Essays on Psychological Ownership, Digital Transformation, and Sustainability in the Retail Industry

Von der Wirtschaftswissenschaftlichen Fakultät der Gottfried Wilhelm Leibniz
Universität Hannover zur Erlangung des Grades

Doktor der Wirtschaftswissenschaften
Dr. rer. pol.

genehmigte Dissertation

von

Stephan Harms, MSc, MBA

2023

Referent:	Prof. Dr. J. Nils Foege
Korreferentin:	Prof. Dr. Laura-Marie Edinger-Schons
Tag der Promotion:	18.07.2023

ACKNOWLEDGEMENTS

First and foremost, I am extremely grateful to my supervisor, Prof. Dr. J. Nils Foege, for his continuous support and patience during my doctoral studies. His immense knowledge and plentiful experience have encouraged me throughout my academic research. I would also like to thank my co-authors Prof. Dr. Laura-Marie Edinger-Schons, Dr. Manuel Reppmann, and Prof. Dr. Patrick Cichy, who have influenced and inspired me with their outstanding expertise. Additionally, I would like to acknowledge Sophia Schütze for her excellent support.

This endeavor would not have been possible without my mentors Dagmar Heuer, Margret Langenau, and Prof. Dr. Timm Homann. Their invaluable advice and unwavering commitment have been of paramount importance, especially during challenging times. I would also like to extend my sincere thanks to the numerous colleagues at Ernsting's family, who have significantly contributed to the execution of the study.

Finally, words cannot express my gratitude to my wife, Anna, and my daughters, Frieda, Paula, and Mathea. Without their tremendous understanding and perseverance over the past six years, it would have been impossible for me to complete my study.

SUMMARY

In today's dynamic economy, retail finds itself at the forefront of disruption resulting from increasing employee demands (Hurst & Good, 2009), shifting consumer habits (Sheth, 2020), business-transforming digitization (Ferreira, Moreira, Pereira, & Durão, 2020), and external shocks (Sharma, Luthra, Joshi, & Kumar, 2021) along its value chain. This dissertation aims to shed light on retailers' relationships with direct stakeholders – employees, customers, and suppliers – against the backdrop of the contemporary challenges.

First, the success of brick-and-mortar retail depends on the performance of its employees (Netemeyer, Maxham, & Lichtenstein, 2010). Today, employees' demands are increasing, while the pool of suitable candidates shrinks (Rumscheidt, 2018). Therefore, firms need to find ways to create momentum among their workforce and translate the strength of their workforce into a competitive advantage.

Second, the incorporation of sustainability is evolving into a major issue for retailers (McGoldrick & Freestone, 2008; Ruiz-Real, Ulribe-Toril, Gazquez-Abad, & dePablo Valenciano, 2018). Customers' perceptions of sustainability and their consequent purchasing decisions are decisive factors (Dang, Nguyen, & Pervan 2020; Elg and Hultman, 2016). We explore the complex contingencies and argue that psychological ownership can assist firms to promote sustainable consumption and overcome the attitude-behavior gap (Devinney, Auger, & Eckhardt, 2010; ElHaffar, Durif, & Dubé, 2020), which makes it difficult for retailers to execute their sustainability strategies. We seek to answer questions about how retailers can overcome this gap, increase the proportion of sustainable products, and fulfill their stakeholders' demands.

Finally, digitization can be a powerful driver of firms' effectivity and efficiency in the supply chain (Koh, Orzes, & Jia, 2019; Rubbio, Bruccoleri, Pietrosi, & Ragonese, 2019; Sousa-Zomer, Neely, & Martinez, 2020). Technology acceptance is one of the major reasons for the success of digitization (Lin & Lin, 2014). However, there are many reasons why firms can fail to get their partners to accept the technology they offer, and distinct attributes of each side play important roles. It is known that family firms possess idiosyncratic characteristics which can influence outside users' willingness to accept technology to streamline their supply chains (Meroño-Cerdán, 2017). It is crucial for family firm retailers – whose key core competences lie, among others, in procurement and in collaboration with business partners – to involve their partners in the digitization of their business operations.

To foster competitive advantages and secure a strong position in their environment, retailers need to develop strategies to address these challenges. The purpose of this dissertation is to illuminate the inclusion and collaboration of suppliers, employees, and customers in the context of technological, sustainable, and behavioral change. We investigate employees' psychological ownership and its spillover effects on a firm level, customers' attitude behavior gaps and the mechanisms and strategies that empower the focal firm to increase sustainable consumption, and supply chain members' technology acceptance and the role of family firm characteristics for the adoption of technologies. From these topics, we derive specific implications for future research and practice to facilitate the inevitable digital and sustainable transformation of the retail business.

This dissertation comprises two parts. In the first part, I provide a general introduction to retail challenges in the areas of sustainability and digitization, and address the topic of psychological ownership, to identify research gaps relevant to this dissertation and motivate the three essays that will be presented in the second part. After summarizing each of the three essays, I follow up with a general discussion of the results and the corresponding implications for theory and practice. The second part comprises the three essays that jointly address the research gaps outlined in Part I. In what follows, I provide concise summaries of these essays.

In Essay I, *"The Multi-Level Nature of Psychological Ownership: Exploring its Antecedents and Consequences,"* we investigated the phenomenon of psychological ownership on different levels of an organization and its effect on performance. Scholars emphasize the importance of psychological ownership for desired behaviors and attitudes in corporate contexts. Psychological ownership is a multi-level phenomenon, meaning that the emotional attachment it implies might pertain to the overall organization as well as to organizational sub-units. Hitherto, however, there is little empirical evidence on the antecedents, consequences, and vertical spillover effects of psychological ownership. To address this research gap, our paper presents arguments explaining how psychological ownership positively affects organizational performance by diffusing from higher levels of the organization to lower levels. Furthermore, we suggest that error management culture and high affective commitment within teams are environmental conditions that let psychological ownership thrive. To test our theorizing, we created a unique dataset combining archival data with two surveys among 1,536 employees and 66 managers of an organization. Our results indicate that psychological ownership toward the business unit indeed enhances performance and mediates the effect of psychological ownership toward the entire organization. Additionally, our findings suggest that error management culture and increased affective commitment in teams are mechanisms that can enhance psychological ownership toward the business unit. With these findings, our essay yields important theoretical and practical implications.

In Essay II, *"Activating the Sustainable Consumer: The Role of Customer Involvement in Embedded Corporate Sustainability*," we develop a conceptual model to demonstrate how firms can motivate sustainable consumption behavior amongst their customers by involving them in their sustainability activities. The success of the ongoing sustainability transformation depends in large part on both the sustainability in firms' production of goods and the consumption choices of individuals. While firms and consumers already separately contribute to sustainable development, a key challenge still lies in accelerating collaborative efforts. We introduce psychological ownership as the underlying mechanism that explains how customer involvement in sustainability activities translates into changes in individuals' consumption choices. We further argue that this mechanism depends on the type of sustainability that a firm undertakes, that is, whether it is embedded in or peripheral to a firm's core business. Results from two scenario experiments and one field experiment broadly support our theorizing and contribute to management research by showing how firms can go beyond delivering sustainable products and services toward actively shaping consumption behavior. Our results additionally reveal that firms can derive further benefits from customer involvement in embedded sustainability, since it incites higher extra-role behavior in the form of feedback-giving than involvement in peripheral sustainability, which firms can exploit to develop their sustainability strategy further.

In Essay III, *"Users' Technology Acceptance in the Digital Transformation of Family Firms' Supply Chain*," we illuminate characteristics of family firms in the context of the implementation of technology and its users' acceptance. New technologies and enhanced information systems are fueling digital transformation in many industries, including with the creation of new digital interfaces to communicate with and involve customers and suppliers. Information systems and management scholars have emphasized the far-reaching consequences of these endeavors for such areas as strategy, innovation, and entrepreneurship. The success of digital transformation depends thereby on the willingness of the involved individuals, i.e., customers, employees, and suppliers, to embrace these new technologies. Digital transformation is particularly difficult for family firm businesses, as these firms usually follow conservative strategies, show resistance to change, and face resource restrictions, which limits their ability to pursue substantial alterations to their business model. On the positive side, though, family firms usually possess strong and continuous organizational culture and sustainable business activities that are rooted in their socioemotional wealth considerations and strong social capital. Drawing on the technology acceptance model, we set out to explore the following research question: How do organizational characteristics of family firms shape the acceptance of new technologies among partner firms within their supply chain? Our grounded theory model contributes to the literature about digital transformation in family firms by linking firm-level strategy to organizational and individual attributes; identifying factors that help family firms' digital transformation success, such as a strong culture for innovation and change and strong social capital embedded in inter- and intra-organizational relationship; and guiding managers of family firms on how to enhance their digital agenda.

Overall, the results of these three essays jointly contribute to a deeper understanding of challenges and opportunities for retail that accompany behavioral, digital, and sustainable transformations in relation to stakeholders.

Keywords: Psychological Ownership, Sustainability, Digital Transformation, Retail Industry

THESIS STRUCTURE OVERVIEW

This dissertation comprises two main parts. Part I consists of a general introduction, a summary of the essays, and a general discussion and conclusion. Part II contains the three essays related to the overarching topic of this dissertation: psychological ownership, digital transformation, and sustainability in the retail industry.

Previous versions of the three essays that are part of this dissertation were presented at peer-reviewed international conferences and doctoral research seminars related to sustainability management, information systems management, and behavioral science. The following section provides an overview about the conferences, doctoral colloquia, research seminars, and peer-reviewed journals to which the essays have been submitted and presented.

ESSAY I: The Multi-Level Nature of Psychological Ownership: Exploring its Antecedents and Consequences

1. Presentations
    1. Doctoral Research Seminar Series (Lehrstuhl für Unternehmensführung, Westfälische Wilhelms-Universität Münster), 2020.
    2. Academy of Management Annual Meeting 2022, Human Resources (HR) Division, Seattle, WA, USA, August 2022.

