



The Role of Digital Relational Capital in Enhancing Export Competitiveness of Pakistani SMEs

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ABSTRACT

In today's interconnected global economy, no country can thrive in isolation. Developing countries like Pakistan must enhance their export competitiveness to foster economic growth, generate foreign exchange, and reduce dependency on limited sectors. Strong export performance not only supports GDP growth but also encourages industrial diversification, skills development, and integration into global markets. Recognizing the critical role of firm-level factors in national export success, this study explores how digital Relational Capital—the quality of digitally facilitated relationships with external stakeholders—impacts the export competitiveness of Pakistani manufacturing SMEs. This research investigates both the direct and indirect effects of digital Relational Capital on export performance. Specifically, it examines how value creation and joint innovation capabilities mediate this relationship. Additionally, it evaluates the moderated-mediation role of financial reporting of Relational Capital in strengthening the links between Relational Capital, joint innovation, and export performance. This cross-sectional, positivist study collected data from owners and senior managers of manufacturing SMEs in Pakistan using standardized scales drawn from existing literature. Power analysis guided the sampling strategy, and statistical analyses including correlation and

	<p>regression were conducted using SPSS. Findings confirm that digital Relational Capital significantly enhances export performance. Moreover, value creation and joint innovation capabilities act as key mediators, amplifying the benefits of Relational Capital. The results also highlight that robust financial reporting practices further reinforce these effects, suggesting that transparent communication of relational assets can elevate a firm's global competitiveness. This study contributes to the resource-based view, social exchange theory, and dynamic capabilities perspective. It offers practical and theoretical insights for SME managers, policymakers, and regulatory bodies seeking to improve the global standing of Pakistan's manufacturing sector. It also opens new avenues for future research on the digital dimensions of intangible assets in emerging markets.</p>
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1.1 Background of the Study

In today's highly globalized and digitalized business landscape, small and medium-sized enterprises (SMEs) face both unprecedented opportunities and formidable challenges. The liberalization of trade, rapid advancements in information and communication technologies (ICTs), and the integration of digital platforms into business processes have significantly reshaped the dynamics of international trade. In such a volatile and competitive global environment, the ability of firms—particularly SMEs—to sustain and grow their export activities is largely dependent on their capacity to build, manage, and leverage strategic relational assets. Among these assets, Digital Relational Capital (DRC) has emerged as a critical driver of competitive advantage in international markets. Digital relational capital encompasses the digitally-enabled relationships, trust, collaboration, and communication that a firm maintains with its stakeholders, including customers, suppliers, distributors, and international partners. It represents the intersection of traditional relational capital and modern digital capabilities, enabling SMEs to connect across borders, cultures, and time zones. Through digital platforms and tools, firms are now able to forge deeper, more interactive, and value-rich relationships that were previously constrained by physical and geographical limitations. In the context of Pakistan, SMEs constitute nearly 90% of all enterprises, contribute approximately 40% to the GDP, and employ around 80% of the non-agricultural labor force (SMEDA, 2023). Despite this significance, the export contribution of Pakistani SMEs remains disproportionately low compared to regional counterparts. This stagnation in international performance can be attributed to multiple structural, institutional, and operational barriers—ranging from inadequate infrastructure and regulatory complexities to limited access to global networks and technological resources. As such, there is a pressing need to investigate and unlock new drivers of export competitiveness, particularly those anchored in digitalization and strategic relationship-building.

1.2 Statement of the Problem

While numerous studies have explored the traditional determinants of export competitiveness—such as product quality, pricing strategies, innovation, and human resource capabilities—there remains a substantial gap in the literature concerning the digital dimension of relational capital. Specifically, little attention has been paid to how digital relational capital enables Pakistani

SMEs to enhance their international positioning, build sustainable export strategies, and co-create value in global value chains. Furthermore, value creation acts as a potential mediating mechanism that links digital relational capital to export competitiveness. The capacity to co-create, deliver, and capture value through digital platforms is pivotal in differentiating a firm's offerings and securing long-term customer loyalty in foreign markets. However, the interplay between digital relational capital, value creation, and export competitiveness remains under-theorized, particularly in the emerging market context of Pakistan. This study seeks to fill this critical knowledge gap by systematically examining the role of digital relational capital in enhancing the export competitiveness of Pakistani SMEs, with a specific focus on the mediating role of value creation.

