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Thoroughly examining the influence of managerial accounting on organizational performance with Heckman two-step technique

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Abstract

The implementation of managerial accounting practices in business has been broadly recognized as a determinant of organizational performance. Earlier studies have not taken sample selection bias problem into consideration when examining this relationship. The current work scrutinizes the relation from managerial accounting adoption to organizational performance by employing Heckman two-step technique. The data was collected from 302 publicly listed enetrprises in Vietnam's main Stock Exchanges. The findings suggest there exists sample selection bias in the causal link from the implementation of managerial accounting practices to organizational performance. The current research is helpful to managerial accounting scholars as well as business executives, in shedding light on the association between managerial accounting practices and organizational performance. The findings could help directors in their business decisions on adopting managerial accounting practices which should correspond to their organizational characteristics and business environment, where they can obtain the best organizational performance.

Keywords

Heckman two-step technique, Organizational performance, Managerial accounting, Organizational characteristics, Business environment

Introduction

The achievement of enterprises is considerablyconditional on managerial accounting. Managerial accounting is the implementation of suitable procedures in processing the business data of an enterprise to help directors establish a plan for sensible business goals (Adu-Gyamfi & Chipwere 2020). Managerial accounting practices are commonlyreferred to as avitalmonitoring tool that providesdirectors with useful information to make

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soundbusiness decisions and sustainactivemanaging mechanism over organizational resources. Enterprises need managerial accounting practices forappropriate and exact information to manageexpenses, measurement and improvement of efficiency(Johnson & Kaplan 1987). Implementingmanagerial accounting practices allows directors to enjoy numerous competitive advantages for their business.

Priorresearch projectsrecommended the implementation of managerial accounting practices in business adds more value to organizational performance; therefore, it can leads to enhancedorganizational performance(Saeidi et al. 2018; Phornlaphatrachakorn & Na-Kalasindhu 2020; Adu-Gyamfi & Chipwere 2020).They explored the impact of adopting managerial accounting practices on organizational performance using the whole research sample whichcomprises both the adopters and non-adopters of managerial accounting practices. The findingsof the aforementioned studies could incorrectly reflect the causal associationform the adoption of managerial accounting practices in business to organizational performance for enterprises adopting managerial accounting practices.

The currentresearch tries toscrutinize the impact of adopting managerial accounting practices in business on organizational performance only for enterprises adopting managerial accounting tools; while it also takes into consideration the influences ofenvironmental uncertainty and organizational characteristics on the probability of adopting managerial accounting practices within business. Additionally, organizational performance is estimatedby comparing the efficiencythe adopters or non-adopter of managerial accounting practices in business with the average effectiveness of industry during the last year.This study employsthe Heckman two-step technique to discover the causal connectionfrom the adoption of managerial accounting practices in business toorganizational performance,allowing for the influences of environmental uncertainty and organizational characteristics on the likelihood of adopting managerial accounting practices.

To the best of my knowledge, the current article is one of the first to applythe Heckman tow-step technique to analyze the influence of adoptingmanagerial accounting practices in business on organizational performance allowing for the influences of environmental uncertainty and organizational characteristics on the likelihood of adopting managerial accounting practices in business. To managerialacademics, the current project offers an insight into the acceptance of managerial accounting practices in businessand its connection with organizational performance by considering the interference of environmental uncertainty and organizational characteristics in the research model.

The results also offerexecutives with more deeply understanding the way whereorganizational performance is augmented by the acceptance of managerial accounting practices for business considering the intervention of environmental uncertainty and organizational characteristics.The current researchis organized as follows. A hypothetical framework will recommendthe research model in the followingpart. Next, the methodology will explain how to collect and analyze the research data. A succeedingpartwill demonstrate the research results. Finnally, some conclusions will bepresented.

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Hypothetical framework

Managerial accounting is a managerial technique which is aimed to provideessentialbusiness information to make sound decisions for an enterprise. Kaplan (1983)referred to managerial accounting as one of the managerialmethods,the role of which is to delivervital information for business toenhanceorganizational performance. In addition, Lucas (1997) suggested that traditional managerial accounting practices are no more deemed as a helpfultoolforrunning business in the recentdynamic environment. Along with these traditional managerial accounting spractices, organiztaions had betterlink their managerial techniquewith more advanced managerial tools; so that they can satisfy the requirements of stakeholders.

