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Article

IT investment and corporate performance: Evidence from Malaysia

Cogent Business & Management

Provided in Cooperation with: Taylor & Francis Group

Suggested Citation: Alghorbany, Abdelkader; Che-Ahmad, Ayoib; Abdulmalik, Salau Olarinoye (2022) : IT investment and corporate performance: Evidence from Malaysia, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 9, Iss. 1, pp. 1-13, https://doi.org/10.1080/23311975.2022.2055906

This Version is available at: https://hdl.handle.net/10419/288665

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Cogent Business & Management

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/oabm20

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To cite this article: Abdelkader Alghorbany, Ayoib Che-Ahmad & Salau Olarinoye Abdulmalik (2022) IT investment and corporate performance: Evidence from Malaysia, Cogent Business & Management, 9:1, 2055906, DOI: <u>10.1080/23311975.2022.2055906</u>

To link to this article: https://doi.org/10.1080/23311975.2022.2055906

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Published online: 26 Mar 2022.

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Received: 25 September 2021 Accepted: 12 March 2022

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Reviewing editor: David McMillan, University of Stirling, Stirling United Kingdom

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

IT investment and corporate performance: Evidence from Malaysia

Abdelkader Alghorbany¹*, Ayoib Che-Ahmad² and Salau Olarinoye Abdulmalik³

Abstract: This paper aims to investigate the effect of Information Technology (IT) investment on firm performance in Malaysia. The data of this study were collected from 231 firms listed on Bursa Malaysia from 2010 to 2019. A dynamic model was built, and estimation was carried out by using the Generalized Method of Moments (GMM) that controls the endogeneity nature of the equity value multiple model. As predicted, IT investment incurred in the current study displayed a positive but weakly significant impact upon firm performance. This result provides valuable information for investors, stakeholders, and the public in general and encourages the companies to implement IT to its benefit in improving the firms' performance. Thus, the findings confirm the significance of future studies that could suggest other variables to further understand whether they support or oppose managerial opportunism to enhance the relationship. Consistent with this suggestion, the result of the present study could help researchers and practitioners identify the key factors to making the right IT investment decision.

Subjects: Accounting; Management of Technology & Innovation; Information Technology

Keywords: information technology; performance; equity value multiple

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PUBLIC INTEREST STATEMENT

This paper investigates the effect of IT investment on firm performance in the Malaysian market. The world interest of the Fourth Industrial Revolution (IR4.0) brought advanced technologies that left many corporations with no choice but to invest in technologies to create a new way of doing things. Therefore, technology has become more pertinent as it influences corporation performance. The substance of information technology is to save companies from collapse by providing highquality products and services deliveries and sustaining a competitive advantage. Inconsistent empirical results regarding the effect of IT investment on firm performance motivate conducting this research in Malaysia. The study utilizes secondary panel data manually collected from the annual report and Thomson Reuters Datastream. The current study findings may help regulators, policy-makers, and investors to understand the importance of technology to the economy.

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1. Introduction

As highlighted in the Resource-Based View (RBV) theory, firm performance is significantly associated with the resources at the organization's disposal (Barney, 1991). The resources at the disposal of business can sometimes fall into the classification of tangible assets, i.e. computer hardware and smart devices, and intangible assets, i.e., software, telecommunications, and the Internet (Grant, 1991; Xu et al., 2016). IT investment has attracted considerable attention among academic scholars due to its consequential effect on firms' performance (Benitez et al., 2018; Chen & Yana, 2018: Khristianto et al., 2021: Taouab & Issor, 2019: Park, Cho, & Main, Park et al., 2015). Proper investment decisions and implementation of IT projects could significantly help firms decrease their operational cost, time, and risk associated with their business operations (Australian Trade and Investment Commission, 2019; Niyonsenga & Mwaulambo, 2018; Obeng et al., 2018; Thames & Schaefer, 2016). According to Houge et al. (2019), IT investments can improve service delivery through enhanced production and timely service. Recently, the contribution of suitable IT investment to corporate performance has become an evident tool for an organization to gain a competitive advantage and survive in the dynamic business environment (Bernama, 2019; Kusuma et al., 2020). An example of that is the Thomas Cook Travel agency which collapsed in the UK due to the increasing competition and technological disruptions brought by new challengers and their failure to innovate accordingly (Loheswar, 2019). Likewise, the transportation industry experienced radical technological changes in Malaysia by introducing E-hailing taxi services (The Malaysian Reserve, 2017). The E-hailing taxi introduction disrupted the industry by providing more efficient services (i.e., cost-effective, timely, and comfortable), making it preferable to local taxi cabs.