- Peer-reviewed journal submission
    1. In preparation for submission at the European Journal of Work and Organizational Psychology

ESSAY II: Activating the Sustainable Consumer: The Role of Customer Involvement in Embedded Corporate Sustainability

1. Presentations

   - Academy of Management Annual Meeting 2022, Organizations and the Natural Environment (ONE) Division, Seattle, WA, USA, August 2022.
   - Jubiläumstagung des Verbands der Hochschullehrer für Betriebswirtschaft (VHB) 2022, Düsseldorf, Germany, March 2022.

2. Peer-reviewed journal submission:

   - Revise-and-resubmit at the Journal of the Academy of Marketing Science (call for papers: "Reimagining Marketing Strategy: Driving the Debate on Grand Challenges")

3. Awards

   - German Science Award 2022 from GS1 Germany and the EHI Foundation in the category "Best Research Project" (This award is endowed with a 20,000 euro prize)

ESSAY III: Users' Technology Acceptance in the Digital Transformation of Family Firms' Supply Chain

1. Presentations

   - Doctoral Research Seminar Series Hannover 2023
   - Submitted to The International Conference on Information Systems (ICIS) 2023, Hyderabad, India, December 2023.

2. Peer-reviewed journal submissions

   - In preparation for submission at the European Journal of Information Systems

TABLE OF CONTENTS

LIST OF FIGURES

Part I :

LIST OF TABLES

Part I:

ABBREVIATIONS

ANOVA	Analysis of Variance
CCI	Customer-Company Identification
COVID-19	Coronavirus Disease 2019
CS	Corporate Sustainability
CSR	Corporate Social Responsibility
IT	Information technology
LLCI	Lower Limit Confidence Interval
OLS	Ordinary Least Squares
PO	Psychological Ownership
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
ULCI	Upper Limit Confidence Interval
UTAUT	Unified Theory of Acceptance and Use of Technology

PART I:

INTRODUCTION, SUMMARIES OF THE RESEARCH ARTICLES, GENERAL DISCUSSION, AND CONCLUSION

Part I

INTRODUCTION

Retailing, one of the largest industries in the world, has always been subject to major transformations; the transformations have accelerated over the past decade (Zentes, Morschet, & Schramm-Klein, 2016). Retailers and their employees constitute the pivotal point in the value chain at the intersection between suppliers and customers. The core functions of retailing include the creation of assortments, procurement, and logistics related to merchandise, legal transactions with consumers, the provision of information, and communication (Reinartz, Wiegand, & Imschloss, 2019). Retailers face several challenges at the core of their business affecting their stakeholder environment against the backdrop of digitization, sustainability, and human resources.

The first challenge is the employee-customer interface. Retailers process millions of transactions in their stores. For each transaction, employees and customers interact with one another, with the employees’ performance having a crucial impact on customer satisfaction and the firm’s financial performance (Netemeyer et al., 2010). These employees are the firm’s interface to the customer and embody the firm. However, retailers are facing an unprecedented shortage of labor (Rumscheidt, 2018); thus, the question arises of how to retain, motivate, and engage employees and develop them into a company’s ambassadors and achievers. A variety of characteristics and attributes affect employees’ performance (Dubinski & Hartley, 1986; Boles, Babin, Brashear, & Brooks, 2001; Cron, Alavi, Wieseke, & Ryari 2021). Among them, scholars have identified psychological ownership, a vital element for promoting knowledge-sharing (Han, Chiang & Chang, 2010); motivation and self-esteem (Pierce & Gardner, 2004); and job satisfaction (Mayhew, Ashkanasy, Bramble, & Gardner, 2007). Therefore, the examination of antecedents and consequences of psychological ownership is more important than ever in a retail context.

The second challenge retailers face is that of sustainability. Retailers can have a substantial impact on sustainability issues, as well as the economic leverage and resources to address them. (Naidoo & Gasparatos, 2018). Retailers can support sustainability in retailing operations, production of retailed goods, and mitigation strategies. Due to their size and bargaining power, retailers can drive sustainable change in production and consumption practices (Chkanikova & Mont, 2012). The incorporation of sustainability has evolved into a major issue for retailers (McGoldrick & Freestone, 2008; Ruiz-Real et al. 2018); customers' perceptions of sustainability and their consequent purchasing decisions are the decisive factors (Dang et al., 2020; Elg & Hultman, 2016). Hence, the transformation toward a more sustainable retailing business depends not only on retailers' sustainable production but also, critically, on the sustainable consumption choices of individuals. Paradoxically, while consumers say that they want firms to offer more sustainable products, they refrain from buying them (White, Hardisty, & Habib, 2019). Here again, the retailers' core function of communication and involvement is key to driving change.

The third challenge is digital transformation and its acceptance by users. Digital technologies are finding their way into retailing and providing new business opportunities (Quelch & Klein, 1996), business models (Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011), and purchasing processes (Grewal, Roggeveen, & Runyan, 2013) to create competitive advantages. Researchers have mainly discussed the opportunities and challenges of retail digitization in the context of marketing and sales processes. However, Seyedghorban, Samson, and Tahernejad (2020) emphasize that there is "considerable potential to transform procurement into a competitive weapon through its effectiveness or through developing new business models" (p. 1692). Organizations need to consider challenges related to technology acceptance among their users to exploit this vast potential in the supply chain.

The final challenge to note here is the COVID-19 pandemic, which dramatically impacted the retail sector and its stakeholders in a very short time (Voorhoes, Fombelle & Sterling, 2020). The World Health Organization declared a pandemic in March 2020 and retailers across the world were forced to shut down operations, which had severe consequences for this labor-intensive sector (Sulaiman, Ahmed, & Shabbir, 2020). Moreover, shop employees needed to follow new, COVID-related regulations and consequently cope with aggressive actions against them from some customers (Voorhoes et al., 2020). With their well-being at risk, these employees' cooperation and resilience have been severely tested. Their psychological ownership can be a key success factor. Beyond that, retailers' supply chains have been disrupted due to interruptions in international transportation and closed borders (Ozdemir, Sharma, Dhir, & Daim, 2022), which left organizations unable to fulfill their contractual obligations on time (van Hoek, 2022). Effective collaboration within the supply chain has helped to minimize the negative impact and increase resilience. Another effect of the COVID-19 pandemic has been to fuel the trend that customers claim to favor sustainable products and services over conventional ones as part of adopting a more eco-friendly and socially responsible lifestyle (IBM, 2023; BCG, 2020; pwc, 2023). In sum, the pandemic's effects have intensified all the challenges for retailers, leading to a powerful need for strategies to address them.

Accordingly, and in the light of the expanded research fields, the company Ernsting's Family served as the subject of the present investigation. Ernsting's Family is a German fashion retailer. As of 2023, it has approximately 1,900 shops and 12,000 employees generating a turnover of more than one billion euros in Germany and Austria. The company's supply chain comprises approximately 200 suppliers, which are preponderantly located in China, India, Bangladesh, and Turkey. Ernsting's Family is a family-owned business whose history goes back to 1968. Over the past decades, nine pillars of the brand have evolved and been defined by the executive board. These pillars (Figure 1) constitute the key principles for business success.

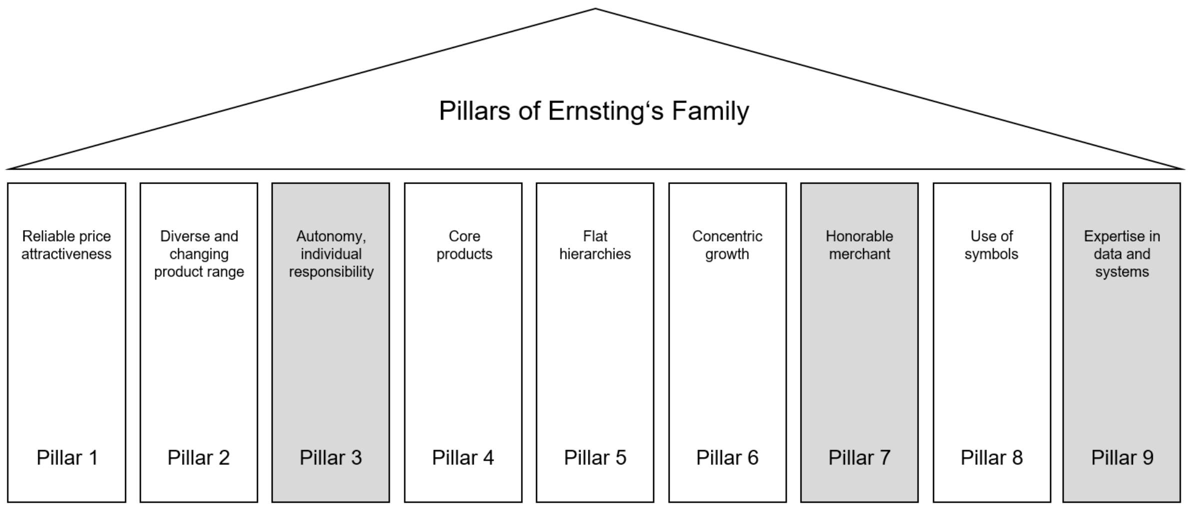

Figure 1. Pillars of Ernsting’s Family

The third pillar emphasizes the importance of autonomous work and the feeling of owning the shop, referring to the concept of psychological ownership. The seventh pillar describes the concept of an honorable merchant, highlighting the relevance of sustainability in the retailer’s operations and marketing of products. An underlying assumption is that the customer desires sustainability, but internal doubts about their willingness to pay for it remain. The ninth pillar emphasizes the importance of expertise in the digitization of processes in the whole value chain. This dissertation aims to capture these principles and examine research questions about the interplay of psychological ownership, technology acceptance, and sustainability along the stakeholder environment considering the distinct transformational developments.