Anchored in the abovementionedperceptions, it refers to the acceptance of managerial accounting practicesin business as the extent to which anenterpriseselects and adopts managerial accounting practicesfor their business, which are composed of both the aforesaid traditional and advanced methodsto run business. Numerous studies have revealled the role of managerial accounting practices in improving organizational performance.

Mia and Clarke (1999) suggested a causalbondfrom the acceptance of managerial accounting practices in business toorganizational performance. They claimeda higher usage of managerial accounting information could allow to boostorganizational performance. Besides, Williams and Seaman (2002) provided statistical evidence on the role of managerial accounting practices in augmentingorganizational performance. Likewise,Ajibolade et al. (2010)discovered an influence ofacceptingmanagerial accounting practices for business onorganizationaleffectiveness. Recent studies also emphasized the influence of managerial accounting practices on organizational performance (Saeidi et al. 2018; Phornlaphatrachakorn & Na-Kalasindhu 2020; Adu-Gyamfi & Chipwere 2020). Consequently, the aforesaidfindings can arrive at the hypothesis for the managerial accounting context.H1: Organizational performance is likely determined by the adoption of managerial accounting practices in business

The probability of adoptingmanagerial accounting practices in businessby enterprises is determined by organizationalcharacteristics and environmental uncertainty. Environmental uncertainty is referred to as a vitalcontingent variable in running business (Duncan 1972). Moreover,Wierenga and Ophuis (1997) suggested higher environmental uncertainty may result in a higher application of managerial information systems for business. In addition,Masrek (2009) confirmed a positive correlationfrom environmental uncertainty to the application of managerial information systems. Similarly, statistical evidence on a positive connectionfrom environmental uncertainty to the design of managerial accounting practices in business was found out by Ibadin and Imoisili (2010) and Ajibolade at al. (2010). Moreover, Amara and Benelifa (2017) employed the contingency theory to decide external factors related to the implementation of managerial accounting practices. The findings suggest a link between external business environment and the acceptance of managerial accounting practices. Likewise, Shahzadi et al. (2018) also highlighted the influence of external environment on the application of managerial accounting practices. The aforementioned discussions can allow to arrive at the following supposition for the

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managerial accounting context. Environmental uncertainty likelydetermines the probability of adopting managerial accounting practices in business.

Nimtrakoon and Tayles (2010) referred to organizational characteristics as organizational industry type and organizational size, which play an important role in organizational success. In this research, it usesorganizational characteristics similar to the above definition, consisting of the two above mentioned dimensions, namely industry type to which the enterprise belongs, and organizational size. Besides, Wierenga and Ophuis (1997)assertedorganizational characteristics could enableexecutives' decisions to adopt managerial information practices. Grounded onMellahi and Eyuboglu (2001), organizational characteristics can be critical to the acceptance of the quality management systemfor business. WhereasWarwood and Roberts (2004) emphasizedthevital role of organizational characteristics in the acceptance of the quality management system for business; Al-Omiri and Drury (2007) determined the adoption ofmanagerial accounting practices will differ significantly depending onorganizational characteristics. Following them, Abdel-Kader and Luther (2008) confirmed the impact of organizational characteristics on the adoption of managerialtools in business; whileMasrek (2009) indicatedorganizational characteristics decide the usage of management information systems in anenterprise. Moreover, a study by Erserim (2012) suggested a causal tie from organizational characteristics tothe acceptance of managerial accounting practices in industrial enterprises.Furthermore, organizational characteristics significantly determines the implementation of managerial accounting practices in busines that can lead to organizational sustainability (Oyewo 2020). Hence, the following proposition can be suggested for the managerial accounting context. Organizational characteristics can influence the probability of adopting managerial accounting practices in business. On the evidence of the managerial accounting literature, it canpropose the probability of acceptingmanagerial accounting practices is conditional on organizationalcharacteristics and environmental uncertainty.