Empirical studies investigate the impact of IT investment on corporate performance, most of which are from the developed countries with inconsistent results (Borja et al., 2018; Chong & Duong, 2017; Niyonsenga & Mwaulambo, 2018; Sirisomboonsuk et al., 2018). The inconsistent findings could result from using different measures of firm performance and the employment of other variables (Fadhilah & Subriadi, 2019). Previous IT and firms' performance studies proxied performance as ROA and Tobin-Q (Ho et al., 2011; Houqe et al., 2019; Zhang & Babovic, 2011. However, this measurement perspective focused on the short term, i.e., the current year's profitability (Xu et al., 2016). Besides, many investors are more concerned about the value of their investment in the shape of shares appreciation than the firm's total value (Shittu, 2015). Also, Xu et al. (2016) connect technology investments to market expectations of future earnings. Therefore, this study measures corporate performance using equity value multiples (EVM) as it is essential to predict the equity value reasonably. In addition, equity value multiples provide a more accurate valuation of equity than other performance measures, especially in valuing equity (Shittu et al., 2016; Schreiner, 2007).

Moreover, not many studies examine the effect of IT investment on corporate performance in emerging economies such as Malaysia. According to Hamdan et al. (2019), Kim et al. (2009), and Zehir et al. (2010), IT and corporate performance outcomes may differ from emerging or developing countries to developed countries due to indices like economic growth, regulation levels, labour costs, IT skills and availability, as well as heterogeneity, competition, organizational innovations, and cultural differences across countries. Therefore, the primary purpose of this study is to investigate the relationship between IT investments and corporate performance in Malaysia. Malaysia is of interest because the government of Malaysia has implemented financial incentives in the national budget to motivate the government and private enterprises to invest more in IT (The International Trade Administration (ITA), 2019). For instance, the Malaysian government has allocated two billion ringgits, and provisions were made under the loan guarantee scheme of businesses to motivate firms to adopt more technology (The International Trade Administration (ITA), 2019). While the government efforts on technology adoption have considerably contributed to the Malaysian economy through revenue generation, there are still other areas of concern. For instance, the Microsoft Malaysia News Centre reported that Malaysian firms would suffer possible losses estimated at 4 percent of total GDP due to the failure to invest in the right technology

(Paramasivam, 2018). Failed IT projects from wrong IT investment and implementation remain a discouraging factor towards IT adoption (Albert, 2016). Consequently, organizations have lost unexplainable amounts of dollars to failed IT projects.

Besides, many previous IT studies are mainly based on case studies or adopt small-sample datasets from a single sector with a time lag within a short period (e.g., Mohd-Noor, 2017; Obeng et al., 2018). Therefore, the generalizability of these studies is difficult to assess (Zehir et al., 2010). Thus, conducting a large-sample study from several sectors makes the outcome of the research generalizable to a broader range among corporations. Similarly, Luftman et al. (2017) suggest that the combination of numerous industries could provide a better perspective and understanding. Furthermore, using an extended period of years can improve the result accuracy as many more data points will be available when performing analysis since IT does not pay off immediately (Lee et al., 2016). Therefore, this study aims to fill the gap in the past research by investigating the effect of IT investment on firm performance proxied with EVM and considering a large sample from all industries in Malaysia. To the best of the researcher's knowledge, no study has used the combination of these variables, especially in Malaysia (Mohd-Noor, 2017; Rosman et al., 2018).