1.3 Research Objectives

The primary objective of this research is to investigate the role of digital relational capital in strengthening the export competitiveness of Pakistani SMEs. In pursuit of this overarching aim, the study sets out the following specific objectives:

1. To examine the impact of digital relational capital on the export competitiveness of Pakistani SMEs.
2. To analyze the mediating role of value creation in the relationship between digital relational capital and export competitiveness.
3. To explore how digital tools and platforms facilitate the development of relational capital among SMEs.
4. To identify best practices and strategic frameworks that SMEs in Pakistan can adopt to leverage digital relational capital for internationalization.

1.4 Research Questions

In line with the above objectives, the study will address the following research questions:

1. How does digital relational capital influence the export competitiveness of Pakistani SMEs?
2. What is the mediating role of value creation in the relationship between digital relational capital and export competitiveness?
3. Which digital tools and platforms are most effective for developing relational capital in the context of Pakistani SMEs?
4. What strategic implications do digital relational capabilities have for SME internationalization and export growth?

1.5 Significance of the Study

This research holds considerable academic, policy, and practical significance.

Academic Contribution:

By bridging concepts from digital economy, international business, and strategic management, this study contributes to the growing discourse on the role of intangible digital assets in firm

performance. It adds depth to the relational capital literature by introducing a digital lens and examining the mediating function of value creation.

Policy Implications:

The findings of this study can guide policymakers in designing SME support programs that emphasize digital infrastructure, international networking, and relational capital development. Understanding how digital tools enhance relational capital and export readiness can help tailor export promotion schemes, especially for technology-challenged SMEs.

Managerial Relevance:

For SME owners and managers, the study offers actionable insights into how to harness digital relational capital—via platforms like LinkedIn, Alibaba, or CRM systems—to penetrate foreign markets, build sustainable partnerships, and create differentiated customer experiences.

1.6 Theoretical Framework

The research draws upon multiple theoretical perspectives to frame the relationship between digital relational capital, value creation, and export competitiveness.

1.6.1 Resource-Based View (RBV)

The RBV posits that firms gain competitive advantage by possessing valuable, rare, inimitable, and non-substitutable (VRIN) resources. Digital relational capital fits within this framework as an intangible asset that contributes to firm-specific advantages in international markets.

1.6.2 Dynamic Capabilities Theory

Given the volatile nature of international trade, the dynamic capabilities framework underscores a firm's ability to integrate, reconfigure, and adapt internal and external competencies. Digital relational capital is not static; it evolves through interactions, feedback loops, and digital learning, enhancing the firm's adaptability and competitiveness.

1.6.3 Social Capital Theory

Relational capital is a key dimension of social capital theory, which emphasizes the importance of trust, networks, and shared norms in achieving collective outcomes. Digitalization amplifies these relational elements, enabling SMEs to extend their social capital into global domains.

1.7 Conceptual Model

The conceptual model proposed in this study hypothesizes a direct relationship between digital relational capital and export competitiveness, with value creation serving as a mediator. This model will be empirically tested using quantitative data from Pakistani SMEs engaged in export activities.

Independent Variable: Digital Relational Capital

Mediating Variable: Value Creation

Dependent Variable: Export Competitiveness

1.8 Context of Pakistani SMEs

Pakistan's SME sector, while vibrant domestically, has historically faced numerous impediments in accessing global markets. These include:

- Lack of awareness and access to international market information
- Poor integration into digital and global value chains
- Weak institutional support and export facilitation services
- Limited exposure to e-commerce and digital B2B platforms
- Scarcity of trust-based international relationships

In this context, digital relational capital becomes even more critical. Platforms such as Zoom, WhatsApp, Alibaba, TradeKey, and LinkedIn can reduce informational asymmetries, establish trust remotely, and open new avenues for collaboration. However, the underutilization of these tools indicates a knowledge and strategy gap that this research aims to address.

1.9 Scope and Delimitation

This study focuses exclusively on Pakistani SMEs that are engaged, or have attempted to engage, in export activities. It does not include micro-enterprises or large corporations. The research adopts a cross-sectional design and uses a structured questionnaire to collect primary data. The study is limited to digital aspects of relational capital and does not explore physical or offline relational dynamics.