Methodology

Measurement of Variables

Adoption of managerial accounting pracrices (ADS)** is calculated using a five-point scale, which ranges from 1 (one) to 5 (five), modified from Cinquini et al. (2008). The measured items are traditional budgeting (ADS1), cost volume profit analysis (ADS2), variance analysis (ADS3), activity based costing (ADS4), total quality management (ADS5) and balanced scorecard (ADS6), employed for ADS, modified from earlier sresearch(Lucas 1997; Al-Omiri and Drury 2007).The probability of adopting managerial accounting pracrices in business (PRS)**takes 1 (one), if satisfaction with the acceptance of managerial accounting pracrices in business is obviouswithin an enterprise, and 0 (zero), otherwise. If an enterprise is satisfied with the successes in the dimensions of managerial accounting pracrices, PRS takes 1 (one), otherwise 0 (zero).

***Organizational Performance (ORE)**is computed with a five-point scale from 1(one) to 5 (five). A comparison with the industry average during the last year was made. Drawing on Huynh (2015), this research measures ORE with five items: 1.returns on asset (ORE1), 2.returns on equity (ORE2), (modified from Droge et al. 2003), 3.innovativeness (ORE3),

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4.quality in products or services (ORE4) and 5.customer satisfaction (ORE5), adjusted from previousresearch(Hudson et al. 2001; Kaplan & Norton 2007). ***Environmental Uncertainty (ENY)** is evaluated on six items: (1) technology-ENY1, (2) economy**-** ENY2, (3) resources and services used by the company- ENY3, (4) product market and demand- ENY4, (5) competition- ENY5 and (6) government policies- ENY6, using a five-point scale ranging from1 (one) to 5 (five), modified fromMiles et al. (1978) andMiller (1993). ***Organizational Characteristics (ORS)** is computed on threeitems.Organizational industry (ORS1) is computed with a three-point scale from 1 (one) to 3 (three), modified from Taha et al. (2011)as well asBrouthers et al. (2002). Organizational size (ORZ1) is calculated with three levels, based onNguyen (2009). Organizational interdependence (ORC3) is assessed with a three-point scale from 1 (one) to 3 (three), grounded onChenhall and Morris (1986)as well asIbadin and Imoisili (2010).

Data collection and analyses

The research population consisted of the publicly listed enetrprises in Vietnam's main Stock Exchanges. Besides available information from the business reports, the initial emails were sent to implorereplies from keyinformersinvolved in managerial accounting. Arelateddirector for each targeted entered was included. After the responses had been gathered from 450 enterprises, those without essentiallyadequate information were removed. The final sample comprises the 302 replies with effective information.

Affter the research data had been collected, reliability analysis was undertaken to examine the properties of constructs and the dimensions whichconstitute the constructs. Subsequently, the Heckman tow-step techniquewasperformed to scrutinize the causal bondfrom the adoption of managerial accounting practicesin business to organizational performance allowing for the influence of environmental uncertainty and organizational characteristics on the likelihood of adopting managerial accounting practices in business. Besides, the regression analysis was also undertaken to test the link between the adoption of managerial accounting practices in business and organizational performance, in comparison with the results from the Heckman tow-step technique.

Research results

To investigate the internal constancy of the scales, reliability analyses wereapplied. The lowest satisfactorythresholds of the Cronbach's αs and the item total correlations are 0.7 and 0.5 respectively; and the smallest α, if item is deleted, should be less than their own Cronbach's αs (Hair et al. 2012).

Table 1: Reliability analyses

Scale	Smallest item totalcorrelation	HighestCronbach's α if item is deleted	Cronbach's α	N of items
ADS	0.705	0.875	0.882	6
ORE	0.694	0.812	0.835	5
ENY	0.673	0.789	0.792	6
ORS	0.681	0.823	0.876	3

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Four of the five contructs need reliability analyses. The results are displayed in Table 1. All of the Cronbach's αs all exceed the 0.7 value (the lowest value is 0.792). All of the item total correlations surpass the 0.5 value (the lowest value is 0.673). In addition, all of the highest Cronbach's αs if if item is deleted' are smaller than their own Cronbach's αs (0.875 vs 0.882; 0.812 vs 0.835; 0.789 vs 0.792; 0.823 vs 0.876). These findings show all of the constructs are internally reliable. As a result, they should be retained in subsequent analyses.