The remaining part of this study is structured as follows: Section 2 displays a literature review related to IT investment and firm performance, while section 3 shows the study's methodology. Section 4 presents the study's empirical results. Finally, section 5 discusses the investigation result and its implication also shows the research conclusion, limitations, and suggestions for further analysis.

2. Literature review

2.1. IT Investment and corporate performance

Information Technology (IT) is the force that drives the world towards an innovative technologybased economy (Eze et al., 2018; Khan et al., 2020; Rastogi et al., 2021); Taouab & Issor, 2019). As deduced from IT-related studies (Australian Trade and Investment Commission, 2019; Lee et al., 2016; Thakurta & Deb, 2018; Thames & Schaefer, 2016), right and adequate IT investment which aligns with the business objectives can assist an organization in improving its operational efficiency, reduce errors inherent in the manual system, reduce costs and give the organization competitive advantages to enhance corporate performance. Eze et al. (2018) rightly noted that technology is an integral part of business operations, and it plays a significant role in helping, changing, and improving firms' performance. Ige (1995) describes IT as the means to electronically process information that involves access, storage, processing, and data transfer. Thus, IT investment is considered as resources related to IT such as software, hardware, communications, and smartphones, which other studies have adopted. For instance, Chen and Yang (2018) and Kauffman et al. (2015) measures IT investment through the total expenses on IT (i.e. hardware and software). Most studies (e.g., Chen & Yang, 2018; Thakurta & Deb, 2018) on IT investment are consistent with the inspiring work of Lee et al. (2016), which examines IT investment and corporate performance. However, a comprehensive review of archival research on investment in IT and corporate performance reveals several inconsistencies of results (Aydiner et al., 2019; Chae et al., 2018; Chen & Yang, 2018; Ho et al., 2011; Kauffman et al., 2015; Ning et al., 2020; Thakurta & Deb, 2018).

For instance, Aydiner et al. (2019), Chae et al. (2018), and Kauffman et al. (2015) detailed that technology investment is negatively associated with the performance of the corporation. While Thakurta and Deb (2018), Stores (2015), and Lee et al. (2016) revealed a positive relationship between IT investment and firm performance. Thakurta and Deb (2018) investigated the impact of technology expenditure on companies' performance proxied with return on equity in India with a sample of 5837 observations from 2000–2015. Through the application of multivariate analysis in succession, the study found that IT investment plays a significant role

in companies' success. In which the study indicated a positive effect of IT investment on return on equity. Similarly, Chen and Yang's (2018) findings were consistent with this outlook, in that the study found IT investment to positively affect corporate performance by raising operational efficiency, reducing manual errors, reducing costs, and performing high competitive advantage to improve business performance.

Another study by Mithas and Rust (2016) tested the effect of investing in IT on the corporate performance proxied with Tobin's Q in the United States with a sample of 300 companies. The study reported a positive impact of IT investment on Tobin's Q. Similarly, in Asian context, Lee et al. (2016) investigated IT infrastructure expenses on firm performance in Korea with a sample of 360 firms from 2011 to 2014. Through applying panel regression analysis, the study found that IT expenses play a significant role in companies' success. Their study showed a positive effect between IT expenses and firm performance based on a resource-based view theory. Moreover, the Resource-Based View (RBV) theory explains the relationship between IT investment and corporate performance. The fundamental premise of the RBV is that "successful corporations possess internal resources and capabilities that are valuable, rare, and inimitable and lack substitutes" (Barney, 1991; Grant, 1991), and IT resources can provide differentiation in company strategies (Bharadwaj, 2000). If these resources are hard to replicate and are not perfectly mobile, the company can produce competitive advantages (Mata et al., 1995). Based on the above discussions, this study posits the following hypothesis:

H1: Information Technology investment positively and significantly affects corporate performance.

