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RESEARCH ARTICLE

The impact of transformational leadership on supplier relational stability: The moderating role of automation and globalization

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Abstract

Stable relationships with suppliers have been portrayed in the literature as having several economic and sustainability benefits. However, while a buyer firm's transformational leadership can be theorized to improve stable supplier relations, recent global business trends such as automation and globalization may endanger this stability. In this study, we therefore analyze the relationship between a buyer firm's transformational leadership and supplier relational stability and examine whether it is moderated by the buyer firm being affected by automation and globalization. We test our assumptions using data from a survey of German Mittelstand firms and confirm the moderating roles of automation and globalization. Our study therefore provides an updated and more nuanced understanding of how transformational leadership can affect supplier relational stability. Our findings also provide indications of how sustainable supplier relations can be achieved.

KEYWORDS

automation, globalization, stakeholder relations, supplier relational stability, sustainability, transformational leadership

1 | INTRODUCTION

Stakeholder theory proposes that a firm must weigh and consider its stakeholders' needs to create its value process and benefit from their recognition (Freeman et al., 2010). Freeman et al. (2010) suggest that achieving organizational goals requires the strategic management of all stakeholder relationships. In line with this notion, Berman et al. (1999) and Choi and Wang (2009) showed empirical evidence for the positive influence between a firm's stakeholder relationships and firm performance. In particular, the broad awareness of stakeholders

seems to be a critical variable for explaining firm performance (Kacperczyk, 2009).

This assessment has been found to apply not only to all of a firm's stakeholders but also to the most important stakeholder groups. In this study, we focus on one of the most relevant stakeholder groups in most firms: suppliers (Birasnav, 2013; Freeman et al., 2010). In particular, we study stable relationships between buyer and supplier firms in B2B markets, named supplier relational stability. Creating such supplier relational stability is one of the most prevalent strategies adopted to manage supplier relationships (Kim & Choi, 2021) owing to its several potential benefits. For instance, Lai et al. (2005) found that supplier relational stability is positively linked to suppliers' commitment to deliver high-quality products and services to buyers, which

Abbreviations: AVE, average variance extracted; CFA, confirmatory factor analysis; CR, composite reliability; VIF, variance inflation factor.

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may explain why it raises the performance of buyer–supplier alliances (Yang et al., 2008). Likewise, Chatain (2011) found that high levels of supplier relational stability make it harder for suppliers' competitors to cannibalize suppliers' customer base.

In addition to these economic benefits, the literature has documented that supplier relational stability can be an important driver of more *sustainable* supplier relationships (e.g., Foerstl et al., 2015; Kim et al., 2020) and a driver of firms' sustainability performance more generally (Kähkönen et al., 2018; Liu et al., 2018). For instance, a high degree of supplier relational stability makes it easier for firms to engage in collaborative sustainability projects such as co-designing green products with suppliers, promoting recycling practices in the supply chain, and jointly investing in on-site pollution control facilities for suppliers (Liu et al., 2018).

To establish or retain supplier relational stability and the associated potential economic and sustainability benefits, a firm's leadership can be decisive. According to Rowold and Poethke (2017), transformational leadership can redirect not only a firm's employees' attitudes but also stakeholders' attitudes. Transformational leaders drive change and growth by overcoming the status quo and inspiring followers with their visions and goals, thus motivating all of a firm's stakeholders to achieve their full potential (Bass & Avolio, 1993; Gerards et al., 2021; Matzler et al., 2008; Men, 2014; Popper & Zakkai, 1994). The literature indicates the potential impacts of transformational leadership on firms' B2B supply chain relationships (e.g., Burawat, 2019; Camarero Izquierdo et al., 2015; Hult et al., 2000, 2007). Such existing research has found that in organizations with transformational leadership, partnerships with suppliers are generally managed well. For instance, in such firms, close relationships with suppliers are maintained and top managers communicate to the firm's employees the importance of partnering with those suppliers, which increases employees' buy-in and encourages them to engage in this partnership (Birasnav, 2013). According to stakeholder theory, effective supply chain management is essential due to the need for close communication and relationships with suppliers (Burawat, 2019; Hult et al., 2000). Transformational leaders have also been found to establish an infrastructure that leads to more information sharing between buyers and suppliers (Birasnav, 2013; Birasnav et al., 2015) and can build solid long-term relationships (Birasnav et al., 2015).

However, existing findings (e.g., Burawat, 2019; Camarero Izquierdo et al., 2015; Hult et al., 2000, 2007) suggest that the impact of transformational leadership does not necessarily unfold in the same way in all contexts. In particular, current trends such as growing automation and globalization may present a changing context for the effectiveness of transformational leadership, but these have not yet been empirically analyzed. In recent years, automation has become increasingly important in many industries such as manufacturing and services (Krzywdzinski, 2017). Globalization, defined as the increasing interdependence of markets and production for such stakeholders as suppliers and customers (B2B and B2C) in different countries (Knight, 2000; Smeral, 1998), has also increased in recent decades. On the one hand, growing process automation affects the stakeholders of firms and existing process structures (Wright & Schultz, 2018),

thereby changing relationships by making them less personal. On the other hand, the increasing uncertainty created by globalization (e.g., doing business in unstable countries due to political situations and low product quality) can lead to threats such as global competition, the relocation of production activities, and, eventually, the closure of firms (Parrilli et al., 2013), meaning a risk that buyer–supplier relationships may be terminated or fail. These trends may put the effectiveness of transformational leadership in question, as personal contacts with suppliers tend to be reduced by automation and globalization, but these contacts are typically the basis of the strengths of transformational leadership (Matzler et al., 2008; Popper & Zakkai, 1994).

Against this backdrop, the aim of this study is to investigate the impact of transformational leadership on supplier relational stability in the context of growing automation and globalization. As detailed below, we assume that transformational leadership is positively related to supplier relational stability, but that this relationship is weakened if the buyer firm is affected by high levels of automation and globalization.

We test our assumptions based on a survey carried out in 2020 among Mittelstand firms in Germany. Our results indicate that transformational leadership positively affects sustainable supplier relations. However, we also find that in the contemporary environment of growing automation and globalization, this effect does not apply universally. Our interaction results indicate that transformational leadership is more effective for reaching high levels of supplier relational stability when the buyer firm features lower levels of automation and is less affected by globalization. For Mittelstand firms, these results imply that for firms with a low degree of automation and those little affected by globalization, a transformational leader seems most valuable for upholding stable relations with their suppliers.

The remainder of the paper has the following structure. First, we review the related literature and develop our hypotheses in Section 2. Section 3 describes our research methods. Section 4 then explains our procedures to ensure valid data and presents the results of our regression, correlation, and descriptive analyses. Finally, Section 5 provides a discussion, including a conclusion and the limitations of the present study.

2 | LITERATURE REVIEW AND HYPOTHESES

2.1 | Supplier relational stability and sustainability

As indicated above, stakeholder theorists propose that stakeholder relations must be closely managed to realize an organization's goals and raise its performance (e.g., Berman et al., 1999; Choi & Wang, 2009; Freeman et al., 2010; Kacperczyk, 2009). When it comes to suppliers, the focal stakeholder group of this study, research has found several archetypes of how a buyer firm's relations with its suppliers can be managed. Recently, Kim and Choi (2021) identified four supplier relationship strategies: (i) a stability strategy characterized by

relational stability between buyers and suppliers, but also supplier rigidity, (ii) an exploitation strategy characterized by a lack of synergies between buyers and suppliers, (iii) a leverage strategy characterized by flexible buyer–supplier relationships and relational ambiguity, and (iv) a laissez-faire strategy characterized by a lack of control over the buyer–supplier relationship, but also a high chance of supplier innovation. As argued by Kim and Choi (2021), more globalized and dynamic B2B markets have broken up many traditional supplier relationships, resulting in these four archetypes of buyer–supplier relationships in the contemporary business environment.

