

**MANAGERIAL SKILLS – A MODERATOR IN BUSINESS PERFORMANCE:
FOCUS ON LINKAGES INTEGRATOR, GROWERS AND BUSINESS PERFORMANCE IN SUPPLY
CHAIN MANAGEMENT**

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Abstract

The Malaysian livestock industry is an important and integral component of the agricultural sector providing employment and producing useful animal protein food for the Malaysian population, estimated at 25 million people and also to about 4 million people in Singapore. Since poultry sector lost its protection from cheap imports of chicken products, the main challenge for the poultry industry now is to remain competitive while sustaining a reliable food source for the nation. The aim of this study is to investigate the moderating effects of the relationship between integrator and grower involvement towards business performance in broiler production. This study discusses the potential role of managerial skill as moderating variable between the integrator and grower (independent variables) and the business performance (dependant variable). Broiler supply chain practices and its corresponding performance indicators in the form of broiler farming operations are among the important measures in the dependant variable (business performance). The content and construct validity has been done by getting opinion from the experts namely Veterinary officers. Besides that the construct reliability is determined through Cronbach's Alpha value and concludes that managerial skill has significant moderating effect on business performance in Supply Chain Management .

Keywords: broiler, integrator involvement, grower involvement and business performance

Introduction

The broiler industry in Malaysia has two types of producers. It comprises commercial farms and conventional farms. Commercial farms that run business on contract farming basis with integrator and conventional farms those belong to independent entrepreneurs. The contracting scheme is therefore more likely to be sustained by its ability to support entrepreneurs than it is by its ability to produce highly competitive products. In 2009 there were 3,300 farms in operation carrying a standing population of nearly 186 million broiler chickens: comprising 22.9% of large farms with more than 50,000 broilers per cycle, 26.2% medium scale farms carrying 20,000-50,000 broilers per cycle, and remaining small farms

with 20,000 broilers or less per cycle. Only 9% of local production was used for further processing. However, processors are increasingly getting supplies from cheaper imported poultry meat for value added processing. In fact, most of poultry meat supplied for processing is from imports. The main challenge facing the industry now is to remain competitive: prior to WTO and AFTA, the broiler industry was highly protected through import bans.

Among all economic activities, agribusiness is developing rapidly worldwide, stimulated mainly by the increase in the population and higher demand for food. Agribusiness studies have been the focus of academic research for quite a long time. However, those studies usually have used a theoretical background, connotations, frames of reference and methodologies slightly different from those used in the research on Supply Chain Management (SCM). Although there is extensive research on the business performance of manufacturing companies in the developed countries, there is limited empirical information about it in Malaysia. This study attempts to answer the following research questions; is there any moderating effect of the relationship between integrator involvement, grower involvement and business performance? Based on this question, following are the objectives of this study: To investigate the moderating effect of managerial skills on the relationships between Integrator Involvement, Grower Involvement and business performance. The remaining part of this paper is organized as follows: Section II constitutes of material and methods including overview of the research problem; section III presents comprehensive survey of literature that enables conceptualization of research framework; section that follows proposes research framework that includes results and discussion; section IV describes expected contributions and finally conclusion of the research is presented.

Material And Methods

General approach of this research is quantitative; the research problem is to study the relationship between integrator involvements, grower involvement towards business performance. Beside the study need to see if there is any moderating effect of managerial skills level between independent variable and dependent variable. The sample of 285 broiler production businesses representing the whole population was used for statistical analysis.

This study was conducted in Peninsular Malaysia including; Kedah (33.3%), Pulau Pinang (14.7%), Perak (28.1%), Selangor (0.4%), Negeri Sembilan (14%), Melaka (1.4%), Kelantan (5.6%), Terengganu (0.4%) and Pahang (0.7). This section of the study first presents descriptive statistics based on the data collected from the surveys. The responding companies' background information will be analysed, followed by statistical analysis of the data and discussion of the results with regards to the hypotheses testing.

