Digital Payment Adoption during the COVID-19 Pandemic in the Philippines

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In the Philippines, economic recovery in the aftermath of the COVID-19 pandemic necessitates a digital shift for businesses. Through this innovation, their operations can continue under the new normal. The adoption of digital payments is one of the common business recovery options supported by the government. In this study, the factors affecting the adoption of digital payments were examined. From July 2020–January 2021, an online survey was conducted on a sample of 433 respondents with at least supervisory level positions. On average, the firms operated their enterprises for 16.22 years and employed 1.8 workers with 57% being sole proprietors, 54% micro enterprises, and 30% having information technology (IT) infrastructure. A decline in their business performance during the pandemic was observed. Two-thirds of the firms across the country employed digital payment technology, and 55% of these firms started using the technology during the pandemic period. Logit analysis was conducted to analyze the determinants of digital payment adoption. Being relatively younger, operating under a partnership business structure relative to sole proprietors, employing more human resources, having IT facilities, and experiencing business growth before the pandemic were found to be predictive of the adoption of digital payments in the business operations of these firms. While younger firms are more receptive to this new payment technology, digital capacity development programs may further revitalize businesses and industries. Such mechanisms need to be put in place targeting vulnerable enterprises: firms under sole proprietorship, without infrastructure for IT, with relatively fewer employees being relatively smaller organizations, and in decline in terms of business growth even prior to the pandemic.

Keywords: COVID-19, digital payment, logit analysis, Philippines, technology adoption

INTRODUCTION

Social distancing, along with other mobility restrictions, limited face-to-face activities during the COVID-19 pandemic. Consequently, many consumers have opted for digital purchases. This buying behavior paved the way for the rise of digital commerce. Transactions for the purchase of goods and services have migrated online. Under this scheme, payments are now made through digital methods (Agur et al. 2020). Digital payments refer to various modes of payments that use digital instruments such as mobile payment, mobile wallet, and electronic payment (Alkhowaiter 2020). These forms of cashless payments have become more popular, as technology in the mobile era has been developed.

The Philippines has an open policy environment that is conducive to the conduct of digital trade (Quimba et al. 2021). In the e-finance landscape of the Philippines, the Digital Payments Transformation Roadmap of the
Bangko Sentral ng Pilipinas was formulated to further develop more innovative and responsive digital financial services to serve the increasing consumer preference for digital payments (BSP 2021). This development boosted the use of electronic financial services, which include online banking and digital money applications (Quimba and Calizo 2018). The pandemic is a great catalyst that triggered consumers’ increased utilization of digital payments (BSP 2021). With reduced physical interactions, emergency subsidies by the government such as the Social Amelioration Program were even made available via e-money through partnerships with private financial service providers (Cho et al. 2021). Moreover, the adoption of digital platforms by enterprises is expected to continue in the “new economy” post-COVID in anticipation of sustained increases in consumer reliance on digital payment (BSP 2020).

Several factors influence the micro, small, and medium enterprises’ (MSMEs) use of digital technologies (e.g. digital payments). These include the low frequency of visits to the physical stores, online payment systems offered by firms with the same products, high number of customers’ inquiries regarding the availability of digital payments, younger owners, younger firms, higher education on the part of owners, reliable internet connectivity, and existing availability of funding from the government (Trinugroho et al. 2021). In another study, Buer et al. (2021) revealed that large enterprises in terms of the number of employees have a higher level of digitalization and organizational information-technology competence relative to small and medium-sized enterprises. In the case of the Indonesian MSME sector, significant determinants of financial technology adoption include MSME profile such as educational background, business age, and size in terms of the asset (Purnamasari et al. 2020). Chen et al. (2014) additionally emphasized ownership structure as an important mechanism for enterprises to adopt innovation. Ownership type positively affects innovation which can be derived from research and development, partnership and alliances, and academe collaboration (Jiang et al. 2013). Sidek (2015) cited more reasons for electronic payment adoption by various stakeholders in Malaysia, where the positive influence of business growth and performance on strategies subsequently affects commitment to adopt e-payment. Furthermore, costs associated with e-payment investment are crucial to enterprises. It is important to comprehensively consider profit and loss, including cash flow, as these indicate debt repayment ability (Li 2015). There is also evidence in the case of Germany, where avoidance of debt has resulted in a slow uptake of cashless payments (Ng et al. 2021). Other equally important factors relative to the firm’s decision on digital payment adoption are the firm’s availability of IT infrastructures and relevant prior knowledge needed to navigate through the online platforms (Liao and Yang 2020).