Current business trends such as globalization and automation may be particularly harmful to the first strategy portrayed by Kim and Choi (2021), namely, a strategy characterized by high levels of supplier relational stability, on which we focus in this study. Research has identified several of the factors that make supplier relational stability more likely to materialize. For instance, supplier relational stability has been found to be driven by relational factors such as trust and effective communication between buyers and suppliers (Yang et al., 2009; Zhang et al., 2011), close and long-term relationships between these two parties (Cannon et al., 2010; Goffin et al., 2006; Tang & Rai, 2012), supplier involvement in product design (Araz & Ozkarahan, 2007; Perez-Arostegui et al., 2012), and higher future order certainty for buyers (Perez-Arostegui et al., 2012). There are also indications that the buyer firm's leadership style makes supplier relational stability more likely. Directly related to our study, Hult et al. (2007) found that the relationship between a buying center's value and supply chain performance is positively moderated by transformational leadership but not other leadership styles. However, they did not directly analyze the effect of the buyer firm's transformational leadership and supplier relational stability, which we address in this study. In addition, their data were collected in the early 2000s, when relationships between buyers and suppliers tended to be more stable than in today's environment of more pronounced automation and globalization (Kim & Choi, 2021). Therefore, we study the relationship between the buyer firm's transformational leadership and supplier relational stability, while also analyzing the potentially moderating effects of automation and globalization.

As indicated above, achieving supplier relational stability seems attractive, as it may lead to such economic benefits as suppliers' higher commitment to quality (Lai et al., 2005), stronger buyer–supplier alliances (Yang et al., 2008), and a lower likelihood of suppliers' competitors grabbing a share of their business with the buyer firm (Chatain, 2011). At the same time, as found by Kim and Choi (2021), supplier relational stability may also result in unintended effects. The above-noted stability strategy for managing suppliers comes with higher supplier relational stability, but also supplier rigidity, as reflected in the supplier acting inflexibly and strictly in line with agreed operating protocols irrespective of the current task or problem context (Kim & Choi, 2021).

However, even when not only associated with intended economic consequences, we can infer from the literature that supplier relational stability may also enable more sustainable relationships between buyers and suppliers, which may also generate environmental

benefits. For instance, organizing a supply chain in a more sustainable and environmentally friendly way often incurs heavy upfront investment, which, according to Foerstl et al. (2015), is more likely to be shouldered if supplier relational stability is high. In line with this notion, Liu et al. (2018) argued that supplier relations must be developed over time to achieve more sustainable supply chains, and increasing relational stability is one key ingredient. They mentioned various practical examples enabled by supplier relational stability, including the co-design of green products and promotion of recycling practices throughout the supply chain, which may also help reduce costs. The field study by Liu et al. (2018) and related research (e.g., Formentini & Taticchi, 2016; Sancha et al., 2016) also show that supplier relational stability complements other features of the buyer–supplier relationship that must be aligned to create more sustainable supply chains. Such features include providing joint quality certifications, formalizing relationships through contracts, and developing joint projects (Formentini & Taticchi, 2016; Liu et al., 2018; Sancha et al., 2016). Therefore, while the present study focuses on supplier relational stability, we must emphasize upfront that this factor is not the only driving force of more sustainable buyer–supplier relations and supply chains.

2.2 | Hypotheses development

Prior research has indicated that transformational leadership may improve firms' B2B supply chain relationships (e.g., Burawat, 2019; Hult et al., 2007; see Hult et al., 2000, for relationship commitment). Camarero Izquierdo et al. (2015) found evidence that the application of transformational leadership to purchasing managers can enhance the relationship between the firm and its suppliers, allowing for greater coordination with the supplier and higher cost efficiency. In this line, Hult et al. (2007) also showed that transformational leadership positively moderates the relationship between buying centers and supply chain performance. Likewise, the study by Birasnav (2013) indicated that in firms with transformational leadership, partnerships with suppliers are generally managed effectively (i.e., close relationships with suppliers are maintained and management communicate to the firm's employees the importance of building or maintaining partnerships with suppliers), which increases employees' acceptance and encourages them to engage in this partnership.

Considering stakeholder theory, which states that the achievement of corporate goals requires the strategic management of all stakeholder relations (i.e., taking into account the interests of all stakeholders) (Freeman et al., 2010), effective supply chain management is essential due to the need for close communication and relationships with suppliers (Burawat, 2019; Hult et al., 2000). According to Hult et al. (2000), powerful leadership at all levels of the process is essential for supply chain efficiency. Transformational leaders implement a technological infrastructure and generate a knowledge-supportive culture that promotes organizational learning and information sharing between the firm and its suppliers that results in solid, long-term relationships (Birasnav, 2013; Birasnav et al., 2015). Hence,

transformational leadership's ability to bring about change through communication may improve supplier relational stability. Therefore, we present the following hypothesis:

H1. Transformational leadership is positively related to supplier relational stability.

However, the findings in the existing literature (e.g., Burawat, 2019; Camarero Izquierdo et al., 2015; Hult et al., 2000, 2007) may not be universally valid and trends such as growing automation and globalization present a changing subject of inquiry concerning transformational leadership's effects. In recent years, the phenomenon of automation has become increasingly important in many industries such as manufacturing and services (Krzywdzinski, 2017). Automation transfers the firm's operational process from humans to artificial systems (Arntz et al., 2017; Åström et al., 2022; Autor, 2015). The automation process ranges from hand tools to computer-controlled process technologies (Brownell & Merchant, 1990), and current developments include flexible robots that can create collaborative workplaces with humans (Krzywdzinski, 2017). The increase in process automation in conjunction with artificial intelligence affects a number of the firm's stakeholder groups and changes existing process structures (Wright & Schultz, 2018) and relations. Hence, firms may benefit from production efficiency, reliable production, and cost reduction (Parthasarthy & Sethi, 1992).

With the growing introduction of lean automation production processes, suppliers have been given increasingly more responsibility in product development and problem-solving (Pérez & Sánchez, 2001). Partner firms increasingly concentrate on their core skills and outsource all other tasks (Christopher, 2000; Gilley & Rasheed, 2000). To maintain these relationships as a supplier, investments in proportion to a partner firm's order are made; hence, a high dependence on suppliers and partner firms is unavoidable (Christopher, 2000), and suppliers adapt to their partner firms' production systems to generate future profits. These adapted and closed stable collaborations enable a highly competitive supply chain alliance (Dyer, 1996; Yang et al., 2008), and the maintenance of this long-term stable relationship is crucial for mutual business success (Yang, 2013; Yang et al., 2008), as any disruption to the supply chain alliance can lead to costly efficiency losses (Pérez & Sánchez, 2001).

