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From Guanxi 1.0 to Guanxi 4.0: A Conceptual Framework of Guanxi in the Digital Transformation of Chinese B2B Relationships

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Abstract: This paper discusses the transformation of guanxi under the influences of digitalization in Chinese B2B environment. With the basis in Confucian principles and personal trust, guanxi has historically become the centrepiece of business relations. Nevertheless, these practices are put to test due to the accelerated process of digitalisation in China that necessitates theoretical rethinking. The framework is based on the Social Capital Theory (SCT) and the Relationship Marketing Theory (RMT) and suggests four stages, including Guanxi 1.0 (kinship-based ties), 2.0 (institutional extension), 3.0 (IT-mediated CRM interface), and 4.0 (platform-based, AI-enabled guanxi). Based on 61 semi-structured interviews in ICT, manufacturing, and construction sectors in China, it was found that although guanxi is still culturally implicit, it currently commingles with scalable, data-driven reciprocity and trust mechanisms. The research demonstrates how digital technologies are changing relational depth, transparency, and scalability not by destroying cultural logics. It offers theoretical knowledge as well as practical solutions to navigating dual guanxi systems in the modern platform economy. The study contributes to the knowledge concerning guanxi as a dynamic construct based on digital infrastructures and cultural resilience in non-Western business environments.

Keywords: Guanxi Evolution; Social Capital Theory; Relationship Marketing; China B2B Relationships; Digital Transformation

1. Introduction

Tao and Li [1] suggested that businesses in China should always consider specific cultural values and norms. Guanxi is a cultural cornerstone that should always be considered in Chinese business practices [2-3]. Tsui and Farh [4] defined *guanxi* as direct particularistic ties between two or more individuals in the Chinese context. Zhang and Hong [5] highlighted that guanxi has a significant impact on business behaviours in China. In the Chinese business environment, *guanxi* is one of the essential relational resources [2-3, 6-8].

In recent decades, China has been one of the world's leading adopters and major investors in digital technologies [9-10]. China's e-commerce and digital marketing market has continued to advance, and Chinese platforms have significantly improved cross-border trade efficiency, serving as a role model for global business strategies [11-12]. However, exploration of *guanxi* from the perspective of digital technologies is scarce, even though China has a high level of digitalisation. The findings in the literature [3;13] confirmed the key role of guanxi relationships in different business contexts such as digital marketplaces, international B2B relations and social media sites, suggesting a continuing relevance of guanxi in post-industrial business environments with a potential for further application and exploration.

The digital turn has significant implications for the nature of guanxi. Traditional guanxi was often limited to face-to-face interactions, geographical proximity, and long-term cultivation. However, emerging technologies now enable swift, scalable, and digitally mediated forms of guanxi. Despite this transformation, most existing research continues to treat guanxi as a relatively static construct rooted in cultural tradition. A critical gap remains in the literature: scholars have yet to develop a systematic, stage-based conceptual model that maps the evolution of guanxi in response to technological changes.

To address this gap, this paper introduces a conceptual framework of guanxi's digital evolution, articulated through four stages:

- Guanxi 1.0: Traditional kinship-based or local interpersonal ties, relying on emotional bonding and frequent physical contact;
- Guanxi 2.0: The expansion of guanxi into institutional and organisational settings, incorporating workplace hierarchies and formalised yet culturally guided relationships;
- Guanxi 3.0: The early use of information technology (IT) and customer relationship management (CRM) systems to formalise and manage guanxi;
- Guanxi 4.0: A contemporary phase marked by the use of platforms, AI, big data, and blockchain to simulate and scale relational mechanisms such as trust, reciprocity, and obligation in digitally mediated environments.

This framework builds upon and extends the concept of "swift guanxi" [3], which describes how trust and familiarity can be established quickly in online marketplaces. However, unlike swift guanxi, the proposed Guanxi 1.0–4.0 model emphasises the longitudinal and structural transformation of guanxi itself, aligning each stage with broader shifts in China's institutional and technological environment.

The central research question driving this study is:

- *How has guanxi evolved under conditions of digital transformation in Chinese B2B contexts?*

To answer this, the study draws on 61 semi-structured interviews with managers and executives across three major sectors in China, including ICT, manufacturing, and construction. These sectors were selected to reflect varying degrees of technological adoption and guanxi dependency, thereby offering a rich empirical base for validating the conceptual model.

This research has two key contributions. It firstly explains a new conceptualisation of guanxi evolution, which considers both technological affordances and cultural longevity. Second, it empirically frames this model using qualitative data from various industry sectors, providing insight into the current transformation of traditional guanxi practices in China, particularly in the context of digital tools. The study is an interdisciplinary examination of relationships that ties the classical theory of guanxi to digital evolution today, providing new insights into relationship marketing, social capital, and digital trust in non-Western business contexts.

2. Literature Review

2.1 Guanxi: Cultural Foundations and B2B Function

The existing literature has revealed that guanxi has positive effects on business strategy formulation [14], business market orientation [15], and business performance [14-15]. According to Sun et al. [16], *guanxi* is a deeply Confucian concept based on long-term partnerships, respect and mutual trust, which are essential elements of sustainable business and customer retention in Chinese markets. Yang [17] defined guanxi as an imperative element of Chinese business culture. It is used not only for gaining resources and information sources, such as government resources and information [18], business opportunities [19], and scarce and necessary resources [20], but also for increasing market share, building corporate image, and motivating employees.