Due to COVID-19, the increase in reliance on mobile and online channels as part of daily activities has reshaped the digital economy of the Philippines, especially in terms of social resilience (World Bank 2020). The traditional business model requiring physical and personal contact is no longer feasible and effective, whereas transactions have evolved in a more contactless society (Shinozaki and Rao 2021). The use of digital technologies will affect enterprises’ processes, products, and services. This system will also beckon companies to adapt their strategies and capabilities to the new norm (Saarikko et al. 2020). To embrace digital technologies, enterprises need capacity-building training in adapting to digital financial tools (Luo et al. 2021), including the need for various infrastructures and multiple actors that support their supply chains and access to digital technologies (Bai et al. 2021).

The introduction of the National Retail Payment System in the Philippines in 2015 helped catalyze digital payments because of its interoperability feature among the payment service providers (BSP 2020). Through this framework, the introduction of the National QR Code Standard or QR Ph has also been made possible. The potential of QR Ph, especially in the person-to-merchant (P2M) case, allows economic actors like MSMEs to participate in the digital payment system. While the uptake of the P2M QR Ph area is increasing, the BSP (2020) has identified a number of challenges that hamper the participation of the other economic actors such as the MSMEs, including: [1] the low level of trust toward this system and low confidence in the security of the digital transactions and [2] the unreliable internet connectivity in the Philippines shown by its rank as having the 4th slowest internet speed among 88 countries in the OpenSignal 2018 State of LTE. According to the BSP (2020), efforts to address some of these challenges are underway such as the following: [1] providing capacity-building programs for the MSMEs, especially on online selling and adoption of digital payments; [2] enhancing further the digital infrastructure; [3] conducting studies to determine how to reduce the costs of converting to digital payments like offering zero fees for microtransactions; [4] transitioning into the ISO 20022 International Messaging and Communication Standard for interoperability, financial integration, and interconnectivity at the domestic and international levels; and [5] promoting educational drives and measures to build confidence in digital payment.

Moving towards business recovery, the contemporary literature has emphasized that the digital shift is vital for businesses and firms to thrive under the new normal. However, only a modicum amount of attention has been given to the prior growth conditions of the firms, which may affect the adoption of digital payment. Thus, this
study assessed the adoption of digital payments by firms in the Philippines during the COVID-19 pandemic and identified the factors that influenced the decision-making on digital payment adoption as firms and businesses transition towards digital transformation.

MATERIALS AND METHODS

Data Collection
In the new normal, the online survey approach is becoming more popular and timely in terms of assessing the impact of the pandemic on technology adoption, including digital payments (Guo et al. 2020). Following this development, a survey was administered online via Google Form in this study. The survey questionnaire was composed of four sections: [1] business profile, [2] business performance before the COVID-19 pandemic, [3] business performance during the COVID-19 pandemic, and [4] digital payment adoption. The survey instrument was pre-tested in June 2020 before the actual conduct of the survey. The online survey was administered during the period July 2020–January 2021 with the help of the Department of Finance. Consent was sought before participants could proceed with the online survey.

Sampling Design
As defined by the rules implementing the Productivity Incentives Act of 1990 (Republic Act No. 6971), supervisors are employees with recommendatory power to effect managerial actions, i.e. not merely performing clerical and routine jobs but also using independent judgment (DOLE and DOF 1991). According to the PSA (2019), supervisors/foremen composed 7.5%, managers/executives comprised 4.9%, and 0.3% constituted working owners or unpaid workers. Thus, the target population of this research was primarily owners of the firm and employees with managerial or supervisory position.

Similar to the mobile payment study of Yan et al. (2021), G*Power version 3.1 (Faul et al. 2009) was employed in this research. The minimum sample size required was 292 samples to generate a 0.95 statistical power, 0.05 margin of error, and 0.10 effect size for 15 predictors using F tests for linear multiple regression: fixed model, R² increase specification. To ensure that the valid samples satisfied the minimum sample size, the total sample collected was increased (Yan et al. 2021) by almost half of the required sample size, consistent with VanVorhis and Morgan’s (2007) recommendation for larger samples to increase power and effect size. As used by de Luna et al. (2019) in a mobile payment survey, quota sampling was then employed as the sampling technique to collect with the required characteristics of being predominantly owners of the firms and employees with managerial or supervisory positions. A total of 433 participants across all regions in the Philippines participated in the survey, and the Logit model had 351 valid samples. This number was above the minimum sample size requirement. The sample was composed of the owners/board of directors/stockholders (56%), senior managers (13%), middle managers (15%), and supervisors (15%).

