Information Technologies and FinTech Adoption: Investigating the Moderating Role of Digital Transformation

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Abstract

Purpose. This study explores the impact of information technologies on FinTech adoption and tries to explore the moderating effect of digital transformation on the strength of this relationship. The framework incorporates antecedent constructs of IT infrastructure capability, IT security and data privacy and the dependent construct of FinTech adoption with the contingent boundary condition of digital transformation. Design/methodology/approach. The research is quantitative with a cross-sectional design that is assisted by comprehensive literature review and expert consultation. The data were gathered using a structured questionnaire to 384 banking professionals, FinTech executives and IT managers from commercial banks, digital banks and FinTech companies. To assess the measurement and structural model and to test the direct and moderating relationships between the constructs, descriptive statistics, confirmatory factor analysis, and structural equation modeling (SEM) using SmartPLS were used. Findings. The findings have shown that information technologies have a positive and statistically significant effect on FinTech adoption, with the capability of IT infrastructure being the most influential direct antecedent, followed by IT integration capability and IT security and data privacy. The positive moderation effect of digital transformation is more evident between information technologies and FinTech adoption as digital transformation intensity increases, with the focal relationships becoming more significant. The structural model shows high predictive power with an R square of 68.4 percent on the level of FinTech adoption. Practical implications. The results help banking and FinTech companies understand how to use their IT investments to support their FinTech adoption goals. IT infrastructure, security architecture and integration capability should be considered as a package of decisions and the organization should strive to build the right maturity to support the expansion of returns from IT investments in order to drive digital organizational transformation. Originality/value. The study adds to the existing literature of IT related to the adoption of FinTech, adding the dimensions of IT capability as a 'contingent boundary condition' within the context of digital transformation. It contributes to the literature with two findings: digital transformation amplifies the adoption return of information technologies and banking executives, FinTech founders, and regulators can draw insights from it to drive FinTech diffusion faster.

Keywords

Information Technology; FinTech Adoption; Digital Transformation; IT Infrastructure Capability; IT Security; IT Integration; PLS-SEM

1. Introduction

In the last ten years, financial technology, or FinTech, has reshaped the structure of financial services around the world by spreading out digital payment facilities, peer-to-peer lending services, robo-advisory firms, blockchain-based settlement systems, and open banking interfaces [1,2]. The reignited competition has resulted from the diffusion of FinTech solutions, which has seen a dramatic shift in the competitive landscape where traditional banking institutions, technology native FinTech firms and platform operators are all vying on a similar value proposition [3,4]. In this changing context, information technologies have become the backbone enablers of FinTech adoption with the architectural foundations, security and integration that FinTech services rely on and achieve scaling. [5,6] While it is acknowledged that information technologies are important for FinTech adoption, the exact mechanisms by which the IT capabilities translate into the outcomes for adoption remains a topic of debate in literature [7,8]. There are some researchers who believe that IT capability is a direct driver of the adoption of FinTech, reducing the transaction costs, improving the reliability of the service offered, and building user confidence [9,10]. Others argue that the IT investments' adoption returns are contingent on the general context of the organization in which IT capabilities are implemented, pointing to the action of contingent boundary mechanisms [11,12]. The un-resolved theoretical tension is of particular import since the banking institutions and FinTech companies are confronted with different regulatory, infrastructural and competitive environments that can condition the conversion of IT capability into adoption.

The phenomenon of digital transformation has become a prominent organizational dimension that can positively shape the relationship between the IT and the FinTech sector. Digital transformation represents the reorganization of business models, business processes, customer interactions and decision processes based on digital technologies [13,14]. According to recent studies, companies with more advanced digital transformation orientations better exploit IT capabilities towards the realization of innovation results, such as the adoption of emerging technologies [15,16]. The evidence indicates that digital transformation is a conditional boundary condition which enhances the conversion of IT investments to FinTech adoption.

While this integrative framing is conceptually appealing, there are a number of areas that need to be addressed in future research. First, the previous studies tend to focus on either IT capability and/or IT adoption in the context of FinTech, providing little insights regarding the configurational architecture through which the relationship works [17,18]. Second, although digital transformation has been studied as a predictor of organizational performance, few studies have given further consideration to the moderating effect of digital transformation in the relationship between IT and FinTech adoption [19]. Third, empirical evidence in different banking contexts with different regulatory architectures and digital maturity profiles is still not consistent, creating a need for context-sensitive evidence [20,21].

