. If a major problem is identified among our customers we would implement a response immediately.	5.41	1.34	171
17. The activities of the different sections in this department are well coordinated.	4.51	1.41	171
18. Customer complaints fall on deaf ears in this department. (R)	5.47	1.57	171
19. Even if we came up with a great idea, we probably would not be able to implement it in a timely fashion. (R)	4.68	1.58	171
20. When we find that customers would like us to modify a service, the section involved make concerted efforts to do so.	5.27	1.14	170
Intelligence Dissemination	**45.80**	**8.63**	**169**
Market Orientation	**95.99**	**16.75**	**161**
Commitment scale	**Mean**	**Std Dev**	**N**
1. I would be very happy to spend the rest of my career with this organization.	4.93	1.76	169
2. I enjoy discussing my organization with people outside of it.	5.65	1.44	171
3. I really feel as if this organization's problems are my own.	5.24	1.50	171
4. I think that I could easily become as attached to another organization as I am to this one. R	Deleted		
5. I do not feel like "part of the family" at my organization. (R)	5.51	1.45	170
6. I do not feel "emotionally attached" to this organization. (R)	5.43	1.60	171
7. This organization has a great deal of personal meaning for me.	5.35	1.56	171
8. I do not feel a strong sense of belonging to my organization. (R)	5.58	1.44	171

APPENDIX (continued)

Commitment scale	Mean	Std Dev	N
Affective Commitment	**37.74**	**8.44**	**168**
9. I am not afraid of what might happen if I quit my job without having another one lined up. (R)	3.81	1.95	171
10. It would be very hard for me to leave my organization right now, even if I wanted to.	4.04	1.84	171
11. Too much in my life would be disrupted if I decided I wanted to leave my organization now.	3.76	1.73	171
12. It wouldn't be too costly for me to leave my organization now. (R)	Deleted		
13. Right now, staying with my organization is a matter of necessity as much as desire.	3.64	1.66	171
14. I feel that I have too few options to consider leaving this organization. (R)	3.27	1.62	170
15. One of the few serious consequences of leaving this organization would be the scarcity of available alternatives.	3.67	1.68	171
16. One of the major reasons I continue to work for this organization is that leaving would require considerable personal sacrifice–another organization may not match the overall benefits I have. (R)	3.75	1.66	170
Continuance Commitment	**26.01**	**8.28**	**169**
17. I think that people these days move from company to company too often.	3.56	1.51	171
18. I do not believe that a person must always be loyal to his or her organization. (R)	Deleted		
19. Jumping from organization to organization does not seem at all unethical to me. (R)	3.47	1.58	170
20. One of the major reasons I continue to work for this organization is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.	3.80	1.53	171
21. If I got another offer for a better job elsewhere I would not feel it was right to leave my organization.	2.82	1.49	171
22. I was taught to believe in the value of remaining loyal to one organization.	3.92	1.65	171
23. Things were better in the days when people stayed with one organization for most of their careers.	2.88	1.55	171
24. I do not think that wanting to be a "company man" or 'company woman' is sensible anymore. (R)	Deleted		
Normative Commitment	**20.48**	**6.53**	**166**
Organizational Commitment	**84.43**	**14.74**	**163**

Performance scale	**Mean**	**Std Dev**	**N**
1. The overall performance of this department in the last three years has been:	5.20	1.16	166
2. In relation to the resources committed the improvements achieved by this department in the last three years have been:	5.42	1.15	165
3. The level of customer service provided by this department in the last three years has been:	5.30	1.09	164
4. The level of cost effectiveness achieved by this department in the last three years has been:	5.38	1.27	165
Performance	**21.25**	**3.95**	**163**

(R.) indicates negatively worded items. The means shown are when negative wording is taken into consideration.

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