Next, the composite scores of the factors for the Heckman two-step techniqueand regression analysis were calculated. Subsequently, the Heckman two-step techniquewasused to scrutinize the causal correlationfrom the acceptance of managerial accounting practices in businesstoorganizational performance allowing for the influences of environmental uncertainty and organizational characteristics on the likelihood of acceptingmanagerial accounting practices in business.

Table 2: The first step of Heckman technique

PRS	β	Std. Err.	z	P_{value}
ENY	0.281	0.051	4.70	0.000
ORS	0.427	0.050	3.88	0.000
C_0	-0.002	0.049	-0.042	0.96
Prob > chi^2 = 0.000, Pseudo R^2 = 0.313				

The Heckman technique of two steps is applied to take potential sample selection bias into consideration, consisting of two stages. The first stage is to develop a selection equation. A probit model for all the observations(adopters and non-adopters of managerial accounting practices in business) is applied to assess the influences of environmental uncertainty and organizational characteristics on the likelihood of adopting managerial accounting practices in business. The estimations of γin the probit model are employed to generatethe consistent coefficients of the inverse Mills ratio. The second stage,where the consistent coefficients of the inverse Mills ratio has been included into the research model, is to estimate the outcome equation with OLS, which only utilizes uncensored observations for analyses.

The results obtained from the Heckman two-step techniqueare exhibited in Tables 2 and 3. The outcomesin Table 2 were gained from the selection equation (the first stage). The probability of acceptingmanagerial accounting practices in business is determined by environmental uncertainty and organizational characteristics at the 1% significance level (Pvalue = 0.000) with the estimates of 0.281 and 0.427 respectively. Furthermore, the fit of model is statistically significant at the 1% level (Prob > chi^2 = 0.000). Pseudo R^2 is 0.313, implying that the likelihood of accepting managerial accounting practices in business is explained by environmental uncertainty and organizational characteristics in 31.3%. The abovementioned findingsreveal that organizational characteristics are stronger in affecting the probability of adopting managerial accounting practices than environmental uncertainty is. This stageallowed to computethe consistent coefficients of the inverse Mills ratio (INMILRA).After INMILRAhad been included into the outcome equation, the second stagewas carried out. The outcomesfrom the second step are presented in Table 3.

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Table 3: The second step of Heckman technique with INMILRA

ORE	β	Std. Err.	t	P_{value}
ADS	0.030	0.073	0.408	0.684
INMILRA	0.148	0.072	2.057	0.041
C_0	4.009	0.058	69.069	0.000
Prob > F = 0.013, R^2 = 0.714				

The findings indicate the outcome equation obtains the model fit at the 5% significance value. The estimation of INMILRA (0.148) is different than 0 at the 5% significance level, indicating there exists sample selection bias in the research data. It can suggest environmental uncertainty and organizational characteristics likely interferes in the effect of adopting managerial accounting practices in business on organizational performance. The intervention of environmental uncertainty and organizational characteristics leads to the statistical insignificance of the link between the adoption of managerial accounting practices in business and organizational performance.

To make anadditional comparison, the outcome equation was run using the OLS regression without INMILRA. The outcomesare exhibited in Table 4. There is difference between influential coefficients of accepting managerial accounting practices on organizational performance in Table 3, compared withTable 4, wherein the influential coefficient of adopting managerial accounting practices in business on organizational performance is bigger for the regression without INMILRA (0.122) than that with INMILRA (0.030). The evidence implies the effect of accepting managerial accounting practices on organizational performance, ifpotential sample selection bias is not considered (Table 4), is larger than if potential sample selection bias is included into the model (Table 3). In addition, the impact of accepting managerial accounting practices on organizational performance becomes insignificant when INMILRA is taken into account. Accordingly, sample selection bias could make the outcomes from the OLS regression become distorted. If potential sample selection bias is not considered, the hypothesis H1 is statistically supported. However, when potential sample selection bias is taken into consideration, the hypothesis H1 becomes statistically unsupported.Therefore,scholarsought to consider sample selection bias, when facing sample selection problem, so that the research results are more truly generated.