The total respondents were 285: which translates to the following percentages of the categories mentioned besides each; 64.2 percent farm owners, 1.8 percent general manager, 1.4 percent managing directors, 5.6 percent managers, 20.4 percent senior managers and 6.7 percent others (managerial position). The number of years in that particular position includes the range of 1 to 5 years 19.5 percent, 6 to 10 years 37.9 percent, 11 to 15 years 27.7 percent, 16 to 20 years 9.8 percent and more than 20 years 5.3 percent. The percentage of businesses with permanent employees: less than 50 (89.5%); 50 to 100 (6.7%); 100 to 150 (3.2%) and more than 150 (0.7%). The two types of housing included: Closed House System (CHS) 55.4%; and Conventional System (CS) 44.6%. The average sale percentage of the businesses for the last three years is; up to RM1, 000,000

(88.41%), RM1, 000,001 to RM2, 000,000 (11.2%); and over RM2, 000,000 (0.4%). The average profit percentage of the businesses for last three years is; up to RM100, 000 (96.1%),; and over RM100,000 (3.9%). These businesses are from states in Peninsular Malaysia.

Specifically designed questionnaire was the instrument used for data collection. A set of attributes was included in the questionnaire that encompassed the grower and integrator involvement, grower managerial skills, and grower business performance question about broiler production and professional characteristics. To ensure its content and face validity, the research instrument was reviewed several times by the research group (Research Department, Department of Veterinary Services of Malaysia) and then implemented in a pilot test to measure its reliability. Questionnaire reliability was estimated by calculating Cronbach's alpha. Reliability for each variable is explained below:

Problem Overview

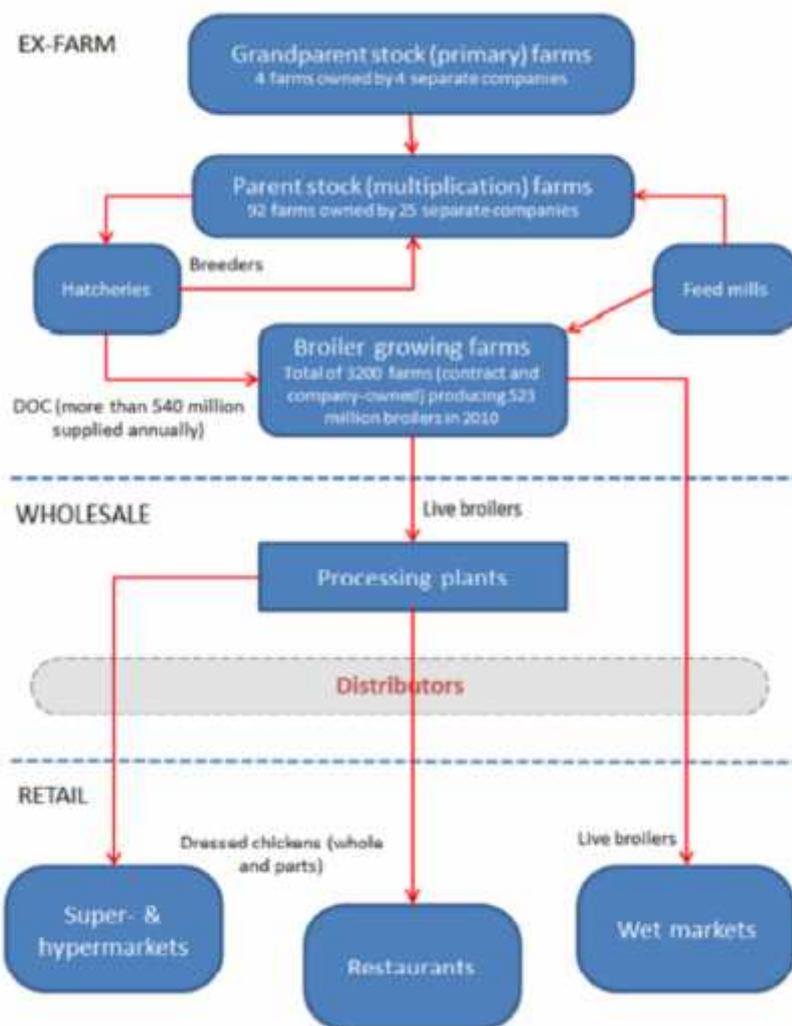
Broiler contracting involves the use of improved and standardized technology and production practices. This involves supply of inputs, close contact and training of the contract grower. Protecting this investment (in inputs and training) requires that default by growers and turnover in their ranks should be minimum (Key & Runsten, 1999). So the process of broiler production has crucial variables that need to be addressed empirically.

Supply Chain in the Broiler Industry

Main players normally have a vertically integrated supply chain, operating as integrated producer, owning the majority of all breeding, feed supply, slaughtering and processing facilities (see Fig. 1): they also operate with a wide variety of distribution channels, ranging from super and hyper markets to distributors restaurants, wet markets and groceries.