Peng and Luo [21] considered organisation-level guanxi as managerial ties and managers' social networks with business partners and government officials that can be employed for the organisation. Park and Luo [22] conceptualised organisation-level guanxi as cross-organisational connections among managers or an aggregate of interpersonal guanxi between organisations. Tsang [23] suggested reducing the mobility of guanxi in an organisation by converting interpersonal guanxi into inter-organisational guanxi. This research only investigates the evolution of guanxi, which is mediated by digital technologies from a B2B perspective.

2.2 Digital Transformation and the Reconfiguration of Business Relationships

Digital transformation has changed how businesses manage and cultivate customer relationships [24-25]. For instance, the emergence of new marketing and CRM digital tools allows for the structuring of more relevant and resilient human relationships at the organisational level [26-28]. On the other hand, digital transformation enables small firms to compete with large ones through extending business networks [24, 29].

Further, companies that manage to undergo the digital transformation can enhance internal collaboration [30-31], decrease expenses [32], and increase responsiveness to customer expectations and to the changes in their competitive market. Manser Payne et al. [33] especially highlighted AI in the servitisation of the value co-creation process, while Akter et al. [34] emphasised blockchain, cloud, and digital transformation in today's business world. The organisations that adopt advanced analytics and machine learning can also increase their ability to predict customers' needs [35], optimise supply chain processes [36], and provide specific services to increase customers' satisfaction [35], which all support the platformisation of organisations.

These previous studies summarise the impacts of digital transformation on businesses and how it could lead to a massive organisational shift. However, Wilson [37] asserted that for organisational culture to fit in with corporate marketing strategies and market demands, it should adapt to external changes in the information economy. In China, cultural barriers may still pose an obstacle to this adoption of digital technologies, since prevailing norms of Chinese society are often in favour of preserving established modes of operation while such openness and adaptability are indispensable for digital innovation [10, 38-43].

Since digital change is redefining organisational relationships with the use of technologies, such as AI, CRM, and blockchain, it is essential to consider the transformation of such culturally ingrained practices as guanxi in the context of this new digital infrastructure. In China, where the relational norms continue to dominate business, the case of the shift between Guanxi 1.0 and 4.0 can offer crucial knowledge as to how interpersonal networks can adjust, protest, or hybridize in platform-based and algorithmic interaction.

2.3 Theoretical Synthesis

The Social Capital Theory (SCT) and Relationship Management Theory (RMT) have been selected as the key theoretical frameworks for this research.

2.3.1 Social capital theory (SCT)

The concept of Social Capital Theory (SCT) can explain how companies develop and profit from relationships [44-46], which is then applicable to B2B situations in the Chinese business world. SCT can be defined as the resources contained in, accessible through and by the network of relationships that an individual or social unit has Nahapiet and Ghoshal [45]. Such resources consist of trust, norms and common values which promote cooperation and collective action [44]. Social capital within the context of organizations allows improving knowledge sharing, innovation, and performance through establishing a close relational commitment and reciprocity [47].

SCT states that trust is critical to B2B relationships, as it reduces transaction costs, promotes cooperative exchange, and provides access to key resources [44, 48]. Trust is another significant aspect of guanxi, considered a crucial foundation of Chinese business society [49]. Reciprocity is a crucial component in SCT, as most business relationships in consumption are reciprocity-based [46, 50-51]. Reciprocity is a Western-derived concept in B2B exchange, related to the Chinese cultural principle of renqing (empathy), which focuses on balancing the flow of favours [46, 51-52].

Globally, the digitalisation of B2B relationships forces firms to reassess how and what social capital should be built and maintained [53]. In the context of SCT, this research examines how the rise of digitalisation has reshaped guanxi business relations, creating both opportunities and pitfalls in redefining negotiated Chinese business relationships. Although digital tools potentially facilitate the expansion of social capital for firms by growing networks, increasing reciprocity, and developing trust, they also seem to risk weakening the personal relations that are still at the core of guanxi [54].

Considering this background, SCT can be an adequate theoretical framework in explaining how traditional guanxi evolves based on digital society. SCT addresses the networks, trust and reciprocity in the retention of business relationships, which are regarded as the key source of competitive advantages in

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the Chinese B2B context [44-45]. Trust lowers transaction costs and enhances coordination, particularly where market uncertainty is high [55, 56]. However, digitalisation might undermine interpersonal trust, making SCT particularly effective in explaining how Chinese firms navigate between *guanxi* and digitalisation in this research.

2.3.2 Relationship marketing theory (RMT)

Relationship Marketing Theory (RMT) asserts that building, developing, and maintaining long-term relationships with business partners is paramount to market success, beyond mere transactional exchanges [57]. For B2B relationships, this theory is that relationship marketing with customers should lead to maintaining customers, building long-term commitment and creating business value [58-59]. Originally developed in Western contexts, RMT highlights principles such as:

- Trust and commitment as foundations for sustained exchanges
- Customer retention is more valuable than acquisition
- Mutual value creation over one-off transactions

While RMT assumes a relatively formal and contract-driven relationship paradigm, its principles resonate with guanxi's relational embeddedness. In fact, guanxi may be seen as an informal, culturally embedded counterpart to RMT in Chinese markets. The key difference lies in governance mechanisms: where RMT relies on legal contracts and service quality, guanxi relies on social norms, favour exchange, and interpersonal monitoring. RMT supplements SCT to discuss how to maintain customers through building long-term commitment and creating business value. As a result, this research adopts both SCT and RMT models to study the evolution processes of IT under the influence of digital technologies in the Chinese business environment.