Table 4: OLS regression without INMILRA

ORE	β	Std. Err.	t	P_{value}
ADS	0.122	0.058	2.111	0.036
C_0	4.009	0.058	68.692	0.000
Prob > F = 0.036, R^2 = 0.502				

Conclusions

The casual associationfromthe adoption of managerial accounting practices toorganizational performance has been consideredbyearlier research. Nevertheless, to the best of my knowledge, no research hasdiscovered the casual relationallowing forsample selection bias. The current project utilizethe Heckman two-step technique to scrutinize the impact of

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accepting managerial accounting practices on organizational performance, where it considers the effects of environmental uncertainty and organizational characteristics on the likelihood of adopting managerial accounting practices in business.

The current study makes some contributions to the managerial accounting literature. The evidence revealsthere exists sample selection bias in the data. And also there is difference between the effects of adopting managerial accounting practicesin business on organizational performance ifpotential sample selection bias is not considered in comparison withif potential sample selection bias is considered. The impact of accepting managerial accounting practices on organizational performance becomes insignificant ifpotential sample selection bias is considered by including environmental uncertainty and organizational characteristics into the research model of managerial accounting practices and organizational performance.

The findings offer managerial accountingscholars with an insight into the significance of sample selection bias problem if they scrutinize the effectof adopting managerial accounting practices in business on organizationalperformance. The problem of sample selection bias can distort the research findingstobe inaccurate. In other words, when entered in the research model, environmental uncertainty and organizational characteristics make the link between the adoption of managerial accounting practices and organizational performance become insignificant.

The findings are also valuable toexecutives by leading them to well understand the casual connectionfromthe acceptance of managerial accounting practices to organizational performancewith the existence of sample selection bias in the research model when considering the intervention of environmental uncertainty and organizational characteristics into managerial accounting practices.Consequently, they could deliver better decisions on adopting managerial accounting practices which can leads to the best organizational performance.

References

[1] Abdel-Kader, M.G., & Luther, R.G. (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. British Accounting Review, 40(1), 2-27

[2] Adu-Gyamfi, J., & Chipwere, K.Y.W. (2020). The Impact of Management Accounting Practices on the Performance of Manufacturing Firms: An Empirical Evidence from Ghana. Research Journal of Finance and Accounting, 11(20), 100-113

[3] Ajibolade, S.O., Arowomole, S.S.A., & Ojikutu, R.K. (2010). Management accounting systems, perceived environmental uncertainty and companies' performance in Nigeria. International Journal of Academic Research, 2(1), 195-201

[4] Al-Omiri, M., & Drury, C. (2007). A Survey of factors influencing the choice of product costing systems in UK organizations. Management Accounting Research, 18(4), 399-424

[5] Amara, T., & Benelifa, S. (2017). The impact of external and internal factors on the management accounting practices. International Journal of Finance and Accounting, 6(2), 46-58

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.05.006

[6] Brouthers, K.D., Brouthers, L.E., & Werner, S. (2002). Industrial sector, perceived environmental uncertainty and entry mode strategy. Journal of Business Research, 55(6), 495-507

[7] Chenhall, R.H., & Morris, D. (1986). The Impact of Structure, Environment, and Interdependence on the Perceived Usefulness of Management Accounting Systems. The Accounting Review, 61(1), 16-35

[8] Cinquini, L., Collini, P., Marelli, A., & Tenucci, A. (2008). An exploration of the factors affecting the diffusion of Advanced Costing techniques: a comparative analysis of two surveys (1996-2005). 31st Annual Congress of the European Accounting Association, Campus of Erasmus University, Rotterdam, Nederland

[9] Droge, C., Claycomb, C., & Germain, R. (2003). Does knowledge mediate the effect of context on performance? Some initial evidence. Decision Sciences, 34(3), 541-568

[10] Duncan, R.B. (1972). Characteristics of Organizational Environments and Perceived Environmental Uncertainty. Administrative Science Quarterly, 17(3), 313-327

[11] Erserim, A. (2012). The impacts of organizational culture, firm's characteristics and external environment of firms on management accounting practices: an empirical research on industrial firms in Turkey. Procedia-Social and Behavioral Sciences, 62, 372-376

[12] Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2012). Multivariate Data Analysis. New Jersey: Prentice Hall, USA