Further, due to the rising degree of automation in recent years, transformational leadership supports and drives the implementation of a technological infrastructure and increases information sharing between the buyer firm and its stakeholders such as suppliers (Birasnav, 2013). According to Birasnav (2013), this implementation is primarily related to supply chain practices. Hence, we assume that transformational leadership has played an essential role in increasing automation in recent years, especially when the focal firm has a low level of automation. Although transformational leadership is primarily characterized by a high degree of personal communication with stakeholder groups (Burawat, 2019; Hult et al., 2000; Matzler et al., 2008; Popper & Zakkai, 1994), this can be limited by rising automation.

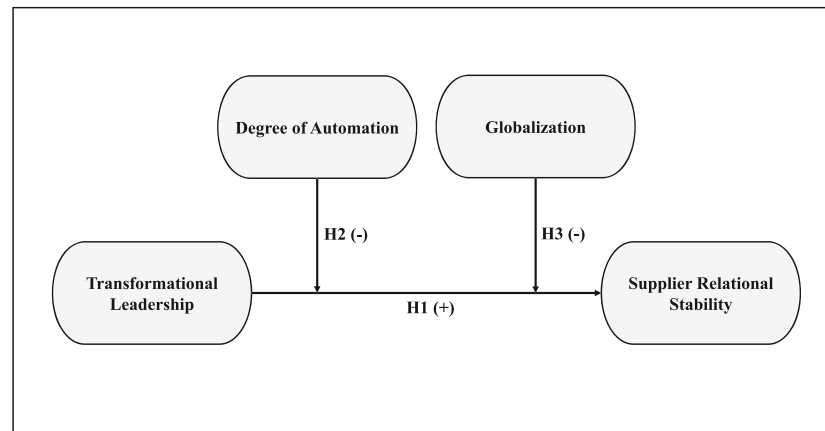
Hence, whether the idea of transformational leadership remains meaningful and essential is also uncertain. We therefore assume that the effect of transformational leadership is moderated by the degree of automation and formulate the following hypothesis:

H2. The relationship between a firm's transformational leadership and supplier relational stability is more pronounced when the buyer firm features little automation.

According to Knight (2000) and Smeral (1998), globalization is the increasing interdependence of markets and production for such stakeholders as suppliers and consumers in different countries. Globalization and the resulting economic pressures are having a growing impact on firms (Ali et al., 2020; Parrilli et al., 2013). On the one hand, firms that want to go global in their procurement activities are increasingly confronted with developing business relationships with unknown foreign suppliers (Min, 1994). Hence, cost rationalization (e.g., lowering administrative, production and material flow costs) and knowledge absorption through relationships with foreign suppliers (Holmlund & Kock, 1996; Parrilli et al., 2013) appear attractive at first sight. These relationships are often challenging to maintain in the long term and only last as long as the interacting partners remain satisfied (Holmlund & Kock, 1996). However, global procurement is still considerably uncertain, as selecting global suppliers is complicated and risky (Min, 1994). This increasing uncertainty of globalization (e.g., unstable countries due to political situations, low product quality) may lead to threats such as global competition, the relocation of production activities and finally firm closures (Parrilli et al., 2013), which could increasingly lead relationships to fail. Further, manufacturers are often faced with the fundamental decision to make a direct sale with the end customer, which is becoming increasingly important due to the rise of internet-based commerce (Yang et al., 2015). Hence, a partner relationship is no longer necessary or the contact between these partners declines. In this line, transformational leaders implement a technological infrastructure that leads to more information sharing in B2B relationships (Birasnav, 2013; Birasnav et al., 2015) and can build solid, long-term relations (Birasnav et al., 2015). However, although transformational leadership is primarily characterized by a high degree of communication and direct contact with various stakeholder groups (see Burawat, 2019; Hult et al., 2000; Matzler et al., 2008; Popper & Zakkai, 1994) in B2B relations, this can be limited by the impact of globalization. In addition, as noted earlier, whether the idea of transformational leadership remains meaningful and essential in globalized B2B relationships is uncertain. We therefore assume that the effect of transformational leadership is moderated by the impact of globalization and present the following hypothesis (Figure 1 summarizes our research model and the three hypotheses):

H3. The relationship between a firm's transformational leadership and supplier relational stability is more pronounced when the buyer firm is little affected by globalization.

FIGURE 1 Research model



3 | METHODS

3.1 | Sampling and data description

As is common in management survey research (e.g., Doluca et al., 2018; Salojärvi et al., 2010), the Amadeus database served as our data pool for identifying the participants of our survey. We targeted the online survey to German Mittelstand firms. Mittelstand firms represent an ideal setting for our research objectives, as these firms are often characterized by long-term and trusting relationships between buyers and suppliers, but at the same time often face automation and globalization issues (De Massis et al., 2018; Heider et al., 2021; Pahnke et al., 2022; Pahnke & Welter, 2019). Besides, many Mittelstand firms are owner-managed, not stock-market-listed, and are typically smaller than listed firms. Hence, they must often complement their scarce human and financial resources with higher degrees of innovativeness (Pahnke et al., 2022; Weigel et al., 2022). To select and address Mittelstand firms, we used the firms' industry affiliation, number of employees and contact details from the Amadeus database. We operationally defined German Mittelstand firms as having a maximum of 3000 employees (Becker et al., 2008; Weigel et al., 2022).

We carried out a manual search for the email addresses of the top managers of the sample firms. During the search, we concentrated on top managers such as CEOs, since, similar to Bowman and Ambrosini (1997) and Zahra (1991), they have a broad overview of many of the firm's activities. We excluded firms that belong to the financial sector from our data pool. Our sample contained 1118 Mittelstand firms.

For our survey, we mostly used established constructs from the English-language literature (Salojärvi et al., 2010; Yang et al., 2008). Since our survey target was German Mittelstand firms, we translated the constructs into German. We also carried out five pretests with scientists and five pretests with practitioners to ensure that the structure and comprehensibility of the survey was suitable (Hunt et al., 1982; Reynolds & Diamantopoulos, 1998). To avoid possible translation errors, a research colleague not involved in our survey translated the survey back into English (cf. Brislin, 1970). Our final German-language version of the survey contained slight adjustments based on this procedure.

Invitations to the survey were sent out in early July 2020. The target of the invitations was the top manager of the firm. To attempt to increase the response rate, we primarily approached firms located close to our university. Bartholomew and Smith (2006) found that higher response rates can be achieved when the geographical proximity between the survey authors and addressees is close. We also incentivized participants (see Edwards et al., 2002) by providing a detailed research report and donating EUR 10 to charity. Participants could choose to receive both incentives, only one, or none. Nevertheless, according to Pielsticker and Hiebl (2020) and Mellahi and Harris (2016), response rates in business and management research have decreased significantly in recent years, especially from CEOs (see also Cycyota & Harrison, 2006). Altogether, 156 partially or fully completed survey questionnaires were received, resulting in a satisfactory response rate of 14%, which is similar to those of recent studies (e.g., Bhatia, 2021; Bonner et al., 2021; Chithambo et al., 2022; Gunarathne et al., 2021; Ljungkvist & Andersén, 2021; Salo et al., 2020; Todaro et al., 2021). As we had to exclude 35 cases due to a lack of information, our final sample contained 121 cases.