FIGURE 1

The Vertically Integrated Poultry Production Supply Chain



Source: Malaysia Competition Commission (“MyCC”)

Vertical production chains consist of a single company controlling all aspects of each stage of production. Hatcheries, farms, feed companies processing plants, harvesting team, distribution, and markets can all be integrated into a single corresponding supply system. In response to shifting conditions in both export and domestic markets, many producers are shifting their production further into these types of vertical systems. Moreover, a select number of firms control the majority of the market. There is a risk of a few large integrated systems controlling the broiler sector.

Contract Farming

The term “contract farming” generally refers to situations in which a farmer raises or grows an agricultural product for a vertically integrated corporation. There are two parties in a typical contract farming arrangement: the grower and the company (Integrator). Broiler contracts consist of contracting out the growing stage. Integrators recruit large farms (growers) to rear broiler chickens for meat according to contractual guidelines. Farming contracts can also help growers mitigate risks posed by fluctuations of input prices and provide a secure market outlet for their product. The latter is especially important because of the limited facilities that process chickens raised by independent farmers. While current

trends are moving producers toward vertical integration, there remain many farms currently under contract or with unused infrastructure from past contracts. Most integrators in Malaysia participated contract farming with growers for broiler production. Consequently, the integrators are always involved in every stage of production. While there are key differences between contract farming and complete vertical integration (e.g. who supervises over important growth stages), most aspects of the supply chain are the same.

Conceptualisation Results and Discussion

A. *Integrator Involvement in Product Modularity (PM)*

According to Schilling (2000) PM is a continuum of describing separateness, specificity and transferability of product components in a product system. A product is transferrable if the product components in a product system can be reused by another. It can be separated as it can be disassembled and recombined into new product configurations without loss of functionality (Schilling, 2000) and specified as the product component has a clear, unique and definite product function with its interfaces in the product system (Ulrich, 1995). If a product has high PM (i.e. modular product design), the product system has separate modules with well-specified interfaces across the modules, such as those found in personal computers. The product modules can be transferred to different product lines and progressive development projects. In this research, we define product modularity as the use of standardized and interchangeable parts or components that enable the configuration of a wide variety of end products.

B. *Integrator Involvement in Internal Coordination (IC)*

Recent literature have stated that successful product development can only be achieved if the organization can effectively integrate internal functional units, including marketing, manufacturing, R&D, and purchasing (Gerwin & Barrowman, 2002; Clark & Fujimoto, 1991). Diverse internal integration mechanisms (e.g. cross-functional teams, overlapping, employee involvement, concurrent engineering, collocations, dedicated teams, empowered teams) have been recommended in different phases of NPD (Griffin, 2002; Hargadon & Eisenhardt, 2000; Zirger & Hartley, 1994). Thus, this study defines IC as the degree of the coordination among sales and marketing, research and development, and production to inventory management throughout the product development process.

C. *Integrator Involvement in Product Innovativeness (PI)*

No consensus on the definition of innovativeness has been made, although it is generally regarded as a measure of discontinuity in the marketing and/or technology factors at both industry and firm levels (Calantone, Chan & Cui, 2006; Garcia & Calantone, 2002; Danneels & Kleinschmidt, 2001). A comprehensive literature review conducted by Garcia and Calantone (2002) shows that it is important to consider both marketing and technological perspectives, as well as the macro-level and micro-level, when identifying innovations. An important part of the research within the new product literature focuses on the effect of PI on product performance (Cooper, 1979; Zirger & Maidique, 1990; Kleinschmidt & Cooper, 1991; Cooper & Brentani, 1991; Song & Parry, 1997; Song & Montoya-Weiss, 1998). Even with the widely varying conceptualizations and operationalization of the PI construct (Danneels and Kleinschmidt, 2001) there are prevailing views arguing that both higher and lower PI increases product performance while the opposite holds true for moderate PI. Based on the above, this study seeks to provide new evidence concerning PI as a phenomenon and extend the empirical literature to the relation between PI and performance. Given the above considerations, the research questions that this empirical study raises, attempt to identify differences, if any, in performance measures at the product level.

