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SUPPLEMENTARY MATERIALS

THE PERFORMANCE OF MĀORI FIRMS:
A STRATEGIC MANAGEMENT APPROACH

2020

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1 Introduction

These materials are intended to be read together with the following report: “The Performance of Māori Firms: A Strategic Management Approach”.

These supplementary materials relate to the present study which uses empirical data on 146 Māori enterprises, including 106 private sector firms, to improve the understanding of self-identified Māori firms’ performance in Aotearoa New Zealand (NZ). This study adopts the approach of Spanos and Lioukas (2001) by using strategic management frameworks to test a wide range of hypotheses aimed at measuring the direct, mediating and moderating effects of: (a) firm assets, (b) firm strategy, (c) dynamic capabilities (and entrepreneurial orientation), and (d) industry forces on the organisational performance of Māori firms.

Section 2 of these materials includes a description of the construction of each study variable, while Section 3 discusses the present study results in the context of existing firm performance literature.

2 Measurement Models

This section details how each variable is measured and the theoretical foundation for the construction of each study variable. The section is structured as follows: first, the section covers the firm factors analysed in the study, followed briefly by industry forces and firm outcomes.

2.1 Firm Factors

2.1.1 Firm Assets

Firm assets were ultimately measured using five distinct constructs. The first three are from the intellectual capital scale by Yang and Lin (2009), coded as 1=strongly disagree, 5=strongly agree. Human capital originally had three items, with a sample item being "Our employees continuously acquire new job-related knowledge". Given Spanos and Lioukas (2001) focused on technology in their firm assets construct, a new fourth item was added "Our employees have high technical skills" (α= .80). Relational capital, three items, has a sample item: "Our employees discover and solve problems through mutual collaboration" (α= .70) and organisational capital, three items, has a sample item: "Our organisation has an effective management process" (α= .75). Cultural capital was measured using four items created for this study, based around the intellectual capital construct from Singh and Rao (2016). The items used coding and exploratory factor analysis results are shown in Table 1. The construct had good reliability (α= .85).

Table 1. Results of Exploratory Factor Analysis for Cultural Capital

	FL	ITC	Mean
1. Our employees are skilled at working with Māori culture and respecting cultural values	.840	.701	3.92 (.85)
2. Our employees are knowledgeable around the Treaty of Waitangi and its implications for working with Māori	.805	.652	3.86 (.91)
3. Our employees interact with Māori culture seamlessly and make few cultural errors	.845	.708	3.82 (.85)
4. Our employees comprehend the value of understanding Māori culture and work hard to provide culturally positive relationships	.822	.673	3.90 (.88)
Eigenvalues	2.742		
Percentage variance	68.5%		
Number of items in measures	4		
Cronbach's Alpha	.85		

Note: Standard deviations in parentheses. ITC= corrected item–total correlations (item scores correlated with the sum of all other item scores), FL= Factor Loadings. Questions were coded as 1=strongly disagree to 5=strongly agree.

Cultural capital may form a central part of Māori firms. Therefore, a confirmatory factor analysis (CFA) was conducted to test the combination of cultural capital and measure the firm assets construct above. This four-factor (14 item) construct demonstrated good fit to the data: χ^2(df)= 128.7 (76), CFI=.94, RMSEA=.07, and SRMR=.06, and was a superior when compared with the three-factor firm asset construct. Other alternative models were also statistically inferior (all p< .001), for example, the alternative CFA of a single factor (Hair et al., 2010).

Parceling was then conducted (combining the items within each dimension) and a new CFA was run which demonstrated excellent fit to the data: χ^2(df)= 12.8 (5), CFI=.97, RMSEA=.09, and SRMR=.04.

Finally, high performance work systems (HPWS) was measured using 15-items by Datta et al. (2005), coded as 1=strongly disagree, 5=strongly agree. Items followed the stem "To what extent do you agreed with specific statements related to Human Resource Practices in your workplace…" and covered five dimensions (three items each) across a range of human resource (HR) practices.