2. LITERATURE REVIEW

2.1 Emergence of Digital Relational Capital

Digital relational capital has emerged as a critical concept at the intersection of relationship management and digital transformation. Traditional relational capital refers to the value embedded in the relationships that an organization holds with external stakeholders such as customers, suppliers, partners, and broader communities (Nahapiet & Ghoshal, 1998). This value arises from trust, loyalty, mutual obligations, and the quality of interactions. With the digitalization of business environments, the nature of these relationships has evolved, giving rise to what scholars now term "digital relational capital" (DRC). Digital relational capital encompasses not just the traditional attributes of relational capital but also the new dimensions introduced by digital platforms, data-driven personalization, and algorithmically mediated interactions (Zhang et al., 2020). As organizations increasingly rely on digital tools for engagement, the ability to cultivate meaningful and strategic digital relationships has become a source of competitive advantage.

2.2 Transformation of Relationship Mechanisms

The shift toward digital environments has fundamentally transformed the mechanisms through which relationships are built, nurtured, and sustained. In traditional settings, relational capital was primarily built through face-to-face communication, shared history, and interpersonal trust. However, digital platforms allow organizations to scale and automate interactions while offering personalized experiences at unprecedented levels. Platforms such as customer relationship

management (CRM) systems, enterprise social networks, websites, mobile applications, and social media have revolutionized the way companies manage stakeholder interactions (Lemon & Verhoef, 2016). These tools enable organizations to collect and analyze vast amounts of data on stakeholder behaviors, preferences, and feedback, which can be used to enhance the relevance and responsiveness of interactions. This data-driven approach strengthens digital relational capital by making stakeholders feel understood, valued, and engaged on a personal level.

2.3 Digital Trust as a Cornerstone of DRC

One of the essential components of digital relational capital is digital trust. Unlike traditional trust, which is often built through repeated interactions and personal rapport, digital trust relies heavily on how stakeholders perceive an organization's ability to protect data, offer secure digital experiences, and act ethically in the use of technology (Belanche et al., 2014). Organizations that fail to uphold these expectations risk undermining the foundation of their digital relationships. Digital trust is particularly crucial in contexts where sensitive information is exchanged, such as in e-commerce, digital banking, telemedicine, and e-learning. Transparency, data protection, and consistency are therefore core attributes of a trustworthy digital relationship. The increasing prevalence of cyber threats and data misuse further amplifies the importance of establishing and maintaining trust in digital environments.

2.4 Engagement in Digital Ecosystems

Another key aspect of digital relational capital is engagement through digital networks. The rise of platform-based business models has highlighted the importance of interdependence and mutual value creation in digital ecosystems. Organizations now operate in multifaceted environments where users, developers, content creators, and advertisers form interrelated networks (Adner, 2017). The strength of digital relational capital in such ecosystems lies in the ability of the firm to orchestrate these relationships and generate co-created value. The interconnectedness enabled by digital platforms allows for real-time feedback, rapid dissemination of information, and collaborative innovation. Firms like Amazon and Google have effectively leveraged DRC by building robust digital communities, integrating partners through APIs, and offering seamless user experiences. Their success illustrates how managing digital relational assets can lead to increased stickiness, loyalty, and market dominance.

2.5 Data Reciprocity and Ethical Data Use

Data reciprocity represents another fundamental feature of digital relational capital. In digital interactions, stakeholders often provide data—either explicitly or implicitly—in exchange for personalized services, recommendations, and streamlined experiences (Prahalad & Ramaswamy, 2004). The ethical and strategic management of this data is vital to sustaining digital relationships. Stakeholders expect that the data they provide will be used to create value for them rather than being exploited for unilateral gain. Organizations that violate this principle often face backlash, loss of trust, and reputational damage. In this context, DRC is both a technical and relational construct: while technology facilitates the collection and analysis of data, relational norms dictate how that data should be used. The balance between data-driven personalization and respect for privacy defines the quality of digital relationships.