D. Integrator Involvement (II)

According to Song and Benedetto, (2008); Van Echtelt, Wynstra, Weele&Duysters (2008)II is recognized as an important way for new product success. In this study, SI is defined as the direct participation of the supplier during the product development processes (Ragatz, Handfield and Scannell, 1997). Suggested by Fliess and Becker (2006);Takeishi (2001) it involves joint product design, process engineering and production operations with key suppliers. II helps secure resources and capabilities, which the manufacturers do not have but are essential for product innovation (Grant, 1996). It helps the supplier learn new technology applications while the buyer can actively shape product performance (Athaide& Klink, 2009).

E. Grower Involvement (GI)

Suggested by Feng, Sun and Zhang (2010); Brown and Eisenhardt (1995) GI is defined as the direct participation of the customer in the design and development stages of New Product Development (NPD), in which the customer engages in problem solving activities and co-develop the final forms of the product with the manufacturers. It involves joint product design, process engineering, and production operations with key customer. According to Brown and Eisenhardt (1995); Clark and Fujimoto (1991) the early involvement of customers or early customer inputs is essential to develop new products. It facilitates the project teams to recognize new ideas and opportunities while avoiding development delays due to a mismatch of the ideas and the customer needs (Ittner & Larcker, 1997).

F. Business Performance

If organizations cannot measure performance, they cannot manage their business (Kaplan & Norton, 1992). This statement summarizes the necessity of performance to measure, and as direct consequence, and to evaluate their performance (O'Raily, Wathey & Gelber, 2000). Business performance is measured in many different ways such as innovation, profit and sales, rate of new product development, customer satisfaction, customer retention, operating costs, profitability and return on investment (ROI) (Zack, McKeen & Singh, 2009). Business performance is also defined as measurable result of the level of attainment of organizations' goals (Daft and Marcic, 2001) or measurable result of the organization's management of its aspects (ISO 1999). In this study, business performance is measured in relations to the supply chain perspective and accordingly uses conventional supply chain measures such as revenues, customer and supplier satisfaction, customer retention, and operating cost.

These are hypotheses that relate to moderating effect as proposed with regards to relationship between independent and dependent variables as stated in the conceptual framework.

H1: Product modularity (PM) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill.

H2: Internal Coordination (IC) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill.

H3: Product Innovativeness (PI) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill.

H4: Internal Coordination (IC) has positive significant relationship with Business Performance (financial) moderated by decision making skill.

H5: Product Innovativeness (PI) has positive significant relationship with Business Performance (financial) moderated by decision making skill.

- H6: Grower Involvement (GI) has positive significant relationship with Business Performance (financial) moderated by accountancy and financial management skill.
- H7: Grower Involvement (GI) has positive significant relationship with Business Performance (financial) moderated by decision making skill.
- H8: Product modularity (PM) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill.
- H9: Internal Coordination (IC) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill.
- H10: Product Innovativeness (PI) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill.
- H11: Product Modularity (PM) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill.
- H12: Internal Coordination (IC) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill.
- H13: Product Innovativeness (PI) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill.
- H14: Grower Involvement (GI) has positive significant relationship with Business Performance (non-financial) moderated by accountancy and financial management skill.
- H15: Grower Involvement (GI) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill.

Moderating effect

The present study is designed to determine the moderating effect of integrator and grower involvement on the business performance (financial) and (non-financial) relationship. Barron & Kenny (1986), moderator variable effects the direction/or strength of the relationship between an independent variable and a dependent variable. The most remarkable finding is that seven interaction effects were encountered. As mentioned previously, it is possible to suggest that the relationship between integrator and grower involvement may be moderated by managerial skill. The hierarchical regression analysis was used to test the moderating effects of managerial skill on business performance strength as depicted in TABLE 1 and TABLE 2. Next, the hypotheses results are discussed thoroughly related to moderating effect of managerial skill on relationship between integrator and grower involvement towards business performance.

Table 1

Hierarchical Results Using Managerial Skill as a moderator in the Relationship between Integrator Involvement and Grower Involvement towards Business Performance (Financial).