2.3.3 Research conceptual base

In conjunction, SCT and RMT offer a strong conceptual foundation for exploring the transformation of guanxi from B2B perspectives. SCT explicates relational logic and resource flow, and RMT accentuates the strategic and operational levels of managing relationships. Layered with the dynamics of digital transformation, these two theories enable thinking of guanxi not simply as a legacy, but an ever-changing structure that adapts to institutional change, technological affordance and strategic requirement.

The Guanxi 1.0 to 4.0 framework that is introduced in this paper utilises these theoretical connections to show how guanxi has evolved in many phases and gauges each phase with a change in digital capabilities and business environment. The goal of this research is to supplement academic study by tracing the continuity and transformation of guanxi through technology eras to provide a culturally grounded but progressive availability to B2B relationship management in China.

3. Research Method

3.1 Research Philosophy

This research used a subjectivist ontology by interpretivism in philosophical thinking, which was adopted in this research. Ontology is about the existence of reality and what can be known. In this research, reality was socially and contextually constructed in the context of the current transformation of *guanxi* under the influences of digital technologies in Chinese economic life. The subjectivist position of this research aligned with the understanding that guanxi, a deeply embedded social and cultural construct, does not exist as a fixed or objective reality but instead emerges from the interactions, interpretations, and meanings ascribed by individuals and businesses within their specific social contexts [60-61].

Also, guanxi is not a static process; it changes through social interaction, trust-building and reciprocity [51, 62]. A subjectivist ontology considers reality dynamically, not linear, ordered units, which is very suitable for *guanxi* [61]. Guanxi, an emergent and dynamism-driven network of relations, corresponds perfectly to the subjectivist concern with change and elasticity [60]. The way business interactions adapt to technological change and the way those changes are perceived and accounted for by business practitioners is the subject of the research and does not seek a one-size-fits-all concept of *guanxi*.

3.2 Qualitative Data Collection

Qualitative studies are instrumental in learning about the social and cultural depth of human behaviour [63]. Guanxi also has relational and culturally rich concepts; therefore, this research undertakes a qualitative approach. With this methodological decision, this research explains and understands deeply the participants' subjective experiences and cultural dimensions of *guanxi* that cannot be quantified. Further, semi-structured interviews were selected as the type of data collection in this research, which allows the exploration of multilayered culturally specific phenomena [64]. The use of semi-structured interviews allowed the author to ask interviewees about the research topic, and follow up with the questions, based on the interviewees' responses. The semi-structured interviews allow enough flexibility in asking questions based on participants' specific backgrounds, such as their industries, the types of their companies, and the adaptation level of IT, etc.

Pre-scheduling the interview questions allowed the author to include central topics of the evolution of guanxi in the digital age. Also, such preparation and the scalability of the semi-structured interview make it possible for the study to capture the expected and unexpected study topics. To pre-scheduling the interview question, the researcher has used interview guidance both in English and Chinese. This can ensure that key points are covered, such as the impact of digital platforms on creating and sustaining guanxi in B2B relationships in the Chinese business world.

In this research, the interviews were conducted between Jan 2021 and Oct 2023. Only 11 telephone interviews were conducted, and the other 50 interviews were conducted through face-to-face interactions. The research mostly used face-to-face interviews with the participants because the author could describe the purpose of the interview and encourage the interviewees to provide more information during the interviews. Also, during the face-to-face interviews, the author was able to clarify the questions directly with the participants and make corrections when the participants had misunderstandings of the research questions. Further, the author can provide prompts, explore responses, and follow up on new ideas. Another equally crucial reason for authors to use face-to-face interviews in most cases was that only a small number of interviewees agreed to participate in interviews over the phone due to security concerns.

3.3 Sampling Procedure

According to Guest et al. [65], non-probability is a commonly used sampling approach in qualitative research. Due to restrictions related to cost and time, the author was prevented from using probability sampling. Therefore, this research used convenience sampling and the snowball technique to access the sample as non-probability sampling approaches. Wang et al. [52] proposed that convenience sampling is mainly selected for convenience. According to David and Sutton [66], convenience sampling is always used to obtain a gross estimate of the outcomes without incurring excessive time or cost.

This research uses convenience sampling to reach those participants who are otherwise difficult to contact by the author. The snowball technique is a convenience sample in which the author can make initial contact with a small group of people [67]. This research uses snowball sampling to reach populations that are inaccessible or hard to find, to provide an in-depth method of *guanxi*. Table 1 represents the distribution of participated companies by locations and industries.

