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Digital Transformation and Performance in Publishing SMEs: The Influence of Online Purchasing Behaviour and CRM

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ABSTRACT

The rapid growth of digital consumption has transformed how readers purchase and engage with publishing content in China. Traditional publishing small and medium enterprises in Shanghai face increasing pressure to digitalise their business models while maintaining competitiveness in the evolving digital economy. This study investigates how online purchasing behaviour and Customer Relationship Management influence firm performance through digital transformation. A quantitative research design was adopted, and data were collected from 113 managers working in private publishing small and medium enterprises in Shanghai. Partial Least Squares Structural Equation Modelling was used to examine both the direct and mediating relationships among the studied variables. The results show that online purchasing behaviour is the most influential driver of firm performance, followed by Customer Relationship Management. Digital transformation significantly enhances firm performance and partially mediates the effects of both online purchasing behaviour and Customer Relationship Management. These findings highlight the interconnected roles of market driven consumer behaviour and internal relational capabilities in shaping digital development and performance outcomes. The study contributes to theoretical understanding of digital transformation in legacy cultural industries and offers practical insights for publishing managers to strengthen customer centric strategies and implement systematic digitalisation initiatives. Overall, success in the digital publishing environment requires a combined effort to respond to online demand patterns, enhance customer relationship capability, and build digital operational readiness.

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KEYWORDS:
Digital transformation; Online purchasing behaviour; Customer Relationship Management; Firm performance; Publishing SMEs

1. INTRODUCTION

1.1 Background of the Study

Digital transformation has become an unavoidable strategy for organisations across the world as they attempt to cope with rapid advances in technology and rising market pressures. The widespread introduction of data driven systems and intelligent technologies is reshaping how businesses operate and create value for their stakeholders. New capabilities such as automation, real time analytics, and artificial intelligence are empowering organisations with faster decision making, deeper insights into customer patterns, and improved efficiency in operations (Hossain et al., 2019). Customer Relationship Management, which is essential for building profitable and long term customer relationships, is increasingly supported by digital tools that analyse consumer data to personalise services and increase customer loyalty and engagement (Li and Xu, 2022). At the same time, online purchasing behaviour continues to expand as consumers gain confidence and familiarity with digital channels. Convenience, reliability, accessibility, and secure payment functions have made online shopping a mainstream choice in many industries, including the consumption of cultural and educational products (Pal and Kumari, 2023).

Digital transformation is not only related to technological adoption but also represents a deeper organisational shift involving culture, processes, and business models. It improves the accessibility of information and promotes more efficient resource utilisation, while reinforcing the need for businesses to act proactively in competitive markets (Zang et al., 2019). In sectors such as publication and print media, digital transformation has become essential as companies experience declining physical sales and rising operational costs caused by changes in consumer preferences and production environments

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(Foerster Metz et al., 2018). Organisations that successfully adopt digital transformation can enhance productivity, improve customer experience, and strengthen competitive advantage through data guided management and strategic innovation (Bughin et al., 2019).

China has emerged as one of the global leaders in digital adoption. National level initiatives support the expansion of advanced technologies across industries and encourage companies to transition from traditional processes into more intelligent systems (Publishing Perspectives, 2024). Shanghai holds a special status in this national transformation because it is one of China's leading cultural centres with a strong foundation in publishing. The printing and publishing sector in Shanghai has historically contributed to cultural communication and education development, yet is now challenged to redefine its market relevance in an era dominated by digital content distribution through mobile applications and online marketplaces.

The rapid growth of e commerce and digital reading platforms in recent years has significantly changed consumer behaviour in the publishing field. Customers are increasingly shifting from purchasing physical books to acquiring digital formats that can be accessed instantly on electronic devices. This shift reduces physical production needs and lowers traditional distribution barriers while highlighting the importance of consumer driven strategies for sustained business growth (Varsha et al., 2021). As a result, the ability to track, understand, and respond to online purchasing behaviour has become crucial for publishing businesses aiming to remain competitive.

However, the ability to benefit from digital transformation depends heavily on how organisations utilise CRM systems and consumer behaviour analytics to guide strategic transformation decisions. Therefore, it is essential to explore the joint roles of online purchasing behaviour and CRM in driving digital transformation in order to improve firm performance in Shanghai's traditional publishing sector.

1.2 Problem Statement

Although digital transformation is widely recognised as a strategic solution for modernising traditional industries, publishing Small and Medium Enterprises in Shanghai continue to struggle to achieve successful transition. Despite clear opportunities, the sector faces persistent structural barriers that hinder progress. Shanghai is experiencing a severe demographic shift marked by accelerated population ageing and a shrinking pool of younger labour. This demographic pressure has resulted in declining productivity and rising wage burdens. Labour costs are increasing steadily year by year, intensifying the financial strain on publishing firms that already operate with narrow margins and limited financial flexibility (Wu and Yan, 2019). As personnel costs continue to rise, firms become less capable of allocating resources toward technological advancement, which consequently undermines their competitiveness against digitally mature rivals.

Meanwhile, shifts in consumer purchasing behaviour are posing a critical threat to firms that rely heavily on traditional physical retail channels. Consumers now strongly favour digital reading formats and mobile purchase platforms due to increased accessibility and personalised experiences supported by artificial intelligence applications and analytics (Statista, 2020). Traditional publishing companies that fail to participate effectively in online markets are losing customers at an alarming rate and experiencing ongoing revenue decline. At the same time, many companies lack the digital marketing insight and analytical competency needed to respond to digital consumer behaviour, creating further performance risks and missed growth opportunities (Mandal et al., 2022).

Internal capability constraints create another major obstacle. Many traditional publishing SMEs demonstrate limited capacity to manage customer data strategically through modern CRM systems. Data remain fragmented across disconnected channels, restricting firms' ability to generate insights and offer tailored engagements. This results in inconsistent customer touchpoints and weakened relationships, which negatively affect customer retention and business sustainability (Lin et al., 2018). Moreover, resistance among employees, insufficient digital skills, and low leadership support continue to delay CRM adoption and reduce its strategic impact on organisational performance (Rahman and Abdel, 2023).