Independent variable	Std Bet a Ste p 1	Std Bet a Ste p 2	Std Bet a Ste p 3
Model variables			
	0.0	-	-
Product Innovativeness	52	18	43
Product Modularity	0.3	0.2	0.2
	10	81	95

Internal Coordination	0.2 93	0.2 01	0.2 09
Grower Involvement	0.0 77	0.0 24	0.0 18
Moderating variable			
Accountancy and Financial Management Skill		0.2 97	0.3 59
Decision Making Skill		0.5 21	0.4 68
Interaction terms			
PI*Accountancy and Financial Management Skill			- 0.2 45
PM* Accountancy and Financial Management Skill			0.0 47
IC* Accountancy and Financial Management Skill			0.2 97
GI* Accountancy and Financial Management Skill			0.0 81
PI*Decision Making Skill			- 0.0 77
PM*Decision Making Skill			- 0.0 42
IC*Decision Making Skill			0.1 72
GI*Decision Making Skill			0.2 19
R ²			
	0.3 63	0.4 10	0.4 73
Adjusted R ²			
	0.3 54	0.4 00	0.4 56
R ² Change			
	0.3 63	0.0 47	0.0 63
Sig. F Change			
	0.0 00	0.0 00	0.0 00
Durbin Watson			
			1.7 05
*p<0.1, **p<0.05, ***p<0.01			

Table 2

Hierarchical Results Using Managerial Skill as a Moderator in the Relationship between Integrator Involvement and Grower Involvement towards Business Performance (Non-Financial).

Independent variable	Std Bet a Ste p 1	Std Bet a Ste p 2	Std Bet a Ste p 3
Model variables			
Product Innovativeness	0.4 05	0.3 38	0.3 83
Product Modularity	0.1 13	0.0 85	0.0 91
Internal Coordination	0.1 33	0.0 46	0.0 26
Grower Involvement	0.2 22	0.1 72	0.1 99
Moderating variable			
Accountancy and Financial Management Skill		0.2 81	0.3 02
Decision Making Skill		- 0.0 69	- 0.0 21
Interaction terms			
PI*Accountancy and financial Management Skill			0.2 60
PM* Accountancy and financial Management Skill			- 0.0 27
IC* Accountancy and financial Management Skill			- 0.0 76
GI* Accountancy and financial Management Skill			- 0.0 15
PI*Decision Making Skill			- 0.1 44
PM*Decision Making Skill			0.0 65
IC*Decision Making Skill			0.1 15
GI*Decision Making Skill			- 0.0 79
R ²	0.5 28	0.5 71	0.6 01
Adjusted R ²	0.5 22	0.5 63	0.5 88

R ² Change	0.5 28	0.0 42	0.0 31
Sig. F Change	0.0 00	0.0 00	0.0 00
Durbin Watson			1.7 27
*p<0.1, **p<0.05, ***p<0.01			

Moderating effect of managerial skill towards business performance (financial)

The hypotheses predicted that managerial skill (decision making, accountancy and financial management skill) moderate the relationship between integrator and grower involvement towards business performance. TABLE 1 and TABLE 2 illustrate the results of hierarchical regression analysis using integrator and grower involvement dimension. The standardized coefficient (Beta) for each variable is shown in the respective step.

The independent variable integrator involvement (product modularity, product innovativeness, and internal coordination) and grower involvement entered at step one. Second step, showed moderator variables; decision making skill (Beta=0.521) was significant 0.000 ($R^2=0.617$, F change value=10.642); moderator accountancy and financial management skill (Beta=0.297) was significant 0.000 ($R^2=0.557$, F change value=8.211). In the third step, the interaction between decision making skill, accountancy and financial management skill with independent variables; product modularity, product innovativeness, internal coordination and grower involvement showed that there were a number of significant relationships with business performance (financial), $R^2=0.473$, R^2 change=0.063, F change=8.211, $p<0.05$. The significant interactions were between product innovativeness and accountancy financial management skill; internal coordination and accountancy financial management skill; internal coordination and decision making skill and grower involvement and decision making skill. Thus, the hypotheses were supported.

Hypothesis H1 stated that product modularity (PM) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill. The results revealed that the R square value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between product modularity towards business performance (financial) relationship.

Hypothesis H2 stated Internal Coordination (IC) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show that internal coordination has made significant, unique contributions to the variance of business performance (financial) after accountancy and financial management skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that internal coordination has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H3 stated Product Innovativeness (PI) has positive significant relationship with Business Performance (BP-Financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show that product

innovativeness has made significant, unique contributions to the variance of business performance (financial) after accountancy and financial management skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that product innovativeness has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H4a stated that Product Modularity (PM) has positive significant relationship with Business Performance (financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by decision making skill between product modularity towards business performance (financial) relationship.