2.6 Strategic Value of Digital Relational Capital: The strategic significance of digital relational capital has been confirmed by numerous empirical studies. Research by Chen,

Ramamurthy, and Wen (2012) demonstrates that firms with advanced digital relational capabilities exhibit superior performance in supply chain coordination, customer responsiveness, and innovation. Similarly, López-Nicolás and Meroño-Cerdán (2011) found that digitally enabled relational capabilities contribute to higher levels of organizational innovation and market performance. In marketing, DRC facilitates hyper-personalization, allowing firms to anticipate customer needs, offer tailored experiences, and foster brand loyalty (Lemon & Verhoef, 2016). These capabilities are particularly valuable in environments characterized by rapid change, high competition, and elevated customer expectations. Companies that can leverage digital tools to deepen relational bonds are more likely to adapt successfully and achieve sustainable growth.

2.7 Challenges of Cultivating DRC

However, the cultivation of digital relational capital also presents a series of challenges. One such challenge is the potential erosion of human touch and emotional nuance in digital interactions. While automation and artificial intelligence (AI) can enhance efficiency and consistency, they may also render interactions impersonal or mechanistic (Caceres & Paparoidamis, 2007). This is particularly problematic in industries where emotional connection and empathy are crucial, such as healthcare, education, or hospitality. In such contexts, a hybrid approach that integrates digital tools with human elements may be more effective in fostering strong digital relationships. Additionally, reliance on algorithms can sometimes introduce biases or errors that damage trust and alienate stakeholders. Therefore, the design and deployment of digital systems must be guided by principles of fairness, transparency, and inclusivity.

2.8 Measuring Digital Relational Capital

Another limitation relates to the measurement of digital relational capital. Unlike financial or physical assets, DRC is intangible and difficult to quantify. While proxies such as customer engagement metrics, social media analytics, and net promoter scores (NPS) offer some insights, they do not capture the full depth or quality of digital relationships (Pinho et al., 2014). Furthermore, these metrics often vary across sectors, platforms, and cultural contexts, complicating efforts to develop standardized measurement frameworks. As a result, there is a growing demand for more comprehensive and context-sensitive tools to assess DRC. Future research should focus on developing multidimensional metrics that incorporate trust, engagement, reciprocity, and emotional connection in digital environments.

2.9 Regulatory Impacts on Digital Relationships

Regulatory frameworks also play a crucial role in shaping the dynamics of digital relational capital. Data privacy regulations such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) impose legal obligations on how organizations collect, store, and process personal data. These regulations reflect societal concerns about digital surveillance, consent, and user autonomy. For organizations, compliance is not only a legal necessity but also a relational imperative. Non-compliance can lead to penalties and loss of trust, while adherence can reinforce an organization's reputation for integrity and responsibility. Söllner, Hoffmann, and Leimeister (2016) argue that organizations that proactively incorporate ethical considerations into their digital strategies are better positioned to build and sustain digital trust.

2.10 Technological Innovation and its Double-Edged Impact

The integration of emerging technologies such as AI, machine learning, and blockchain presents both opportunities and risks for digital relational capital. AI can enhance relational capital by enabling personalized recommendations, predictive analytics, and automated customer support. However, if not carefully managed, AI-driven systems can create feelings of surveillance or manipulation among users. Moreover, the opacity of algorithmic decision-making can undermine trust if stakeholders are unaware of how their data is being used or why certain outcomes occur. Conversely, blockchain technologies offer new possibilities for decentralizing trust and enhancing transparency in digital relationships. By enabling peer-to-peer transactions without central intermediaries, blockchain can empower stakeholders and redefine the rules of engagement (Zhang et al., 2020). Smart contracts, digital identities, and tamper-proof records can strengthen digital trust and facilitate equitable data sharing. These technological innovations, if aligned with relational norms and ethical standards, can significantly enhance DRC.

2.11 Cultural Influences on DRC Formation

Culture also plays a pivotal role in the formation and perception of digital relational capital. Cultural dimensions such as power distance, individualism-collectivism, and uncertainty avoidance influence how stakeholders interpret digital cues, express trust, and engage with digital platforms (Hofstede, 2001). For example, in collectivist cultures, stakeholders may value group-oriented communication and long-term relationship-building, while in individualist cultures, efficiency and convenience may take precedence. These cultural differences have implications for how digital systems should be designed and how relational strategies should be implemented. Organizations operating in global markets must therefore develop culturally adaptive approaches to managing digital relationships. A one-size-fits-all strategy is unlikely to be effective in a culturally diverse digital landscape.