The HPWS meta-analysis by Combs et al. (2006) showed that HPWS effects are stronger as a combination of HR practices rather than as individual HR practices. An initial CFA was conducted to test the measure using the full 15 items (five factors of three items) and this demonstrated a reasonable fit to the data: χ^2(df)= 171.8 (89), CFI=.92, RMSEA=.08, and SRMR=.06. This was superior compared to alternative CFA models where various factors were combined (e.g., compensation and recruitment). All alternative models were statistically inferior (all p< .001).[1]

Following the approach of Spanos and Lioukas (2001), the five firm asset dimensions (human capital, relational capital, organisational capital, cultural capital and HPWS) were compared and found to be highly correlated with each other (.49 < r < .69), thus combining these factors was appropriate for a single firm asset factor (α= .91).

2.1.2 Firm Strategy

The approach of Spanos and Lioukas (2001) is followed regarding firm strategy and the associated industry forces which are detailed below. Firm strategy was measured using four dimensions with three based on the scale by Spanos and Lioukas (2001) coded as 1=much less than competitors, 5=much more than competitors. Respondents were asked to indicate the extent to which they use each of the competitive methods detailed in Table 2.

[1] Such as an alternative CFA (1 factor of 15 items) was shown to be inferior to the hypothesised CFA (Hair, Black, Babin, & Anderson, 2010). Parceling was then conducted (combining the items within each dimension) and a new CFA was run and this demonstrated excellent fit to the data: χ^2(df)= 9.6 (9), CFI=1.0, RMSEA=.02, and SRMR=.03.

Table 2. Firm Strategy Competitive Methods

Dimesions	sample item	α
Innovative Differentiation Strategy (four items)	"R&D expenditures for product development"	.78
Marketing Differentiation Strategy (four items)	"Emphasis on strong sales force"	.74
Low Cost Strategy (three items)	"Efforts to achieve economies of scale"	.70

We extended this firm strategy construct by adding a fourth dimension, following the meta-analysis by Campbell-Hunt (2001) that showed support for differentiation strategies including quality. Hence, we created a three-item scale quality differentiation strategy, using the same coding scales, two items from Campbell-Hunt (2001): "Emphasis on product quality" and "Emphasis on quality service" and included a third item "Emphasis on quality improvement" to enhance the psychometric qualities of the construct. To ensure these three items were a good fit, an exploratory factor analysis (principal components, direct oblimin) was conducted and confirmed that the items loaded onto a single factor with eigenvalues greater than 1 (2.2), accounting for sizeable amounts of the variance (73.3%) and achieving good reliability (α=.82).

Before applying any parcelling, the factor structure of the construct was first tested. A CFA was initially conducted to test the measure using the full 14 items (two factors of four items and two factors of three items) and this demonstrated a reasonable fit to the data: χ^2(df)= 144.3 (76), CFI=.92, RMSEA=.08, and SRMR=.06. This was a superior fit to the data than alternative CFA models where various factors were combined (e.g., compensation and recruitment) and all alternative models were statistically inferior (all p< .001).

Parceling was then conducted and a new CFA was run which demonstrated excellent fit to the data: χ^2(df)= 7.1 (5), CFI=.99, RMSEA=.05, and SRMR=.04. Aligning with Spanos and Lioukas (2001), we compared the four firm strategy dimensions and found that they are all highly correlated with each other (.47 < r < .70), thus it was appropriate to combine them to form a single firm strategy construct (α=.90).

2.1.3 Entrepreneurial Orientation

Entrepreneurial orientation was measured using the nine items by Miller (1983), coded as 1= strongly disagree, 5= strongly agree. Questions followed the stem "Your organisation..." and the construct had three dimensions: Risk taking (sample item: "has a strong aptitude for high-risk projects (with chances of high returns)", proactiveness (sample item: "we are often the first to introduce new products and

services, new ways to produce these, or new administrative methods") and innovativeness (sample item: "changes in product or service lines have usually been quite dramatic to achieve competitive advantage").

Kantur (2016) supports the use of a summed unidimensional conceptualisation of the entrepreneurial orientation construct. Since an empirical examination of entrepreneurial orientation has not been conducted on Māori firms, this approach was tested. A CFA was run with nine items representing a global entrepreneurial orientation construct which demonstrated excellent fit to the data: χ^2(df)= 41.7 (27), CFI=.97, RMSEA=.06, and SRMR=.05. Next, a comparison CFA was run with entrepreneurial orientation as a higher order construct with three dimensions (risk-taking, proactiveness and innovativeness). This was a poor fit to the data: χ^2(df)= 74.0 (27), CFI=.89, RMSEA=.11, and SRMR=.20. This supports arguments for a global entrepreneurial orientation and thus a global construct was utilised (α= .85).