To counteract non-response bias, we carried out a non-response analysis (van der Stede et al., 2005). Non-response bias may significantly influence our study (van Loon, 2003) because, according to Halbesleben and Whitman (2013), conclusions drawn based on the data may not represent the actual population, making generalization impossible. Consequently, we compared early with late respondents (non-respondents can be considered to be similar to late respondents) as well as the mean values between late and early respondents (Armstrong & Overton, 1977; Kähkönen et al., 2018). We then carried out a normal distribution test in the form of a Shapiro-Wilk test and Kolmogorov-Smirnov test. The results showed that no variable was normally distributed, excluding *Transformational Leadership* (Shapiro-Wilk test was not significant, see Field, 2018). Thus, we used the *T*-test for *Transformational Leadership* and the non-parametric Mann-Whitney *U*-test for all the other variables except for the dichotomous variables *Industry*, *Firm Size* and *Family Business*, for which we used the chi-square test. The results in Table 1 show no significant differences in the variables and thus no indication of non-response bias.

In our study, we used a single respondent approach, which is widely used in management research. Many empirical studies based

Variable	Early respondents	Late respondents	p value
	Mean	Mean	
Firm Size 100–249	0.20	0.33	.204
Firm Size 250–499	0.20	0.23	.785
Firm Size >499	0.53	0.40	.262
Manufacturing	0.60	0.75	.152
Retail	0.10	0.03	.166
Tenure Position	10.40	8.50	.375
Family Business	0.63	0.78	.143
Stakeholder Interaction	4.27	4.63	.243
Automation	10.05	9.93	.761
Globalization	3.89	4.03	.881
Transformational Leadership	5.78	5.84	.567
Supplier Relational Stability	6.29	6.16	.379

TABLE 1 Comparison of late respondents with early respondents

on the single respondent approach (e.g., Avlonitis & Gounaris, 1997; Ogbonna & Harris, 2000) have been conducted (Bowman & Ambrosini, 1997). According to Flynn et al. (2018), this approach has been criticized for showing common method bias. However, Montabon et al. (2018) pointed out that this survey design can ensure large sample sizes; further, according to Avlonitis and Gounaris (1997), it can allow researchers to choose participants who know the research topic very well. Since we surveyed top management team members in our study, we decided to collect the data using the single respondent approach. We nevertheless followed Podsakoff, MacKenzie, Lee, and Podsakoff (2003) and carried out Harman's one-factor test to check the problem of common method variance *ex post* (i.e., after the data had been collected). If only one factor explains a large part of the covariance between the variables or a single factor is extracted, this would point to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986). Our results showed that the highest value of Harman's one-factor test was 17.87%; hence, the probability of common method variance appeared to be low.

We also took some *ex ante* measures suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to contain and avoid the risk of common method bias. For instance, in the sequence of the questionnaire, we introduced a delay between the independent and dependent variables, ensured the anonymity of respondents, and improved our construct items with the help of pretests. In addition, we mainly used established variable measurements from the international research literature to allow us to ask our questions concisely, precisely, and simply (i.e., respondents were not confronted with complicated syntax).

3.2 | Variable measurement

As noted above, we used only established constructs from the literature, which were only slightly adapted to suit the current empirical setting. The majority of the variables were multi-item constructs

measured using Likert scales. We performed confirmatory factor analysis (CFA) to check how well the measured items represented the respective constructs (Hair et al., 2019), interpreting only factor loadings $>.4$ (see Field, 2018). We also calculated the average variance extracted (AVE) (the AVE should not be less than .5; see Hair et al., 2019) and composite reliability (CR) (a value of at least .6 is acceptable; see Henseler et al., 2009; Schloderer et al., 2009) as part of the construct and reliability analyses (see Table 2). We further checked collinearity problems by calculating the bivariate correlations and variance inflation factors (VIFs) (see Table 2 for details).

3.2.1 | Dependent variable

Supplier Relational Stability, as the dependent variable, was measured based on the four-item scale presented by Johnson et al. (2004). We used this construct to measure the stability of the relationship between suppliers and the firm on a 7-point Likert scale. Evidence for disseminating this construct has been provided by Yang et al. (2008) and Yang (2013). As shown in Table 2, the final multi-item construct was grounded on four items, whose mean values were calculated; finally, the variable was a metric scale.

Further, we performed CFA (see Table 2) and calculated a summary measure of the convergence between the items representing the reflectively measured construct using the AVE. We also calculated the CR value as a measure of the reliability and internal consistency of the measured items. All the items showed adequate reliability (see Table 2).

3.2.2 | Moderator variables

Our measurement of *Degree of Automation* was based on the construct of Brownell and Merchant (1990) and scaled metrically. Based initially on Inkson et al. (1970), the measurement was further

TABLE 2 Construct validity of *Globalization, Stakeholder Interaction, Relational Stability Supplier, and Transformational Leadership*

<i>Globalization (first-order construct reflectively measured)</i>		
CR = .894	AVE = .589	Factor loading (CFA)
Many of our most important competitors' headquarters are abroad.		.646
Most of our main competitors have distribution channels in Asia and Europe.		.782
Cross-border flow of goods and capital normally happens in our industry without problems.		.632
Within the last 10 years, trade with foreign countries has increased enormously.		.895
Within the last 10 years, competition with overseas firms has increased enormously.		.782
Within the last 10 years, we came to the conclusion in our firm that international sales are an important source for additional revenue.		.832
<i>Stakeholder Interaction (first-order construct reflectively measured)</i>		
CR = .883	AVE = .716	Factor loadings (CFA)
We involve our suppliers closely in the cooperation in development projects.		.841
We communicate intensively with our suppliers.		.873
We emphasize the firm's overall strategy through close cooperation and dialogue with our suppliers.		.824
<i>Supplier Relational Stability (first-order construct reflectively measured)</i>		
CR = .868	AVE = .623	Factor loadings (CFA)
The relationship between our firm and your suppliers is ...		
Unstable–stable		.809
Short term–long term		.810
Secure–insecure		.768
Steady–unsteady		.769
<i>Transformational Leadership (second-order construct formatively measured) (bivariate correlations <.5)</i>		
Innovation (formative weight [path coefficient] = .128 ^{***} ; VIF = 1.210) (<i>first-order constructs reflectively measured</i>) (CR = .668; AVE = .501)		Factor loadings (CFA)
I communicate the meaning and background of upcoming tasks and goals.		.717
I show new ways of understanding tasks and goals.		.699
Team spirit (formative weight [path coefficient] = .225 ^{***} ; VIF = 1.395) (<i>first-order constructs reflectively measured</i>) (CR = .792; AVE = .564)		
I ensure that team members work well together.		.753
I ensure that employees see themselves as team members rather than individuals.		.872
I appeal to the sense of community or togetherness.		.605
Performance development (formative weight [path coefficient] = .327 ^{***} ; VIF = 1.450) (<i>first-order constructs reflectively measured</i>) (CR = .852; AVE = .595)		
I demand justified best performance from employees.		.798
I explain why top performance is required.		.893
I communicate transparently and comprehensibly that high performance is important.		.765
I communicate my confidence in the ability of the respective employee when defining performance goals.		.602
Individuality focus (formative weight [path coefficient] = .222 ^{***} ; VIF = 1.299) (<i>first-order constructs reflectively measured</i>) (CR = .823; AVE = .621)		
I know how my employees are doing personally.		.906
I know my employees' individual interests and personal goals.		.883
I support my employees in their professional performance and development.		.512
Vision (formative weight [path coefficient] = .330 ^{***} ; VIF = 1.601) (<i>first-order constructs reflectively measured</i>) (CR = .826; AVE = .558)		
I inspire through a vision of the future.		.764
I communicate a clear and attractive vision of the future for my team.		.971
I enthusiastically communicate my vision of long-term opportunities, tasks, and goals.		.717
I make my employees understand the meaning and value of their work.		.439

(Continues)

TABLE 2 (Continued)

<i>Transformational Leadership (second-order construct formatively measured) (bivariate correlations <.5)</i>	
To set an example of something to somebody (in the way one lives) (formative weight [path coefficient] = .237 ^{***} ; VIF = 1.441) (first-order constructs reflectively measured) (CR = .753; AVE = .506)	
I exemplify what is important to me.	.721
I am aware of my role as a role model.	.791
I am myself a good example of how members of my organization (or firm) should behave.	.611

* $p < .10$.** $p < .05$.*** $p < .01$.