Table 1. Distribution of Participated Companies by Locations and Industries

<table>
<tr><td>Total number of Participated Companies</td><td colspan="2">61</td></tr>
<tr><td rowspan="7">Locations of Interviews</td><td>City Name</td><td>Number of Companies</td></tr>
<tr><td>Shenzhen, Guangdong Province</td><td>28</td></tr>
<tr><td>Guangzhou, Guangdong Province</td><td>15</td></tr>
<tr><td>Huizhou, Guangdong Province</td><td>4</td></tr>
<tr><td>Dongguan, Guangdong Province</td><td>4</td></tr>
<tr><td>Shanghai</td><td>5</td></tr>
<tr><td>Beijing</td><td>5</td></tr>
<tr><td rowspan="2">Industries</td><td>Industry Type</td><td>Number of Companies</td></tr>
<tr><td>ICT (Information</td><td>36</td></tr>
</table>

	and Communication Technology)	
	Manufacturing	13
	Construction	12

3.4 Interview Design

The interview design was informed by three conceptual lenses namely, Social Capital Theory and the Relationship Marketing Theory. In order to strike a balance between thematic integrity and situational concerns, they were utilized in semi-structured interviews. It produced and generated questions that will be answered with regards to the construction and transformation of the trust, reciprocity, and network ties (SCT) in B2B contexts. Other triggers explored the effects of the digital tools, namely CRM systems and platform-based analytics on the quality of relationships and customer engagement (RMT).

The interview aims at encouraging the participants looking back on how guanxi progressed through the transformation of the kinship-based relations it originated into a relationship mediated solely by the platform of interaction. A pilot interview was used to improve linguistic specificity and cultural appropriateness. The interviews were completed in Mandarin, and transcribed and translated to English before the analysis. All participants participated voluntarily, and informed consent was guaranteed alongside confidentiality. This design allowed rich, theoretically informed accounts of transformation of guanxi in the digital age to be gathered.

3.5 Data Analysis

This research implements six steps of qualitative data analysis from Creswell [68], and the details undertaken in each analysis step in this research are shown in Table 2.

Table 2. Details of Six Steps for This Research's Qualitative Data Analysis Based on Creswell [69] Model

No.	Step	Description
1	Organise and Prepare Data	Collect, arrange, and prepare data for analysis, including transcribing interviews, organising notes, and structuring data files.
2	Read Through the Data	Review all data multiple times to gain a general sense of the information, familiarise with the content, and identify initial insights.
3	Code the Data	Segment data into meaningful units, labelling sections with codes that capture essential ideas, patterns, or recurring concepts.
4	Generate Themes or Categories	Group similar codes into broader themes or categories representing major data ideas.
5	Interpret Data	Make sense of the themes by connecting them to the research questions or theoretical framework, highlighting the significance.
6	Present the Findings	Share the results in a descriptive or narrative format, using visuals or participant quotes to illustrate themes and insights.

4. Conceptual Framework of Guanxi 1.0 to 4.0

This part presents a conceptual model with four stages to track their progression that guanxi follows in Chinese B2B environments in the context of digital transformation. Every phase of Guanxi 1.0 through to 4.0 addresses a different arrangement of relational logic and the technological mediation and institutional environment. The model fills in the gap in existing guanxi literature, extending it to digital and platform-mediated shifts, providing a longitudinal and integrative point of view.

4.1 Guanxi 1.0: Kinship and Localised Personal Ties

Guanxi 1.0 represents the earliest form of personal connections in Chinese society, which is established based on traditional Chinese culture. In *guanxi* 1.0, *guanxi* primarily relies on reciprocal relationships [70-71], face-to-face communication [48, 72], and kinship ties [73]. In the 1.0 era, interpersonal trust and mutual obligations were the key concepts in *guanxi* [74]. At this stage, Chinese people always build their own networks and establish their relationships based on trust towards their immediate social circles [6-7, 75-76]. The trust and cooperation among people were established by involving in mutual assistance and long-term interactions in a close-knit social network [77-79].

In 1.0 era, *guanxi* focuses on the significance of trust, reciprocity and development of long-time relationship [6, 51, 77, 79-80]. At this stage, the business deals were heavily relying on social networks, individuals' face-to-face interactions, and personal connections, such as family members, friends, and acquaintances etc. [51, 72, 79-80].

Also, *guanxi* at this stage mainly relies on interpersonal trust, shared experiences, and personal meetings [51, 62, 72, 76, 79]. Accordingly, *guanxi* 1.0 emphasises the significant role of direct communication and physical presence [72, 79-80]. In *guanxi* 1.0, the reciprocity and trust play a more significant role [6, 51, 77, 79, 51]. Also, the building and maintenance of relationships are nurtured through favours, gift-giving and mutual assistance in *guanxi* 1.0 era [51, 79, 81].

Several Chinese companies still involve in *guanxi* 1.0 doing their business. For example, Mr. A52 and Mr. A49 indicated that their companies were doing business with the local governments. Mr. A49 indicated that their company was responsible for the construction of public buildings, such as local schools and libraries, in their villages. These projects were undertaken from Mr. A49's one of relatives who was working as the leader of local government. Mr. A49 said his relative trusted the quality of their construction work so his company was able to win the other competitors.

Mr. A52 shares similar opinions with Mr. A49, "*Before I open my company, I was working for the local government, so I have direct contacts with them. When I was working for local government, I was a senior engineer who was responsible for designing and planning the buildings. I become an expert in using BIM to do smart building design when I was working for local government. Therefore, after I quit the government job and set up my own construction design company, I am easy to get projects from local government. They trust my ability in construction design to support the local government to establish a smart city*".

Combining previous literature and interviews, *Guanxi* 1.0 is considered as the traditional form of relationship building and social networking in China, which relying on personal connections, face-to-face communications and mutual obligations, with limited influences from digital technologies.