2.1.4 *Dynamic Capabilities*

The dynamic capabilities construct is represented by three factors: (1) absorptive capacity, (2) relationship learning, and (3) research and development (R&D) networks (Teece, 2007, 2012).

Absorptive capacity was measured with three items by Chen et al. (2009), coded as 1=strongly disagree, 5=strongly agree. Questions followed the stem "Indicate whether your company has the ability to", with a sample item being "understand, analyse and interpret external information" (α= .69).

Relationship learning was measured using a four-item construct from Chen et al. (2009), coded as 1=strongly disagree, 5=strongly agree. The focus was on the way a firm engages with partners and a sample item is "exchanges information related to changes in the R&D of products with its relevant partners" (α= .78).

R&D networking was created for the present study because the literature argues that engagement of R&D partners can potentially represent a wide range of firm processes and behaviours (e.g., Cincera, et al., 2003; Kazadi et al., 2016). This new measure was developed to capture Māori firm engagement with R&D - specifically firms' propensity to partner with others in R&D. The four items utilise a semantic differential scale with a neutral midpoint. To ensure they are a good fit an exploratory factor analysis (principal components, direct oblimin), shown in Table 3, was conducted which confirmed that the items loaded onto a single factor with eigenvalues greater than 1 (2.339), accounted for sizeable amounts of the variance (58.5%) and achieved good reliability (α=.76). Further analysis showed that the corrected item-total correlations were all greater than .50, with a mean corrected item-total correlation of .56, and factor loadings of all items were greater than .50. This provides strong alignment with established approaches to assessing new constructs (e.g., Allen, 2001).

Table 3. Results of Exploratory Factor Analysis for R&D Networking

	FL	ITC	Mean (SD)
1=R&D partners outside my firm are not important to our business 5=R&D partners outside my firm are very important to our business	.736	.529	3.43 (0.98)
1=My firm's engagement with science/technology researchers in the past two years is much less or zero 5=My firm's engagement with science/technology researchers in the past two years is much more	.752	.546	3.47 (1.00)
1=My firm would not know where to find R&D partners 5=My firm actively cultivates R&D partner relationships	.801	.607	3.39 (0.97)
1=My firm is not looking to engage with R&D partners 5=My firm is actively looking to engage (more) with R&D partners	.769	.565	3.51 (0.97)
Eigenvalues	2.339		
Percentage variance	58.5%		
Number of items in measures	Four items		
Cronbach's Alpha	.76		

Notes: ITC= corrected item–total correlations (item scores correlated with the sum of all other item scores) & FL=Factor Loadings Questions followed a 1 to 5 scale, with anchors at each end and 3 being the mid-point.

Following the logic of Spanos and Lioukas (2001), the three dimensions for dynamic capabilities were found to significantly correlate ($.31 < r < .56$) thus, combining these factors was appropriate. The single dynamic capabilities construct was found to be robust ($\alpha=.89$).

2.2 Industry Forces

Industry forces were assessed using the approach of Spanos and Lioukas (2001). Competitive rivalry was measured using their four-item measure, coded as 1=very weak competition, 5=very fierce competition. Questions followed the stem "How would you evaluate the intensity of competition your firm is facing with respect to…", and a sample item is "Access to distribution channels" ($\alpha= .75$). The other four industry forces were assessed using single-item measures from Spanos and Lioukas (2001), each with their own unique coding: Barriers to entry (1=very easy to enter, 5=very difficult to enter), threat of substitutes (1=not at all, 5=extreme), power of suppliers (1=very weak, 5=very strong) - which was reverse scored to indicate the firms power over suppliers, and power of buyers (% of sales to three biggest buyers).

2.3 Firm Outcomes

Product innovation was measured using the four-item scale by Li, Su, and Liu (2010), coded as 1= no change, 5=radical change. Questions followed the stem "To what extent does your organisation engage in the following" and a sample item is "improving qualities of product/service" (α= .71).