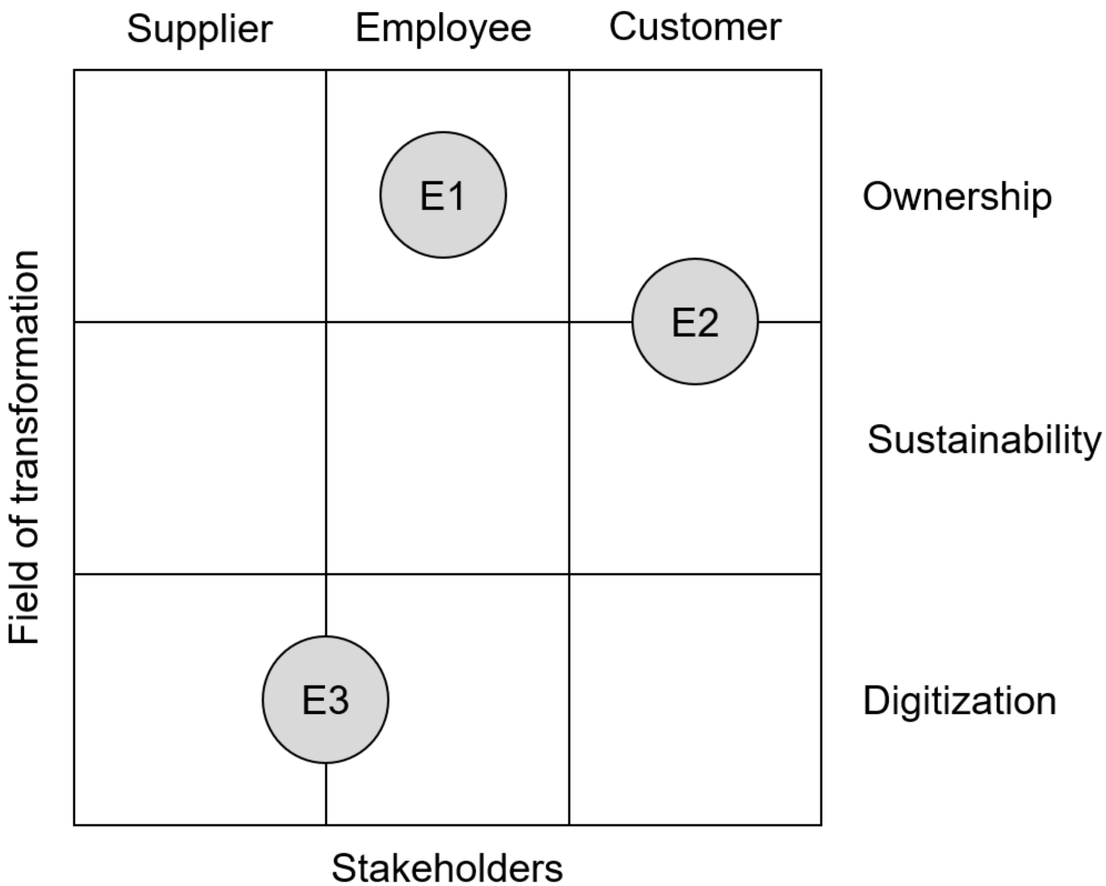

Figure 2: Stakeholder-transformation matrix

Figure 2 shows a stakeholder-transformation matrix illustrating the focus of the studies. Essay I and Essay II examine psychological ownership from different perspectives to facilitate sales performance and sustainable consumption. Essay III deals with firms' supply chain interface among employees and suppliers, examining their technology acceptance.

Part I

SUMMARY OF THE ESSAYS

The second part of this dissertation comprises three stand-alone yet thematically connected essays that address the research questions outlined above. For each of the three essays, Table 1 provides a brief overview of the prior state of the art, the main research questions, the applied methodology, the key results, and the major contributions.

Table 1. Overview of the three essays

Essay I:	The Multi-Level Nature of Psychological Ownership: Exploring its Antecedents and Consequences*
What we know	Researchers highlight the relevance of psychological ownership for desired behaviors in corporate contexts. Psychological ownership is a multi-level phenomenon, meaning that the emotional attachment it implies might pertain to the overall organization as well as to organizational sub-units. To this date, however, there is little empirical evidence on the antecedents, consequences, and vertical spillover effects of psychological ownership.
Research questions	What are the antecedents to psychological ownership? How can managers shape the psychological ownership of their employees? And what are the performance implications of psychological ownership, given its multi-level nature?
Method	Ordinary least squares (OLS) regression analyses with a unique dataset combining archival data from financial reports with two separate surveys among (1) 1,536 employees and (2) 66 managers of a fashion retailer.
Key findings	Psychological ownership of the business unit enhances performance and mediates the effect of psychological ownership of the entire organization. Error management culture and affective commitment in teams are mechanisms that can enhance the psychological ownership of the business unit.
Contribution	Identifying employees' psychological ownership of a business unit as a way to increase performance, with error management culture and affective commitment as important contingencies.

Notes: *the article was co-authored by Prof. Dr. Patrick Cichy

Table 1. Overview of the three essays (continued)

Essay II:	Activating the Sustainable Consumer: The Role of Customer Involvement in Embedded Corporate Sustainability**
What we know	Prior research has investigated the attitude-behavior gap in sustainable consumption by focusing on consumer-related factors. Less attention, however, has been paid to companies' role in narrowing this gap. Since extant studies show that involving customers in a company's activities is a way to change customers' behavior toward a company and its products, it seems promising to investigate the connection between customer involvement and sustainable consumption.
Research questions	What role does customer involvement in a company's corporate sustainability activities have as a driver for sustainable consumption? And does it matter what type of corporate sustainability activity the customers become involved in – whether the activity is embedded in the firm's core business versus peripheral to it?
Method	Three between-subject scenario experiments with 1,006 participants, including one field experiment among customers of a fashion retailer. Measurement of sustainable consumption through an online shop simulation (in the lab experiments) and observation of real online shopping behavior (in the field experiment).
Key findings	Customer involvement in corporate sustainability activities enhances sustainable consumption behavior; customers' feelings of psychological ownership toward the company's corporate sustainability activities mediate this relationship. This positive mediation effect is only present when customers become involved in CS (Corporate Sustainability) activities that are embedded in the company's core business.
Contribution	Identifying psychological ownership as a concept to explain the link between involvement and sustainable consumer behavior, with corporate sustainability embeddedness as an important contingency. Introducing an online shop simulation as a new method for measuring consumer behavior.

Notes: **the article was co-authored by Dr. Manuel Reppmann and Prof. Dr. Laura Marie Edinger-Schons

Table 1. Overview of the three essays (continued)

Essay III:	Users' Technology Acceptance in the Digital Transformation of Family Firms' Supply Chain
What we know	The success of digital transformation depends on the technology acceptance of the members of a firm's supply chain. Digital transformation is particularly difficult for family firm businesses, as these firms usually follow conservative strategies, show resistance to change, and face resource restrictions, which limits their ability to pursue such substantial change to their business model. Countervailing factors, however, include family firms' strong and continuous organizational culture and sustainable business activities that are rooted in their socioemotional wealth considerations and strong social capital.
Research questions	How do organizational characteristics of family firms shape the acceptance of new technologies among stakeholders within their supply chain?
Method	Inductive qualitative analysis following Gioia et al. (2013) utilizing 14 semi-structured interviews with employees and suppliers of a fashion retailer.
Key findings	Family firm characteristics have a major influence on users' ability to participate in shaping the scope of technology and degree of customization. Family firm characteristics also induce trust among employees and suppliers towards the organization, which facilitates intention into real behavior.
Contribution	Linking firm-level strategy to organizational and individual attributes, identifying factors that facilitate or hinder family firms' digital transformation success, and guiding managers of family firms on how to enhance their digital agenda.

GENERAL DISCUSSION

This dissertation investigates the transformational challenges of the retail industry in three research essays from different stakeholder perspectives. The stakeholder-transformation matrix (Figure 2) illustrates the focus of each paper and reveals their contextual distinctions and connections. In a nutshell, Essay I and Essay II identify the phenomenon of psychological ownership as a facilitator to enhance desired outcomes, i.e., sales performance and sustainable consumption, and pave the way for transformation integrating employees and customers. Essay III scrutinizes firms' supply chain interface among employees and suppliers in the context of digital innovation and finds positive effects of family firm characteristics on users' technology acceptance.

The results of the studies described in these essays provide novel and substantial insights into how managers can successfully refine their retail organizations' competitive advantages while guiding them through inevitable transformation processes. Moreover, the results highlight the relevance of proactive, socio-emotional, and participative measures – that is, error culture management (Essay I), stakeholder involvement (Essay II), and opportunities to participate and shape (Essay III). Hence, the essays condense recommendations for practitioners to conceptualize and operationalize these measures and overcome the transformations' pitfalls and leverage its potentials.

Furthermore, the dissertation contributes in various ways to behavioral research, sustainability research, and information technology research by utilizing a set of unique data with high explanatory power. Thus, it contributes to a more holistic picture of specific challenges that retailers face, their contingencies, and strategies on how to address them. It examines different sources and types of data, including quantitative data from surveys and archives as well as qualitative data from interviews. In particular, the first essay uses survey data collected from employees and their managers and employs an OLS regression analysis with robust standard errors to investigate the multi-level nature of psychological ownership. The second essay is designed as a single factor between-subjects scenario experiment with a control group; several ANOVAs (Analysis of Variance) are conducted to identify involvement effects on the attitude-behavior gap. The third essay explores the influence of family firm characteristics on stakeholders' technology acceptance by coding and analyzing a text corpus that stems from various semi-structured interviews of employees and suppliers. In what follows, I will outline the major contributions of the essays and conclude with a concise reflection.