[Correction added on 20 September 2022, after first online publication: Table 2 has been updated in this version.]

developed by Brownell and Merchant (1990) to determine a firm's process automation. The measurement consists of three dimensions, and we asked our responding top managers to assess each of these dimensions for their firms:

- The category that best describes the most automated piece of equipment used in the respondent's firm on a 6-point scale (from "1 = hand tools and hand machines" to "6 = computer controlled"),
- The category that best describes the bulk of the production equipment of the respondent's firm on a 6-point scale (from "1 = hand tools and hand machines" to "6 = computer controlled"), and
- The category that best describes how the quality control of the final product is organized on a 3-point scale (from "1 = Personal evaluation only. No automated measurement instruments are used" to "3 = Fully automated measurement. Automated measurements are used over virtually the whole of output to compare against precise specifications.").

To address different business sectors, we extended the quality control of products to the quality control of services and goods. *Degree of Automation* was calculated by summing the three-part construct as an index (cf. Brownell & Merchant, 1990). As defined by Brownell and Merchant (1990), a higher index value represents a higher *Degree of Automation*.

We measured *Globalization*, our second moderator variable, using the multi-item construct proposed by Knight (2000) based on six dimensions. The respondents were asked to indicate the extent to which the statements about globalization applied to their firm on a 7-point Likert scale (from "completely disagree" to "completely agree"). Finally, we again performed a CFA (see Table 2) and computed the AVE and CR values for *Globalization*. All the items showed adequate reliability. The *Globalization* variable was calculated using the mean values of the items concerned and thus metrically scaled.

3.2.3 | Independent variable

Transformational Leadership is our independent variable, measured following Rowold and Poethke (2017). Initially, the construct contained 24 items, four items for each of the six subscales of *Transformational Leadership*: innovation, team spirit, performance development, focus on individuality, vision, and setting an example to somebody (e.g., in the way one lives). The behavioral patterns of *Transformational Leadership* can influence and change employees' attitudes toward considering the firm's goals over and their own (Rowold & Poethke, 2017). In line with MacKenzie et al. (2005), Podsakoff, MacKenzie, Podsakoff, and Lee (2003), and Tyssen et al. (2014), we operationalized *Transformational Leadership* as a second-order construct, with the first-order factors measured reflectively and second-order factors measured formatively. We slightly adapted certain items to suit our empirical setting and ensured the formulations were gender-neutral. Participants were asked to express their behavior toward their employees in the work context to indicate the extent to which they agreed with the item statements. We used a 7-point Likert scale from "completely disagree" to "completely agree."

As with the other reflectively measured multi-item constructs, we conducted CFA for the first-order reflectively measured constructs (interpreting only factor loadings $>.4$; see Field, 2018). This indicated the need to exclude one item. In line with Hair (2014), we analyzed the impact of removing this item on the AVE. We continued to exclude four further reflective items until we reached the recommended AVE threshold of .5 (Hair et al., 2019). Regarding collinearity problems, we performed bivariate correlations that included all the first-order constructs (one construct includes several items) separately, with the results showing that no bivariate correlation value was above .5 (the highest value was .458), thus not indicating issues of multicollinearity (Hair et al., 2019). Following Hair et al. (2019), we also conducted bootstrapping to determine the significance of the formative weights (path coefficients) in addition to the VIF to address multicollinearity problems (see Table 2). We adopted the repeated indicator approach by reusing the indicators of the first-order

constructs for the second-order construct (Braumann et al., 2020; van Riel et al., 2017). The results showed that no VIF value was above three. We thus had no indications of multicollinearity problems. All the formative weights were significant (Hair et al., 2019). To make the factor loadings applicable for the regression analyses, we calculated the mean of the items of each subscale as well as the mean of the subscales. *Transformational Leadership* is thus metrically scaled.

3.2.4 | Control variables

Family Business

We measured *Family Business* following Steiger et al. (2015), who stated that the use of self-assessment is a common method for operationalizing family firms; hence, we used this measurement as a dichotomous variable in our survey. If the firm under consideration was a family firm according to the respondent, we coded the variable as one and zero otherwise.

Firm Size

In business research, *Firm Size* is often operationalized using the number of employees (e.g., Arocena et al., 2021; Li & Vanhaverbeke, 2009; Simpson & Samson, 2010; Tsai & Liao, 2017; Wolf, 2013), and we follow this tradition. *Firm Size* can influence the way firms relate to their stakeholders such as suppliers (Darnall et al., 2010), as small firms generally access a greater variety of resources than large firms (Dean et al., 1998); hence, different levels of resources and management may impact supply chain management (Field & Meile, 2008). Following Speckbacher and Wentges (2012), we divided the firms in our sample into four groups:

1. For the variable *Firm Size 100–249*, we coded the variable as “1” if the firm had more than 99 and fewer than 250 employees ($N = 33$).
2. For the variable *Firm Size 250–499*, we coded the variable as “1” if the firm had more than 249 and fewer than 500 employees ($N = 28$).
3. For the variable *Firm Size >499*, we coded the variable as “1” if the firm had more than 499 employees ($N = 51$).
4. Firms with fewer than 100 employees served as the reference category and were thus coded “0” for the above three size variables ($N = 9$).

Industry

The inclusion of industry affiliation as a control variable is a common method in business research (e.g., Hoejmoose et al., 2012; Hörisch et al., 2015). Since *Industry* has been shown to impact a firm's stakeholder relations (Griffin & Koerber, 2006), we also controlled for this variable. Our questionnaire originally asked respondents to select their primary industry affiliation from four industries (service, retail, manufacturing, and other). However, in the statistical analysis, we used only two dichotomous variables representing three industry groups:

1. We coded the variable *Retail* as “1” if the firm belonged primarily to the retail industry ($N = 9$).
2. We coded the variable *Manufacturing* as “1” if the firm belonged primarily to the manufacturing industry ($N = 83$).
3. If the respondents chose the service sector or “other sector” as their primary industry affiliation, the two variables *Retail* and *Manufacturing* were coded as “0.” Firms belonging to the service or other sectors thus served as the reference category for our two industry variables ($N = 29$).

Tenure Position

A top manager's tenure has a significant impact on a firm's operations (Shen & Cannella, 2002), particularly influencing the strength of firm–stakeholder relations (Luo et al., 2014). Hence, we controlled for *Tenure Position*. Following Haas and Speckbacher (2017), *Tenure Position* was measured as a metric variable that counted the number of years the respondent had spent in their current position.