Top talent retention was measured using a single item designed for this study, coded as 1=strongly disagree, 5=strongly agree, with the item being: "Our organisation has a low turnover rate of top-rated talented staff". Top talent retention is defined as a firm's ability to retain their most skilled and productive people and seeks to address the retention of human resources more accurately, rather than the more generic approach of examining retention as the average annual rate of employee turnover (e.g., Guthrie, 2001; Yalabik et al., 2008).

Organisational performance was measured using four items by Yang and Lin (2009), coded as 1=strongly disagree, 5=strongly agree. Questions followed the stem "To what extent does your organisation engage in the following" and sample items included "Our manager and supervisors are effective" and "Our employees have high job satisfaction". Item "Our organisation has a low turnover rate" was excluded due to its overlap with the top talent retention analysis. Indeed, these two items were significantly correlated at r= .55 (p< .01). The remaining four-item scale had adequate reliability (α= .71).

Breakthrough sales were measured using one indicator: "Within the last three years, what percentage of overall organisation sales/income comes from products and services new to your organisation?" which was posed to private sector firms only (n=106). The response scale ranges from 0% to 100%. To enable easier interpretation of effects, the breakthrough sales score was z-scored.

Spanos and Lioukas (2001) found that firm size was positively related to organisational performance, thus firm size was controlled for. The total number of full-time employees is coded as 1=micro [up to 10 employees], 2=small [11-50 employees], 3=medium [51-250 employees], 4=large [251-1000 employees], 5=very large [1001+ employees].

2.4 Final Model

A CFA was conducted to test the combination of items best suited for the overall model. Three model constructs were tested, the components of each are listed below, with the CFA results detailed in Table 4.

Model 1: Hypothesized 12-factor model

Firm assets (single latent construct reflecting the four-dimensions of firm assets parcelled + total HPWS), firm strategy (four items parcelled, reflecting the four strategy dimensions), dynamic capabilities (single latent construct combining absorptive capacity, R&D networks, + relationship learning), entrepreneurial orientation (single latent construct), competitive rivalry (four items), barriers to entry (single item), threat of substitutes (single item), firm power over suppliers (single item), bargaining power of buyers (single item), product innovation (four-items), organisational performance (four items), and top talent retention (single item).

Model 2: Alternative eight-factor model

As per model 1, with all industry forces combined (total: eight items): competitive rivalry (four items) + barriers to entry (single item) + threat of substitutes (single item) + firm power over suppliers (single item) + bargaining power of buyers (single item).

Model 3: Alternative 11-factor model

As per model 1, with both performance constructs combined (total: eight items): product innovation (four items) + organisational performance (four items).

Table 4. Results of Confirmatory Factor Analysis

	Model Fit Indices					Model Differences			
Model	χ^2	df	CFI	RMSEA	SRMR	χ^2	Δdf	p	Details
1	304.1	194	.92	.06	.06				
2	394.8	228	.88	.07	.07	90.7	34	.001	Model 1 to 2
3	338.6	205	.91	.07	.06	34.5	11	.001	Model 1 to 3

3 Discussion

3.1 Direct Effects

The analyses towards the various performance indicators, provided in the main report, indicate that all core factors (firm assets, firm strategy, entrepreneurial orientation, and dynamic capabilities) play important roles in shaping firm performance and a complex interplay between the firm factors was illuminated.

Fundamentally, firm assets were found to be the key construct towards Māori firm performance indicators. Spanos and Lioukas (2001) argued that firm assets shape firm strategy and this was strongly supported in the present study. The present study extended that study's approach and included entrepreneurial orientation and dynamic capabilities and, following the same logic, both firm assets and firm strategy were found to be positively related to entrepreneurial orientation and firm assets and entrepreneurial orientation were found to predict dynamic capabilities. Hence, within these study factors, firm assets appear to be the core factor in shaping firm strategy and the way processes around entrepreneurship and dynamic capabilities are created. This shows that the overall knowledge resources of an organisation (Singh & Rao, 2016), including its human resource management (HRM) practices, can help shape the way firms engage and use strategic decisions and facilitate dynamic capabilities within their structures. This aligns with the literature (e.g., Youndt & Snell, 2004; Yang & Lin, 2009), although studies seldom test relationships as comprehensively as the present study does.