The present study aims to clarify this, which is the reason of the following research questions. What's the impact of information technologies on the adoption of FinTech? Second, does this digital transformation relationship between information technologies and the adoption of FinTech moderate? Third, what are the unique impacts of the various dimensions of information technologies – IT infrastructure capability, IT security and data privacy, and IT integration capability – on differential effects on FinTech adoption?

The study has three contributions: On a theoretical level, it contributes to the development of a configuration of the RBV, DC, and T-O-E theories to explain IT capability as an antecedent of the adoption return, which is moderated by maturity in digital transformation. The study offers empirical evidence with 384 banking and FinTech professionals and shows how the effects of the dimensions of IT capability vary between the adoption of FinTechs and the role of digital transformation. From a managerial perspective, the results provide guidance to banking management, FinTech entrepreneurs and regulators to harmonise investments in IT with the aims of FinTech adoption in the range of conditions of digital transformation.

The rest of the manuscript is as follows. In Section 2 the related literature is reviewed and the hypotheses developed. The methodology of the study is described in Section 3. The measurement and the structural model assessments are in Section 4 and 5 respectively. The results of the experiments are presented in section 6. The results are discussed in Section 7 and the implications of the theory and practice are outlined. The manuscript ends with restrictions and further research.

2. Theory and Hypotheses Development

2.1 FinTech and FinTech Adoption

FinTech refers to the use of digital technologies in providing financial services, including digital payments, lending, wealth management, insurance, and capital market services [22,23]. The literature has evolved from descriptive studies of FinTech innovations to systematic studies of the adoption of FinTech at the individual, organizational, and institutional levels [24,25]. From an organizational perspective, FinTech adoption refers to the incorporation of FinTech enabled services and platforms into the institutional architecture and strategy of incumbent and emergent financial institutions [26]. Recent studies have explored the adoption of FinTech from various perspectives, such as the Technology Acceptance Model, the Unified Theory of Acceptance and Use of Technology, the Resource Based View and the Technology-Organization-Environment paradigm [27,28].

2.2 Information Technologies and FinTech Adoption

Information technologies are the backbone enabling architecture that underpins FinTech adoption, delivering infrastructural, computational, security and integration capabilities on which FinTech services are delivered and scaled [29,30]. In recent years, IT capabilities have been broken down into various separate dimensions such as IT infrastructure capability, IT security and data privacy capability, IT integration capability, and IT human capability [31,32]. The present study focuses on three dimensions of IT that are of special significance for the FinTech adoption: IT infrastructure capability, IT security and data privacy, and IT integration capability.

2.3 IT Infrastructure Capability

IT infrastructure capability refers to the organization's capability to deploy, manage, and orchestrate the hardware, software and networking architectures that are used to support digital services [33,34]. Within the FinTech industry, IT infrastructure capability is important as FinTech services are underpinned by low-latency transactional processing, high availability computing and elastic cloud architecture [35,36]. Recent studies show that organisations with a more advanced IT infrastructure capability are more ready to embed FinTech services into their operational architecture, which leads to increased adoption of FinTech services [37,38]. The Resource-Based View (RBV) is used to theorize IT infrastructure capability as a strategic resource that can be leveraged by FinTech adoption.

H1: IT infrastructure capability positively influences FinTech adoption.

2.4 IT Security and Data Privacy

The term IT security and data privacy refer to the ability of the organization to safeguard the information assets, transactional data, and customer identifiers against unauthorized access, manipulation, and disclosure [39,40]. Security and privacy concerns are integral to FinTech contexts as sensitive financial data is processed, there are strict regulatory regulations, and there is a high level of cyber threat risk [41,42]. The literature of the last few years shows that levels of perceived security and privacy have a strong impact on both the individual and organizational decision to adopt FinTech [43,44]. Organisations with well established IT security and data privacy frameworks are thus more likely to be able to assist with FinTech adoption, as an increase in IT security maturity lowers the risk of regulatory, reputational and operational risks that may arise during FinTech integration [45].

H2: IT security and data privacy positively influence FinTech adoption.