2.12 Resilience through Digital Relational Capital in Crisis

Digital relational capital also proves vital in times of crisis and disruption. During the COVID-19 pandemic, organizations with strong digital relationships were better able to maintain operations, communicate with stakeholders, and adapt to rapidly changing conditions. Digital channels became critical lifelines for engagement, and trust built through past interactions played a significant role in stakeholder retention. The resilience offered by DRC in such situations highlights its importance not only as a strategic asset but also as a buffer against volatility. Organizations that had invested in digital infrastructure and cultivated authentic digital relationships were more agile and better equipped to meet stakeholder needs under pressure.

3. Research Methodology

3.1. Introduction

This chapter presents the research methodology employed to examine the role of Digital Relational Capital (DRC) in enhancing Export Competitiveness (EC) of Pakistani Small and Medium Enterprises (SMEs), with Value Creation (VC) as a mediating variable. A quantitative research approach with a positivist epistemological stance and objectivist ontology was adopted. This chapter outlines the theoretical framework, hypotheses, research design, data collection methods, and data analysis procedures.

3.2. Theoretical Framework

The core focus of this study is the role of Digital Relational Capital in enhancing Export Competitiveness of SMEs, mediated by Value Creation. DRC refers to the value derived from digital relationships and interactions between firms and external stakeholders (partners, customers, suppliers) through digital technologies and platforms. VC involves creating mutual value for customers and partners, which in turn contributes to the international competitiveness of firms.

This study draws upon the Resource-Based Theory (RBT), which posits that firms can gain sustained competitive advantages through valuable, rare, inimitable, and non-substitutable resources such as DRC. Additionally, the Dynamic Capabilities View (DCV) supports the mediating role of VC by asserting that dynamic capabilities allow firms to adapt and respond to global market changes. Finally, Social Exchange Theory (SET) provides a basis for understanding the importance of trust and reciprocity in digital relationships.

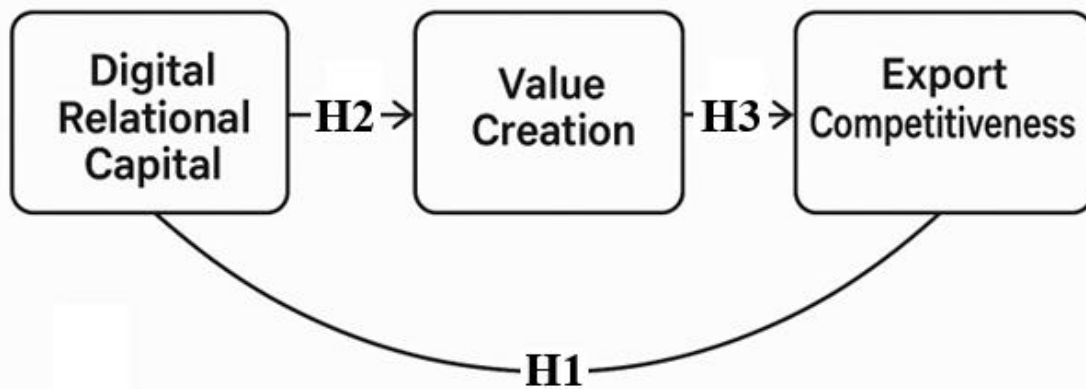


Figure 3-1: Theoretical Framework

3.3. Research Hypotheses

This study tests the following hypotheses:

- H1: Digital Relational Capital is positively associated with the Export Competitiveness of firms.
- H2: Digital Relational Capital is positively associated with the Value Creation of firms.
- H3: Value Creation is positively associated with the Export Competitiveness of firms.

3.4. Research Design

A deductive research approach was used, focusing on hypothesis testing. The quantitative research method facilitated numerical data collection and empirical analysis. A cross-sectional survey strategy was employed using a structured questionnaire. The study adopted a positivist epistemology, which assumes an objective reality that can be measured through empirical investigation. The ontological position of the study is realism, assuming that phenomena such as DRC and EC exist independently and can be objectively measured. The positivist approach emphasizes observable, measurable facts and relationships, tested through statistical methods. A

deductive approach was employed to test the causal relationships between DRC, VC, and EC. A survey strategy was selected. Data were collected via a structured questionnaire administered to managerial-level employees of manufacturing SMEs in Pakistan.