3. Methodology and data

3.1. Data and sample

The study population consisted of 790 listed companies (financial and non-financial) trading on the Bursa Malaysia within the period from 2010 to 2019. This study excluded companies that disclose their IT investment inadequately, resulting in 231 firms for which all information was collected. It is consistent with previous studies that stated some of the Malaysian companies have improper IT investment disclosure (Jaafar & Halim, 2013; Mohd-Noor, 2017). This is because companies that have proper disclosure in IT have contributed more to the failure rates of IT implementation (Goatham, 2009; Mohd-Noor, 2017). Data on EVM, IT investment, and other control variables were collected manually from the annual reports downloaded from the Bursa Malaysia website. The final sample description based on industry classification is provided in Table 1. The sample companies range from 558 Products & Services, Consumer Products 460, Technology 362, Properties 206,

Table 1. Industry classification				
Industry	Observation			
Construction	80			
Consumer Products	460			
Financial Services	194			
Health Care	30			
Industrial Products & Services	558			
Plantation	96			
Properties	206			
Transportation & Logistics	40			
Technology	362			
Trading-Services	179			
Total number of observations	2,205			

Financial Services 194, Trading-Services 179, Plantation 96, Construction 80, Transportation & Logistics 40, and Health Care sector 30. Based on this information, an unbalanced panel data set of 2,205 firm-year observations (231 firms) was obtained from the Malaysian public listed companies.

3.2. Model and variable measurement

Consistent with the past studies on IT investment (e.g., Aydiner et al., 2019; Chae et al., 2018; Lee et al., 2016), equation (1) was used to estimate the association between IT investment and firm performance.

$$FP_{it} = \alpha_{it} + \beta_1 FP_{t-1} + \beta_2 ITINVEST_{it} + \beta_3 BOSIZE_{it} + \beta_4 BIND_{it} + \beta_5 LEV_{it} + \beta_6 FSIZE_{it} + \beta_7 SGROWTH_{it} + \beta_8 MARKSH_{it} + \beta_9 FAGE_{it} + \beta_{10} INDUSTRYD_{it} + \mu_{RO}$$
(1)

Equation (1) was estimated using the two-step general method of moments (GMM) as proposed by Arellano and Bover (1995) and Blundell and Bond (1998) because it can control endogeneity issues between firm performance measures and corporate governance variables (Romano et al., 2019; Sheikh et al., 2018; Tanriverdi, 2005; Ullah et al., 2018; Wintoki et al., 2012). Thus, the GMM estimation technique is appropriate because the estimation technique creates the first difference variables and the lagged value of the dependent variable, which removes the unobserved effect (Arellano & Bover, 1995). Moreover, in the presence of heteroscedasticity and serial correlation in the error terms, the GMM estimation approach is more efficient than the two-stage least square (Arellano & Bover, 1995).

3.2.1. Measuring the firm performance

This study uses Equity Value Multiple (EVM) (i.e. price to book value and price to sales) to measure firm performance. EVM serves as an essential tool in predicting the value of equity reasonably. EVM was conducted through the trailing approach to locate value multiples of the study. Because the information on the trailing method is available in the company's annual reports. This study determined the EVM regression in two stages, i.e., calculating individual value multiple of the firms within the sample and applying the principal components analysis technique (PCA) to select one EVM that we used in the regression model.

Thus, this paper implements the PCA technique to minimize the four elements of equity value multiples (price to book value and price to sales) to arise one value for equity value multiple as the dependent variable. Based on the study of Ashton, Cooke, Tippett, and Wang (2012) aggregation theorem of equity and value of the market, this present study presents the following EVM regression hence:

 $EVM_{(t)} = \beta_{(0)} + \beta_{(1)}PBM_{(t)} + \beta_{(2)}PSM_{(t)} + \varepsilon_{(t)}$

 $PBM_{(t)}$ = price to book value

 $PSM_{(t)} = price to sales$

 β = coefficient of valuations that related to all elements of reducing valuation mode.