Despite extensive national policy push towards digital adoption, the transformation progress in this sector remains slow. The absence of clear implementation strategies, poor organisational readiness, and limited understanding of the performance value derived from digital transformation prevent firms from moving beyond minor digital adjustments (Lai, 2017). Many publishing SMEs are responding reactively rather than proactively, which threatens long term survival and erodes their ability to compete in a digitally dominated marketplace.

Therefore, a significant knowledge gap exists regarding how internal strategic resources such as CRM and external behavioural forces such as online purchasing behaviour jointly shape digital transformation and its outcomes. There is an urgent need for empirical investigation to determine whether digital transformation can effectively translate these drivers into improved firm performance for Shanghai's traditional publishing SMEs.

1.3 Significance of the Study

This study carries notable practical and theoretical significance. First, it contributes empirical evidence to the underexplored domain of digital transformation in traditional publishing SMEs, a sector wherein historical practices and cultural heritage often constrain digital adoption (K. Lee & S. M. Lee, 2018). By focusing on Shanghai, a key publishing centre in China, the research provides localised insights that are highly relevant to firms navigating similar structural challenges.

Second, the study adopts a customer-driven transformation perspective. Online purchasing behaviour reflects consumers' growing preference for convenience, sustainability, and personalised content delivery in digital formats. Understanding these behavioural patterns can guide publishers' e-commerce strategies and enhance competitiveness in a digital economy (Varsha et al., 2021; Pal & Kumari, 2023). At the same time, CRM is recognised as a strategic tool for collecting, analysing and applying customer insights, ultimately strengthening relationships and influencing long-term financial and market performance (Li & Xu, 2022; Lee et al., 2021).

Third, the study provides guidance for strategic execution. By demonstrating the mediating effect of digital transformation, the findings can help business leaders better align resource allocation, change management initiatives, and technology investments with performance goals. This offers a practical decision-making framework for SMEs aiming to survive and excel in highly competitive, rapidly digitising markets (Foerster-Metz et al., 2018).

Collectively, the study supports managers, policymakers, and scholars in understanding how consumer behaviour and internal relationship management capabilities jointly shape digital transformation outcomes, providing a pathway for revitalising traditional publishing business models and sustaining firm performance in the digital era.

1.4 Research Objectives & Contribution

Grounded in the recognised challenges and research gaps within Shanghai's traditional publishing industry, this study aims to investigate how internal and external strategic factors influence digital transformation and organisational success. Specifically, the study seeks to explore the role of consumer driven purchasing behaviour and digital customer relationship capabilities in accelerating technology adoption and generating improved performance outcomes. The following research objectives are established to guide the investigation:

- RO1: To examine the effect of online purchasing behaviour on digital transformation in Shanghai traditional publishing SMEs.
- RO2: To examine the effect of customer relationship management on digital transformation.
- RO3: To assess the effect of digital transformation on firm performance.
- RO4: To investigate the direct effects of online purchasing behaviour and customer relationship management on firm performance.
- RO5: To evaluate whether digital transformation mediates the effects of online purchasing behaviour and customer relationship management on firm performance.

This study offers several important contributions that hold theoretical and practical value. First, it provides an integrated view that connects consumer market forces with organisational capability development, highlighting how online purchasing behaviour and customer relationship management jointly stimulate digital transformation. This perspective is essential because many past studies examined these drivers independently rather than holistically within a transformation pathway. Second, it addresses a major empirical gap in the context of traditional publishing SMEs in Shanghai, a legacy cultural industry that has been slow to respond to digital disruption. By presenting data driven findings related to a sector under economic pressure and competitive decline, the study contributes knowledge that has immediate relevance to rebuilding strategic resilience. Third, the findings deliver practical guidance for business leaders and policy stakeholders by identifying the digital capabilities most critical for sustaining firm performance. Through understanding how digital transformation converts market and organisational inputs into measurable performance improvements, publishing SMEs can better design, prioritise, and execute technology adoption strategies that align with customer expectations and long-term competitiveness.

2. LITERATURE REVIEW

2.1 Online Purchasing Behaviour and Its Role in Digital Transformation and Performance

Consumer buying behaviour has undergone profound changes with the widespread adoption of electronic commerce and digital platforms. Many recent studies show that online purchasing behaviour reflects not only a shift in channel preference but also broader changes in consumer expectations regarding convenience, immediacy, and digital engagement (Wahdiniawati, Apriani and Orlando, 2024). In the context of small and medium enterprises and traditional firms, this shift exerts pressure on businesses to adapt digital distribution and service models or risk losing market share. The acceleration of digital consumption therefore emerges as a primary driver for firms to consider structural transformation.

Furthermore, empirical evidence suggests that consumer engagement, including online purchasing frequency, trusted digital payment systems, and responsiveness to digital marketing, significantly influences a firm ability to adopt digital technologies. A recent study involving China and Kazakhstan found that consumer engagement has a strong positive influence on a firm digital transformation capability, which in turn enhances firm performance (Gao et al., 2025). This indicates that shifting online purchasing behaviour creates external pressure for firms to transform, making such behaviour a critical antecedent for digital transformation.

In legacy industries such as publishing, where traditional business models rely on physical distribution and print based production, the shift toward online purchasing presents both a challenge and an opportunity. As readers increasingly prefer digital content or online purchase channels, publishers that neglect this change risk losing customers and weakening market relevance. For publishing small and medium enterprises in Shanghai, measuring online purchasing behaviour becomes essential to understand whether and how external demand pressure is translated into digital adoption and improved outcomes.