4.2 Guanxi 2.0: Organisational and Institutional Expansion

In the context of the entry of digital technologies and the global market, Guanxi 2.0 was born. Its evolution owes to the industrial revolution and rapid urbanization that extended its spatial and institutional boundaries [62, 71, 73, 74, 79, 82, 83]. With digital platforms, such as online marketplaces, instant messaging apps and emails, physical boundaries saw how they could be undermined and how relationship building is revolutionised. Institutionalizing personal networks into *guanxi* 2.0 enabled structured business practices from formal agreements to long distance collaborations [74, 82, 84-86].

IT has played a transformative role in *guanxi*, as literature acknowledges. Wang [87] pointed out that digital tools form a means for interaction, improving customer relations and supporting customised services. Technologies involved in Social CRM as discussed by Taiminen and Ranaweera [88] and Zhang and Li [27] maximise trust building and minimise risks associated with transactional detachment. These tools facilitate how businesses can expand their *guanxi* networks worldwide with combined professional as well as personal relationships in a structured, and transparent manner [28, 74, 89].

These insights are corroborated by interviews. The IT tools such as QQ and WeChat play an important role in modern business communication according to many participants. Mr. A55 and Mr. A48 showed how their companies moved to WeChat instead of QQ from 2012 onwards to make real time interactions with clients and suppliers. With this action, it shows how domestic instant messaging apps are getting involved in handling business relationships.

Additionally, IT-mediated *guanxi* facilitates global market navigation and trust building among the remote regions. For instance, Mr. A40 described how his company sourced high quality integrated circuits required by its manufacturing process from foreign suppliers via forums, and industrial and networking events. Mr. A42, similarly, described how his company had initially used personal connections his father had made to obtain

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South African clients by "*shifting from face-to-face to email communication that enabled seamless working during the COVID-19 pandemic*".

The interviews also indicate the IT tools blended with traditional *guanxi* elements. Mr. A37 mentioned his company used community ties and social gestures, such as inviting suppliers to anniversary events, to keep long term partnerships going with local suppliers. While his company still offers traditional practices, *guanxi* 2.0 is becoming increasingly hybrid in nature with the advent of IT tools such as Tencent Meeting, whom his company now combines with online meetings.

In general, in *guanxi* 2.0 age, IT tools have been integrated to sustain trust and reciprocity in the expansion of relationships over cultural and geographical boundaries. Combining personal and professional networks, businesses can use them to effectively participate in the global market and maintain commitments that are long-lasting and reduce operational costs. During *guanxi* 2.0, the combination of technology innovation coupled with traditional *guanxi* values is a revolutionary change to the Chinese business practice.

4.3 Guanxi 3.0: Early IT-Mediated Guanxi and CRM Integration

Guanxi 3.0 fits the information age defined by globalization and rapid technological evolution. *Guanxi* 3.0 surpasses geographical constraints with cutting edge technologies, big data and digital services [28, 34, 62, 83, 90-92]. In turn, these tools create global connectivity, encourage relationship management and maintain trust and reciprocity [13, 51, 93]. *Guanxi* 3.0 enables strategic resource access, long term commitment and decision making by conducting data driven analysis on customer preference and social behaviour [50, 54, 94].

The interviews reflected the practical experiences of *guanxi* 3.0, in which Chinese businesses interact virtually with digital tools, such as WeCom, WeChat, DingTalk, and Alibaba cloud platform. For instance, Mr. A34 and Mr. A31 utilised WeCom and WeChat as real-time communication method for supplier and client communication. These are tools which simplify interactions and decrease necessity of physical presence. The interviews highlighted *guanxi* 3.0's hybrid nature, blending digital and traditional practices. For instance, Mr. A38 mentioned he still would send online gifts through online platforms when talking about online tools like WeCom and Zoom during COVID-19. Ms. A36 also discussed how her company went through the transition of going from face to face to using DingTalk and QQ for daily interactions, and how their client range expanded to other provinces without frequent travel.

According to the literature, digital *guanxi* grants strategic benefit through resource accessibility and means to maintain long term commitment despite external disruptions [45, 50]. Organisations are able to operate even in a physical constraint thanks to digital platforms. Findings from the interviews support this view, as Mr A31 shared his company used social media communication platform such as WeChat, heavily, during the pandemic. The digital platforms and social media tools that used by Chinese businesses allowed easy communication and project coordination that kept the relationships intact even in the absence of face-to-face interactions.

Therefore, it is found that *guanxi* 3.0 is based on digital platforms to extend networks globally. Digital tools are there emphasizing trust and reciprocity as fundamentals, helping people communicate with ease and establish them strategic relationship. However, interviews offer a real sense of how companies balance traditional and new business practices. Mr. A38's insistence on how the personal gestures is maintained through digital means reflect how cultural values are being incorporated into virtual progressiveness.

Guanxi 3.0 era, in general, is the natural integration of digital technology and business relations, where advanced digital technologies help businesses to manage the globalization and the progress of new technology. *Guanxi* mediated by IT tools globalizes networks, sustaining trust, combining traditional and modern practices and accommodating the challenges of the pandemic. This *guanxi* 3.0 evolution protects the basic values of *guanxi* in the digital age and adapts the modern efficiency.

4.4 Guanxi 4.0: Digital Platformisation, AI, and Data-Driven Guanxi

With the current age of emerging technologies, such as AI, blockchain, IoT, data analytics and cloud computing etc., *Guanxi* 4.0 is born. *Guanxi* 4.0 is the integration of personal relationships to these emerging technologies, with a focus on a complete and connected ecosystem [28, 34, 92, 95, 96]. Pagani and Pardo [97] broaden the concept of *guanxi* beyond interpersonal boundaries, in which *guanxi* helps to real-time decision-making, as well as shape predictive notion and personal solution. The IoT improves supply chain efficiency and network connectivity [50] and blockchain improves trust and transparency by recording secure, and immutable records of transactions [93].