 $\varepsilon_{(t)}$ = error term.

3.2.2. Measuring IT investment

Consistent with Mohd-Noor (2017), The proxy of IT investment (ITINVEST) constructs as ITINVEST, which is equivalent to the logarithm for the amount of Net Cash for IT Investing Activities (logNCITIA).

3.2.3. Measuring control variables

This study controlled for inherent firm characteristics that could affect firm performance. The control variables, namely, the board size, board independence, leverage, firm size, sale growth, market share, firm age, industry dummy and their definitions are Table 2.

Table 2. Variables definition		
	Description	Source
Dependent Variable	·	
EVM	We use two measures for equity value multiple FP signifies firm performance, firm performance measures by the equity value multiple (i.e., book value and sales).	Nenkov (2019), Shittu et al. (2015)
Independent variables		
ITINVST	ITINVST is the logarithm of IT investment spending of firms	Mohd-Noor (2017); Kauffman et al. (2015)
Control variables		
BOSIZE	BOSIZE is the sum of directors at a company.	Kamardin (2014).
BIND	BIND signifies the total number of independent non-executive directors divided by the total number of directors.	Haider et al. (2015).
LEV	LEV signifies the total debt to total equity.	Kamardin (2014).
FSIZE	FSIZE signifies the logarithm of total assets.	Kamardin (2014).
SGROWTH	SGROWTH signifies the change in sales revenue.	Houqe et al. (2019)
MARKSH	MARKSH signifies square the market shares of all firms in a market and then summing the squares.	Houqe et al. (2019, January)
FAGE	FAGE is the total number of firm (i) age.	Hamdan et al. (2019).
INDUSTRYD _{it}	INDUSTRYD Industry dummies are based on financial and non- financial firms.	Hamdan et al. (2019).

4. Results

4.1. Descriptive statistics

Table 3 presents the descriptive statistics of all the variables used in this study. In Table 3, the mean and median of EVM were 3.81 and -0.32, respectively. For the test variables, the mean of ITINVEST was 6.49, which indicates the average amount that Malaysian companies have invested in IT from 2010 to 2019. Concerning the control variables, the board size (BOSIZE) and board independence (BOIND) mean values were 7.48 and 0.49, respectively. Leverage (LEV) had an average value of 0.43. The mean and median of sale growth (SALEGROW) were 4.48 and 4.58, respectively, and the log of firm size (FIRMSIZE) had a mean of 5.60. Lastly, the mean value of the market share (MARSH) was 0.57.

Table 4 shows the correlation matrix. It can be seen that the correlation values are within the acceptable threshold because all the variables were not above 0.7, which suggests that the variables are not highly correlated (Pallant, 2013).

4.2. Regression analysis

The study examines the effect of IT investment on firm performance measured by equity value multiples (price to book value and price to sales). The regression results are presented in Table 5, using equity value multiples to capture the firm performance changes (EVM). H1 predicted a positive relationship between IT investment and firms' performance. The result reveals a positive but weak

Table 3. Descriptive statistics								
	Obs	Mean	Median	Std. Dev.	Min	Max		
Dependent variable								
EVM	2,205	3.8	-0.32	1.08	-1.19	12.65		
Independent variable								
ITINVEST(log)	2,205	6.49	6.48	0.82	4.11	8.69		
ITINVEST(Rm)	2,205	13,900,000	3,055,000	30,700,000	13,000	494,000,000		
Control variable								
BOSIZE	2,205	7.48	7	2.06	4	17		
BOIND	2,205	0.49	0.47	1.29	.14	.90		
LEV	2,205	0.43	0.14	2.55	0	64.35		
SALEGROW	2,205	4.48	4.58	25.68	-93.17	99.61		
FIRMSIZE(log)	2,205	5.60	5.46	0.86	3.92	8.02		
FIRMSIZE(Rm)	2,205	3,765,836	292,000	11,700,000	8,298	106,000,000		
MARSH	2,205	0.57	0.49	0.42	0.001	3.14		

significant (b = 0.07, p < 0.10) relationship between IT investment and firm performance. The result indicates that firms that invested in IT experienced an increase in the EVM by 0.07. This result suggests that IT adoption by firms responds positively to firm performance. This finding is consistent with previous literature (Gaith et al., 2008; Kaur et al., 2012; Mohd-Noor & Apadore, 2017).