Therefore, online purchasing behaviour should be viewed as an active market signal that compels firms to redesign operations, adopt digital solutions, and pursue better performance. This understanding supports Hypothesis 3 which predicts a positive influence on digital transformation, Hypothesis 1 which predicts a positive influence on firm performance, and Hypothesis 6 which predicts that digital transformation mediates this relationship.

2.2 Customer Relationship Management as Organisational Capability for Digital Transformation and Performance

Customer Relationship Management is recognised as a strategic organisational capability that enables firms to collect, organise, and use customer information to drive loyalty, satisfaction, and long term value (Al Homery, Ashari and Ahmad, 2023). As digitalisation advances, Customer Relationship Management increasingly incorporates data analytics, automated customer interactions, and electronic service mechanisms, enabling firms to respond effectively to modern consumer expectations (Gil Gomez et al., 2020).

In the context of small and medium enterprises and digital transformation, Customer Relationship Management plays a dual role. First, it supports infrastructure for customer engagement by enabling firms to personalise offerings, segment markets with precision, and align services with online purchasing behaviour. Customer Relationship Management therefore becomes a connecting capability between traditional business operations and new data centred models. Second, Customer Relationship Management enhances responsiveness and customer satisfaction, leading to stronger loyalty and purchase intention. Studies in digital commerce confirm that electronic Customer Relationship Management directly improves customer satisfaction and sales stability (Hwang, 2022. Elhabashy, 2024).

Recent research also demonstrates that Customer Relationship Management strengthens organisational transformation and innovation. Firms that embrace Customer Relationship Management within technological environments achieve higher levels of innovation, especially when teams share a culture that supports digital advancement (Lin et al., 2025). This highlights Customer Relationship Management as a resource that helps firms adapt successfully to digital disruption. Thus, Customer Relationship Management is a capability that guides strategic adaptation and sustains performance in digitally evolving industries. This supports Hypothesis 2 which predicts a positive effect on digital transformation, Hypothesis 4 which predicts a positive effect on firm performance, and Hypothesis 7 which proposes that digital transformation mediates this performance relationship.

2.3 Digital Transformation as Strategic Enabler and Mediator

Digital transformation refers to the incorporation of digital and electronic technologies into all aspects of business operations in order to alter how organisations create and deliver value to customers. It begins with the conversion of analogue information into digital form, but extends further into the redesign of processes, structures, and strategies to take advantage of digital capabilities. Early discussions of digitisation focused on converting paper, images, sound, and video into computer readable data. Contemporary work emphasises how digital transformation enables firms to become more efficient, more responsive, and more innovative in how they operate and compete.

In many sectors, digital transformation is associated with increased productivity, improved sales, and better cost effectiveness. By gaining access to timely and accurate information about markets and customers, firms are able to make more informed strategic decisions and reduce uncertainty in their actions (Bughin et al., 2019. Rahman et al., 2021). Big data and advanced analytics allow companies to understand consumer behaviour, needs, and preferences in greater depth, which can be translated into more relevant offerings and more effective marketing activities (Zhang et al., 2019. Denicolai et al., 2021). Within electronic commerce, digital systems also support faster problem solving and more reliable customer service, strengthening satisfaction and loyalty and contributing to performance improvement (Varsha et al., 2021).

In the case of Shanghai traditional publishing companies, digital transformation is particularly significant. The rapid expansion of internet access in both urban and rural settings and the growing importance of online channels in daily life mean that digital channels have become an essential part of basic consumption and information activities (Statista, 2022). Communication technologies have enabled the widespread use of internet based purchasing and electronic commerce transactions. Traditional publishers that adopt digital platforms for catalogues, electronic books, and online sales can reduce dependence on physical distribution, expand market reach, and lower operational costs (Kim, 2019). By using digital tools, such as online marketing, social media engagement, and cloud based workflow systems, these firms can improve customer retention, increase audience reach, and support more focused decision making about content and investment (Chandrakant Urne, 2016. Popescu, 2015).

Digital transformation also sits at the centre of the relationships in the present study. External market pressures, such as the rise of online purchasing behaviour, provide an incentive for firms to adopt digital systems. Internal capabilities, such as Customer Relationship Management, provide the knowledge and structures needed to design and implement transformation. However, it is digital transformation itself that converts these pressures and capabilities into actual business outcomes. Without a transformation of processes, structures, and technologies, changing consumer behaviour and stronger customer insight may not be sufficient to improve performance. Digital transformation therefore acts as a strategic enabler that allows firms to translate online purchasing behaviour and Customer Relationship Management into improved firm performance.

In this way, digital transformation is expected to have a direct positive effect on firm performance and to function as a mediating mechanism between online purchasing behaviour and firm performance, and between Customer Relationship Management and firm performance. This reasoning supports Hypothesis 3 on the effect of online purchasing behaviour on digital transformation, Hypothesis 5 on the effect of digital transformation on firm performance, Hypothesis 6 on the mediating role of digital transformation between online purchasing behaviour and firm performance, and Hypothesis 7 on the mediating role of digital transformation between Customer Relationship Management and firm performance.

2.4 Firm Performance as the Outcome of Transformation

Firm performance is commonly understood as the extent to which an organisation achieves its goals and objectives over a specific period of time using available resources and strategies. It is a multidimensional concept that may include financial results, operational efficiency, innovation, service quality, employee outcomes, and customer related indicators (Edison et al., 2017. Na nan and Sanamthong, 2019. Robbins and Judge, 2017). A comprehensive view of performance considers how effectively the organisation mobilises tangible and intangible resources to generate value for stakeholders and maintain competitiveness in a changing environment (Chatterjee et al., 2021. Ghasemaghaei, 2021).

From a resource-based perspective, firm performance depends on valuable, rare, inimitable, and non-substitutable resources that support competitive advantage. These resources can include knowledge, technology, relationships, and capabilities that enable the firm to produce offerings that are difficult for competitors to imitate (Mikalef and Gupta, 2021. Mikalef et al., 2021). Workplace creativity, organisational learning, and innovation in products and services also contribute to enhanced performance by allowing firms to respond more effectively to emerging opportunities and threats (Mikalef and Gupta, 2021). At the same time, retaining valuable customers, expanding the number of targeted customers, and reaching new markets all contribute to improved performance by increasing satisfaction, loyalty, and retention (Yasmin et al., 2020. Demlehner et al., 2021).