Data Variables
Table 1 shows the description of the variables used in this study. The dependent variable is the digital payment adoption in operations during the COVID-19 pandemic. This variable was designed as a binary variable representing adopter (1) and non-adopter (0). Moreover, the participants were also asked when they adopted digital payment in their operations. This question could be answered using the following options: before the COVID-19 pandemic and during the COVID-19 pandemic – particularly during February, March, April, May, and June 2020 onward. Their answers were also sought with regard to the number of years of operations and their business structure: sole proprietorship, partnership, stock corporation, non-stock corporation, or cooperative. Their total number of employees was also collected. In terms of capitalization, firms were classified as micro (PHP 3 million and below), small (PHP 3,000,001–15,000,000), medium (PHP 15,000,001–100,000,000), and large (more than PHP 100,000,000). Participants were also asked regarding the existence of IT infrastructure in their enterprises, which was treated as a binary value with 1 for existing IT and 0 otherwise. The business performance before and during the COVID-19 pandemic was also included in the questionnaire. Four performance indicators – namely, cash flow, debt, growth, and profit – were answerable with a Likert scale from 1–5, with 5 being the highest value (i.e. high cash flow, low debt, high growth, and high profit). This section was based on the Benchmark Resilience Tool developed by Resilient Organisations (2022). The tool was applied by Goncalves et al. (2019), Brown et al. (2017), Tibay et al. (2018), and Whitman et al. (2013). Likert scale was also used for the financial indicators in the studies of Chowdhury et al. (2018), Prayag et al. (2018), and Sobaih et al. (2021).

Data Analysis
The quantitative analysis involved determining the factors that influenced the adoption of digital payments of enterprises during the COVID-19 pandemic. Logit analysis was used to model the determinants of digital payment adoption. Technology adoption studies are popular in the literature, and the use of logit models is a common approach (Gan et al. 2006). Trinugroho et al.
(2021) modeled the adoption of digital technologies for micro and small businesses in Indonesia during the COVID-19 pandemic. Their study revealed that consumers’ online payment preference, younger firms, younger owners, internet access, and higher income were the key determinants of digital technology adoption. Similarly, Guo et al. (2020) explored the factors affecting the digitalization of SMEs during the COVID-19 pandemic taking into account the firm’s online engagement and business performance including growth, cash flow, revenue, and expense. Following Stock and Watson (2020), the logit model assumes a logistic cumulative distribution function and the estimation can be expressed as:

\[ P_i = E(Y = 1|X_i) = \frac{1}{1 + e^{-Z_i}} \]  

(1)

\[ Z_i = \beta_0 + \beta_1YearsBusiness + \beta_2Partnership + \beta_3StockCorp + \beta_4NonStockCorp + \beta_5Coop + \beta_6Employees + \beta_7Capital + \beta_8IT + \beta_9CashBefore + \beta_{10}DebtBefore + \beta_{11}GrowthBefore + \beta_{12}ProfitBefore + \beta_{13}CashDuring + \beta_{14}DebtDuring + \beta_{15}GrowthDuring + \beta_{16}ProfitDuring \]  

(2)

where \( P_i \) is the probability of digital payment adoption, \( E \) is the expected value of \( Y = 1 \) given \( X_i \) independent variables, \( Y \) is measured as a binary response: \( (Y = 1) \) adopter and \( (Y = 0) \) non-adopter, and the independent variables \( X_i \) refer

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital payment adoption in operations during the COVID-19 pandemic</td>
<td>1 = adopter; 0 = non-adopter</td>
</tr>
<tr>
<td>Years in business</td>
<td>Number of years</td>
</tr>
<tr>
<td>Ownership type (base = sole proprietorship)</td>
<td></td>
</tr>
<tr>
<td>Partnership</td>
<td>1 = partnership; 0 = otherwise</td>
</tr>
<tr>
<td>Stock corporation</td>
<td>1 = stock corporation; 0 = otherwise</td>
</tr>
<tr>
<td>Non-stock corporation</td>
<td>1 = non-stock corporation; 0 = otherwise</td>
</tr>
<tr>
<td>Cooperative</td>
<td>1 = cooperative; 0 = otherwise</td>
</tr>
<tr>
<td>Total number of employees</td>
<td>Number of employees</td>
</tr>
<tr>
<td>Capitalization</td>
<td>1 = PHP 3,000,000 and below; 2 = PHP 3,000,001–15,000,000; 3 = PHP 15,000,001–100,000,000; 4 = more than PHP 100,000,000</td>
</tr>
<tr>
<td>Information technology</td>
<td>1 = with existing IT; 0 = otherwise</td>
</tr>
</tbody>
</table>