2.5 IT Integration Capability

IT integration capability refers to the ability of the organisation to connect diverse information systems, data architectures and digital platforms within functional and inter-organizational context [46,47]. Integration capability is a key factor to consider in a FinTech environment as FinTech services rely on seamless interoperation with core banking systems, payment networks, third-party APIs, regulatory reporting infrastructures, and customer-facing channels [48,49]. Recent studies show that companies with a well-developed IT integration capability on-board FinTech at a quicker pace, have less friction and see higher velocity of adoption [50,51]. Theoretically, based on the Dynamic Capabilities Theory, the IT integration capability is theorized as a higher order capability that is achieved through the configurational alignment of digital resources when adopted.

H3: IT integration capability positively influences FinTech adoption.

2.6 Digital Transformation as a Moderator

Digital transformation denotes the organizational reconfiguration of business models, operational routines, In addition to customer interfaces, decision architectures are also enabled using strategic applications of digital technologies [13,52]. The modern literature confirms that digital transformation is not just a technical challenge, but a strategic one that involves aligning leadership, workforce capabilities, data systems and processes [53,54]. Digital transformation is now frequently conceived as a 'conditional' boundary condition that influences the extent to which organisations use technological resources in achieving their innovation results [55,56].

In the current context, digital transformation is conceptualized as a positive moderator of the link between the dimensions of IT capability and the adoption of FinTech. If digital transformation maturity is low, the return of adoption from investing in the IT might be limited since there is a lack of procedure, culture, and strategy to leverage the capabilities of the investment [57,58]. In a high digital transformation maturity, IT investments, on the other hand, are embedded in a larger configurational architecture that enhances the transformation into FinTech adoption [59,60]. The approach to contingency theory-based reasoning is consistent with the configurational nature of capability returns posited by Dynamic Capabilities Theory and the organizational readiness conditions in the Technology-Organization-Environment paradigm.

H4: Digital transformation positively moderates the relationship between IT infrastructure capability and FinTech adoption, with the relationship strengthening as digital transformation intensifies.

H5: Digital transformation positively moderates the relationship between IT security and data privacy and FinTech adoption, with the relationship strengthening as digital transformation intensifies.

H6: Digital transformation positively moderates the relationship between IT integration capability and FinTech adoption, with the relationship strengthening as digital transformation intensifies.

2.7 Theoretical Integration

The theoretical perspective used in the present study combines three lines of thought that are complementary. According to the Resource-Based View, strategic IT capability dimensions are strategic resources that can be configured into a strategic bundle to create competitive advantage [61, 62]. A key element of Dynamic Capabilities Theory is the need for higher-order capabilities that can be used to sense opportunities, seize them by reconfiguring resources, and make changes to organizational architectures as a result of environmental changes [63,64]. The joint consideration of technological, organization, and environmental conditions and their influence on technology adoption is captured in the Technology-Organization-Environment paradigm [65,66]. These traditions are merged in such a way that the framework herewith makes IT capability a configurational antecedent, FinTech adoption a focal outcome, and digital transformation a boundary condition, contingent on the conversion of IT capability into FinTech adoption.

3. Research Methodology

3.1 Research Design and Setting

The hypothesized relationships were tested with a quantitative cross sectional survey design and partial least squares structural equation modelling (PLS-SEM) in the software package SmartPLS. This method is suitable for the current study, which involves a combination of reflective constructs, assessment of direct and moderating relationships, and the provision of predictive insights into a managerially relevant phenomenon [67,68]. The empirical setting consists of banking institutions, digital banks, and FinTech enterprises in various markets with a focus on companies involved in FinTechs development, integration, or distribution.

3.2 Sample and Data Collection

The target respondents included banking professionals, executives of FinTech businesses, IT managers, and digital transformation leaders who had relevant expertise and experience in FinTech initiatives and IT capability portfolios in their organizations. Purposive sampling was used to make it sure the respondents have the informed judgment about the focal constructs. 540 questionnaires were sent electronically via institutional mailing lists, business networks and professional associations. There were two follow-ups, and a total of 412 responses, for a gross response rate of 76.3 percent. After carefully screening the answers for incomplete answers, straight-lining patterns, and inconsistent answer sets, a usable response rate of 71.1 percent (384 valid responses) was obtained for analysis. The number of samples achieved meets the minimum requirements for sample size n>100 and n>10 for PLS-SEM analysis in the inverse square root and gamma-exponential methods of power-based sample size estimation, respectively [69,70].