First, literature to date lacks evidence of the performance implications of psychological ownership (e.g., Mayhew et al., 2007; Pierce & Rodgers, 2004; Vandewalle, van Dyne, & Kostova, 1995). The first essay demonstrates the multi-level nature of psychological ownership and its direct effect of psychological ownership on organizational performance. Decision-makers need to transparently communicate their vision and corporate policies to transfer the firm's culture and reputation to lower levels of its organizations and consequently amplify psychological ownership. We encourage managers to consider error culture management and affective commitment as important pathways to psychological ownership, and we build a bridge to extant literature (Frese & Keith, 2014; Van Dyck, Frese, Baer, & Sonnentag, 2005; Han et al. 2010; van Dyne and Pierce, 2004).

Second, our research provides another perspective on psychological ownership, identifying it as a mechanism that connects customer involvement and sustainable consumption. Thus, we connect the research on psychological ownership with involvement research, building a bridge between two streams that have not been connected. This offers new theoretical insights into research about incentivizing consumer behavior beyond well-established social marketing interventions such as appeal-based communication. While previous research investigated individuals' preferences for different forms of involvement, it did not establish a potential underlying mechanism explaining the outcomes of customer involvement (Edinger-Schons, Lengler-Graiff, Scheidler, Mende, & Wieseke, 2019). This notion is critical, since it fills a relevant research void and simultaneously addresses the increasing need among practitioners for approaches affecting customer behavior concerning sustainability. Additionally, decision-makers should consider that the effect of involvement on both purchasing behavior and extra-role behavior is only significant if the target of ownership is embedded within the firm's core business.

Third, we link research on digital transformation and family firms and provide several crucial insights. The essay explores digital transformation stimuli within the supply chain against the backdrop of a family firm business and reveals pathways to the success of these ventures. It links firm-level strategy to organizational and individual attributes, provide explanations for relevant contingencies, and propose concepts on how to support users' technology acceptance within the supply chain and prevent pitfalls of digitization. Thus, we support Duran, Kammerlander, van Essen, and Zellweger (2016)'s argument that a strong family firm culture for innovation and change plus strong social capital embedded in inter- and intra-organizational relationships support the acceptance of technologies among users. This causes family firm managers to develop inclusive and integrative concepts that create trust and self-efficacy among users, who can provide new ideas (Gassmann, Enkel, & Chesbrough, 2010) and valuable feedback (Tyre & Von Hippel, 1997). Being involved in the development of the supply chain interface increases these users' intention to use the technology.

All things considered, this dissertation attempts to illuminate the major challenges of the retail industry and provide key theoretical and practical insights into transformational processes affecting its relevant stakeholders. The essays offer practical implications that support decision-makers in successfully guiding their organization through the industry's transformation by systematically enabling, involving, and empowering its stakeholders to carry out the necessary change. Apart from its contributions and implications, each paper highlights its limitations and reaches out to further deepen the understanding of psychological ownership, sustainability, and digitization among firms' critical stakeholders.

REFERENCES

BCG (2020). ***The Pandemic Is Heightening Environmental Awareness***. https://www.bcg.com/de-de/publications/2020/pandemic-is-heightening-environmental-awareness.

Boles, J., Babin, B. J., Brashear, T. G., & Brooks, C. 2001. An Examination of the Relationships between Retail Work Environments, Salesperson Selling Orientation-Customer Orientation and Job Performance. ***The Journal of Marketing Theory and Practice***, 9(3): 1-13.

Brown, G., Pierce, J. L., & Crossley, C. (2014). Toward an Understanding of the Development of Ownership Feelings. ***Journal of Organizational Behavior***, *35*(3), 318–338.

Chkanikova, O., & Mont, O. 2012. Corporate Supply Chain Responsibility: Drivers and Barriers for Sustainable Food Retailing. ***Corporate Social Responsibility and Environmental Management***, 22(2): 65-82.

Cron, W. L., Alavi, S., Habel, J., Wieseke, J., Ryari, H. 2021. No conversion, no conversation: consequences of retail salespeople disengaging from unpromising prospects. ***Journal of the Academy of Marketing Science***, 49(3): 502-520.

Dang, V. T., Nguyen, N. & Pervan, S. 2020. Retailer corporate social responsibility and consumer citizenship behavior: The mediating roles of perceived consumer effectiveness and consumer trust. ***Journal of Retailing and Consumer Services***, 55: 1-10.

Devinney, T. M., Auger, P., & Eckhardt, G. M. 2010. ***The Myth of the Ethical Consumer***. Cambridge: Cambridge University Press.

Dubinski, A. J., & Hartley, S. W. 1986. Antecedents of retail salesperson performance: A path-analytic perspective. ***Journal of Business Research***, 14(3): 253-268.

Duran, P., Kammerlander, N., van Essen, M., Zellweger, T. 2016. Doing more with less: Innovation input and output in family firms. ***Academy of Management Journal***, 59(4): 1224–1264.

Edinger-Schons, L. M., Lengler-Graiff, L., Scheidler, S., Mende, G., & Wieseke, J. 2019. Listen to the voice of the customer—First steps towards stakeholder democracy. ***Business Ethics: A European Review***, *29*(3): 510–527.

Elg, U., & Hultman, J. 2016. CSR: retailer activities vs consumer buying decisions. ***International Journal of Retail & Distribution Management***, 44(6): 640-657.

ElHaffar, G., Durif, F., & Dubé, L. (2020). Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. ***Journal of Cleaner Production***, 275: 1-20.

Ferreira, M.J., Moreira, F., Pereira, C.S., Durão, N., 2020. The Digital Transformation at Organizations – The Case of Retail Sector. In: Á. Rocha, H. Adeli, L. Reis, S. Costanzo, I. Orovic, F. Moreira (Eds.), ***Trends and Innovations in Information Systems and Technologies***: 560-567. Cham, Germany: Springer.

Frese, M., & Keith, N. 2014. Action Errors, Error Management, and Learning in Organizations. ***Annual Review of Psychology***, 66(1): 661-687.

Gassmann, O., Enkel, E. & Chesbrough, 2010. The future of open innovation. ***R&D Management***, 40(3): 213-221.

Gioia, D.A., Corley, K.G., Hamilton, A.L. 2013. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. ***Organizational Research Methods***, 16(1): 15–31.

Grewal, D., Roggeveen, A., & Runyan, R.C. 2013. Retailing in a connected world. ***Journal of Marketing Management***, 29(3-4): 263–270.

Han, T.-S, Chiang, H.-H., & Chang, A. 2010. Employee participation in decision making, psychological ownership and knowledge sharing: mediating role of organizational commitment in Taiwanese high-tech organizations. ***The International Journal of Human Resource Management***, 21(12): 2218-2233.

Hurst, J. L. & Good; L. K. 2009. Generation Y and career choice. The impact of retail perceptions, expectations and entitlement perceptions. ***Career Development International***, 14(6): 570-593.

IBM (2023). ***Covid-19 Consumer Survey: IBM***. https://www.ibm.com/thought-leadership/institute-business-value/report/covid-19-consumer-survey.

Koh, L., Orzes, G. & Jia, F.J. 2019. The fourth industrial revolution (Industry 4.0): technologies disruption on operations and supply chain management. ***International Journal of Operations and Production Management***, 39(6/7/8): 817-828.

Lin, T.H., & Lin, I.-C. 2014. Factors for Information Technology Acceptance Willingness and Adoption in Logistics Industry from Supply Chain Perspectives. ***International Journal of Electronic Business Management***, 12(3): 167-177.

Mayhew, M. G., Ashkanasy, N. M., Bramble, T., & Gardner, J. 2007. A Study of the Antecedents and Consequences of Psychological Ownership in Organizational Settings. ***The Journal of Social Psychology***, 147(5): 477-500.

Meroño-Cerdán, A. L. 2017. Perceived benefits of and barriers to the adoption of teleworking: peculiarities of Spanish family firms. ***Behaviour & Information Technology***, 36(1): 63-74.

McGoldrick, P. J., & Freestone, O. M. 2008. Ethical product premiums: antecedents and extent of consumers' willingness to pay. ***The International Review of Retail, Distribution and Consumer Research***, 18(2): 185-201.

Naidoo, M., & Gasparatos, A. 2018. Corporate environmental sustainability in the retail sector: Drivers, strategies and performance measurement. ***Journal of Cleaner Production***, 203(1): 125-142.

Netemeyer, R. G., Maxham, G. M., & Lichtenstein, D. R. (2010). Store Manager Performance and Satisfaction: Effects on Store Employee Performance and Satisfaction, Store Customer

Satisfaction, and Store Customer Spending Growth. ***Journal of Applied Psychology***, 95(3): 530-545.

Ozdemir, D., Sharma, M., Dhir, A., & Daim, T. 2022. Supply chain resilience during the COVID-19 pandemic. ***Technology in Society***, 68: 101847.

Pierce, J. L., & Gardner, D. G. 2004. Self-esteem within the work and organizational context: A review of the organization-based self-esteem literature. ***Journal of Management***, 30(5): 591–622.

Pierce, J. L., & Rodgers, L. 2004. The psychology of ownership and worker-owner productivity. ***Group & Organization Management***, 29(5): 588–613.

PricewaterhouseCoopers. (2023). ***PwC's Global Consumer Insights Survey 2021: PwC***. https://www.pwc.com/gx/en/industries/consumer-markets/consumer-insights-survey/archive/consumer-insights-survey-2021.html.

Quelch, J.A., & Klein, L.R. 1996. The internet and international marketing. ***Sloan Management Review***, 37(3): 60–75.

Reinartz, W., Wiegand, N., & Imschloss, M. 2019. The impact of digital transformation on the retailing value chain. ***International Journal of Research in Marketing***, 36(3): 350-366.