In digital contexts, firm performance is closely tied to the ability to manage information and technology in ways that support strategic and operational objectives. Access to large volumes of data, when combined with appropriate analytical and decision-making tools, allows organisations to make better decisions, to reduce risk, and to design more competitive offerings (Denicolai et al., 2021. Rahman et al., 2021). In electronic commerce, firms that use digital systems to understand customer needs, predict demand patterns, and personalise interactions can improve their service quality and efficiency, which in turn supports stronger financial and customer related performance (Cui et al., 2021. Li et al., 2021).

For Shanghai traditional publishing small and medium enterprises, performance is strongly influenced by how well they adjust to changing consumer behaviour and digital market structures. Online purchasing behaviour can contribute to better performance by expanding demand and enabling firms to reach customers beyond physical locations, provided firms are able to serve those customers effectively in digital environments. Customer Relationship Management can improve performance by supporting deeper understanding of customer preferences, enabling more accurate targeting, and fostering long lasting relationships that support repeat purchases and positive word of mouth (Guerola et al., 2021. Lee et al., 2021. Li and Xu, 2022). Digital transformation amplifies these effects by providing the technological and process infrastructure needed to translate behavioural trends and relationship insights into efficient, high quality, and innovative operations.

In summary, firm performance in this study is viewed as the final outcome of the combined influence of online purchasing behaviour, Customer Relationship Management, and digital transformation. Online purchasing behaviour and Customer Relationship Management contribute directly to performance by shaping demand and enhancing customer value, and indirectly by feeding into digital transformation, which further strengthens organisational capability and competitiveness. This discussion supports Hypothesis 1 on the effect of online purchasing behaviour on firm performance, Hypothesis 2 on the effect of Customer Relationship Management on firm performance, Hypothesis 4 on the effect of Customer Relationship Management on firm performance through enhanced capabilities, and Hypothesis 5 on the effect of digital transformation on firm performance.

2.5 Theoretical Foundation

The conceptual model for this study is grounded in two complementary theoretical perspectives: the Resource Based View and consumer behaviour theory. Together, these theories explain how internal capability development and external market forces jointly drive digital transformation and firm performance in Shanghai traditional publishing small and medium enterprises.

The Resource Based View highlights that internal organisational resources and capabilities are crucial determinants of sustainable competitive advantage and performance. Capabilities that are valuable, rare, and difficult to imitate, such as information systems, technological know-how, and strong customer relationships, enable firms to respond effectively to industry change and competitive pressure (Chatterjee et al., 2021. Ghasemaghaei, 2021. Mikalef and Gupta, 2021). Customer Relationship Management aligns with the Resource Based View as a strategic internal capability that supports better decision making, improved customer engagement, and higher value creation, which ultimately enhance firm performance (Guerola et al., 2021. Lee et al., 2021). Digital transformation also reflects organisational capabilities linked to technology integration and innovation that are required for operational improvement and efficient market response. These capabilities are essential for publishing firms facing the need to transform long established practices in order to remain relevant in digital markets.

In contrast, consumer behaviour theory explains how external demand forces influence organisational actions. Online purchasing behaviour reflects significant shifts in consumer expectations toward digital engagement, personalised services, and convenience in product acquisition (Wahdiniawati et al., 2024. Statista, 2022). When consumer preferences become increasingly digital, firms are pushed to redesign delivery channels and invest in new technology in order to satisfy customer expectations and maintain market share (Cui et al., 2021). For Shanghai publishing firms, rising reliance on electronic commerce and digital reading habits means that transformation becomes a necessary response to evolving market behaviour. Therefore, online purchasing behaviour serves as a market pull mechanism that motivates firms to adopt digital transformation and improve performance outcomes.

This integrated theoretical view emphasises that internal capabilities and external behaviours must be aligned. Customer Relationship Management provides the structure needed to capture and interpret behavioural signals, while digital transformation ensures that insights and market pressures are converted into improved operational outcomes. The complementary role of Customer Relationship Management and digital transformation is therefore essential, as Customer Relationship Management guides strategic adaptation and digital transformation delivers the technological basis for performance improvement. This theoretical foundation strengthens the contribution of the study by explaining not only why internal and external factors matter independently, but also how their combined influence drives transformation and competitiveness in traditional publishing industries.

Table 2.1 Theoretical Summary

Theory	Key Assumptions	Constructs Linked	Direction of Influence in This Study	Explanation of Relevance
Resource Based View	Internal resources and capabilities drive sustainable competitive advantage when they are valuable, rare, inimitable, and non substitutable	Customer Relationship Management and Digital Transformation	CRM → FP and CRM → DT and DT → FP	Customer Relationship Management represents a strategic capability that enhances relationship value and loyalty. Digital transformation strengthens operational efficiency and innovation, translating capabilities into performance improvement.
Consumer Behaviour Theory	Consumer purchasing decisions influence organisational strategies to satisfy needs and preferences	Online Purchasing Behaviour	OPB → DT and OPB → FP	Online purchasing behaviour acts as market pull force. Shifts toward digital demand pressure firms to adopt digital technologies and respond with better service quality and accessibility.
Complementary Capability Logic	Performance improvement depends on alignment between internal capabilities and external market forces	CRM interacting with OPB through DT	CRM + OPB → DT → FP	Customer insight capabilities enable firms to utilise consumer behaviour changes effectively. Digital transformation is required to convert insights and market pressure into tangible performance outcomes.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Conceptual Framework

The conceptual framework of this study explains how external market forces and internal organisational capabilities jointly influence the digital transformation of Shanghai traditional publishing small and medium enterprises, which then leads to improved firm performance. Online purchasing behaviour represents the market pressure that encourages firms to adopt digital practices, while Customer Relationship Management provides the internal structure needed to understand and respond to customers in digital environments. Digital transformation functions as the strategic mechanism that converts these influences into positive performance outcomes.