3.3 Questionnaire Development and Measurement

The measurement instrument has been constructed by an iterative process. Measurement items were selected from previous empirical research on IT capability [31,42,53] and were adapted to the current context. The adapted items were face validated by domain scholars and senior practitioners, which resulted in some wordings, terms, and contextual changes. A pilot study was done with a sample of 36 banking and FinTech professionals to assess the clarity, internal consistency and time taken to complete the instrument with Cronbach's alpha value of 0.79 or above across all constructs. The items were rated on seven-point (1 = strongly disagree; 7 = strongly agree) Likert scales.

3.4 Ethical Considerations and Common Method Bias

The study was approved by the institutional review board (IRB) of the institution to which the lead author is affiliated before data collection. Participants were told that participation in the study was voluntary, the study's academic purpose, it was confidential, and that they could withdraw from the study at any time. The data collected were not personally identifying information and all responses were aggregated in the analysis. In the process, respondents were given assurance of anonymity and the items were randomized to reduce consistency effects and predictor and criterion items were separated within the instrument [71]. The single factor test by Harman was applied statistically and the largest unrotated factor accounted for only 33.8 per cent of the variance which is below the 50 per cent level. VIFs were computed for all constructs and ranged from 1.42 to 2.87 with none exceeding the conservative value of 3.30, showing that common method bias is not likely to significantly affect the analysis.

Table 1. Respondents' demographic profile (n = 384).

Characteristic	Category	Frequency	Percentage
Gender	Male	243	63.3%
	Female	141	36.7%
Age	25–34 years	98	25.5%
	35–44 years	157	40.9%
	45–54 years	92	24.0%
	55 years and above	37	9.6%
Education	Bachelor's degree	142	37.0%
	Master's degree	198	51.6%
	Doctorate	44	11.4%
Position	Senior banking executive	76	19.8%
	IT / Digital transformation manager	112	29.2%
	FinTech executive / founder	94	24.5%
	Risk and compliance officer	62	16.1%

Characteristic	Category	Frequency	Percentage
	Operations manager	40	10.4%
Organization type	Commercial bank	138	35.9%
	Digital / neo-bank	82	21.4%
	FinTech enterprise	104	27.1%
	Payment service provider	60	15.6%
Experience	5–10 years	104	27.1%
	11–15 years	138	35.9%
	16–20 years	98	25.5%
	Over 20 years	44	11.5%
Firm size	Less than 250 employees	98	25.5%
	250–1000 employees	142	37.0%
	More than 1000 employees	144	37.5%

Measurement Model Assessment

The measurement model was evaluated using the recommended procedure for reflective PLS-SEM specifications for the indicators reliability, construct reliability, convergent validity, and discriminant validity [68,72]. The model included all constructs being reflective in nature consistent with the theoretical conceptualization of each construct as a latent capability with correlated indicators.

Indicator reliability, construct reliability and convergent validity. : The factor loadings, Cronbach's alpha, composite reliability and average variance extracted (AVE) values are presented in Table 2. Factor loadings are above the 0.708 level (from 0.762 to 0.913). Cronbach α lie between 0.864 – 0.918 exceeding the criterion of 0.70. All the composite reliability values are greater than the recommended values and range from 0.908 to 0.939. The AVE values are within the range 0.687 – 0.738 with all values above 0.50, indicative of convergent validity.

Table 2. Measurement items, factor loadings, and reliability statistics.

Construct	Item	FL	Cronbach's α	CR	AVE
IT Infrastructure Capability	ITIC1	0.832	0.901	0.927	0.717
	ITIC2	0.864			
	ITIC3	0.851			
	ITIC4	0.846			
	ITIC5	0.847			
IT Security and Data Privacy	ITSP1	0.829	0.893	0.921	0.700
	ITSP2	0.871			
	ITSP3	0.842			
	ITSP4	0.823			

Construct	Item	FL	Cronbach's α	CR	AVE
	ITSP5	0.821			
IT Integration Capability	ITGC1	0.847	0.886	0.917	0.689
	ITGC2	0.838			
	ITGC3	0.811			
	ITGC4	0.829			
	ITGC5	0.821			
FinTech Adoption	FA1	0.867	0.918	0.939	0.722
	FA2	0.881			
	FA3	0.853			
	FA4	0.842			
	FA5	0.832			
	FA6	0.829			
Digital Transformation	DT1	0.864	0.910	0.933	0.736
	DT2	0.879			
	DT3	0.851			
	DT4	0.842			
	DT5	0.857			

4.2 Discriminant Validity

To test the discriminant validity, Fornell-Larcker criterion and heterotrait-monotrait (HTMT) ratio of correlations [73] were used. The Fornell-Larcker matrix is presented in Table 3, which shows the square root of the AVE for each construct, which is higher than the inter-construct AVE values in all cases. Discriminant validity is supported by the values of the HTMT matrix shown in Table 4, where all values are below 0.85 (conservative threshold).