Table 1. Description of variables.
to the business profile [including years in business (YearsBusiness), business structure such as partnership (Partnership), stock corporation (StockCorp), non-stock corporation (NonStockCorp) and cooperative (Coop) relative to a base (i.e. sole proprietorship), total number of employees (Employees), capitalization (Capital), and presence of IT infrastructure (IT)], business performance before the COVID-19 pandemic [including cash flow (CashBefore), debt (DebtBefore), growth (GrowthBefore), and profit (ProfitBefore)], and business performance during the COVID-19 pandemic [including cash flow (CashDuring), debt (DebtDuring), growth (GrowthDuring), and profit (ProfitDuring)]. The dataset was converted from Google Forms to Microsoft Excel format and analyzed using Stata 15.

The model used 351 valid samples with a p-value = 0.00, suggesting that the model is statistically significant. The model satisfied the assumptions of [1] no specification error, [2] good fit of the model, and [3] no degrading multicollinearity (UCLA 2022). Using the linktest command, results suggest that the model has meaningful predictors (i.e. the linear predicted value is significant; p-value = 0.00), and there was no specification error (i.e. the linear predicted value squared is not significant; p-value = 0.49). In addition, using the Box-Tidwell model, the non-linearity assumptions of the independent variables were satisfied (i.e. all the non-binary independent variables are not significant; minimum p-value = 0.14). The business structure and presence of IT variables are binary variables. In terms of goodness-of-fit, the model has a log-likelihood value of -193.37, a likelihood ratio of the chi-squared (16) value of 60.08, and a McFadden R-squared value of 0.13. Moreover, the goodness-of-fit test using Hosmer and Lemeshow indicated that the model was found to be fit (p-value = 0.45). The model had a 69.8% correct prediction rate. Lastly, the maximum variance inflation factor (VIF) was 3.00, and the average VIF was 1.85 – suggesting that there is no degrading multicollinearity affecting the model.

**RESULTS**

Descriptive Statistics

The summary statistics of the pooled data and disaggregated data of adopters and non-adopters are shown in Table 2. Sixty-seven percent (67%) of the enterprises adopted digital payment in their operations, whereas the remaining 33% did not. The adopters were also asked when they adopted digital payment in their operations and almost half were already using the technology before the COVID-19 pandemic (45%), some adopted the technology during the pandemic season particularly in February 2020 (4%), March 2020 (18%), April 2020 (10%), May 2020 (11%), and the rest on June 2020 onward (12%). Thus, more than half of the participants adopted the technology during the pandemic period. In terms of years of business operation, the respondent firms were operating for an average of 16.22 years. The adopters and non-adopters had an average of 17.85 and 12.95 years in business, respectively. Under the business structure, 7% of the enterprises involved partnership, 22% were stock corporations, 12% were non-stock corporations, 2% were cooperatives, and the remaining 57% were sole proprietors. The profile for adopters had higher proportions of partnerships (10%), stock corporations (26%), and non-stock corporations (12%). It had lower proportions of cooperatives (2%) and sole proprietorship (49%) relative to non-adopters (1, 14, 10, 3, and 73%, respectively). On average, the firms employed 1.85 workers, and adopters had a higher number of employees – specifically, 2.08 employees – compared to non-adopters with only 1.38 employees. In terms of capitalization, this measure was classified as an ordinal scale from 1–4, each representing the size of the firm – namely, micro (1), small (2), medium (3), and large (4). On average, most of the firms were micro to small (1.90). Adopters of digital payment technology were mostly medium to large (2.10), whereas non-adopters were mostly micro to small (1.49). Looking at the ordinal responses, in general, 54% of the survey participants were micro-enterprises, 16% small, 15% medium, and 15% large. Adopters had a higher proportion of small to large firms with 18% small, 17% medium, and 19% large compared to non-adopters with 14, 9, and 6% composition, respectively. In addition, 46% of the microenterprises were adopters, and 72% were non-adopters. On average, only 30% of the firms had IT infrastructure. Of this percentage, the proportion was higher for adopters at 38%, whereas 13% of non-adopters had IT infrastructure.