Beyond the direct effects of firm assets, a number of the other factors played significant mediation roles, for example entrepreneurial orientation partially mediated the influence of firm strategy towards product innovation, and this was ultimately fully mediated by dynamic capabilities. Given the mediation effects between the constructs, an important finding from the present study is that all firm factors are likely to be important and the fundamental role that firm assets plays is vital. The meta-analysis by Karna et al. (2016) found both ordinary capabilities and dynamic capabilities were significant predictors of firm performance, and these findings mirror that. Overall, Māori firms appear to have a strong central stock of firm resources (Barney, 1991) and use this to produce better strategies, stronger entrepreneurship and better dynamic processes that leverage ordinary capabilities to create distinctive capabilities that help generate new profit in challenging conditions.

Towards product innovation, the effect sizes are all relatively even between the firm factors. This suggests that there are a collection of influences from firm assets, firm strategy, and their processes around dynamic capabilities. While less common, the findings here align with the literature predicting product innovation comes from firm assets (Costa, Fernández, & Dorrego, 2014), dynamic capabilities (Engelman et al., 2017), and HPWS (Liao et al., 2019; Tan & Nasurdin, 2011). Further, links exist between various forms of dynamic capabilities and product innovation (Wei et al., 2014; Liao et al., 2019; Lin et al., 2014), although they are not typically tested in the same extensive way as the present study.

However, the literature around firm strategy and product innovation is less clear. Some studies are theoretical (Gupta, Raj, & Wilemon, 1986), or mix firm strategy with HPWS (Wei, Liu, & Herndon, 2011; Lau & Ngo, 2004), or mix firm strategy with other firm factors (e.g., Mitrega et al., 2017). While firm strategy is important for organisational performance (Campbell-Hunt, 2001) the present study provides a more nuanced approach by testing the direct effect of firm strategy on product innovation (which is significant), and its mediating and moderating effects in the context of firm assets (including HPWS), entrepreneurial orientation, and dynamic capabilities. The findings here show that firm strategy is important but becomes non-significant ($p > .05$) in the presence of entrepreneurial orientation, and dynamic capabilities.

Towards top talent retention, again firm assets were significantly related. Van Iddekinge et al. (2009) found links between a skilled workforce and retention and the present study shows that firm assets are the key to top talent retention. Given that firm assets were extended to include HPWS, and that literature has meta-analysis supporting links to retention (e.g., Combs et al., 2006; Subramony, 2009; Zhai & Tian, 2019), firm assets (including HPWS) is concluded to play an important role in retaining top talent. Further, dynamic capabilities were found to not only directly relate to top talent retention but also partially mediate the effect of firm assets. While employee related outcomes are not common in the dynamic capabilities literature, the focus on retaining employees because the workforce focuses on extraordinary capabilities aligns with Haar and White (2013) around the notion that employees are more intellectually challenged and thus more likely to remain in their workplace.

The next firm outcome explored was organisational performance and this is a non-financial performance indicator, which explores more generic aspects like the job satisfaction of employees, the effectiveness of managers, and the loyalty of customers (Yang & Lin, 2009). This was selected because it enables the largest comparison of Māori firms in our sample across all industries. Similar to top talent retention, firm assets are the dominant predictor. There is meta-analysis support for human capital influencing organisational performance (Unger et al., 2011; Crook et al., 2011) and intellectual capital (McDowell et al., 2018). Again, given the aforementioned links between HPWS and organisational

performance (e.g., Combs et al., 2006; Subramony, 2009; Zhai & Tian, 2019), we ultimately have a strong support base that would suggest the firm assets as studied here should be vital to superior organisational performance.

The next model included product innovation and top talent retention as predictors of organisational performance. Product innovation has been argued as a precursor of organisational performance (Li et al., 2010) because firms that create new products and services are likely to be more profitable and successful than their competitors. Indeed, studies have used product innovation as a mediator of firm factors towards organisational performance (e.g., Mitrega et al., 2017). This follows arguments (e.g., Ritter & Gemünden, 2003) around how product innovations introducing new effective solutions into a firm, ultimately being a key driver of organisational performance (Han et al., 1998). Similarly, there is strong theoretical argument from the human capital (Boxall, 1996, 1998) that employee retention – especially around talent – is likely to play an important role in organisational performance.