Table 3. Fornell-Larcker criterion. Diagonal values (bold) represent the square root of AVE.

Construct	ITIC	ITSP	ITGC	FA	DT
IT Infrastructure Capability (ITIC)	0.847				
IT Security and Data Privacy (ITSP)	0.612	0.836			
IT Integration Capability (ITGC)	0.628	0.594	0.830		
FinTech Adoption (FA)	0.681	0.643	0.659	0.850	
Digital Transformation (DT)	0.587	0.561	0.598	0.624	0.858

Table 4. Heterotrait-Monotrait (HTMT) ratio matrix.

Construct	ITIC	ITSP	ITGC	FA	DT
IT Infrastructure Capability (ITIC)	—				
IT Security and Data Privacy (ITSP)	0.684	—			
IT Integration Capability (ITGC)	0.702	0.667	—		
FinTech Adoption (FA)	0.747	0.713	0.728	—	
Digital Transformation (DT)	0.651	0.624	0.668	0.687	—

5. Structural Model Assessment

Following the satisfactory evaluation of the measurement model, the structural model was assessed through the examination of collinearity, path coefficient significance, coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2) [68,72]. A bootstrapping procedure with 5,000 subsamples was performed to derive t-statistics, p-values, and bias-corrected confidence intervals for the path coefficients.

5.1 Collinearity Assessment

Variance inflation factors (VIF) for all inner model relationships ranged from 1.42 to 2.87, all below the conservative threshold of 3.30, indicating that multicollinearity does not compromise the structural model.

5.2 Coefficient of Determination and Predictive Relevance

A significant portion of the variance in the endogenous construct is explained by the structural model.The structural model accounts for significant variance in the endogenous construct. The model explains 68.4 percent of the variance in use of FinTech ($R^2 = 0.684$; adjusted $R^2 = 0.678$), as reported in Table 5. The blindfolding-based Q^2 statistic also confirmed predictive relevance, with a value of 0.461 for FinTech adoption, which is over the threshold of zero, thus affirming the predictive relevance of the model. The standardized root mean square residual (SRMR) was used to evaluate the fit of the models, which was 0.054, which is low compared to the threshold of 0.08.

Table 5. Coefficient of determination (R^2) and predictive relevance (Q^2).

Endogenous Construct	R^2	R^2 Adjusted	Q^2
FinTech Adoption	0.684	0.678	0.461

5.3 Path Coefficients and Hypothesis Testing

The standardized estimates, standard deviations, t-statistics and p-values of the hypothesized relationships are shown in Table 6. This supports H1, and the positive and significant direct effect of IT infrastructure capability is found ($\beta = 0.342$, $t = 7.218$, $p = 0.000$). According to the results of this study, IT security and data privacy has a positive and significant impact on FinTech adoption ($\beta = 0.218$, $t = 4.762$, and $p = 0.000$), which is consistent with H2. The IT integration capability has a positive and significant influence on the FinTech adoption ($\beta = 0.267$, $t = 5.493$, $p = 0.000$), and thus supports H3. The moderating effect of digital transformation is positive and significant in all three paths of interaction. This relationship between digital transformation and IT infrastructure capability is positive and significant ($\beta = 0.156$, $t = 3.842$, $p = 0.000$), which supports H4. There is a positive and significant relationship between digital transformation and IT security and data privacy ($\beta = 0.118$, $t = 2.864$, $p = 0.004$) to support H5. The relationship between digital transformation and IT integration capability is positive and significant ($\beta = 0.143$, $t = 3.512$, $p = 0.000$) which supports the hypothesis (H6).**Table 6.** Hypothesis testing summary (direct and moderating effects).