Rubbio, I., Bruccoleri, M., Pietrosi, A. & Ragonese, B. 2019. Digital health technology enhances resilient behaviour: evidence from the ward. ***International Journal of Operations and Production Management***, 40(1): 34-67.

Ruiz-Real, J. L., Urilbe-Toril, J., Gazquez-Abad, J. C., & dePablo Valenciano, J. 2018. Sustainability and Retail: Analysis of Global Research. ***Sustainability***, 11(1): 14.

Rumscheidt, S. 2018. Beschäftigungsentwicklung im Handel: Besteht ein Arbeitskräftemangel in der Branche? **Ifo Schnelldienst**, 71(9): 37-43.

Seyedghorban, Z., Samson, D., & Tahernejad, H. 2020. Digitalization opportunities for the procurement function: pathways to maturity. ***International Journal of Operations & Production Management***, 40(11): 1685-1693.

Sharma, M., Luthra, S., Joshi, S. & Kumar, A. (2021). Accelerating retail supply chain performance against pandemic disruption: adopting resilient strategies to mitigate the long-term effects. ***Journal of Enterprise Information Management***, 34(6): 1844-1873.

Sheth, J. 2020. Impact of Covid-19 on consumer behavior: Will the old habits return or die? ***Journal of Business Research***, 117: 280-283.

Sorescu, A., Frambach, R.T., Singh, J., Rangaswamy, A. and Bridges, C. 2011. Innovations in retail business models. ***Journal of Retailing***, 87(1): 3–16.

Sousa-Zomer, T., Neely, A., & Martinez, V. 2020. Digital transforming capability and performance: a microfoundational perspective. ***International Journal of Operations and Production Management***, 40 (7-8), 1095-1128.

Sulaiman, M.A.B.A., Ahmed, M.N., & Shabbir, M.S. 2020. COVID-19 Challenges and Human Resource Management in Organized Retail Operations. ***Utopía y Praxis Latinoamericana***, 25(12): 81-92.

Tyre, M. J. & von Hippel, E., 1997. The Situated Nature of Adaptive Learning in Organizations. ***Organization Science,*** 8(1): 1-107.

Vandewalle, D., Van Dyne, L., & Kostova, T. 1995. Psychological ownership: An empirical examination of its consequences. ***Group and Organization Management***, 20: 210-226.

Van Dyck, C., Frese, M., Baer, M., & Sonnentag, S. 2005: Organizational Error Management Culture and Its Impact on Performance: A Two-Study Replication. ***Journal of Applied Psychology***, 90(6): 1228-1240.

Van Dyne, L., & Pierce, J. L. 2004. Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behavior. ***Journal of Organizational Behavior***, 25: 439-459.

Van Hoek, R. 2022. Lessons from CSCMP Supply Chain Hall of Famer Henry Ford and the research that they call for in modern supply chains. ***International Journal of Physical Distribution and Logistics Management***, 52(1): 88-102.

Voorhees, C. M., Fombelle, P. W., & Sterling, A. B. 2020. Don't Forget About the Frontline Employee During the COVID-19 Pandemic: Preliminary Insights and a Research Agenda on Market Shocks. ***Journal of Service Research***, 23(4): 396-400.

White K., Hardisty D. J., & Habib, R. 2019. The elusive green consumer. ***Harvard Business Review***, 11: 124–133.

Zentes, J., Morschett, D., & Schramm-Klein, H. 2016. ***Strategic Retail Management: Text and International Cases*** (3rd ed.). Wiesbaden, Germany: Springer Fachmedien.

PART II:

RESEARCH ESSAYS

ESSAY I

The Multi-Level Nature of Psychological Ownership: Exploring its Antecedents and Consequences

Abstract

Scholars emphasize the importance of psychological ownership (i.e., a feeling of possession towards an object independent of legal ownership) for desired behaviors and attitudes in corporate contexts. Psychological ownership is a multi-level phenomenon, meaning that the emotional attachment it implies might pertain to the overall organization as well as to organizational sub-units (e.g., business units). Hitherto, however, there is little empirical evidence on the antecedents, consequences, and vertical spillover effects of psychological ownership. To address this research gap, our paper presents arguments explaining how psychological ownership positively affects organizational performance by diffusing from higher levels of the organization towards lower levels. Furthermore, we suggest that error management culture and high affective commitment within teams, constitutes environmental conditions that let psychological ownership thrive. To test our theorizing, we created a unique dataset combining archival data with two surveys among 1,536 employees and 66 managers of an organization. Our results indicate that psychological ownership towards the business unit indeed enhances performance and mediates the effect of psychological ownership towards the entire organization. Additionally, our findings suggest that error management culture and the increase of affective commitment in teams pose mechanisms that can enhance psychological ownership towards the business unit. With these findings, our study yields important theoretical and practical implications.

Keywords: Psychological ownership; Error management culture; Affective commitment

Introduction

Individuals develop feelings of possession, i.e., psychological ownership (Pierce et al., 2003), towards a broad variety of material and immaterial objects. Such objects include homes, machinery, cars (Dittmar, 1992), products (Das, 1993), ideas, knowledge (Isaacs, 1933; Pierce, Kostova, & Dirks, 2001), people (Pierce et al., 2001), organizations (Dirks, Cummings, & Pierce, 1996), jobs (Beaglehole, 1932; Peters & Austin, 1985), and organizational practices (Kostova, 1998). Although these feelings occur independent of legal ownership (Pierce, O'Driscoll, & Coghlan, 2004), they have important psychological and behavioral consequences (e.g., Han, Chiang, & Chang, 2010; Dirks et al., 1996). Several studies examined psychological ownership in the work place and found that it promotes knowledge-sharing (Han et al., 2010), motivation and self-esteem (Pierce & Gardner, 2004), and job satisfaction (Mayhew, Ashkanasy, Bramble, & Gardner, 2007) among employees.

Despite all efforts thus far, the multi-level nature of psychological ownership, its antecedents and consequences in corporate contexts remain severely underexplored (Pierce & Julissa, 2011; Mayhew et al., 2007; Pierce & Gardner, 2004). In particular, a lot of controversy about the performance implications of psychological ownership in organizations exist (e.g., Pierce & Rodgers, 2004). In line with its conceptualization as a multi-level phenomenon (Liu, Wang, & Lee, 2012), psychological ownership was found to exist towards the organization, the business unit, the team, colleagues, and even towards ones own job (Dirks et al., 1996; Beaglehole, 1932; Peters & Austin, 1985). To understand performance implications at different levels, it is crucial to understand psychological ownership spillovers, i.e., how such feelings of possession towards higher levels of the organization transfers towards lower levels and vice versa. To foster psychological ownership in corporate contexts, it is also important to identify environmental conditions under which the development of such an emotional attachment is enhanced. In this regard, we argue that by establishing an error management culture managers can pro-actively foster psychological ownership in their teams. This is because the intensified communication routines, joint team learning, and the higher openness for change (Frese, 1991; 1995;Van Dyck, Frese, Baer, & Sonnentag, 2005) that the constructive handling of errors entails, open up the very paths that lead to the development of psychological ownership (i.e., coming to intimitally know and investing the self into the ownership target) (Pierce, Kostova, & Dirks, 2003). Similarly, we suggest that affective commitment will catalyze the development of psychological ownership because it entails a higher personal attachement and investment of individuals (Pierce & Gardner, 2004). Taking all aspects into consideration, we depicted the following research questions to guide our exploration: What are antecedents to psychological ownership? How can managers shape the psychological ownership of their employees? And what are the performance implications of psychological ownership given its multi-level nature?

In order to empirically examine these questions, we collaborated with Ernsting's family, a large German retailer for clothing, and created a unique dataset that relied on three sources. First, we collected 1,813 responses to a survey that was distributed among employees of 809 business units (i.e. shops) of the company. Second, we acquired performance data for each business unit in the sample by approaching 66 regional managers. Finally, we obtained archival data for each business unit including but not limited to information on employee fluctuation, business unit size, and average age of the employees working in the business unit. The analyses of the rich data that we were able to obtain yielding a final sample of 1,536 individuals widely confirmed our theorizing.

We believe that our study contributes to the literature on the organizational impact of psychological ownership in several important ways. First, while extant studies are inconclusive or of conceptual nature (Pierce & Rodgers, 2004), we were able to provide empirical evidence for a performance effect of psychological ownership in corporate contexts. Second, we provide evidence for the vertical spillover of psychological ownership underpinning the multi-level nature of our core concept. Third, we identified error management culture and affective commitment as two important antecedents of psychological ownership. Beyond contributing to theory, our findings also are of particular relevance for practice as they point on mechanisms available to managers that aim at fostering psychological ownership within their organization.

Theoretical background

The multi-level nature of psychological and organizational ownership

Psychological ownership is a feeling of possession towards an object that is independent of legal ownership of the object (Etzioni 1991; Sieger, Zellweger, & Aquino, 2013). These feelings can occur towards material and immaterial objects and influence the attitudes, values, and behaviors of individuals (Pierce et al., 2003). Individuals have been observed to invest greater care, attention, and energy into the objects when they feel that such belong to them (Belk, 1988). Pierce et al. (2001, 229) define psychological ownership as a "state in which an individual feels as though the target of ownership […] or a piece of it is 'theirs' (i.e., 'it is MINE')." Furby (1978a) elaborates that the motivation for ownership is grounded in the human need to experience effectance and be able to produce desired outcomes in the environment. Beyond that, scholars suggest that possessions are symbolic expressions of the self and might hence help in communicating ones identity to others (Dittmar, 1992; Mead, 1934). The third motive of psychological ownership can be derived from the innate need of individuals to possess a certain space, ergo 'home' (Pierce & Rogers, 2004; Pierce et al., 2001). Possessions that contribute to the feeling of 'home' have received a considerable emotional invest from individuals (Pierce et al., 2001). Individuals are said to develop psychological ownership when they can control the target, come to know the target intimately, and invest the self into the target (Van Dyne & Pierce, 2004).