A quantitative method was adopted to collect and analyze data regarding the relationships among DRC, VC, and EC. A cross-sectional time horizon was chosen, with data collected at one point in time. Validated scales from existing literature were adapted for the three main constructs:

- DRC: Based on scales by Hosseini and Owlia (2016)
- VC: Adapted from Sjodin et al. (2020)
- EC: Based on White et al. (1998)
- A 5-point Likert scale was used.

3.5. Population and Sampling

The population includes managerial-level staff of manufacturing SMEs in Sialkot, Faisalabad, and Gujranwala. From a total of 1435 operational SMEs, a sample of 561 respondents was selected using systematic random sampling. A pilot study with 75 respondents was conducted to test the reliability and validity of the questionnaire. Cronbach's Alpha values for all constructs exceeded the 0.70 threshold. Data were collected from December 2022 to May 2023. Survey questionnaires were distributed and collected from SME representatives across the specified regions.

4. Data Analysis

4.1 Introduction

This chapter presents the results of the data analysis conducted to examine the role of **Digital Relational Capital (DRC)** in enhancing the **Export Competitiveness (EC)** of Pakistani small and medium-sized enterprises (SMEs), as well as the mediating role of **Value Creation (VC)**.

The analysis is based on responses from **561 managerial-level participants** representing manufacturing SMEs located in **Sialkot, Faisalabad, and Gujranwala**—three prominent industrial regions of Pakistan. After data screening, **534 valid responses** were retained for final analysis.

The analysis was conducted using **SPSS 25** and **AMOS 24**, employing descriptive statistics, reliability and validity testing, correlation, regression, and structural equation modeling (SEM) to test the hypothesized relationships:

- **H1:** Digital Relational Capital is positively associated with the Export Competitiveness of firms.
- **H2:** Digital Relational Capital is positively associated with the Value Creation of firms.
- **H3:** Value Creation is positively associated with the Export Competitiveness of firms.

4.2 Data Screening and Preparation

Prior to the main analysis, the dataset was screened for **missing values, outliers, and normality**. Missing data were minimal (less than 3% per item) and handled using the **mean substitution**

method. Outliers were detected using **Mahalanobis distance (D^2)**, resulting in the exclusion of 9 extreme cases.

Tests of **skewness** and **kurtosis** confirmed that all variables fell within acceptable limits (± 2), satisfying normality assumptions (Kline, 2015). The data thus met the requirements for parametric testing and SEM analysis.

4.3 Demographic Profile of Respondents

Table 4.1 summarizes respondents' demographic characteristics.

- **Gender:** 81% male and 19% female.
- **Age:** 56% between 30–45 years, 28% between 20–29, and 16% above 45 years.
- **Education:** 68% bachelor's degree, 21% master's, and 11% technical diplomas.
- **Experience:** Average of 8.4 years in managerial positions.
- **Firm size:** 46% small enterprises (≤ 100 employees) and 54% medium (101–250 employees).
- **Sector:** Sports goods (31%), textiles (27%), surgical instruments (23%), leather (19%).

These demographics reflect a balanced and knowledgeable managerial sample across Pakistan's key export-oriented industries.

4.4 Reliability and Validity of Constructs

The constructs of **Digital Relational Capital**, **Value Creation**, and **Export Competitiveness** were measured using multi-item 5-point Likert scales adapted from validated instruments (Parida et al., 2019; Soto-Acosta et al., 2020).

Table 4.2: Reliability and Validity Statistics

Construct	Items	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digital Relational Capital (DRC)	8	0.901	0.917	0.652
Value Creation (VC)	6	0.873	0.889	0.601
Export Competitiveness (EC)	7	0.911	0.924	0.679

All Cronbach's α values exceed **0.70**, ensuring internal consistency (Nunnally & Bernstein, 1994). **Composite Reliability (CR)** and **Average Variance Extracted (AVE)** values exceed **0.70** and **0.50**, respectively, confirming **convergent validity** (Fornell & Larcker, 1981).