In other words, an AI-powered tool that can be both scalable and personalised, so that the scale of the network can be served while not breaking and maintain relational depth and reciprocity [51,54,87]. When *guanxi* 4.0 encounters the digital channels which are becoming more and more impersonal, it may doubt the cultural authenticity and relational depth [74, 79, 85-86,98]. The core principles of trust and mutual benefit which continue to make *guanxi* important in modern Chinese society can be sustained only if technologies are used to enhance such human relations without altering them beyond recognition.

The findings suggest that *guanxi* 4.0 allows to utilise the latest technology, namely big data analytics, the IoT, machine learning, blockchain and automation to improve B2B relationships in business world. Instead, the businesses personalise interactions and services with individual preferences, to deliver tailored experiences and deepen relationships at scale. With smart algorithms and big data, individuals and organisations can find out and nurture valuable connections, predict needs and provide personalised services for customers. In *guanxi* 4.0 era, technological power has become the foundation of trusted relationships.

According to Mr. A27, their company helps the local governments to attract a number of high-tech companies from China's mega cities, such as Shenzhen and Guangzhou, to smaller cities to establish their branches. The aim of doing this is to help to increase the local employment rate and support the technical development and advancement in Chinese small cities. According to Mr. A27, "*Shenzhen government would like to reduce the emission produced by these manufacturing companies so they would like these companies to move their factories. Our company uses government's internal database to find out them and their contact methods. Then our company contacts them and asks them whether they need help with our solutions*".

Mr. A23 who works for a private company which provides financial supports for IT companies and involves in investment in IT industry, they are looking for potential customers through big data analytics in industrial data. Mr. A57 indicated that their company have employed AI-powered techniques in the identification of potential partners. He pointed out that, "*our partnerships have been strengthened by blockchain technology as it has assured everyone that records of the partnership dealings are open for review and valuable since no alteration is possible*." Similarly, Mr. A58 described how his company has turned to IoT and machine learning offered by Alibaba Cloud to enhance supply chain in the business, "*The use of real-time data has enhanced the aspects of openness and credibility between us and our suppliers. By using the machine learning techniques, the data about our partner's usage is studied and further solutions are proposed ahead of time.*"

On the other hand, Ms. A59 shared how her team employs the AI tools for partner satisfaction assessment, "*The sentiment analysis on Baidu Intelligent Cloud we use helps us determine how satisfied or not our partners are with our message and feedback. In essence, these insights help us provide nurture to our guanxi while beating our competitors*". The social media communication platform, WeChat has been also used to ensure constant communication with business partners, Ms. A59 said. Also, Mr. A60 indicated that DingTalk provided them the ability to keep a digital record of all business interactions, and to identify those opportunities which have accountability, Accordingly, *guanxi* has become more dynamic and resilient because technology has integrated human interaction.

Big data analytics has been essential for Mr. A61's company. Real-time communication in his company is made possible through cloud-based platforms that would not be limited by geographical boundaries. He realised that this has been a significant improvement in their reach and increase in efficiency of their relationship building efforts. Mr. A47 explained in the manufacturing sector how blockchain technology on AntChain helps performing company supplier analysis and using virtual reality (VR) in client engagement. He further explains, "*The use of VR technologies gives out international clients a virtual tour of our production processes that in turn strengthens their confidence in our capabilities.*"

Guanxi 4.0 uses advanced digital tools to reshape traditional relational practices, embedding cutting edge technologies to enhance decision making, resource deployment, and relationship management. Pagani and Pardo [97] indicated that tools such as AI and big data analytics can help to analyse customers' behaviours, identify potential partners, and work out with solutions to the customers. Blockchain leads to higher level of trust and transparency by securing the immutable records for the transactions, and IoT enables the efficiency of supply chain and improving the network connectivity [50,93].

Trust continues to be an important part of *guanxi* in the age of 4.0 and are the IT tools an important factor to cultivate this trust. Mr. A47 describes blockchain technology as secure, transparent and discrete transactions that greatly reduce dispute and enhance credibility. Ms. A59 uses AI-derived sentiment analysis to track partner satisfaction, thereby gaining valuable insights to continue long term relationships. This technological progress guarantees that the digital environment also preserves and fortifies those very basic aspects of *guanxi* such as trust and reciprocity.

The challenge balance relational depth and scalability is addressed in *guanxi* 4.0. In literature [54,87] and interviews, AI-powered CRM systems can scour enormous networks and personalised interactions. For example, Mr. A58 indicated that their company has used machine learning algorithms to predict what partner companies need and proactively provide solutions to improve domestic or international partnership. Therefore, the conclusion is that by making use of IoT and VR, B2B communications and interactions in guanxi 4.0 could be personalised. Using these innovations, this research shows how guanxi 4.0 scales its form of relational management to large scales without losing personalization.

Based on literature [50], they also hold relevance for a real time provision of communication, while growing networks. Based on the research, it is still certain that social media platforms, like WeChat, WeCom and DingTalk, continue to play an important role in the guanxi 4.0 era. For instance, Mr. A61 and Mr. A45 revealed that social media platforms could help building efficient and scalable relationship from the global communication and discovering new partnership opportunities.