Scholars found that individuals develop psychological ownership towards a variety of targets such as homes, machinery, cars (Dittmar, 1992), created products (Das, 1993), ideas, knowledge, creative endeavors (Isaacs, 1933; Pierce et al., 2001), people (Pierce et al., 2001), organizations (Dirks et al., 1996), jobs (Beaglehole, 1932; Peters & Austin, 1985), and organizational practices (Kostova, 1998). "Organziation-based psychological ownership is concerned with individual members' feelings of possession and psychological connection to the organization as a whole" (Mayhew et al. 2007, 478) and relates to organizational culture, climate, vision, reputation, and corporate policies. As such, psychological ownership can occur at different levels including the organization, the business unit, the work/project team, and the project. Furthermore, initial evidence suggests that a transfer effect of psychological ownership between interlinked objects or entities might exist (Brasel & Gips, 2013).

Psychological ownership develops independent of legal ownership or, in corporate contexts, independent of an equity ownership position. It is associated with positive behavioral and social-psychological consequences (Etzioni, 1991; Furby, 1978b), like greater care, attention, and energy that is invested into the target (Belk, 1988). Psychological ownership in corporate contexts is said to trigger a sense of responsibility, facilitate motivation to protect the ownership target (Pierce et al., 2003), minimize shirking and enhance organizational members' work performance (Das & Teng, 1998; Mayhew et al. 2007). As a consequence, employees are more satisfied when they experience high psychological ownership towards their organization, team or job.

Error management culture

Organizations are confronted with errors in everyday business. Errors pertain unintended deviations from goals, standards, a code of behavior, the truth, or from some true value (Merriam-Webster 1967). Despite their negative connotation, errors can pose a valuable opportunity for learning when managed effectively (Van Dyck et al., 2005). Error management acknowledges the negative effect of errors while promoting its positive consequences (Van Dyck et al., 2005). Such an constructive and opportunity-oriented view suggests to focus on what can be done after an error occurred (Frese 1991; 1995). Scholars argue that organizations with an effective approach to errors may be more profitable because they learn from errors and are more likely to innovate (Peters, 1987). Organizations solely relying on error prevention might face issues because total elimination of errors is impossible (Garud, Nayyar, & Shapira, 1999). In contrast to error prevention, error management hence focuses on reducing the negative and increasing the positive consequences of errors (Frese & Keith, 2014). One of the major success factors of such an approach is that errors are quickly detected, consequences are effectively handled, and that organizational learning is ensured (Van Dyck et al., 2005). In this regard, Van Dyck et al. (2005) argue that an effective communication about errors is crucial in effective error handling strategies because it allows to develop shared knowledge and an understanding of high-risk situations (Mathieu, Goodwin, Heffner, Salas, & Cannon-Bowers, 2000). Establishing an open communication and a positive framing of errors reduces the risk of hindsight bias and fundamental attribution bias (Brown, Williams, & Leeshaley, 1994). Accepting that errors always will be part of daily business but can catalyze positive changes in organizations at the same time, will also encourage employees to explore and experiment more. Through this employees will gain a more comprehensive understanding of the organization, the business unit, and complex situations that led to an error.

Affective Commitment

Literature suggests that there are three types of organizational commitment, i.e., affective, continuance, and normative commitment (Camelo-Ordaz, Garcia-Cruz, & Sousa-Ginel., 2011). The different types of commitment vary in the categories of affectivity, continuance, and normativity, whereas employees can experience each of these states independently (Allen & Meyer, 1990). Stebbins (1970, 527) refers to the continuance commitment as the “awareness of impossibility of choosing a different social identity […] because of the immense penalties in making the switch”. Normative commitment can be defined as the “totality of internalized normative pressures to act in a way which meets organizational goals and interests” (Wiener 1982, 471). The most prevalent approach to organizational commitment is considered as an affective or emotional attachment to the organization (Kanter, 1968; Buchanan, 1974). This form of commitment is based on a sense of identity with the organization, its goals as well as its values and is reflected by feelings of belongingness and personal attachement. Allen and Meyer (1990, 1) define affective commitment as “the organizational commitment [that] refers to employees' emotional attachment to, identification with, and involvement in, the organization.” Allen and Meyer (1990) conclude that the different categories of commitment are expressed in employees wanting to (affective), needing to (continuance), or feeling they ought to stay in the organization (normative). We therefore expect that greater affective commitment to their organization and an increased likelihood of displaying positive extra-role behaviors is related to the feeling of increased control (O’Driscoll, Pierce, & Coghlan, 2006), which we argue to be associated with a greater sense of ownership (for the job and organization).

Hypotheses

Psychological ownership and business unit performance

Scholars have argued that psychological ownership is a key factor for organizational success (e.g., Pierce et al. 2004, Pierce et al., 2003). In light of extant research, we expect positive effects of psychological ownership on a business unit's performance for three reasons. First, psychological ownership is associated with a sense of responsibility and shared interests with other owners to protect the target of ownership (Das & Teng, 1998), as it is associated with pride that minimizes shirking and motivates organizational members to perform at high levels (Vandewalle, Van Dyne, & Kostova, 1995). Second, psychological ownership affects the promotion of change and therefore facilitates the company's performance if the change is self-initiated, evolutionary, and additive (Pierce et al. 2001, 304). Third, psychological ownership is said to lead to extra-role behavior of employees (Vandewalle et al., 1995).

That said, there might also be negative effects that origin from psychological ownership. Scholars observed that individuals with high degree of psychological ownership are less likely to share their ideas with colleauges (Deci & Ryan, 1987; Pierce et al., 2003) and boycott change processes within their organizations (Baer and Brown 2012). The latter especially pertains to change processes that are imposed, revolutionary, and subtractive in nature (Pierce et al., 2001). However, Vandewalle et al. (1995) provide evidence that psychological ownership is more likely to lead to proactive behavior in the form of extra-role behavior. Besides pro-organizational attitudes, psychological ownership is associated with a variety of caretaking behaviors. High-ownership individuals feel higher responsibility for the object, treat it with greater care, and give it more attention (Belk, 1988). Taking all aspects into consideration, we expect that the desired effects of psychological ownership will outweigh potential detrimental behavior. We hence hypothesize an overall positive effect of psychological ownership on organizational performance and predict the following:

> **Hypothesis 1.** *Employees' psychological ownership enhances the performance of their business unit.*

The mediating effect of psychological ownership towards the business unit

We expect that the positive effect of psychological ownership towards the organization on business unit performance is mediated by psychological ownership towards the business unit. As for individuals the job is "a more proximal and salient aspect of their working lives than is the organization per se" (O'Driscoll et al. 2006, 409), we believe that psychological ownership towards the smaller sub-unit, i.e. the business unit, will elicit stronger effects on employees' behavior than psychological ownership towards the organization would. That said, we also view psychological ownership towards the organization as a key antecedent of psychological ownership towards the business unit. More precisely, we assume that the feelings of belongingness will transfer from the higher level to the lower level of the organization (Brasel & Gips, 2013). For instance, intimate knowledge about the overarching vision, mission, and goals of the company lead to psychological ownership towards the organization. That feeling gives rise to better control the target which consequently increases the psychological ownership towards the business unit. That means that high ownership feelings towards the organization facilitates those towards the business unit, which consequently increase the performance. Therefore, we hypothesize:

> **Hypothesis 2.** *Employees' psychological ownership towards the business unit mediates the positive effect of psychological ownership towards the organization on the performance of the business unit.*

Error management culture and psychological ownership

We argue that error management culture is an antecedent to psychological ownership and that a constructive and proactive handling of errors facilitates psychological ownership of employees. However, a lack of error management culture will negatively influence the psychological ownership of employees. There are several reasons that support our argument. First, we argue that error management culture satisfies the need for effectance and ability to produce desired outcomes in the environment. This constitutes a main motivation for ownership with reference to Furby (1978a). In other words, an open communication within the team creates an atmosphere of safety where employees can offer criticism constructively and suggest new approaches (Van Dyck et al., 2005). Hence, employees perceive that they can develop and control the organization (Frese 1991; 1995), which we consider to subsequently lead to the development of psychological ownership. Second, error management culture will significantly increase employees' knowledge about the organization, its issues, and shortfalls (Frese & Keith, 2014). The intimate knowledge about the organization depicts another main driver for the development of psychological ownership. Pierce et al. (2001) argue that "the more information and the better the knowledge an individual has about an object, the deeper the relationship between the self and the object, and hence, the stronger the feeling of ownership toward it" (p. 301). Error management culture promotes intimate knowledge by making the information more accessible, because it creates an atmosphere of being allowed to talk about it (Frese & Keith, 2014). Against this backdrop, we believe that error management culture that employees experience in their business units, fosters the development of psychological ownership towards the business unit. Consequently, we hypothesize:

> **Hypothesis 3.** *A strong error management culture enhances employees' psychological ownership towards the business unit.*

Psychological ownership and affective commitment

We argue that individuals that show higher levels of affective commitment are more likely to develop feelings of psychological ownership towards the business unit (Allen & Meyer 1990). Affective commitment is based “on a sense of identity with the organization, its goals, and its values, and is reflected by feelings of belongingness within and wanting to be attached to the organization” (O’Driscoll et al., 2006). As such, greater affective commitment to their organization increases the likelihood of displaying positive extra-role behaviors and exercising control over the business unit (O’Driscoll et al., 2006). The experience of control over an object is said to lead to the development of psychological ownership (Pierce et al., 2001). Han et al. (2010) further argue that employees have increased willingness to remain in the organization and have a stronger sense of belonging if they are committed to their organizations. Pierce et al. (2001) suggest that if the belief of being the owner of the organization is strong, employees will develop strong affective attachment to the organization.