[13] Hudson, M., Smart, A., & Bourne, M. (2001). Theory and practice in SME performance measurement systems. International Journal of Operations & Production Management, 21(8), 1096-1115

[14] Huynh, Q.L. (2015). The Mutual Relationship Between Corporate Governance and Management Accounting: Which Occurs First? American Journal of Applied Sciences, 12(9), 403-410

[15] Ibadin, P.O., & Imoisili, O. (2010). Organization Contexts and Management Accounting System Design: Empirical Evidence from Nigeria. International Journal of Current Research, 10(2010), 064-073

[16] Johnson, H.T., & Kaplan, R.S. (1987). Relevance Lost: The Rise and fall of Management Accounting. Harvard Business School Press: Boston, USA

[17] Kaplan, R.S. (1983). Measuring manufacturing performance: a new challenge for managerial accounting research. The Accounting Review, 58(4), 686-705

[18] Kaplan, R.S., & Norton, D.P. (2007). Using the balanced scorecard as a strategic management system. Harvard Business Review, 85(7/8), 150-161

[19] Lucas, M. (1997). Standard costing and its role in today manufacturing environment. Management Accounting: Magazine for Chartered Management Account, 75(4), 32-35

[20] Masrek, M.N. (2009). Determinants of Strategic Utilization of Information Systems: A Conceptual Framework. Journal of Software, 4(6), 591-598

[21] Mellahi, K., & Eyuboglu, F. (2001). Critical factors for successful total quality management implementation in Turkey: Evidence from the banking sector. Total Quality Management, 12(6), 745-756

[22] Mia, L., & Clarke, B. (1999). Market competition, management accounting systems and business unit performance. Management Accounting Research, 10(2), 137-158

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.05.006

[23] Miles, R.E., Snow, C.C., Meyer, A.D., & Coleman, H.J. (1978). Organizational Strategy, Structure, and Process. The Academy of Management Review, 3(3), 546-562

[24] Miller, K.D. (1993). Industry and country effects on managers' perceptions of environmental uncertainties. Journal of International Business Studies, 24(4), 693-714

[25] Nguyen, T.D. (2009). Decree No. 56/2009/ND-CP of 30 June 2009 on Assistance to the development of small- and medium-sized enterprises. Vietnamese Government, Vietnam

[26] Nimtrakoon, S., & Tayles, M. (2010). Contingency Factors of Management Accounting Practices in Thailand: A Selection Approach. Asian Journal of Accounting and Governance, 1(1), 51-78

[27] Oyewo, B.M. (2020). Outcomes of interaction between organizational characteristics and management accounting practice on corporate sustainability: The global management accounting principles (GMAP) approach. Journal of Sustainable Finance & Investment, 1-35

[28] Phornlaphatrachakorn, K., & Na-Kalasindhu, K. (2020). Strategic management accounting and firm performance: Evidence from finance businesses in Thailand. The Journal of Asian Finance, Economics, and Business, 7(8), 309-321

[29] Saeidi, S.P., Othman, M.S.H., Saeidi, P., & Saeidi, S.P. (2018). The moderating role of environmental management accounting between environmental innovation and firm financial performance. International Journal of Business Performance Management, 19(3), 326-348

[30] Shahzadi, S., Khan, R., Toor, M., & Haq, A.U. (2018). Impact of external and internal factors on management accounting practices: a study of Pakistan. Asian Journal of Accounting Research, 3(2), 1-14

[31] Taha, A., Etemadi, H., & Pifeh, A. (2011). Exploration of Factors Influencing on Choice the Activity-Based Costing System in Iranian Organizations. International Journal of Business Administration, 2(1), 61-70

[32] Warwood, S., & Roberts, P. (2004). A Survey of TQM Success Factors in the UK. Total Quality Management & Business Excellence, 15(8), 1109-1117

[33] Wierenga, B., & Ophuis, P.A.M.O. (1997). Marketing decision support systems: Adoption, use, and satisfaction. International Journal of Research in Marketing, 14(1997), 275-290

[34] Williams, J.J., & Seaman, A.E. (2002). Management accounting systems change and departmental performance: the influence of managerial information and task uncertainty. Management Accounting Research, 13(2002), 419-445