At large scale, guanxi 4.0 comes with the ultimate efficiency and scalability, but retaining the social relations depth and cultural authenticity can be challenging. Scholars warn about the nature of the impersonal digital interactions that could reduce the social, cultural, and incentives bonds of a traditional *guanxi* [73-74,82,85-86]. Interviewees overcome this challenge by merging technology with traditional practice. For example, Mr. A27 and Mr. A58 endorsed integrating digitals tools into personalised gestures to keep relational values and trust.

In general, while *guanxi* is mediated in the 4.0 era by IT, it integrates advanced technologies to enhance trust, scalability and personalization and create networks globally. Traditional practice is tackled with tools like AI, blockchain and IoT, real time, data driven decision making and partnerships are strengthened. Nevertheless, a key element of long-term success in this technology is still to balance technological efficiency with the cultural and relational ethos of *guanxi*. With *guanxi* 4.0, traditional relational principles are demonstrated to be adaptable to emergent technologies, thus enabling their continued relevance in the modern business context.

4.5 Summaries of Progressive Transformation of Guanxi from 1.0 to 4.0

The Guanxi 1.0–4.0 model can also be compared across four analytical dimensions: trust, reciprocity, transparency, and scale, as presented in Table 3. This comparative table illustrates the progressive transformation of guanxi from a localised, opaque, emotionally driven tie to a digitally institutionalised, transparent, and scalable relationship logic.

Figure 1 illustrates the dynamic progression of Guanxi relationships from version 1.0 to 4.0, mapping each stage to theoretical insights from Social Capital Theory (SCT) and Relationship Marketing Theory (RMT). At Guanxi 1.0, relationships are grounded in trust-based personal relations, reflecting SCT's relational capital and RMT's emphasis on personal trust as the foundation for business interactions. Advancing to Guanxi 2.0, formalized inter-organisational ties emerge, supported by SCT's relational and structural capital, and RMT's view of enduring, contractually structured partnerships.

Guanxi 3.0 integrates CRM technologies, aligning with SCT's inclusion of all three capitals—relational, structural, and cognitive—and RMT's embrace of technology-enabled relationship customization.

At the frontier, Guanxi 4.0 features platform-driven relationships, underpinned by SCT's concept of digital structural capital—digital infrastructure and network configurations that facilitate scalable connections—and RMT's recognition of platforms as relationship mediators.

The dual-column structure visually juxtaposes SCT's conceptual focus on social resources and structures with RMT's practical orientation toward managing and evolving customer-firm relationships. Together, Figure 1 reveals how Guanxi's digital transformation can be understood as both a shift in social capital formation and relationship marketing mechanisms.

Table 3. Progressive Transformation of Guanxi

Dimension	Guanxi 1.0	Guanxi 2.0	Guanxi 3.0	Guanxi 4.0
Trust	Emotional, face-based	Role-based, semi-formal	Data-supported, but personal	Algorithmic, reputation scores
Reciprocity	Social favours	Resource sharing in firms	CRM-based loyalty	Platform-enforced incentives
Transparency	Opaque, informal	Partially visible	Documented but not open	Fully traceable via digital logs
Scale	Localised, limited	Regional, inter-organisational	National within sectors	Global, platform-enabled

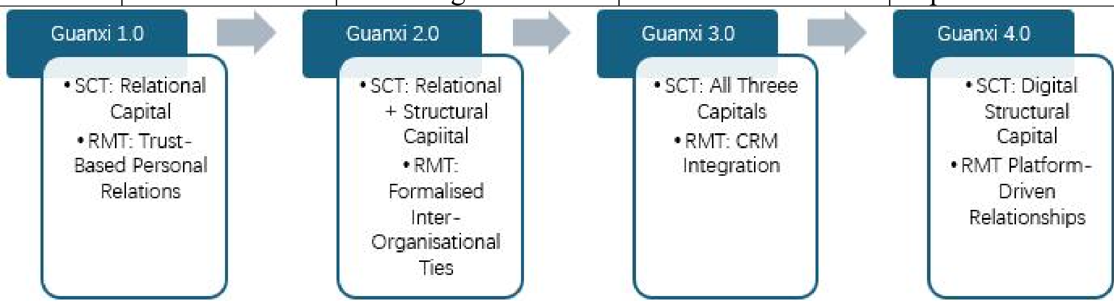

Figure 1. Theoretical Insights of Dynamic Progression of Guanxi Relationships

5. Discussion

This section synthesizes the theoretical and practical implications of the Guanxi 1.0–4.0 framework in understanding B2B relationship evolution in China's digital economy. Drawing from 61 interviews across three sectors, this research reconceptualises guanxi as a dynamic, staged construct influenced by technological infrastructures, sectoral maturity, and institutional conditions. It contributes to both theory development in relationship marketing and social capital, and practice in digital strategy and relational governance.

5.1 Theoretical Implications

Previous literature has often treated guanxi as a static cultural artefact, anchored in Confucian values and resistant to change. While scholars like Gold et al. [99] explored guanxi's role in institutional transition, few have systematised its transformation under digitalisation. This study addresses that gap by offering a longitudinal framework that reflects structural, technological, and strategic shifts in guanxi.