Stakeholder Interaction

According to Foss et al. (2011), the strength of the interaction with customers, as stakeholders of the firm, is a critical factor affecting innovation performance. Increased interaction through communication and engagement may lead to a more stable and transparent working relationship between the firm and its stakeholders (e.g., Mishra et al., 2014). We operationalized this variable using the construct proposed by Foss et al. (2011). Initially, Foss et al. (2011) used the construct to measure customer interaction. We slightly adapted this construct to our empirical setting and asked participants to state the extent of their interaction with the firm's suppliers on three items, namely, project level, communication, and strategy. We used a 7-point Likert scale ranging from “not at all” to “to a very large extent.” We also performed CFA for this construct (see Table 2). To calculate a summary measure of the convergence between the items representing the reflectively measured construct, we computed the AVE. Furthermore, we calculated the CR value, which showed that all the items had adequate reliability results. *Stakeholder Interaction* was metrically scaled and calculated as the mean value.

4 | DATA ANALYSIS AND RESULTS

4.1 | Results of the descriptive and correlation analyses

Table 3 shows the results of the descriptive analysis, showing, for instance, the sample size (N), mean, and median for each variable. Table 4 provides the correlation matrix (including the dependent and independent variables). We applied the Pearson correlation coefficient for the correlations between the metric variables; for the correlations between the metric and dichotomous variables, we calculated the *point-biserial* correlation coefficient. Finally, the correlations between the dichotomous variables were calculated using *Phi* values (see Field, 2018 for more information). Significant correlations ($p < .10$) are

Variable	N	Mean	Min	Max	Median	SD
Firm Size 100–249	121	0.27	0.00	1.00	0.00	0.45
Firm Size 250–499	121	0.23	0.00	1.00	0.00	0.42
Firm Size >499	121	0.42	0.00	1.00	0.00	0.50
Manufacturing	121	0.69	0.00	1.00	1.00	0.47
Retail	121	0.07	0.00	1.00	0.00	0.26
Tenure Position	121	9.26	1.00	40.00	7.00	8.35
Family Business	121	0.75	0.00	1.00	1.00	0.43
Stakeholder Interaction	121	4.46	1.00	7.00	4.67	1.35
Automation	121	10.08	3.00	15.00	10.00	3.53
Globalization	121	4.01	1.00	6.83	4.50	1.79
Transformational Leadership	121	5.83	4.53	6.81	5.89	0.47
Supplier Relational Stability	121	6.24	3.00	7.00	6.25	0.72

TABLE 3 Descriptive statistics

TABLE 4 Correlation matrix

Variable	N	1	2	3	4	5	6	7	8	9	10	11	12
1 Firm Size 100–249	121	1											
2 Firm Size 250–499	121	-.336	1										
3 Firm Size >499	121	-.523	-.468	1									
4 Manufacturing	121	-.065	-.051	.037	1								
5 Retail	121	.039	-.006	.013	-.419	1							
6 Tenure Position	121	.059	-.203	.078	-.031	.238	1						
7 Family Business	121	.137	-.275	.025	.271	.090	.225	1					
8 Stakeholder Interaction	121	.106	-.019	-.098	.118	-.027	.135	.135	1				
9 Automation	121	.059	-.124	.080	.487	-.186	.068	.226	.018	1			
10 Globalization	121	.002	.076	-.047	.665	-.202	-.021	.138	.108	.453	1		
11 Transformational Leadership	121	-.102	-.066	.219	.048	.006	-.015	-.013	.322	.102	.164	1	
12 Supplier Relational Stability	121	.076	-.186	.037	.056	.068	.226	.242	.193	.071	.121	.283	1

Note: Pearson correlation coefficients are used for the correlations between the metric variables; Phi values are used for the correlations between the dichotomous variables; Point-biserial correlation coefficients are used for the correlations between the metric and dichotomous variables (for further information, see Field, 2018). Correlations significant at $p < .10$ are marked in bold.

marked in bold in Table 4. All the correlation values are below the threshold of .7, which according to Dormann et al. (2013) would indicate potential multicollinearity problems.

4.2 | Multiple regression analyses

We tested our hypotheses using two hierarchical regression analyses consisting of six models (three for each regression analysis; see Tables 5 and 6). Therefore, we considered successively increasing variables in our regression analyses. First, we considered only the control variables; second, the control variables plus the main effect variables; and finally, the interaction effect variables. Regarding multicollinearity, we calculated the VIF to check that the threshold of 10 was not exceeded (Dormann et al., 2013; Hair et al., 2019). Our maximum VIF

value is 4.239. Following Menard (2000), our tolerance values in the regression analyses do not show a value below .2, which would indicate a potential multicollinearity problem (lower tolerance values indicate a high degree of multicollinearity; see Hair et al., 2019). Thus, no multicollinearity problems became apparent from our regression analyses. Following Cronbach (1987) and Hair et al. (2019), we followed grand mean centering to create the variables contained in the interaction effect, namely, *Automation*, *Transformational Leadership*, and *Globalization*. We also calculated the predictive validity of the individual models. Model 3 (Table 5) has an R^2 value of .238 and Model 6 (Table 6) an R^2 value of .229. All six models are significant (see the F statistics). Following Field (2018), a ratio of 10:1 (i.e., 10 observations to one independent variable) is reasonable for standard OLS regression models, allowing a maximum of 12 independent variables per regression analysis (the minimum ratio of observations to variables

TABLE 5 Hierarchical regression analysis concerning *Automation*

Dependent variable Independent variables	Supplier Relational Stability											
	Model 1				Model 2				Model 3			
	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF
Constant		16.170	.000			4.215	.000			4.901	.000	
Control variables												
<i>Firm Size 100–249</i>	-.076	-0.460	.647	3.487	-.107	-0.658	.512	3.592	-.124	-0.782	.436	3.599
<i>Firm Size 250–499</i>	-.181	-1.095	.276	3.476	-.218	-1.355	.178	3.521	-.226	-1.438	.153	3.523
<i>Firm Size >499</i>	-.088	-0.500	.618	3.983	-.197	-1.121	.265	4.226	-.174	-1.008	.316	4.239
<i>Manufacturing</i>	.004	0.040	.968	1.400	-.002	-0.014	.989	1.716	.007	0.064	.949	1.717
<i>Retail</i>	.030	0.296	.768	1.352	.017	0.174	.862	1.356	.003	0.030	.976	1.360
<i>Tenure Position</i>	.140	1.473	.143	1.160	.162	1.748	.083*	1.175	.183	2.009	.047**	1.184
<i>Family Business</i>	.149	1.479	.142	1.296	.164	1.670	.098*	1.311	.152	1.590	.115	1.314
<i>Stakeholder Interaction</i>	.150	1.650	.102	1.057	.043	0.454	.651	1.232	.083	0.885	.378	1.268
Main effects added												
<i>Transformational Leadership</i>					.293	3.072	.003***	1.239	.213	2.171	.032**	1.380
<i>Automation</i>					-.009	-0.090	.929	1.402	-.041	-0.408	.684	1.424
Interaction effects added												
<i>Transformational Leadership * Automation</i>									-.229	-2.532	.013**	1.174
<i>R²</i>	.124				.193				.238			
<i>Adjusted R²</i>	.061				.120				.161			
<i>F</i>	1.976*				2.636***				3.097***			
<i>N</i>	121				121				121			

* $p < .10$.** $p < .05$.*** $p < .01$.

is 5:1, but a ratio of 15:1 is preferred; see Hair et al., 2019). Thus, we ran two separate regression analyses (e.g., Chen & Hou, 2016; Land et al., 2012) with a maximum of 11 independent variables in each regression model (ratio of 10:1).