Some of the control variables in the EVM model were significant and while others were insignificant. For example, the coefficient of board size (BOSIZE) was insignificant but negative in the EVM model (b = -0.1, p >0.10). The implication is that large board size is unnecessary to establish high performance in the firm (Kweha et al., 2019). For board independence size (BOIND), the coefficient revealed significant and positive in the EVM model (b = 0.04, p <0.10). This result implies that a high level of board independence can improve firms' performance which is consistent with Houqe et al. (2019, January) The coefficient of LEV was highly significant and negative in the EVM model (b = -0.11, p <0.01) and suggest that the leverage factor affects negatively firm performance. The leverage result is in line with prior studies (Byoun et al., 2016; Gyapong et al., 2019).

For the firm size (FIRMSIZE), the coefficient was positive and significant in the EVM model (b = 0.18, p <0.01). It suggests that large firms can improve the performance of the firms' which is consistent with Kamaruzaman et al. (2019). On the other hand, the coefficient of sales growth (SALEGROW) was significantly negative (b = -0.01, p <0.05). This finding is consistent with prior research (Houqe et al., 2019). In contracts, the market share (MARSH) was positive and significant in the EVM model (b = 0.85, p <0.01), an indication that firms' with high market share experienced good performance consistent with Houqe et al. (2019) Finally, firm age (FIRMAGE) was negatively significant in the EVM model (b = -0.01, p <0.01), consistent with the argument in prior studies (Houqe et al., 2019).

5. Discussion and conclusion

Despite several motivations to study IT investment and firm performance, most of the results of past empirical studies on IT investment and firm performance documented a weak relationship (e.g., Borja et al., 2018; Chong & Duong, 2017; Niyonsenga & Mwaulambo, 2018; Sirisomboonsuk et al., 2018). Thus, it indicates that the existing IT investment framework has yet to incorporate some essential mechanisms that could explain the relationship. Overall, the findings from a longitudinal sample of 2,205 observations between 2010 and 2019 were decisive, with empirical results supporting past studies' arguments. Furthermore, the findings explain how IT investment influences equity value multiple as proxies for firms' performance using GMM estimation to eliminate the endogeneity problem. This finding is consistent with Houge et al. (2019) and Ho et al. (2011), who argued that

Table 4. Corr	elation matrix									
	Variables	1	2	ſ	4	Ŋ	9	7	8	6
1	EVM	1								
2	ITINVEST	0.05								
Э	BOSIZE	-0.03	-0.03	7						
4	BOIND	0.02	-0.08	0.60	1					
5	LEV	-0.02	0.01	0.04	0.03	1				
6	FIRMSIZE(log)	0.23	-0.01	0.44	0.36	0.07	1			
7	SALEGROW	0.01	0.02	0.01	0.01	0.01	0.08	1		
8	MARSH	-0.14	0.10	0.04	-0.05	0.02	-0.18	0.0	1	
6	FIRMAGE	-0.09	-0.05	0.16	0.22	0.05	0.21	-0.04	-0.04	1

Table 5. Regression results for equity value multiples					
Variable	EVM	VIF			
	coeff	t-value			
L.EVM	0.68	10.45***	-		
ITINVET(H1)	0.07	1.66*	1.02		
BOSIZE	-0.01	-0.64	1.79		
BOIND	0.04	0.93*	1.66		
LEV	-0.11	-4.07***	1.02		
FIRMSIZE	0.18	3.95***	1.38		
SALEGROW	-0.01	-1.81**	1.03		
MARSH	0.85	8.03***	1.09		
FIRMAGE	-0.01	-4.12***	1.10		
_cons	-9.34	-4.37***	-		
Industry Dummy	Yes	-	-		
Mean VIF	-	-	1.2		
No. of obs	1,974	-	-		
No. of groups	231	-	-		
Prob > chi2	0.00	-	-		
Hansen J	0.29	-	-		
AR(1)	0.01	-	-		
AR(2)	0.60	-	-		