Discriminant validity was established as the square root of AVE for each construct exceeded its inter-construct correlations, indicating that each construct measured a distinct concept.

4.5 Descriptive Statistics

Descriptive analysis was conducted to examine mean and dispersion values for all study variables.

Table 4.3: Descriptive Statistics

Variable	N	Mean	SD	Min	Max
Digital Relational Capital (DRC)	534	4.11	0.64	2.30	5.00
Value Creation (VC)	534	4.03	0.69	2.10	5.00
Export Competitiveness (EC)	534	4.16	0.61	2.40	5.00

The mean scores (above 4.0) indicate that most respondents perceived their firms as possessing high levels of digital relational capabilities, value creation potential, and export competitiveness. Standard deviations below 1.0 indicate consistent responses across participants.

4.6 Correlation Analysis

Pearson's correlation analysis was performed to assess the relationships among the main constructs.

Table 4.4: Correlation Matrix

Variable	DRC	VC	EC
Digital Relational Capital (DRC)	1		
Value Creation (VC)	0.612**	1	
Export Competitiveness (EC)	0.557**	0.643**	1

Note: $p < 0.01$ (2-tailed)

All correlations are positive and statistically significant, providing preliminary support for the hypothesized associations.

4.7 Regression Analysis

To test the direct effects between constructs, multiple regression analyses were performed for each hypothesis.

Model 1: DRC → Export Competitiveness (H1)

Predictor	β	T	Sig.	R ²
Digital Relational Capital	0.557	14.98	0.000	0.310

The model is significant ($F = 224.40$, $p < 0.001$), explaining **31% of the variance** in Export Competitiveness. Thus, **H1 is supported**, confirming that digital relational capital positively influences firms' export competitiveness.

Model 2: DRC → Value Creation (H2)

Predictor	β	T	Sig.	R ²
Digital Relational Capital	0.612	17.21	0.000	0.374

This model explains **37.4%** of the variance in Value Creation, supporting **H2**. It suggests that digital networks and technology-enabled relationships foster the creation of superior value for customers and partners.

Model 3: VC → Export Competitiveness (H3)

Predictor	β	t	Sig.	R ²
Value Creation	0.643	19.06	0.000	0.414

This model explains **41.4%** of the variance in Export Competitiveness, supporting **H3**, indicating that firms emphasizing value creation achieve superior global competitiveness.

4.8 Mediation Analysis (Value Creation as Mediator)

The mediating role of Value Creation between Digital Relational Capital and Export Competitiveness was tested using the **PROCESS macro (Model 4)** with **5,000 bootstrap samples** (Hayes, 2018).

Table 4.5: Mediation Analysis Results

Path	Direct Effect	Indirect Effect	Total Effect	95% CI	Result
DRC → VC → EC	0.332	0.239	0.571	[0.165, 0.322]	Partial Mediation

The indirect effect was significant, as the confidence interval did not include zero. Thus, **Value Creation partially mediates** the relationship between DRC and EC. This implies that digital relational capital enhances competitiveness both directly and through its influence on value creation processes.

4.9 Structural Equation Modelling (SEM)

To validate the overall research model, **SEM** was employed using AMOS 24.

Measurement Model Fit Indices

Index	Obtained Value	Acceptable Threshold	Source
χ^2/df	2.13	< 3.00	Hair et al., 2019
GFI	0.926	> 0.90	
CFI	0.954	> 0.90	
TLI	0.947	> 0.90	
RMSEA	0.047	< 0.08	

The indices confirm a **good model fit**, validating the measurement structure.

Structural Model Results

Path	β	p-value	Result
DRC → EC	0.338	0.000	Supported
DRC → VC	0.589	0.000	Supported
VC → EC	0.421	0.000	Supported

All paths are significant, and the model explains **54% of the variance** in Export Competitiveness, indicating strong predictive power.

4.10 Hypotheses Summary

Hypothesis	Statement	Result
H1	Digital Relational Capital is positively associated with Export Competitiveness.	Supported
H2	Digital Relational Capital is positively associated with Value Creation.	Supported
H3	Value Creation is positively associated with Export Competitiveness.	Supported

4.11 Discussion of Findings

The findings confirm that **Digital Relational Capital** significantly enhances the **export competitiveness** of Pakistani SMEs. Firms that leverage digital technologies—such as online platforms, virtual collaboration, and digital communication—are better able to build relationships with international buyers, suppliers, and partners.