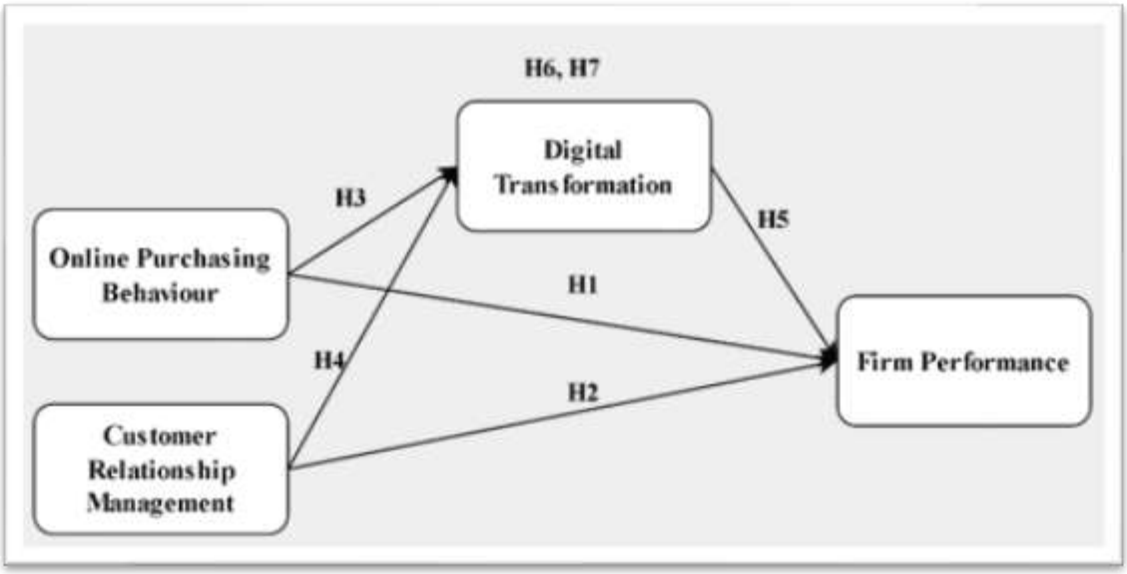

Figure 2.1 Conceptual Framework

Hypotheses Development

Online purchasing behaviour has become a dominant consumption pattern as consumers increasingly choose digital channels for convenience, accessibility, and personalised service delivery. Firms that successfully adapt to these shifts are more likely to enhance sales, customer reach, and competitiveness, which contributes directly to improved performance outcomes (Varsha et al., 2021. Pal and Kumari, 2023). Therefore, online purchasing behaviour is expected to influence firm performance positively.

Customer Relationship Management strengthens organisational capability to maintain long term customer loyalty and satisfaction. Firms that understand customer needs, use insights to personalise interactions, and maintain continuous engagement are more capable of achieving sustainable growth and performance achievements (Li and Xu, 2022. Guerola et al., 2021. Lee et al., 2021). This provides support for a positive relationship between Customer Relationship Management and firm performance.

The rise of digital purchasing behaviour prompts firms to redesign processes and adopt more advanced technologies to satisfy modern consumption patterns. In publishing industries where traditional structures dominate, this shift exerts significant pressure on firms to update operations and move toward digital transformation (Statista, 2022. Mandal et al., 2022). Thus, online purchasing behaviour is expected to positively drive digital transformation.

Customer Relationship Management also influences digital transformation because it provides actionable information about customer expectations and enables informed decision making for technological initiatives (Rahman et al., 2023. Zhang et al., 2019). Firms with strong Customer Relationship Management capability are therefore more likely to adopt digital solutions that align with customer needs, resulting in operational transformation.

Digital transformation improves efficiency, strengthens service quality, and increases the responsiveness of business processes. These improvements allow firms to compete more effectively, reduce risk, and support performance growth in rapidly evolving markets (Bughin et al., 2019. Zang et al., 2019. Rahman et al., 2021). This suggests that digital transformation directly contributes to enhanced firm performance.

Finally, digital transformation acts as the process through which both market behaviour changes and internal capability advantages are translated into stronger results. Without transformation, the influence of consumer trends or Customer Relationship Management improvements may not be converted into meaningful performance outcomes. Digital transformation therefore plays a mediating role in supporting performance improvement for publishing small and medium enterprises (Foerster Metz et al., 2018).

Therefore, the study proposes the following hypotheses:

- H1: Online purchasing behaviour has a positive effect on firm performance.
- H2: Customer Relationship Management has a positive effect on firm performance.
- H3: Online purchasing behaviour has a positive effect on digital transformation.
- H4: Customer Relationship Management has a positive effect on digital transformation.
- H5: Digital transformation has a positive effect on firm performance.
- H6: Digital transformation mediates the relationship between online purchasing behaviour and firm performance.
- H7: Digital transformation mediates the relationship between Customer Relationship Management and firm performance.

4. METHODOLOGY

4.1 Research Design

This study adopts a quantitative research design using a cross sectional survey strategy to examine the causal relationships among online purchasing behaviour, Customer Relationship Management, digital transformation, and firm performance in the traditional publishing sector in Shanghai. A survey approach allows the collection of structured responses from a targeted managerial population and is suitable for testing hypotheses through statistical modeling. Partial Least Squares Structural Equation Modeling using SmartPLS software is applied because it supports complex models, mediation testing, and predictive analysis with relatively smaller sample sizes and non normal data characteristics (Hair et al., 2019).