The Guanxi 1.0-4.0 model suggests that guanxi is not monolithic but evolves along two critical axes, including technological mediation (from face-to-face to AI platforms) and relational logic (from kin-based trust to algorithmic trust). This offers a new lens to understand how traditional relational capital adapts to digitised environments, moving beyond binaries of tradition and modernity. Instead, it reveals continuity through transformation—digital tools do not displace guanxi but reshape its operational logic, formalisation, and scale.

From an SCT perspective, the evolution from Guanxi 1.0 to 4.0 reflects a shift in the dominant forms of capital. Guanxi 1.0 relies heavily on relational capital (trust, obligation, emotional intimacy). Guanxi 2.0 incorporates structural capital (hierarchies, role-based access). Guanxi 3.0 begins to formalise and document interactions. Further, Guanxi 4.0 introduces digital structural capital—platforms, ratings, and AI proxies for trust. This reconceptualisation extends [45] framework by incorporating digital affordances as a new layer of social capital mediation. It also highlights how weak ties become systematised and activated at scale in Guanxi 4.0 through data-driven B2B networks.

In relationship marketing literature, guanxi is often framed as a cultural supplement to transactional marketing in the Chinese context [100]. However, this paper positions guanxi as a core dynamic within digital strategy, not an add-on. The Guanxi 4.0 stage challenges classical RMT assumptions in three ways. First of all, relational closeness can be engineered via platforms, not just cultivated over time. Second, digital transparency substitutes for ritualistic signalling, such as banquets or gift-giving. Third, automated segmentation and predictive analytics personalise relationships at scale, changing the role of the salesperson or relationship manager. These findings suggest that RMT should adapt to platform-based environments, where customer intimacy is algorithmically constructed rather than interpersonally nurtured. Guanxi 4.0 thus represents a hybrid logic, blending affective trust with behavioural scoring.

5.2 Practical Implications

Practically, the study highlights guanxi's transformation into a strategic digital capability. In Guanxi 4.0, relationship management becomes embedded in platform architecture, allowing firms to monitor relational risk in real time, evaluate trustworthiness through digital footprints, automate reciprocity through smart contracts and scale emotional engagement via AI chatbots or reputation systems. This has particular value in China's platform-driven economy, where B2B interactions occur through semi-closed ecosystems like Alibaba Cloud, JD Industry, or WeChat Enterprise. Firms no longer rely solely on personal connections but on data governance systems that codify guanxi as a relational infrastructure.

However, the empirical data also shows that traditional guanxi logics persist, especially in construction and older-generation firms. This confirms that guanxi does not disappear but co-exists with new digital practices. Managers must therefore navigate dual guanxi strategies—relational and data-driven—depending on context, partner type, and generational preferences. It is important to acknowledge that the Guanxi 1.0–4.0 model is not strictly sequential or universal. Firms and sectors may operate across multiple stages simultaneously. For instance, one enterprise may use AI ratings for vendor screening (4.0), CRM for managing distributors (3.0), and personal dinners for key stakeholders (2.0). Thus, guanxi should be seen as a plural and layered construct, with overlapping logics across a digital continuum.

6. Limitations and Future Research Directions

6.1 Research Limitations

While this research offers a novel framework, several limitations must be acknowledged. First of all, the data is qualitative and exploratory, which limits generalisability. Although the cross-sectoral approach enhances richness, future work should adopt quantitative methods to statistically test the relationships proposed in the framework. Second, the study is geographically bounded to China, reflecting local institutional logics, cultural norms, and digital infrastructure. While the findings may resonate in other Asian economies with relational cultures, caution must be exercised in applying the model universally. Finally, this study captures a snapshot in time. As technologies evolve rapidly, especially in AI-driven recommendation, privacy regulations, and platform governance, the nature of Guanxi 4.0 will likely evolve further.

6.2 Future Research Directions

This paper opens several promising avenues for further research. Firstly, future studies could design survey instruments to test the relationship between digital tool adoption and guanxi dimensions (e.g., trust, reciprocity) across industries and regions. Second, the future study can consider using cross-country comparative perspectives by exploring how guanxi analogues (e.g., *blat* in Russia, *jeitinho* in Brazil, *wasta* in the Middle East) evolve under digital conditions would enrich relational theory beyond the Chinese context. Further, given the rise of closed B2B ecosystems (e.g., Alibaba, JD), further research is needed into how platform design mediates and constrains guanxi, including algorithmic discrimination and digital exclusion risks. Also, future study can be longitudinal by tracking how a single firm or sector transitions across guanxi stages over time would help assess whether Guanxi 4.0 is a stable stage or an unstable hybrid requiring constant managerial adaptation. In addition, as digital trust becomes more datafied, ethical concerns regarding privacy, data misuse, and algorithmic bias emerge. Future research could interrogate the moral implications of digitising guanxi.

7. Conclusion

This study has proposed and empirically illustrated a four-stage conceptual framework—Guanxi 1.0 to Guanxi 4.0—to capture the evolutionary dynamics of guanxi in the context of China's digital transformation. The core contribution of this paper lies in its dual theoretical and empirical offering. Theoretically, it integrates Social Capital Theory (SCT) and Relationship Marketing Theory (RMT) with guanxi research to demonstrate how digital tools alter the mechanisms of trust, reciprocity, transparency, and scalability in Chinese B2B relationships. Empirically, it provides sectoral evidence of how guanxi practices manifest differently across industries, depending on digital maturity and institutional embeddedness. By conceptualising guanxi as a layered and adaptive construct, this study moves beyond static typologies and situates guanxi in a dynamic digital trajectory.

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