The business performance of the firms before the COVID-19 pandemic was generally better compared to the period of the COVID-19 context. The Likert scale ratings for the business performance ranged from 1–5, with 5 being the ideal level. Before the pandemic, the cash flow of the firms was rated 3.92 on average, debt level with a 3.74 rating, growth with a 4.13 rating, and profit with a 4.11 rating. Adopters of digital payment generally enjoyed higher ratings compared to non-adopters. Specifically, cash flow ratings were 3.95 for adopters versus 3.87 for non-adopters, and growth ratings were 4.26 for adopters versus 4.13 for non-adopters. Profit ratings were equal for both adopters and non-adopters. Debt ratings were 3.74 for adopters versus 3.85 for non-adopters, implying higher debt levels for adopters. This finding
suggests that adopters had better business performance compared to non-adopters but profit performance was equal for both participants.

During the COVID-19 pandemic, there was an observed decline in business performance on average. This case is true for both adopters and non-adopters of digital payment. In general, all the four business indicators were rated lower with a 3.03 rating for cash flow, 3.31 for debt, 3.20 for growth, and 3.15 for profit. Adopters had better business performance compared to non-adopters. Specifically, cash flow was rated 3.12 by adopters, whereas non-adopters had a 2.86 rating. Similarly, growth was rated higher with a 3.27 rating for adopters versus a 3.04 rating for non-adopters, and profit was rated 3.24 by adopters compared to a 2.96 rating by non-adopters. The debt level performance for adopters was a 3.25 rating versus a 3.43 rating for non-adopters, implying higher debt levels for adopters. Thus, adopters had better business performance compared to non-adopters.

Factors Affecting Digital Payment Adoption
Using Logit analysis to model the determinants of digital payment adoption in business operation, the study found that the model was significant at a 1% margin of error, as shown in Table 3. Five variables significantly influenced the decision of the firm to adopt digital payment. First, younger firms were more likely to adopt digital payment ($p < 0.10$). Second, firms with a partnership business structure were more likely to employ digital payment than firms owned by sole proprietors ($p < 0.05$). Third, the higher the number of employees, the more likely the firm would adopt digital payment ($p < 0.05$). Fourth, firms with existing IT facilities were more likely to adopt digital payment ($p < 0.05$). Fifth, firms that were more digitally mature were more likely to adopt digital payment ($p < 0.05$).
to use digital payment ($p < 0.10$). Fifth, firms experiencing growth before the COVID-19 pandemic were also more likely to adopt digital payment ($p < 0.10$).

Applying the marginal analysis using the delta method to derive the standard errors, the investigation showed the effect of the variables on the probability of adopting digital payment technology, as depicted in Table 4. For every one year of operation, the probability of adopting digital payment was reduced by 0.3% ($p < 0.10$). In terms of business structure, firms under partnership had a 29.6% higher chance of adopting the technology compared with sole proprietors ($p < 0.01$). For every additional worker employed by the business, there was a higher chance of adopting digital payment by 12.2% ($p < 0.01$). Businesses with IT infrastructure were 12.4% more likely to adopt the technology ($p < 0.10$). Lastly, firms experiencing growth before the COVID-19 pandemic were more likely to adopt digital payment in their business operations, and the impact of an additional one Likert rating improvement on digital payment adoption was 6.6% ($p < 0.10$).

## DISCUSSION

The shift to digital business has become a critical pivot strategy for enterprises to resume business operations amid the COVID-19 pandemic. Results of the study showed that two-thirds of businesses and firms across the country have adopted digital payment during the pandemic. This shift into digitization can be associated with the huge surge in mobile payment usage. More consumers are opting for cashless payment systems like G-Cash, Coins.Ph, and PayMaya (Pantola 2008). People prefer to use these kinds of payment modes primarily because of convenience, ease of use, and 24/7 service availability (Ching 2017). With G-Cash as the largest and leading mobile money operator, it has been reported that account registrations increased by 150% during the peak of the pandemic (Endo 2020).