4.2 Population and Sampling

The target population consists of managers working in private small and medium publishing firms located in Shanghai, China. Managers are selected as the unit of analysis because they are responsible for decisions concerning digital transformation initiatives, Customer Relationship Management systems, and performance strategies. Private publishing enterprises are emphasized as they experience stronger commercial pressures and fewer subsidized advantages than state owned enterprises, intensifying the relevance of digital capability development.

Qixinbao, a major enterprise information platform that compiles official business registration and credit data, was used to identify active private publishing firms in Shanghai. Keyword searches such as publishing, book editing, and publishing planning yielded 160 private publishing companies. Based on firm profiles, the managerial workforce was estimated at approximately 160 managers, representing the population frame.

A minimum required sample of 113 managers was determined using the sample size table for known populations (Krejcie and Morgan, 1970). Stratified random sampling was applied to ensure representation across different managerial functions within publishing operations. This sampling approach improves generalisability of the findings within the sector studied.

4.3 Instrumentation and Measurement

A structured questionnaire was developed consisting of validated scales measured using a five point Likert format ranging from strongly disagree to strongly agree. All items were adapted to reflect the publishing context in Shanghai and were translated into Chinese using a forward and backward translation process to safeguard semantic accuracy.

The measurement constructs include:

- Online Purchasing Behaviour: Measured using items that reflect consumer digital purchasing trends and market engagement as perceived by firms based on established digital consumer behaviour indicators.
- Customer Relationship Management: Items measure organisational capability to gather, manage, and utilise customer information for relationship building as adapted from prior Customer Relationship Management capability scales.
- Digital Transformation: Items reflect adoption of digital tools, integration of technology in operational processes, and perceived improvement in digital fluency, aligned with validated digital transformation metrics used in enterprise research.
- Firm Performance: Subjective measures of financial, operational, and competitive performance are used due to privacy limitations in obtaining objective firm level data and because subjective assessments have been proven reliable where managerial respondents are used.
- All constructs follow recommendations to ensure content validity, scale reliability, and conceptual clarity in organisational survey research.

4.4 Data Collection Procedure

Data collection was conducted using an online questionnaire platform with invitations sent through professional contacts and published business communication channels. Participation was voluntary and respondents were informed that the study aimed to investigate digital development in the publishing sector. Ethical requirements were followed by assuring confidentiality, anonymity, and data usage strictly for academic purposes. Respondents were screened to confirm managerial job role and active engagement in operational or strategic decision making regarding customer relationships or technology integration. Incomplete or invalid responses were removed through data cleaning prior to analysis. To reduce common method bias, measures included randomisation of question order, separation of predictor and outcome constructs in the survey layout, and confidentiality reminders to lessen social desirability concerns.

4.5 Data Analysis Techniques

Data analysis was performed using SmartPLS version 4.0 to assess the measurement and structural models. Th51 e measurement model evaluation examines construct reliability through Cronbach alpha and Composite Reliability values, and convergent validity through factor loadings and Average Variance Extracted. Discriminant validity is assessed using the Fornell and Larcker criterion and the Heterotrait Monotrait ratio. Variance Inflation Factor is used to assess multicollinearity.

The structural model evaluation includes path coefficient analysis, mediation effects using bootstrapping procedures, and predictive relevance using R squared, f squared effect sizes, and Q squared. Hypothesis testing is based on significance levels associated with standardised path estimates. This multistage evaluation ensures rigorous assessment of both measurement properties and theoretical relationships.

5. RESULTS

5.1 Respondents profile

A total of 113 managers from private publishing small and medium enterprises in Shanghai participated in the survey. Table 5.1 presents the demographic characteristics of the respondents. Overall, the sample shows a balanced gender distribution with 52.2 percent male and 47.8 percent female participants. Most respondents are within the productive working age bracket, where 31.9 percent fall between 30 and 39 years old and 35.4 percent are between 40 and 49 years old, indicating that the majority of respondents have considerable professional maturity and industry exposure.

In terms of education, close to half of the respondents hold a bachelor degree (48.7 percent), followed by master degree holders (31.0 percent). This educational distribution demonstrates that the managerial workforce in Shanghai private publishing firms possesses sufficient academic training to make informed decisions related to digital transformation and customer oriented strategic practices.

Regarding organisational tenure, 30.1 percent of respondents have worked for their firms between four and six years, and another 30.1 percent have more than six years of experience, suggesting a strong level of institutional familiarity and engagement with organisational processes.

Company size varies within the sample, with 40.7 percent of respondents working in firms with 50 to 99 employees, followed by 35.4 percent in larger small and medium enterprises with 100 to 299 employees. This confirms the study focus on private publishing SMEs.

Notably, 77.0 percent reported that their organisations are actively implementing digital transformation initiatives, while 70.8 percent stated that Customer Relationship Management systems are currently in use. This supports the suitability of the sample for examining the relationships among digital transformation, Customer Relationship Management, and firm performance.

Respondents come from diverse functional areas within publishing operations. The highest proportion represents editorial departments (25.7 percent), followed by marketing (23.9 percent), management roles (17.7 percent), design teams (16.8 percent), and information technology related roles (15.9 percent). This diversity enhances the representativeness of managerial perspectives across different operational responsibilities in the publishing workflow.

Table 5.1 Demographic Profile of Respondents

Variable	Category	Frequency (n)	Percent (%)
Gender	Male	59	52.2
	Female	54	47.8
Age Group	<30	23	20.4
	30–39	36	31.9
	40–49	40	35.4
	≥50	14	12.4
Educational Qualification	Diploma or below	5	4.4
	Bachelor Degree	55	48.7
	Master Degree	35	31.0
	Doctoral Degree	18	15.9
Tenure	<1 year	13	11.5
	1–3 years	32	28.3
	4–6 years	34	30.1
	>6 years	34	30.1
Organization Size	<49	30	26.5
	50–99	43	40.7
	100–299	40	35.4
Digital Transformation Initiatives	Yes	87	77.0
	No	26	23.0
CRM Use	Yes	80	70.8
	No	33	29.2
Department	Editorial	29	25.7
	Design	19	16.8
	Marketing	27	23.9
	IT/Tech	18	15.9
	Management	20	17.7

5.2 Measurement Model Assessment

The reliability and validity of the reflective measurement constructs were evaluated before testing the structural relationships. Table 5.2 presents the internal consistency reliability and convergent validity results. All constructs recorded Cronbach alpha and Composite Reliability values above the minimum recommended threshold of 0.70, indicating that items consistently measure their intended constructs. The Average Variance Extracted values also exceed the recommended threshold of 0.50, confirming strong convergent validity. These results demonstrate that the measurement items are statistically sound for further structural model evaluation.