With the HPWS literature, firms can attract and retain high skilled workers (e.g., Takeuchi et al., 2007) and these skilled employees (high human capital) have meta-analytic support towards influencing organisational performance (Crook et al., 2011). This also aligns with meta-analysis (Park & Shaw, 2013). The evidence here shows both product innovation and top talent retention played significant direct effects towards organisational performance, and these largely played only a minor mediation effect on the direct effect of firm assets. Again, the overall core capacity of the firm is key to performance but also through the various mechanism because firm assets were found here to shape firm strategy, entrepreneurial orientation, and dynamic capabilities, and shape product innovation and top talent retention, and then organisational performance. Thus, even when product innovation and top talent retention are included in the model, firm assets retain their central importance for Māori firm performance.

The final indicator tested was breakthrough sales, which represents the income generated from new products (Faems et al., 2005; De Visser et al., 2010). Tests were conducted on only a subset of the overall dataset (n=146) and was much smaller (n=106) due to the focus on private sector Māori firms only. Overall, the effects were similar to the whole sample, with firm assets shaping firm strategy, and both firm assets and firm strategy influencing entrepreneurial orientation, and then firm assets and entrepreneurial orientation influencing dynamic capabilities.

However, unlike the full sample, towards product innovation and the retention of top talent, firm assets is the only significant predictor. While firm assets were significant, the effect is fully mediated by firm strategy, showing a different process within the private sector towards the breakthrough sales outcome.

Fundamentally though, within private sector firms, it is entrepreneurial orientation that is key, which supports the meta-analytic evidence towards performance (Rosenbusch et al., 2013).

Finally, the direct effects of industry forces showed that competitive rivalry was the most dominant predictor among the industry forces, predicting product innovation and organisational performance. Interestingly, no industry forces were significant for top talent retention. In the private sector only data towards breakthrough sales, competitive rivalry was significant although the bargaining power of buyers was also a significant industry force. These findings align with Martínez-Sánchez et al. (2011), who argued that a dynamic business environment can positively shape innovation because employees would need to learn and utilise new skills faster. Clearly, when the industry forces are tested together it is competitive rivalry that dominates– at least on direct effects.

In the present study, it appears that Māori firms respond positively to competitive rivalry, although this might reflect that firms that perform poorly have already shut down (i.e. have stopped trading).

3.2 Moderating Effects

Beyond the direct effects, moderating effects of the industry forces were tested, responding to calls within the literature (e.g., Ong et al., 2018). Using a sample of NZ firms, Gibb and Haar (2010) found significant interaction effects on organisational performance from competitive rivalry. Theoretically, the testing of industry forces on core firm assets aligns what Spanos and Lioukas (2001) refer to as *indirect industry effects*. The present study extends this approach to include interactions with entrepreneurial orientation and dynamic capabilities, as those factors have their own supportive literature (Teece, 2007, 2012).

Dynamic capabilities enable organisations to position themselves toward targeting the right market, meeting customer needs, and seizing future competitive opportunities (Rumelt, 2011). In order to do this, organisations with advanced dynamic capabilities can develop and coordinate firm resources with partner resources (Teece, 2018). Consequently, there is strong theoretical support that industry forces shape firm outcomes, and interact with firm assets, firm strategy, entrepreneurial orientation, and dynamic capabilities. Porter (1981) highlighted the importance of considering the industry a firm operates in.

The empirical evidence suggests that while competitive rivalry was had the greatest direct effect on firm outcomes, when all five industry forces are used as moderators, several produced significant interaction effects. Importantly, testing for interaction effects might highlight the actions of firms, where

they engage in “offensive” strategic moves, which seek to alter the balance of industry forces (Porter, 1980; Spanos & Lioukas, 2001).