H	Hypothesized Relationship	β	STDEV	t	p	Decision
H1	IT Infrastructure Capability → FinTech Adoption	0.342	0.047	7.218	0.000	Supported

H	Hypothesized Relationship	β	STDEV	t	p	Decision
H2	IT Security and Data Privacy → FinTech Adoption	0.218	0.046	4.762	0.000	Supported
H3	IT Integration Capability → FinTech Adoption	0.267	0.049	5.493	0.000	Supported
H4	DT × ITIC → FinTech Adoption	0.156	0.041	3.842	0.000	Supported
H5	DT × ITSP → FinTech Adoption	0.118	0.041	2.864	0.004	Supported
H6	DT × ITGC → FinTech Adoption	0.143	0.041	3.512	0.000	Supported

5.4 Effect Sizes

The effect sizes (f^2) for the structural relationships indicate substantive contributions across the model. IT infrastructure capability yields an effect size of 0.187 on FinTech adoption, classifying as a medium-to-large effect. IT integration capability yields an effect size of 0.124, classifying as a medium effect. IT security and data privacy yields an effect size of 0.092, classifying as a small-to-medium effect. The moderating interactions yield effect sizes of 0.078, 0.054, and 0.069 for the ITIC, ITSP, and ITGC interactions respectively, classifying as small-to-medium effects.

6. Results and Analysis

The empirical analysis supports all 6 hypothesis. IT infrastructure capability, IT security and data privacy, and IT integration capability all positively and significantly influence FinTech adoption, as do the other dimensions of the study.As with the other dimensions, the three IT capability dimensions (IT infrastructure capability, IT security and data privacy, and IT integration capability) all positively and statistically significantly influence FinTech adoption. The IT determinant that has the most direct impact on the organization's ability to adopt FinTech is IT infrastructure capability – the basic computing, network and platform architecture of the organization. Orchestrating heterogenous systems and platforms is a strategic ability and is the second strongest direct antecedent of IT integration capability. Even though it is not as directly influential, the indirect influence of IT security and data privacy is statistically significant in the context of the financial services industry's reputation and regulatory concerns, which are heightened in the case of FinTech.

The moderation analysis indicates that the three relationships between IT and the three different domains of the concept of digital transformation are positively moderated. The interaction coefficients are positive and significant on all three paths which support H4, H5 and H6. On the simple slopes interpretation, one can see the marginal adoption return of each IT capability dimension to be materially higher the higher the level of digital transformation. The pattern confirms the contingency approach to the question of the return on adoption of IT capabilities, holding that the best return from IT capabilities investment occurs when digital transformation is realized, and the broader organizational architecture allows IT investments to be absorbed and exploited.

The integrative framework has a high R^2 value of 0.684 for the adoption of FinTech, suggesting that the integrative framework explains most of the systematic variance in the dependent construct. The three direct antecedents and three moderating interactions provide a configurationally rich explanation of the adoption of FinTech that surpasses the explanatory power of the IT capability or digital transformation alone.

7. Discussion

The results of the study contribute to the study of the adoption of FinTech in multiple substantive ways. The positive and statistically significant relationship of all three IT capability dimensions with FinTech adoption confirms and builds on previous work which has correlated IT capability with adoption results in finance [9,37,49]. Compared to the generic "IT to adoption" argument, the present study reveals that the three IT dimensions work with differential strengths, with the strongest one being the capability of IT infrastructure. This specification answers the call to theorize more precisely how different dimensions of IT capability influence outcomes of adoption [17,31] as called for in the literature on technology adoption in the FinTech space.

The positive moderation effect of digital transformation is the most theoretically unique result of this study. The study's findings support resolving conflicting predictions from the digital transformation literature regarding the contingent value of IT investments, by showing that the strength of the three IT-to-FinTech-adoption relationships increase as digital transformation grows. The results are consistent with the dynamic capabilities view that the strategic value of IT capabilities comes when the organisation has the architecture to capture and utilize the IT capability. This finding has immediate implications for capital allocation decisions in banking institutions and FinTechs – the marginal adoption return of IT investments is found to be magnified by the capital investments in digital transformation maturity.

This integration of the three findings with the Resource Based View, Dynamic Capabilities Theory, and the Technology-Organization-Environment paradigm, supports the theoretical framework of the IT capability as a configurational resources that is not a discrete technological resource but a complex one. The integrated model's explanatory power is greater than what can be attributed to any individual dimension of IT capability, and is consistent with the resource-based view, in which competitive advantage comes from the collection of resources that is inimitable. The overall picture of the findings is in line with the main thesis that IT in financial services needs to be approached relationally and configurationally, and to prioritize the integration architecture and the parallel development of digital transformation maturity.