Table 5.2 Measurement Model Results

Constructs		Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
SP	AIB	AIB3	0.763	0.764	0.894	0.808
		AIB4				
	AIS	AIS2	0.745	0.917	0.937	0.750
		AIS3				
	AIP	AIP1	0.917	0.745	0.887	0.797
		AIP2				
		AIP3				
		AIP4				
		AIP5				
OR	SR	SR2	0.795	0.795	0.907	0.830
		SR3				
	TR	TR2	0.791	0.793	0.905	0.827
		TR4				
	CR	CR1	0.878	0.878	0.916	0.732
		CR3				
		CR4				
		CR5				
OPB		OPB1	0.955	0.961	0.961	0.713
		OPB2				
		OPB3				
		OPB4				
		OPB5				
		OPB6				
		OPB7				
		OPB8				
		OPB9				
		OPB10				
CRM	CO	CO4	0.787	0.788	0.904	0.825
		CO5				
	TB	TB1	0.927	0.930	0.943	0.735
		TB2				
		TB3				
		TB4				
		TB5				
		TB6				
	KM	KM1	0.728	0.729	0.880	0.786
		KM2				
DT		DT1	0.954	0.956	0.961	0.709
		DT2				
		DT3				
		DT4				

	DT5				
	DT6				
	DT7				
	DT8				
	DT9				
	DT10				
FP	FP1	0.962	0.963	0.967	0.725
	FP2				
	FP3				
	FP4				
	FP5				
	FP6				
	FP7				
	FP8				
	FP9				
	FP10				
	FP11				

5.3 Structural Model Results

The structural model results demonstrate that all proposed relationships are positive and statistically significant. Online purchasing behaviour shows the strongest direct influence on firm performance with a path coefficient of 0.350 and a t value of 5.352 at p less than 0.001. This confirms that firms which respond to customers increasing preference for digital purchasing experience higher performance outcomes. In the context of Shanghai traditional publishing enterprises, where consumers increasingly rely on online retail channels and digital reading platforms, the ability to capture this shift directly enhances revenue generation and competitive success.

Customer Relationship Management also has a positive and significant contribution to firm performance with β equal to 0.269, t equal to 4.674, and p less than 0.001. This indicates that firms which organise and utilise customer data effectively, personalise service delivery, and provide rapid support are better able to retain customers and increase repeat purchases. For publishing SMEs that lack physical distribution advantages, strong relationship capabilities therefore represent a critical performance determinant.

Digital transformation shows a significant effect on firm performance with β equal to 0.298, t equal to 3.927, and p less than 0.001. This implies that firms which integrate digital technologies into operations and service systems achieve improvements in productivity, customer experience, and decision quality. Transformation activities such as e service implementation, automated workflows, and data analytics support better operational outcomes in publishing environments facing rapid digitalisation.

The mediation analysis confirms that digital transformation partially mediates the relationships from both online purchasing behaviour and Customer Relationship Management to firm performance. Specifically, the indirect effect of online purchasing behaviour on performance through digital transformation is significant with β equal to 0.105, t equal to 2.940, and p equal to 0.003. This indicates that part of the impact of online consumer trends operates through transformation initiatives that reshape publishing processes and delivery models.

Similarly, the indirect effect of Customer Relationship Management on performance through digital transformation is significant with β equal to 0.109, t equal to 2.924, and p equal to 0.003. This confirms that Customer Relationship Management capabilities must be supported by digital systems to fully realise their performance benefits. Staff skills and data resources alone are insufficient without digital infrastructure that enables their application.

Together, these results validate that performance improvement in Shanghai publishing SMEs depends not only on market adaptation and customer capability but also on the extent to which firms transform their operations to support these strategies. The strongest outcomes are achieved when demand driven pressure and relationship competencies are channelled through systematic digital transformation efforts that modernise processes and strengthen competitiveness in the digital economy.

Table 5.3 Structural Path Coefficient Results

Hypothesis	Path	β (O)	t value	p value	Decision
H1	OPB → FP	0.350	5.352	0.000	Supported
H2	CRM → FP	0.269	4.674	0.000	Supported

H3	OPB → DT	0.312	4.580	0.000	Supported
H4	CRM → DT	0.287	4.142	0.000	Supported
H5	DT → FP	0.298	3.927	0.000	Supported
H6	OPB → DT → FP	0.105	2.940	0.003	Supported
H7	CRM → DT → FP	0.109	2.924	0.003	Supported

6. DISCUSSION

6.1 Interpretation of Significant Path

The findings confirm that all hypothesised relationships in the model are statistically significant. Online purchasing behaviour demonstrates the strongest positive effect on firm performance, indicating that demand shifts in reader behaviour significantly influence business outcomes in the Shanghai publishing market. When firms invest in online channel optimisation and align products with digital consumption preferences, they benefit from increased accessibility, broader market exposure, and higher customer conversion rates.

Customer Relationship Management is also confirmed as an important driver of firm performance. Firms that strengthen their ability to collect customer information, personalise service, and support effective after sales communication show stronger performance results. This indicates that customer engagement and retention strategies are essential in an industry where competition has intensified due to digital retail and content alternatives.