The results of the regression analyses in Model 2 (see Table 5) indicate that *Tenure Position* ($b = .162, p < .10$) is significantly positively related to *Supplier Relational Stability*. In addition, *Family Business* ($b = .164, p < .10$) has a significantly positive correlation with *Supplier Relational Stability*. *Transformational Leadership* is positively related to *Supplier Relational Stability* ($b = .293, p < .01$), which confirms H1. The results in Model 3, however, show changes in the significant relationships beyond Model 2. On the one hand, *Tenure Position* ($b = .183, p < .05$) and *Transformational Leadership* ($b = .213, p < .05$) have a significantly positive relationship with *Supplier Relational Stability*, confirming H1. On the other hand, Model 3 shows the significant negative correlation of the interaction term (*Transformational Leadership * Degree of Automation*) and *Supplier Relational Stability* ($b = -.229, p < .05$), which supports H2. The results in Model 5 (see Table 6) indicate that *Tenure Position* ($b = .159, p < .10$) is significantly positively correlated with *Supplier Relational Stability*. In addition, *Family Business* ($b = .167, p < .10$) is positively related to *Supplier*

Relational Stability and *Transformational Leadership* ($b = .273, p < .01$), which supports H1. The results in Model 6 (Table 6) show further changes in the significant relationships beyond Model 5 (Table 6). On the one hand, *Tenure Position* ($b = .188, p < .05$), *Family Business* ($b = .175, p < .10$) and *Transformational Leadership* ($b = .223, p < .05$) have significantly positive relationships with *Supplier Relational Stability*, confirming H1. On the other hand, Model 6 (Table 6) shows the significant negative correlation of the interaction term (*Transformational Leadership * Globalization*) and *Supplier Relational Stability* ($b = -.178, p < .10$), which supports H3.

Figures 2 and 3 help us better interpret the significant interaction effects. We conducted a simple slope analysis based on Aiken and West (1991) and computed the *T*-test for the simple slopes to check whether the simple regression line significantly differs from zero (Aiken & West, 1991; Dawson & Richter, 2006). Figure 2 shows that the solid black line, representing a lower *Degree of Automation* (mean *Degree of Automation* - 1 SD), has a significant positive slope ($t = 3.933, p < .01$), which confirms H2, while the dashed line, representing a higher *Degree of Automation* (mean value of *Degree of Automation* + 1 SD), has only a slightly positive, but insignificant slope ($t = 0.160, p > .10$). This illustrates that the *Degree of Automation*

TABLE 6 Hierarchical regression analysis concerning Globalization

Dependent variable	Supplier Relational Stability											
	Model 4			Model 5			Model 6			Model 6		
	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF
Independent variables												
Constant		16.170	.000			4.324	.000			4.728	.000	
Control variables												
Firm Size 100–249	-.076	-0.460	.647	3.487	-.135	-0.836	.405	3.583	-.127	-0.796	.428	3.585
Firm Size 250–499	-.181	-1.095	.276	3.476	-.249	-1.539	.127	3.606	-.230	-1.441	.153	3.618
Firm Size >499	-.088	-0.500	.618	3.983	-.212	-1.219	.225	4.181	-.180	-1.045	.298	4.218
Manufacturing	.004	0.040	.968	1.400	-.100	-0.746	.457	2.465	-.121	-0.911	.364	2.480
Retail	.030	0.296	.768	1.352	.006	0.057	.955	1.372	-.010	-0.102	.919	1.380
Tenure Position	.140	1.473	.143	1.160	.159	1.727	.087*	1.167	.188	2.041	.044**	1.197
Family Business	.149	1.479	.142	1.296	.167	1.719	.088*	1.301	.175	1.826	.071*	1.303
Stakeholder Interaction	.150	1.650	.102	1.057	.048	0.508	.613	1.221	.069	0.736	.463	1.237
Main effects added												
Transformational Leadership					.273	2.839	.005***	1.270	.223	2.270	.025**	1.360
Globalization					.129	1.069	.287	1.990	.119	0.998	.320	1.994
Interaction effects added												
Transformational Leadership * Globalization									-.178	-1.980	.050*	1.140
R ²	.124				.202				.229			
Adjusted R ²	.061				.129				.152			
F	1.976*				2.777***				2.948***			
N	121				121				121			

*p < .10.
 **p < .05.
 ***p < .01.

FIGURE 2 Interaction between *Degree of Automation* and *Transformational Leadership*

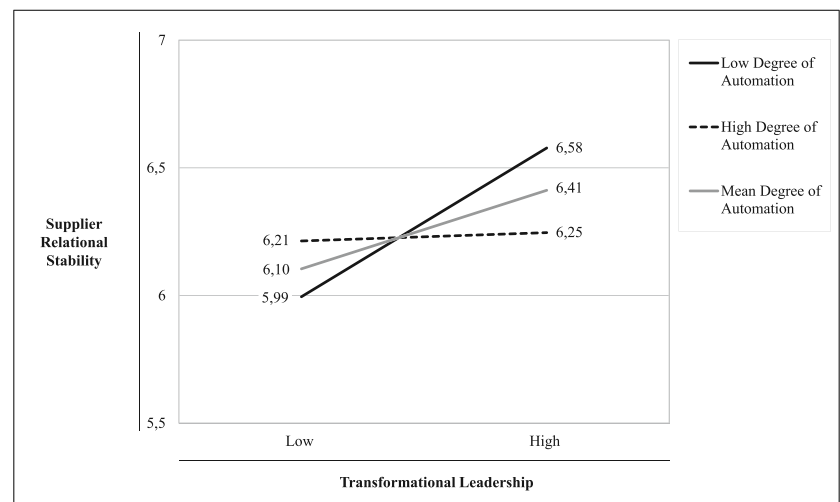
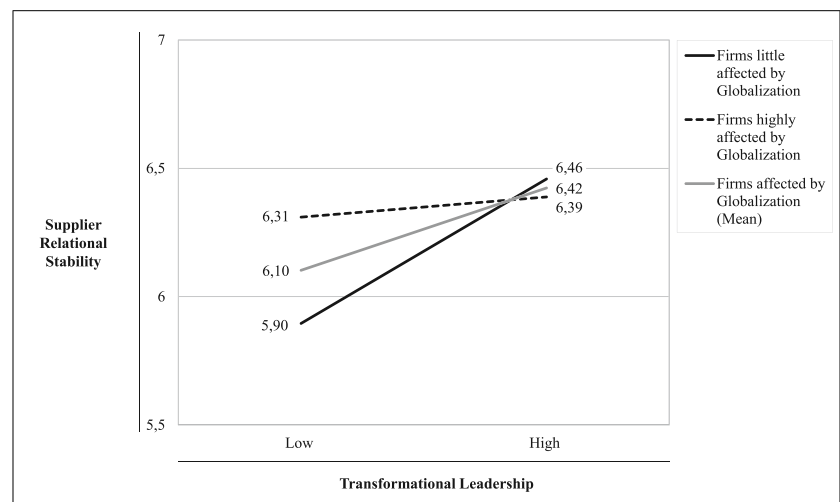


FIGURE 3 Interaction between *Globalization* and *Transformational Leadership*



significantly affects the relationship between *Transformational Leadership* and *Supplier Relational Stability*, but for firms with low automation levels only.