Hypothesis H4 stated Internal Coordination (IC) has positive significant relationship with Business Performance (financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show that internal coordination has made significant, unique contributions to the variance of business performance (financial) after decision making skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that internal coordination has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H5 stated that Product Innovativeness (PI) has positive significant relationship with Business Performance (financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by decision making skill between product innovativeness towards business performance (financial) relationship.

Hypothesis H6 stated that Grower Involvement (GI) has positive significant relationship with Business Performance (financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between grower involvements towards business performance (financial) relationship.

Hypothesis H7 stated Grower Involvement (GI) has positive significant relationship with Business Performance (financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show that grower involvement has made significant, unique contributions to the variance of business performance (financial) after decision making skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that grower involvement has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between grower involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships grower involvement and business performance.

Moderating effect of managerial skill towards business performance (non-financial). The hypotheses predicted that managerial skill (decision making, accountancy and financial management skill) moderate the relationship between integrator and grower involvement towards business performance. Table 4.28 and Table 4.29 illustrate the results of hierarchical regression analysis using integrator and grower involvement dimension. The standardized coefficient (Beta) for each variable is shown in the respective step. The independent variable integrator involvement (product modularity, product innovativeness, and internal coordination) and grower involvement are entered at step one. Second step, showed moderator variables; decision making skill (Beta=0.532) was not significant ($R^2=0.532$, F change value=2.0); moderator accountancy and financial management skill (Beta=0.281) was significant 0.000 ($R^2=0.571$, F change value=27.525). In the third step, the interaction between decision making skill, accountancy and financial management skill with independent variables; product modularity, product innovativeness, internal coordination and grower involvement showed that there were a number of significant relationships with business performance (non-financial), $R^2=0.601$, R^2 change=0.31, F change=5.267, $p<0.01$. The significant interactions were between product innovativeness and accountancy financial management skill; internal coordination and decision making skill and product innovativeness and decision making skill. Thus, the hypotheses H3e, H3f and H4f were supported.

Hypothesis H8 stated that product modularity (PM) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between product modularity towards business performance (non-financial) relationship.

Hypothesis H9 stated that Internal Coordination (IC) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill. The results revealed that the R square value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between internal coordination towards business performance (non-financial) relationship.

Hypothesis H10 stated Product Innovativeness (PI) has positive significant relationship with Business Performance (BP Non-Financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show that product innovativeness has made significant, unique contributions to the variance of business performance (non-financial) after accountancy and financial management skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that product innovativeness has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H11 stated that Product Modularity (PM) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by decision making skill between product modularity towards business performance (non-financial) relationship.

Hypothesis H12 stated Internal Coordination (IC) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show that internal coordination has made significant, unique contributions to the variance of business performance (non-financial) after decision making skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that internal coordination has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H13 stated Product Innovativeness (PI) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show that product innovativeness has made significant, unique contributions to the variance of business performance (non-financial) after decision making skill had been taken into account. Additionally, managerial skill made a contribution towards the variance of business performance. It became known that product innovativeness has an impact on business performance. Therefore, managerial skill was found to be an important moderator in the link between integrator involvements towards business performance. It can therefore be said that there is strength in the hypothesis. Managerial skill has moderating impact on the relationships amongst integrator involvement and business performance.

Hypothesis H5b stated that Grower Involvement (GI) has positive significant relationship with Business Performance (non-financial) moderated by accountancy and financial management skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between grower involvements towards business performance (non-financial) relationship.

Hypothesis H6b stated that Grower Involvement (GI) has positive significant relationship with Business Performance (non-financial) moderated by decision making skill. The results revealed that the R^2 value and Sig. F Change values show there is no significant relationship. Thus, there is no moderating effect by accountancy and financial management skill between grower involvements towards business performance (non-financial) relationship.

Conclusions

The study has empirically tested that the managerial skills has moderating effects on the relationship between integrator and grower involvement towards business performance in the poultry industry. The scope of the research is the Malaysian local poultry industry. The content validity has been done by getting opinion from the experts namely Veterinary officers. Besides that the construct reliability is determined through value from Cronbach's Alpha. The data obtained was satisfactory for content validity and construct validity and also fit the model as proposed previously. A research framework and goals are advocated in relations to the above matter. Upon completion, the research is expected to be beneficial for relevant policy makers' yearning for some empirical evidence on the green supply chain practices in local poultry industry.

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