Van Dyne and Pierce (2004) found a positive correlation between psychological ownership and (organizational) commitment. They argue that commitment is the essence of ownership (Van Dyne and Pierce, 2004). Mayhew et al. (2007) confirm this finding in a qualitative research setting and distinguished between organization-based psychological ownership and job-based psychological ownership. In line with their expectations, the scholars observed the effects of both types of ownership on continuance and affective commitment. Hence, they show that organization-based psychological ownership is significantly related to affective organizational commitment and even stronger than its relationship to continuance commitment (Mayhew et al., 2007). Vandewalle et al. (1995) found that organizational commitment mediates the relationship of psychological ownership and extra-role behavior. On the basis of this, they proved that the relationship of organizational commitment and extra-role behavior was stronger than the relationship of organizational commitment and in-role behavior (Vandewalle et al., 1995). Finally, Han et al. (2010) found a correlation between organizational commitment and psychological ownership. In line with the majority of findings we hypothesize:

> ***Hypothesis 4.*** *A strong affective commitment enhances an employees' psychological ownership towards the business unit.*

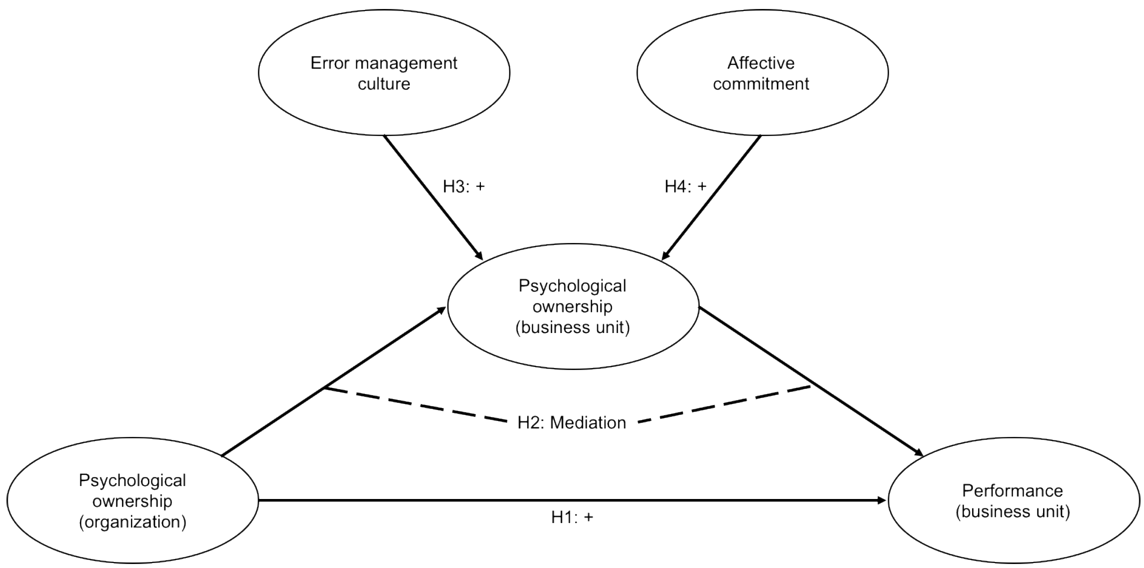

Figure 3: Conceptual model

Methods

Research design and sample

To test our hypotheses, we collaborated with Ernsting's family a large German retailer for clothing. The company was founded in 1968 and offers textiles, home textiles, and decoration in Germany and Austria. In the business year 2017/2018, Ernsting's family generated a turnover of 1.15 billion euro in 1,850 shops and ranks among the top ten of the largest textile retailers in Germany. Two different surveys have distributed among 9,090 sales assistants and 69 regional managers that administer between 12 to 33 shops each which one to ten shop assistants.

Article I

We conducted the first survey between April and May 2018. We questioned the 9090 sales assistants on topic such as job satisfaction, psychological ownership, affective commitment, and error management culture. The sales assistants could choose between an analogue and a digital questionnaire. The analogue questionnaires have been distributed physically with the internal logistics. In total, 1,813 shops assistants answered the questionnaire, which results in a response rate of 19.9 %. The majority of shop assistants (91.9%) chose to reply analogue instead of digitally, which can be explained by its ease of use during opening hours. The shop assistants are almost always female (99.9%) and their average age is 46.4 years. Their average job tenure is 8.2 years.

The regional managers were contacted personally and requested to evaluate the performance of each shop with the criteria tidiness, shop organization, merchandising and team performance. These criteria have been derived in a workshop in March 2018 by a team of internal sales experts. The survey has only been conducted online in the period of April to May 2018 and the defined evaluation period was the current business year starting from July 2017. 66 regional managers participated in the individual surveys, so that we achieved a response rate of 95.6 %. The regional managers' average age is 45.6 years and they are working for Ernsting's family on average for 11.0 years with 60% being female and 40% male.

We added archival data from various internal sources to our dataset. All archival data is based on the business year 2017/2018 and has been collected from the internal SAP Enterprise Resource Planning System. The human resource data contain information on the number of shop assistants, the average age, the average seniority, the average number of weekly hours, and the annual fluctuation. The accounting data contain information on the number of purchases, revenue, discount and marginal return for each shop. Beyond that, the real estate data provide a variety of information that can function as control variables. This set of data comprises the sales area in sqm, the rent and the year of establishment and latest renovation of each shop. Beyond that, Ernsting's family classifies its shops into different types of location and obtains information on the purchase power and the centrality of each shop's surrounding.

Measures

Dependent variable

In this study, our main dependent variable is *business unit performance*. In order to measure business unit performance, we conducted a workshop with all of Ernsting's families Head of Sales (supervisors of regional managers) to create a scale that captures performance beyond hard facts such as sales per square meter. Consequently, we questioned them how they regularly evaluate the performance of their teams. After collecting their ideas, we jointly started to structure and condense them resulting in four attributes of performance, i.e., team climate, organization, merchandising, and tidiness. Using these attributes as items, we questioned the 66 regional managers *"How would you evaluate the performance of business unit [XYZ] regarding its…(1) team climate, (2) organization, (3) merchandising, and (4) tidiness."* They answered on a seven-point Likert-scale from 1 (very poor) to 7 (very good). Consequently, it ranges from 1 (very poor business unit performance) to 7 (very high business unit performance).We computed business unit performance as the mean of the four items. A Cronbach's alpha value of 0.89 indicates adequate reliability.

Independent variables

Our main independent variable is psychological ownership towards the organization. We captured *PO (psychological ownership) organization* by means of a reflective measure. In accordance with Van Dyne and Pierce (2004), we asked to what extent the employees agreed with the following statements: (1) *"Ernsting's family is my organization"*, (2) *"I sense that Ernsting's family is my organization"*, and (3) *"I feel a very high degree of personal ownership for Ernsting's family"*. Employees responded on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). A Cronbach's alpha value of 0.84 indicates adequate reliability. For each employee, we computed PO organization as the mean of the three items. Consequently, it ranges from 1 (very low psychological ownership) to 7 (very high psychological ownership).

Furthermore, we employed *error management culture* and *affective commitment* as explanatory variables. We captured both by means of a reflective measure. We used a short scale adapted from Van Dyne and Pierce (2004) asking (1) *"After an error, people think through how to correct it"*, (2) *"When an error has occurred, we usually know how to rectify it"*, and (3) *"When people are unable to correct an error by themselves, they turn to their colleagues"* to measure error management culture. A Cronbach's alpha value of 0.78 indicates acceptable reliability. As for affective commitment, we asked in accordance with Allen and Meyer (1990) (1) *"I would be very happy to spend the rest of my career with this organization"*, (2) *"I enjoy discussing my organization with people outside it"*, and (3) *"This organization has a great deal of personal meaning for me."* A Cronbach's alpha value of 0.86 indicates adequate reliability. Employees responded for both on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). We computed the measures as the means of each item set. Consequently, they range from 1 (very low error management culture/affective commitment) to 7 (very high error management culture/affective commitment).

Mediating variable

Our mediating variable is psychological ownership towards the business unit, i.e., the shop. We captured *PO business* unit similarly to PO organization by means of a reflective measure. In accordance with Van Dyne and Pierce (2004), we asked to what extent the employees agreed with the following statements: (1) “The shop is my organization”, (2) “I sense that the shop is my organization”, and (3) “I feel a very high degree of personal ownership for the shop”. Employees responded on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). A Cronbach’s alpha value of 0.81 indicates adequate reliability. For each employee, we computed PO business unit as the mean of the three items. Consequently, it ranges from 1 (very low psychological ownership) to 7 (very high psychological ownership).

Control variables

To control for possibly confounding factors, we employed a set of four control variables. First, we included the *average hours* per business unit of the employees. Second, we included the number of employees of the business unit. Third, we controlled for *regional growth*, i.e., whether the business unit is located in a region with 1 (very low) to 5 (very high) growth. Finally, we included the employee *fluctuation* in percent.

Analysis

As our dependent variable is approximately continuous, we employed OLS regression analyses with robust standard errors clustered at the business unit level to allow for potential non-independence of evaluations of the same business unit. To overcome the limitations of Baron and Kenny’s (1986) step-wise approach for mediation analyses, we followed the procedure for (moderated) mediation analyses suggested by Preacher and Hayes (2004), and Hayes (2015). We obtained bootstrapped confidence intervals (with 5000 bootstrapping replications) and directly tested the significance of the indirect effects at the five percent level.