Figure 3 visualizes the moderating role of *Globalization* in the relationship between *Transformational Leadership* and *Supplier Relational Stability*. The solid black line, representing firms little affected by *Globalization* (mean *Globalization* – 1 SD), has a significant positive slope ($t = 3.487, p < .01$), which confirms H3, while the dashed line, representing firms highly affected by *Globalization* (mean value of *Globalization* + 1 SD), has only a slightly positive, but insignificant slope ($t = 0.376, p > .10$). This illustrates that *Globalization* significantly affects the relationship between *Transformational Leadership* and *Supplier Relational Stability*, but for firms little affected by *Globalization* only.

In summary, on the one hand, *Transformational Leadership*'s positive effect in securing and strengthening *Supplier Relational Stability* is more pronounced in firms with a lower *Degree of Automation* than in firms with a higher *Degree of Automation* (i.e., H2 is confirmed). On the other hand, *Transformational Leadership*'s positive effect in securing and strengthening *Supplier Relational Stability* is more pronounced

in firms that are less affected by *Globalization* than in firms highly affected by *Globalization* (i.e., H3 is confirmed).

5 | DISCUSSION, CONCLUSIONS, AND LIMITATIONS

Considering the growing reliance of contemporary businesses on automation and globalization, we investigated whether earlier findings of the positive effects of transformational leadership on supplier relational stability still hold today (Hult et al., 2000, 2007). Based on a survey of German Mittelstand firms, while we confirmed this relationship, we also found that it does not hold universally. That is, our results suggest that transformational leadership's positive effect on supplier relational stability is more pronounced in firms with a lower degree of automation and that are less affected by globalization. In line with the theory presented in Section 2, these results indicate that with increasing levels of automation and globalization, the relationship between buyer and supplier firms is no longer as intense, resulting in an apparent weakening of the positive effect of

transformational leadership. Put differently, we found evidence that the impact of transformational leaders on supplier relational stability is limited, particularly in firms already highly automated and severely affected by globalization. In such firms, the added value of transformational leadership on positive stakeholder-related outcomes such as supplier relational stability seems limited, which is in contrast to earlier findings in the literature (see Burawat, 2019; Hult et al., 2000, 2007).

Our study thus complements the emerging literature on transformational leadership's effects on supplier relationships in four ways. First, our results are the first to confirm the positive relationship between transformational leadership and supplier relational stability for the German Mittelstand. On the one hand, we confirm existing findings in the literature, particularly the results of studies of relationship commitment by Hult et al. (2000), Camarero Izquierdo et al. (2015), and Hult et al. (2007).¹ On the other hand, we replicate these existing results in a different cultural context, that of the German Mittelstand. However, given that the effect of transformational leadership on supplier relational stability was not found in our study to hold universally, but only for Mittelstand firms less automated and less affected by globalization, our findings may contrast with earlier research on transformational leadership in small businesses. For instance, Matzler et al. (2008) found significant direct relationships between transformational leadership in small businesses and product innovativeness, profitability, and growth. Like the studies by Hult et al. (2000, 2007), the data used by Matzler et al. (2008) were also collected in the early 2000s and the business environment has changed considerably in the past two decades. While we did not measure the same outcomes as Matzler et al. (2008) and Mittelstand firms are somewhat larger than the small businesses they studied on average, our findings may nevertheless raise doubts about whether transformational leadership can still create positive outcomes for smaller businesses in a world characterized by higher levels of automation and globalization and thus less personal contact. We therefore call for more research on the role of transformational leadership for small businesses in the contemporary environment characterized by trends including higher automation and globalization.

Relatedly and second, our findings indicate that compared with Hult et al. (2000), transformational leadership's positive effect is less evident under the contemporary trends of increasing automation and globalization. In this environment, the personal ties between buyer and supplier no longer seem as intense, with our results suggesting that the positive effect of transformational leadership is no longer as relevant for highly automated business models and those geared toward the global marketplace. Hence, our results suggest that transformational leadership is less beneficial for expanding already high levels of automation and globalization, especially given that highly automated and globally active firms rely less on personal contact and close communication with stakeholders, two strengths typically associated with transformational leaders (Burawat, 2019; Hult et al., 2000). Thus, our results respond to the call by Hult et al. (2000), who suggested further investigating the role of transformational leadership in firms affected by international sourcing activities. An open

question that arises from our results is which other leadership styles—if not transformational leadership—may be useful for highly automated and globally active firms to maintain or expand their relational stability with suppliers.

Third, our results challenge the views expressed in the literature that transformational leadership is the preferred leadership style in global firms (Ghasabeh et al., 2015). Ghasabeh et al. (2015) proposed extending future research by measuring the potential impact of transformational leadership theory on the success of local firms that operate and compete in the global market. Our results imply that the effectiveness of transformational leadership in globalized markets, at least in terms of its effect on supplier relational stability, is a context-specific strategy. That is, the positive effect of transformational leadership on supplier relational stability seems to be more effective when the focal firm is relatively unaffected by globalization.

Fourth, we supplement the study by Bass (2000) of the use of transformational leadership in connection with automation. Bass (2000) theorized that introducing new automated technologies should go hand in hand with learning and adaptation opportunities for the firm and its leaders. With its properties such as inspiration and intellectual stimulation, Bass (2000) suggested that transformational leadership helps design and optimize automated technology together with affected stakeholders. However, our results imply that these positive effects of transformational leadership have limits and may be less apparent under today's trends (i.e., increasing automation) as well as that transformational leadership is less likely to expand already high degrees of automation.

As summarized above, prior research has suggested that supplier relational stability has various economic and sustainability benefits (e.g., Chatain, 2011; Foerstl et al., 2015; Kim et al., 2020; Lai et al., 2005; Liu et al., 2018; Yang et al., 2008). In particular, there is evidence that supplier relational stability, together with other measures, can lead to more sustainable supplier relationships, including environmental benefits (Formentini & Taticchi, 2016; Liu et al., 2018; Sancha et al., 2016). Considering our finding that transformational leadership is more effective for generating supplier relational stability in less automated firms and those less affected by globalization, it may also be more likely to achieve sustainable supplier relations in such firms. By contrast, in highly automated firms and those more affected by globalization, transformational leadership seems unlikely to foster sustainable supplier relations. However, this conclusion results from triangulation only; it was not directly measured in our analyses. We thus call for more research examining the relationships between transformational leadership and further leadership styles, supplier relational stability, and the sustainability of such supplier relations, especially in the context of current business trends such as automation and globalization.

In terms of practical implications, our results imply that supplier relational stability depends on how Mittelstand firms are affected by globalization, the degree of automation, and how their managers expand and apply transformational leadership. From our results, firms with a low degree of automation and little affected by globalization can take away that transformational leadership (still) seems to benefit

the stability of their supplier relations. This argument, however, no longer seems to be valid for highly automated and globally active firms.

Finally, we acknowledge the following limitations of our study. First, our data mainly relate to the situation in the German Mittelstand, particularly those firms located close to our university, to increase the response rate (see Section 3). Second, according to Podsakoff, MacKenzie, Lee, and Podsakoff (2003), a second limitation could be the data collection period. Respondents' answers strongly depend on their mood, especially how they see themselves and the world around them (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Since our data were collected during the Covid-19 pandemic (Alalwan et al., 2021; Epler & Leach, 2021; Rapaccini et al., 2020), our respondents' mood and thereby their answers may have differed from situations before or after this crisis.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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ENDNOTE

¹ Hult et al. (2007) interpreted transformational leadership as a moderator in the relationship between the buying firm and supply chain performance. Similar to our view of transformational leadership, this view also interprets this leadership style as positive for supplier relations.

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