The strong effect of online purchasing behaviour on digital transformation shows that managers respond to digital consumer demand by reconfiguring their internal processes through new technologies. Similarly, Customer Relationship Management capabilities contribute to transformation by enabling firms to move toward information driven management. Digital transformation itself remains a significant predictor of firm performance, supporting the idea that performance gains require not just market or capability strength but also integrated transformation of business operations. The mediation results further show that digital transformation acts as a mechanism through which online purchasing behaviour and Customer Relationship Management influence firm performance. This suggests that strategic alignment between digital demand, customer capability, and process transformation is necessary to achieve optimal performance in traditional publishing organisations.

There are no insignificant paths in the tested model. This confirms the theoretical assumption that both market behaviour drivers and internal organisational capabilities jointly influence transformation and performance outcomes among Shanghai publishing SMEs.

6.2 Managerial Implications for SMEs

Publishing SMEs in Shanghai cannot rely solely on traditional distribution and marketing structures. Managers should emphasise strategies that leverage digital consumer engagement, including closer collaboration with online retailers, utilisation of digital promotional tools, and enhancement of website and mobile purchasing experiences.

In relation to Customer Relationship Management, firms need to invest in systems that integrate customer data from various touch points, including online book platforms and social media interactions. Better understanding of reader interests can help publishing SMEs improve content planning and service quality, which directly contributes to stronger performance outcomes.

The significant role of digital transformation highlights the importance of sustained commitment to upgrading operations. Managers should consider phased transformation plans that include workflow digitalisation, online catalogue integration, automation of administrative tasks, and adoption of analytics tools for decision making. Strengthening employee digital literacy and changing internal culture to support transformation can also increase performance returns.

6.3 Why CRM and OPB Drive Digital Transformation and Firm Performance in Shanghai Publishing

Publishing enterprises in Shanghai operate in a market characterised by strong technological adoption and rapidly evolving reading behaviour. Online purchasing behaviour represents increasing market pressure that encourages firms to digitalise in order to remain visible, competitive, and accessible to readers. As such, it becomes a powerful motivator of transformation and performance driven change.

Customer Relationship Management acts as a strategic capability that helps firms remain customer focused in a digital economy. In an industry where switching costs are low and competition includes digital platforms and self publishing ecosystems, strong Customer Relationship Management capabilities help retain customers, encourage repeat interactions, and support personalised content development. When Customer Relationship Management practices are supported by digital technologies, performance is enhanced through operational efficiency and improved customer satisfaction.

Overall, both online purchasing behaviour and Customer Relationship Management trigger investments in digital transformation and strengthen performance outcomes. Publishing SMEs that ignore these dynamics are more likely to fall behind as the industry continues its transition into the digital economy.

7. CONCLUSION

This study examined how online purchasing behaviour and Customer Relationship Management influence digital transformation and firm performance in Shanghai traditional publishing small and medium enterprises. The findings demonstrate that online purchasing behaviour is the strongest driver of firm performance, indicating that publishing SMEs must actively respond to the rapid shift in consumer demand toward digital and online channels. Customer Relationship Management also contributes significantly to performance outcomes by improving customer engagement and enabling personalised product and service offerings. Digital transformation not only supports performance directly but also serves as a mediating mechanism that converts consumer demand trends and relationship capabilities into strategic performance advantages. These findings confirm that successful participation in the digital publishing economy requires a combination of market responsiveness and capability development.

The study contributes new empirical insights into how traditional publishing organisations can sustain competitiveness as legacy business models continue to face pressure from digital alternatives. Firms that focus on online consumer intelligence, customer relationship enhancement, and systematic transformation of internal processes are more likely to maintain relevance and achieve long term success in the evolving digital economy.

7.1 Theoretical Implications

The study extends the Resource Based View by demonstrating that Customer Relationship Management and digital transformation represent strategic capabilities that support competitive advantage in cultural and creative industries. The significant role of digital transformation as a mediator highlights how capabilities must be deployed and converted into operational practices to create value. The findings also reinforce consumer behaviour theory by confirming that market demand shifts arising from online purchasing behaviour can shape internal transformation and performance outcomes. This integration of market driven and capability driven influences deepens theoretical understanding of how firms evolve within industries undergoing digital disruption.

The study also contributes to the limited empirical research on digital transformation within the traditional publishing sector in China. By focusing on Shanghai publishing SMEs, the study provides a context specific explanation of transformation dynamics in a legacy industry that must now compete in an increasingly digital ecosystem.

7.2 Practical Implications

Managers in Shanghai publishing SMEs should prioritise strategies that enhance their ability to respond to digital consumer behaviour. This includes strengthening digital distribution channels, improving online purchasing experiences, and actively monitoring customer behaviour data from online platforms.

Customer Relationship Management capability must also be strengthened. Developing integrated customer databases, improving segmentation practices, and aligning marketing activities with consumer preferences will help publishing SMEs sustain customer loyalty and increase repeat purchases.

Since digital transformation mediates the influence of both online purchasing behaviour and Customer Relationship Management on performance, firms should embed these strategies within comprehensive transformation initiatives. This includes expanding the use of digital workflows, investing in automation to reduce manual tasks, and improving staff digital skills.

Managers who focus on both external demand shifts and internal capability development will achieve the greatest improvements in performance and long term competitiveness.

7.3 Limitations and Future Research

The study is limited to publishing SMEs in Shanghai, which may affect generalisability to other regions or sectors of the publishing industry in China. Future studies should expand the geographical coverage and include comparisons with state owned publishing enterprises that operate under different resource conditions. Due to the cross-sectional survey design, causal relationships cannot be fully inferred. Future research could employ longitudinal methods to better understand how transformation effects evolve over time. There is also a need to explore additional factors that may shape the transformation journey of publishers, such as organisational culture, leadership support, or partnerships with technology providers. Finally, future studies may use mixed method approaches to deepen understanding of how managers perceive digital risks and opportunities in legacy publishing organisations.

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