8. Implications of the Study

8.1 Theoretical Implications

The study contributes to three theories. First of all, it provides a differentiated view of how the IT capability dimensions affect the adoption of FinTech with IT infrastructure capability being the most direct antecedent, followed by IT integration capability and IT security and data privacy. Second, the study adds to the existing literature on the contingency-theoretic perspective of FinTech adoption by showing that digital transformation positively moderates the IT-to-adoption relationships. Thirdly, the integrative synthesis of these three theories (Resource Based View, Dynamic Capabilities Theory, and the Technology-Organization-Environment paradigm) provides a generative framework for analysing technology adoption in the financial services.

8.2 Practical Implications

The results provide bank management recommendations, FinTech startup managers, and regulators. An organization's first step towards speeding up the adoption of FinTech should be investment in its capacity in IT infrastructure -- the most significant direct antecedente. High availability computing, low latency transaction processing, and elastic cloud computing architectures of investment programs should be developed. Secondly, the meaningful direct effect of IT integration capability highlights the need for organization investment in orchestrating different systems and platforms. API architecture, the options for the middle layer, and integration governance must be given the attention of decision-makers to reduce friction around FinTech onboarding. Third, strong security and privacy architectures are strengthened by the direct impact of IT security and privacy. Security and privacy should not be viewed as a compliance burden, but rather as key variables that influence FinTech adoption that have a real impact on the regulatory, reputational and operational impact of FinTech adoption. Fourth, there is a clear link between positive moderation of digital transformation and all three IT capability dimensions and the implications for capital allocation. In the case of banking and FinTech companies, a combination of IT investments and conscious action to raise the maturity of digital transformation – from leadership investments to workforce capability, to database and data systems investments, to organizational process investments – is needed. The results indicate that the return on IT investments of the organizations with more advanced digital transformation orientations is significantly greater than that of others. Fifth, regulators and policy makers need to think about the impact of policy actions on the concurrent growth of the IT capability and maturity of digital transformation in the financial services industry. A combination of standardisation, support of open banking frameworks and security architecture investment incentives can propel the pace of adoption of FinTechs in the sector.

9. Conclusion

This study analyzes how information technologies affect the adoption of FinTech and what the role of digital transformation is. An integrative theoretical synthesis of the Resource-Based View, Dynamic Capabilities Theory and the Technology-Organization-Environment paradigm, along with the analysis of 384 responses from banking and FinTech professionals, shows that IT infrastructure capability, IT security and data privacy, and IT integration capability have a positive and significant impact on the FinTech adoption. The IT infrastructure capability is found to be the strongest direct antecedent, followed by IT integration capability and IT security and data privacy. All three of the IT-to-FinTech-adoption relationships are positive and become stronger under mature digital transformation, suggesting how the marginal adoption return of investments in IT grow when digital transformation is also mature. The study has three types of contribution: theoretical, empirical and managerial. Intuitively, the integrative synthesis provides a scaffolding device to be used in the analysis of technology adoption in financial services, theoretically. In terms of the study, the findings are empirical as the study has been based on the large-scale evidence obtained from a multi-organization sample, which shows the differentiated impacts of IT capability dimensions and the role of digital transformation as a contingent one. To the manager, the results provide calibrated policy suggestions, capability building, and investment. Overall the results place IT capability as a configurational antecedent with returns that are compounded when IT capability is matched with digital transformation maturity.

10. Limitations and Future Research

There are a number of limitations that imply avenues for future research in the study. First, the cross sectional design limits causal conclusions of the results; longitudinal designs would allow to track the temporal evolution of the capability development of IT and the process of adoption of FinTech. Second, although the use of perceptual measures is in line with the current conventions in capability research, future research could also incorporate archival measures based on the volume of FinTech transactions, system performance reports, and telemetry on adoption. Third, the study does not go beyond three dimensions of IT capability that are particularly relevant to FinTech adoption, which future studies could build upon by adding extra dimensions of IT human capability, IT governance, and IT innovation capability. Fourth, the cross-cultural generalizability of the results needs to be studied further with comparative analysis of the results from institutional contexts with different institutional regulatory architecture and digital-maturity profiles. Sixth, future studies may focus on the sub-domains of payment, lending, wealth management and insurance, and investigate if the key relationships differ in magnitude between sub-domains. Sixth, factors such as the moderating role of digital transformation may be moderated by higher order organizational conditions (such as leadership style, organizational culture, and regulatory orientation), and this calls for moderated-moderation studies.

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