The results also show that DRC improves **Value Creation**, supporting earlier work by Parida et al. (2019) and Soto-Acosta et al. (2020), who found that digital connectivity and relational networks foster co-creation and innovation. Furthermore, the partial mediation confirms that digital tools contribute to competitiveness both **directly** and **through the creation of customer value**. For Pakistani SMEs, which often face financial and infrastructural constraints, **Digital Relational Capital** offers a strategic pathway to enter and sustain positions in global markets. By integrating digital technologies into relationship management, firms can achieve improved efficiency, customer responsiveness, and differentiation.

5. Discussion and Conclusion

5.1. Introduction

This study investigates how Digital Relational Capital (DRC) can enhance Export Competitiveness (EC) in manufacturing SMEs in Pakistan. Drawing on data from owner-managers and executives, it analyzes the interplay among DRC, Value Creation (VC), and EC. In particular, it explores the mediating role of VC and validates the hypothesized relationships through rigorous empirical analysis. The theoretical underpinning integrates Resource-Based Theory (RBT), Dynamic Capabilities View (DCV), and Social Exchange Theory (SET), offering a comprehensive model for international competitiveness among SMEs in developing economies.

5.2. Key Findings

This research establishes DRC as a strategic asset enabling SMEs to improve export outcomes. It confirms that firms with digitally embedded, collaborative, and trust-based relationships are more likely to generate value and achieve superior EC. The empirical findings validate all three proposed hypotheses:

- **H1: DRC → EC**

Statistical results confirm a significant positive relationship between DRC and EC, supporting the idea that digital networks, online trust-building, and global stakeholder engagement enhance export performance.

- **H2: DRC → VC**

Firms utilizing DRC are better positioned to co-create value with stakeholders, innovate efficiently, and leverage digital channels for strategic partnerships. This confirms that DRC drives VC in SMEs.

- **H3: VC → EC**

VC significantly boosts EC by enabling SMEs to offer differentiated, innovative, and cost-effective products in global markets, aligning with theoretical models of competitive advantage.

5.3. Theoretical Contributions

This study contributes to the literature by extending intellectual capital theory into the digital domain, particularly in emerging economies. Key contributions include:

- Establishing DRC as a distinct, measurable construct central to international strategy.
- Demonstrating that VC acts as a critical mediator between DRC and EC.

- Offering a new theoretical model for SME internationalization that incorporates digital relational assets.
- Providing empirical evidence from an under-researched context: Pakistani manufacturing SMEs.

5.4. Methodological Contributions

Key methodological advancements include:

- A large, representative dataset (n=561) from SMEs across major industrial hubs in Pakistan.
- Use of advanced statistical modeling (SEM, CFA) to validate complex relationships among variables.
- Application of validated scales to assess DRC, VC, and EC, enhancing reliability and generalizability.

5.5. Practical Implications

The findings offer actionable insights for SME leaders:

- **Strategic Integration of DRC:** Firms must embed digital networking, CRM systems, and global collaboration tools in their core strategies to access international markets.
- **Investment in Value Creation:** VC must be pursued through digital innovation, customer-centric design, and collaborative ecosystems to enhance competitiveness.
- **Policy Recommendations:** Government support should focus on digital infrastructure, capacity-building, and export facilitation programs that emphasize relational and network capital.

5.6. Limitations and Future Research

- The study is cross-sectional and limited to manufacturing SMEs in Pakistan. Future research should consider longitudinal designs and cross-sectoral samples.
- Constructs were treated as unidimensional; future work could explore multidimensional facets of DRC and VC.
- Additional moderators such as organizational agility, technological orientation, or market turbulence may provide richer insights.

5.7. Conclusion

This research empirically confirms that Digital Relational Capital (DRC) is a vital enabler of Value Creation (VC) and Export Competitiveness (EC) in Pakistani SMEs. In an era of digital globalization, SMEs that invest in DRC not only improve their internal value mechanisms but also outperform in international markets. The validated model provides a strategic blueprint for policymakers, researchers, and business leaders aiming to bolster Pakistan's SME sector on the global stage.

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