Note: The coefficient values are presented with the t-statistics in parenthesis, * p < 0.05; *** p < 0.05; *** p < 0.01. EVMt-1: is a lagged dependent variable. The lagged value of the dependent variable is automatically added in STATA to account for any dynamic endogeneity present in the regression; ITINVEST is IT spending and is the independent variable.

the plausible reason for the weak or insignificant relationships in the past findings is agency issues. Hence, the agent may overinvest to accumulate excessive IT assets for their interests.

The study indicated that companies with a conflict of interest would have unsupportive decisions of its goals. Hence, managers (agents) might be "more value-oriented and attempt to establish personal pride and self-identification" (Ning et al., 2020). Therefore, the agency problem is associated with the success or the failure of IT investment (Chae et al., 2018; Houqe et al., 2019). Besides, the study indicates investment in information technology does not immediately affect corporate performance; it takes a specific time to pay off (Kauffman et al., 2015). Therefore, the theoretical and empirical analyses expounded in the current study shed more light on the IT investment failure and, thus, make contributions to accounting research. Although some literature on IT investment has explored the effect on firm performance, the area is yet to be fully explored. Overall, this study extends the IT investment and firm performance literature by using equity value measurement as proxied for firm performance through GMM estimation. The motivation of this investigation is by several alarming issues since PLCs kept on increasing their expenditure on IT investment while there is still a concern about the future failure of companies in IT adoption (Sirisomboonsuk et al., 2018; Nawi et al., 2013).

Consequently, the results of this study should be of valuable interest to all the stakeholders of business organizations, especially Malaysian companies. These stakeholders are particularly the policy-makers and government; existing and potential investors; the board of directors; the management of firms. Since IT investment failure is usually associated with poor firm performance, this causes serious concern for businesses at present times because acquiring and implementing IT usually involves large initial capital investments that might be from government incentives (taxpayers') that could be wasted. Thus, it is essential for companies, especially in Malaysia, to ensure that any IT investment made must be accurate. Moreover, the results obtained from this study provide valuable information not only for potential investors, stakeholders, and the public in general but also for the company's board of directors and the top management level. In addition, the results may also encourage companies to implement IT in order to its benefits in improving the firms' performance.

Finally, the study suffers certain limitations. For instance, relying only on a direct effect between IT investment and firm performance constitutes a limitation of the study where IT investment in Malaysia is still growing; as such, the findings may not be generalized to other developed countries that are more advanced in IT investment adoption, and a similar study could be implemented with adding interaction effect for better understand the behaviour of investment toward firm performance. In other words, the available evidence from the current study recommends and suggests that technology investment will be an added value that can improve corporate performance when moderated by other factors. Hence, the managerial opportunism that affects firm decisions can be mitigated by other factors (e.g., governance mechanisms') and consequently enhance and strengthen decision-making to generate high/better business value. Moreover, the current study sample was drawn from only the firms listed on the main board of Bursa Malaysia without considering the non-listed companies, especially the small and medium scale enterprises. It also recommends that future researchers should expand their sample to include non-listed small and medium-scale firms that equally constitute a major part of businesses in Malaysia. Hence, the present study only focused on the main board of Bursa Malaysia.

Funding

The authors received no direct funding for this research.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Citation information

Cite this article as: IT investment and corporate performance: Evidence from Malaysia, Abdelkader Alghorbany, Ayoib Che-Ahmad & Salau Olarinoye Abdulmalik, *Cogent Business & Management* (2022), 9: 2055906.

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