Towards product innovation, there were significant two-way interaction effects with barriers to entry and bargaining power of buyers. Porter (2008) argues that high barriers to entry and low bargaining power of buyers means the profitability of an industry is likely to lead to superior profits. The present study showed that Māori firms with a high firm strategy reported stronger product innovation even when the barriers to entry were low. This should make the environment more challenging and less profitable (Porter, 1980, 1981) yet Māori firms appear able to be more competitive when the barriers remain low.

Two potential explanations are that (1) Māori firms with high firm strategy recognise the challenges faced by their open industry and engage in superior product innovation to counter such a threat. Alternatively, (2) such barriers to entry can be dependent on many additional conditions, with Porter (2008) highlighting supply-side economies of scale, demand-side benefits of scale, capital requirements, and customer switching costs, amongst others. Thus, it might be that while low barriers to entry exist there are varying aspects that were not sufficiently captured that more adequately explain this effect.

Barriers to entry also operated as a boundary condition on the indirect effect of firm assets on product innovation (through firm strategy). With barriers to entry, there is a significant indirect effect from firm assets at low levels of barriers to entry only (up to -1.7SD). At these low levels where firms have potential competitors who find it the easiest to access the industry, their firm assets are core and fundamentally important towards innovation. As the barriers to entry become increase, firm assets are no longer important and instead firm strategy becomes vital.

The two-way moderation effects regarding the bargaining power of buyers follows the more traditional route towards product innovation. As expected, when bargaining power of buyers is low, firms are best able to leverage their entrepreneurial orientation, and achieve superior product innovation. Here, the bargaining power of buyers means that firms are under less pressure and are not forced to engage with buyer demands as much, aligning with the literature (Porter, 2008). Overall, Māori firms appear able to leverage their firm processes with challenging and modest industry forces, to achieve product innovations.

Towards top talent retention, a few significant moderation effects were found. It was shown that Māori firms reported the highest levels of top talent retention when they had high entrepreneurial orientation and high threat of substitutes. Porter (2008) noted that profitability suffers when the threat of substitutes is high. Despite this, Māori firms with a high threat of substitutes are in a positive position regarding top talent retention. This might reflect the argument that employees can be retained when their workplaces and their approach to risk and innovation are high (Haar & White, 2013).

The threat of substitutes was also found to operate as a boundary condition, with the indirect effect of firm assets on top talent retention (through entrepreneurial orientation) only significant at low levels of threat of substitutes (up to -1.65SD). Thereafter, firm assets becomes non-significant and it is the role of entrepreneurial orientation (as the mediator) that is important.

It was found that high firm assets allowed firms to achieve the highest top talent retention when they had high bargaining strength over suppliers. Māori firms are strong and able to manage their suppliers with some dominance might be appealing from a retention perspective.

Towards organisational performance, there are significant moderation and moderated mediation effects. The first significant moderation effect from industry forces comes from threat of substitutes. It significantly interacts with firm strategy showing the highest organisational performance occurs when firms have high firm strategy and high threat of substitutes, which is somewhat counter to Porters (2008) arguments around low profitability from high threat of substitutes. It might reflect that while there is a high level of threat for alternative goods and services from competitors, a solid firm strategy is able to leverage this challenge and turn it into a positive performance effect.

The next two-way moderation effect shows that the highest organisational performance is achieved by firms with high top talent retention and high bargaining power over suppliers. Similar to the effect around retention, this effect is as expected under industry forces (Porter, 2008). The related moderated mediation effect shows that firm assets (through top talent retention) have a significant indirect effect beginning near the mean score (-0.7SD) and growing from there. Ultimately, the indirect effects are strongest when bargaining power over suppliers is high, and this aligns with both Porter (2008) and the literature suggesting that employee retention is vital to organisational performance (Park & Shaw, 2013).

Overall, most industry forces examined here had significant interactions, highlighting their vital role within the NZ economy, at least to this sample of Māori firms. Consequently, this study produces a lot of empirical support for those arguing that firm studies must examine, not only the firm and its behaviours, but also the industry conditions they operate in. In summary, these findings provide much needed evidence encouraging the testing of industry forces as moderators. Further, as noted by some researchers (Bacharach, 1989; Hayes, 2013, 2018), moderated mediation can identify boundary conditions which provide a level of insight not previously available and, in this example, we find that most industry forces play such a role, although competitive rivalry is found to have only direct effects.

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