Several significant factors that contributed to the ability of the firms to adopt digital payments, as a key pivot strategy during the pandemic period, were identified. As transactions evolved in a contactless society, younger firms are more likely to adopt digital payments. Relatively young firms are in better positions when
it comes to innovation adoption since they are more flexible, receptive to changes, and aim for seamless and sustainable business operations. This claim is reinforced by the findings of Trinugroho et al. (2021) that relatively new enterprises were more likely to adopt digital-based businesses, considering their flexibility and adaptability to changes in environments as they strategically build internal capability to sustain performance. Innovations such as digital payment adoption may be considered by older firms as a disruptive force, which will affect their existing processes and activities, thus probably limiting their interest to adopt. This assertion builds on the findings of Subrahmanya (2011) that older firms are highly specialized and established, which hinders them from availing the benefits of technological innovations.

Businesses with a partnership structure were also found to be more likely to be receptive to digital payment use. In a partnership structure, shared risks and liabilities promote valuable feedback and quality decision-making from partners for the attainment of mutual goals and benefits. In support of this finding, Lee (2004) revealed that firms with limited liabilities were more than twice likely to innovate. Vulnerable firms such as those with a sole proprietorship structure may find difficulties and challenges in adopting digital innovations given their resources levels. Similar findings were shown by Chen et al. (2014) and Jiang et al. (2013). According to them, the ownership structures are important and relevant mechanisms for firms to utilize and direct key resources for innovation that can be derived from building partnerships, alliances, and collaboration. This arrangement is evident in another study by Cendana (2020), which found that partnership with banks was an important factor for higher education institutions when considering new payment technology to augment needed facilities, software, and infrastructure.

In terms of firm size, firms with a higher number of employees or relatively large ones were more likely to shift to digital payment than smaller ones. Larger firms in terms of the number of employees may indicate human resources capabilities—indicating adequate talents, skills, expertise, and exposure that are crucial for companies in implementing innovative strategies. Smaller firms may lag behind since their resources are more allocated for sustaining operations instead of innovation investments.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\frac{dy}{dx}$</th>
<th>Std. err.</th>
<th>$z$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business profile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in business</td>
<td>$-0.003$</td>
<td>$0.002$</td>
<td>$-1.750$</td>
<td>$0.080$</td>
</tr>
<tr>
<td>Business structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnership</td>
<td>$0.296$</td>
<td>$0.057$</td>
<td>$5.180$</td>
<td>$0.000$***</td>
</tr>
<tr>
<td>Stock corporation</td>
<td>$-0.033$</td>
<td>$0.083$</td>
<td>$-0.400$</td>
<td>$0.687$</td>
</tr>
<tr>
<td>Non-stock corporation</td>
<td>$0.013$</td>
<td>$0.101$</td>
<td>$0.120$</td>
<td>$0.901$</td>
</tr>
<tr>
<td>Cooperative</td>
<td>$-0.119$</td>
<td>$0.165$</td>
<td>$-0.720$</td>
<td>$0.472$</td>
</tr>
<tr>
<td>Total number of employees</td>
<td>$0.122$</td>
<td>$0.043$</td>
<td>$2.830$</td>
<td>$0.005$***</td>
</tr>
<tr>
<td>Capitalization</td>
<td>$0.021$</td>
<td>$0.035$</td>
<td>$0.620$</td>
<td>$0.536$</td>
</tr>
<tr>
<td>Information technology</td>
<td>$0.124$</td>
<td>$0.073$</td>
<td>$1.710$</td>
<td>$0.088$ *</td>
</tr>
<tr>
<td>Business performance before the COVID-19 pandemic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow</td>
<td>$-0.021$</td>
<td>$0.031$</td>
<td>$-0.690$</td>
<td>$0.491$</td>
</tr>
<tr>
<td>Debt</td>
<td>$0.019$</td>
<td>$0.039$</td>
<td>$0.500$</td>
<td>$0.619$</td>
</tr>
<tr>
<td>Growth</td>
<td>$0.066$</td>
<td>$0.038$</td>
<td>$1.720$</td>
<td>$0.085$ *</td>
</tr>
<tr>
<td>Profit</td>
<td>$-0.072$</td>
<td>$0.046$</td>
<td>$-1.550$</td>
<td>$0.120$</td>
</tr>
<tr>
<td>Business performance during the COVID-19 pandemic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow</td>
<td>$0.023$</td>
<td>$0.027$</td>
<td>$0.860$</td>
<td>$0.389$</td>
</tr>
<tr>
<td>Debt</td>
<td>$-0.047$</td>
<td>$0.031$</td>
<td>$-1.520$</td>
<td>$0.129$</td>
</tr>
<tr>
<td>Growth</td>
<td>$-0.001$</td>
<td>$0.027$</td>
<td>$-0.020$</td>
<td>$0.982$</td>
</tr>
<tr>
<td>Profit</td>
<td>$0.033$</td>
<td>$0.028$</td>
<td>$1.170$</td>
<td>$0.242$</td>
</tr>
</tbody>
</table>

Std. err. – standard error; N = 351
which they may find as an additional cost. Like what was found by Serafica (2016), larger firms were in a better position to manage innovation processes since they are more specialized, have advanced resources to upskill employees, and have a better understanding of the importance of technology.

The likelihood of an enterprise adopting digital payments is significantly influenced by its prior investments in ICT-based facilities. IT infrastructure serves as an enabler for enterprises and provides a mechanism for effective and efficient implementation of technology-based strategies such as digital payment adoption. Consistent with the findings of Kabanda and Brown (2015), information and communications technology (ICT) based infrastructure is a critical success factor, particularly in e-commerce. ICT resources including business networks with ICT foreign companies contribute to a conducive business environment for the conduct of e-commerce. ICTs are drivers of economic growth, and rural economies – in particular – require intervention to foster sustainability and development, especially among MSMEs (Galloway and Mochrie 2005).

Moreover, enterprises which were experiencing business growth were more likely to adopt digital payments as compared to a growth-stagnant enterprise. Enterprises that experienced growth prior to the pandemic were more likely to be innovative and risk-takers. These attributes may influence and shape their abilities to take advantage of the available opportunities such as digital innovations in order to create, communicate, and capture value for their customers. As shown also by Nambisan et al. (2018), fast-growing firms were ready to capture their lost market in another venue such as digital platforms, thereby facilitating the adoption of digital payments.

CONCLUSION

This study assessed the factors affecting the adoption of digital payments of firms in the Philippines as a pivot strategy in business operations. Through an online survey, a sample of 433 participants holding at least a supervisory position were surveyed from July 2020–January 2021. Using Logit analysis, results revealed that younger firms, those with partnership business structure, firms with more employees, those with existing ICT-based facilities, and firms experiencing business growth before the pandemic were more likely to adopt digital payments.

Digital transformation is a key strategy of firms for value creation and value capture in the new normal which also facilitated the adoption of digital payment. The shift from a traditional business model to a digital one to thrive under pandemic conditions indicates the necessity for firms to become more flexible, adaptive, and receptive to the changing environment. To achieve and sustain recovery, assistance and support must be prioritized for firms that are relatively younger as they are more likely to adopt digital payments. Continuing digital capacity development programs must also be explored to cater to vulnerable organizations – especially those with sole proprietors, smaller firms with fewer employees, those without ICT infrastructure, and those experiencing declining business growth to revitalize businesses and industries. Moreover, there is a need for digital innovation policies that enable the establishment of digital infrastructures among businesses and firms. One of the areas of these policies is the use and adoption of digital payment platforms and the acceleration of digital payment adoption, as these will be beneficial to customers, merchants, and service providers. Another strategy is the provision of an environment that encourages various providers of digital payment services and financial technology developers to be more responsive to the needs of the businesses, especially the MSMEs. Competence in the processes and usability of various digital payment platforms must also be developed, as these have become the new modalities of financial transactions.

To complement these initiatives, efforts toward strengthening data security and protection along with safe cyberspace for all users of online platforms such as digital payments must be a priority. A concerted collaboration among key stakeholders toward a more financially inclusive environment is needed to propel enterprises and consumers to increase the utilization of digital payments during the COVID-19 pandemic period and the post-pandemic. Lastly, continuing research studies must be explored such as an evidenced-based assessment of the limiting factors and attributes, revealed in this study, that hinder and constrain the vulnerable enterprises to adopt digital payments. Such future research direction will contribute to the body of knowledge on understanding the MSME landscape while harnessing businesses and enterprises to be digitally ready, especially in the next normal.

ACKNOWLEDGMENT

The authors would like to thank the University of the Philippines Mindanao’s Office of Research for the funding support; Resilient Organisations for providing us with the Benchmark Resilience Tool, which served as one of the bases of our data collection tool; the Department of Finance for sending the questionnaire to their network; Margareth Mary Angeli Serrano and Nathalia Alawan for assisting in data collection; and the enterprises that participated in the survey.
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