Results

Descriptive results

Table 2 depicts the descriptive statistics and pairwise correlations for our sample. Although the mean of the two psychological ownership are high with an average score of 5.87 (organization) and 5.78 (business unit). Their correlation is unsurprisingly high with a value of 0.68. PO business unit, error management culture, and number of employees are positively and significantly correlated to business unit performance. Employees worked for 14 hours on average with approximately five to six employees working in one business unit and a fluctuation of 10 percent on average.

Table 2: Summary statistics and correlations

Variables	mean	sd	min	max	α	1	2	3	4	5	6	7	8	9
1. Business unit performance	5.87	0.88	2	7	0.89	1								
2. PO organization	5.78	1.02	1	7	0.84	0.04	1							
3. PO business unit	6.02	0.95	1	7	0.81	0.08 *	0.68 *	1						
4. Error management culture	6.19	0.84	1	7	0.78	0.09 *	0.28 *	0.31 *	1					
5. Affctive commitment	6.29	0.77	2	7	0.86	0.00	0.58 *	0.48 *	0.39 *	1				
6. Average hours	13.98	2.28	9	23		-0.01	-0.03	-0.01	0.01	0.01	1			
7. Number of employees	5.34	1.14	2	10		0.07 *	0.02	-0.01	-0.04	-0.03	-0.43 *	1		
8. Regional growth	3.61	1.14	1	5		0.06	-0.05	-0.02	-0.06	-0.07 *	0.05	0.13 *	1	
9. Fluctuation	0.10	0.13	0	0.625		-0.06	0.01	0.02	0.01	-0.02	0.04	-0.10 *	0.05	1

Notes: *p<0.01; N=1536, PO=Psychological ownership; α=Cronbach's alpha.

Regression Results

In Hypothesis 1, we proposed that an employee's psychological ownership enhances the performance of the business unit. The regression results are depicted in Model 1 (see Table 3). In contrast to our expectations, the coefficient of PO organization ($b=-0.029$, $p>0.1$) is negative and not significant statistically significant. However, the coefficient of PO business unit ($b=0.099$, $p<0.01$) is positive and significant at the one percent level. Therefore, we provide partial evidence for Hypothesis 1.

As for Hypothesis 2, we expected psychological ownership towards the business unit to mediate the positive effect of psychological ownership towards the organization on the performance of the employee's business unit. Again, the regression results are depicted in Models 1, 2, and 3 (see Table 3). Although we did not find a direct positive effect of PO organization on business unit performance our analyses show that the indirect effect is statistically significant. The betas of the indirect effect (not included in Table 3) is significant at the five percent level, as the bootstrapped confidence interval does not include a zero value for PO business unit (b=0.063, LLCI=0.020, ULCI=0.108). Therefore, we can confirm Hypothesis 2.

Table 3: Regression analyses explaining psychological ownership and performance

	Performance business unit		Psychological owernship business unit		Psychological owernship business unit	
	Model 1		Model 2		Model 3	
Variables	**b**	**SE**	**b**	**SE**	**b**	**SE**
Control Variables						
1. Average hours	0.006	(0.011)	0.004	(0.009)	0.002	(0.008)
2. Number of employees	0.050	(0.022) **	-0.011	(0.018)	-0.008	(0.017)
3. Regional growth	0.046	(0.020) **	0.008	(0.016)	0.023	(0.015)
4. Fluctuation	-0.486	(0.176) ***	0.070	(0.139)	0.122	(0.135)
Predictors						
5. PO organization	-0.029	(0.030)	0.630	(0.018) ***	0.544	(0.021) ***
6. Error management culture					0.137	(0.029) ***
7. Affective commitment					0.113	(0.022) ***
Mediators						
8. PO business unit	0.099	(0.033) ***				
R-Squared	0.020		0.460		0.476	
F	5.293 ***		260.807 ***		203.740 ***	

Notes: *p<0.05, **p<0.01, ***p<0.001; N=1,536; SE=robust standard error clustered at the business unit level; PO=Psychological ownership.

As for Hypotheses 3 and 4, we proposed that error management culture and affective commitment are positively associated with an employee's psychological ownership towards the business unit. The regression results are depicted in Models 3 of Table 3. Consistent with our expectations, the coefficients of error management culture (b=0.137, p<0.01) and affective commitment (b=0.113, p<0.01) are positive and significant at the one percent level. Hence, we can confirm Hypotheses 3 and 4.

Discussion

Implications for research

In this study, we set out to explore the multi-level nature of psychological ownership in corporate contexts, tested its performance implications, and investigated error management culture and affective commitment as important antecedents to the development of psychological ownership. Our theorizing and empirical results contribute to the literature on psychological ownership in at least four important ways. First, research on psychological ownership remains inconclusive about the performance implications of psychological ownership (e.g., Mayhew et al., 2007; Pierce & Rodgers, 2004; Vandewalle et al., 1995). We contribute to this discussion by arguing and showing that employees' psychological ownership towards the business unit, i.e., the immediate work environment, enhances the performance of the business unit, while psychological ownership towards the organization has no direct effect on organizational performance. This finding goes beyond what Vandewalle et al. (1995) discovered, namely that psychological ownership leads to extra-role behavior but has no direct effect on the overall performance of a business unit. Our results hence suggest that employees are noticeably investing greater care, attention, and energy into the business unit when they feel that it is their own, which ultimately enhances the total performance.

Second, we shed light on the multi-level nature of psychological ownership (Mayhew et al., 2007; Brasel & Gips, 2013) and illustrated that higher level psychological ownership (towards the organization) is an antecedent to psychological ownership at lower levels (towards the business unit). Our findings suggest that psychological ownership towards the business unit mediates the effect of psychological ownership towards the organization on the performance of the employee's business unit. We assume that psychological ownership towards the business unit is the key element to trigger a sense of responsibility and extra-role behavior. However, psychological ownership towards the organization has a strong influence on the development of psychological ownership towards the business unit, as it is connected to the culture, climate, vision, reputation, and corporate policies (Mayhew et al., 2007). In other words, the employees' sense of belonging is more specific and direct than for the general organization itself, but it is influenced their perception of ownership towards the organization.

Third, a strong error management culture might itself increase organizational performance (Rochlin 1999; Helmreich & Merritt 2000), but we argue and show that it also contributes to the development of psychological ownership towards the business unit. Such a culture enables employees to unconcernedly operate in the business unit and to report and correct occurring errors (Frese 1991; 1995). Thus, they are able to produce desired outcomes in the environment and can control their target (Frese & Keith, 2014). Additionally, employees are able to intimately know the business unit due to a more open communication in regard to errors (Van Dyck et al., 2005).

Finally, we explored the relationship of psychological ownership and affective commitment and provide empirical evidence in support of extant findings (Han et al., 2010; van Dyne and Pierce, 2004; Mayhew et al., 2007). We argue that an emotional attachment to the organization and a desire to maintain the relationship not only elicits a feeling of belonging but also feeling of possession (i.e., psychological ownership), as an emotional attachment can cause feelings of possessions and gives individuals a sense of place, belonging, and personal place. We accede to Han et al. (2010) that when employees consider themselves as an important part of an organization and are affectively committed, they increase their participation and effort.

Implications for practice

Despite its theoretical contribution, this study yields important practical implications for managers that seek to leverage the potential of psychological ownership. First, practitioners should to be aware that psychological ownership can significantly and quantifiably enhance performance in their organization. In this regard, we suggest practitioners to promote ownership feelings by introducing an effective error management culture, that implies a constructive and opportunity-oriented handling of errors (Murphy, 1996) through a proactive communication of such. Here, managers are well-advised to set an example and report their own errors and associated learnings more openly to their team (Van Dyck 2005, 1230). Instead of punishing the reporting of errors through sanctions, the open communication about errors and joint efforts in handling their consequences should be rewarded (Edmonson, 1999). Rigorously implemented, error management culture can lead to more intimate knowledge about the organization in general and the business unit in particular, which, in turn, is said to allow psychological ownership to prosper (Pierce et al., 2003).

Given that also affective commitment showed to increase psychological ownership, we recommend managers to strengthen the emotional ties between their employees and the organization. For instance, employer branding campaigns and comprehensive communication to the business unit might facilitate affective commitment. In addition, organizations profit from high levels of affective commitment because such are commonly related to low cost of fluctuation and to extra-role behavior among employees (O'Driscoll et al., 2006).

Finally, managers should be aware that not only the psychological ownership towards the business unit is relevant, but also that its antecedent, namely psychological ownership towards the organization, must not be neglected. Both phenomena should be considered as interlinked and inextricable. Managers need to develop specific measures to address the different levels of psychological ownership. Ownership towards the organization can be created on a meta level by measures to actively shape a positive culture (e.g. celebration of jubilees) and image of the organization.

Limitations and future research

Our study has some limitations that pose fruitful future research directions. First, our research design is not experimental, in which individuals are randomly assigned to conditions or levels of the independent variable. Therefore, we have only tested correlational associations between variables, but were limited in testing true causation. We hence suggest conducting a field experiment with longitudinal data to illuminate the emergence and consequences of psychological ownership more reliably.

Second, our survey data could be prone to a non-response bias among the 9,090 shop assistants. It is likely that the share of shop assistants with a high psychological ownership is higher than the share of assistants with low psychological ownership. We tried to avoid this bias by introducing an analogue and digital opportunity to response to the survey during working hours.

Finally, we encourage scholars to shed light on the relationship and underlying mechanisms of error culture management and psychological ownership. Additionally, we recommend examining other antecedents of psychological ownership such as reputation, brand management, and sustainability. We consider that a high reputation and sustainable image have a strong impact on psychological ownership towards the company. Employees identify more likely with the positive image of the brand and therefore develop psychological ownership towards the company. This argument is grounded on Pierce et al. (2003), who assume that employees develop psychological ownership when they invest themselves into the target. This self-investment is stronger in case of a high reputation and sustainable image.

Conclusion

In this study, we set out to explore the multi-level nature of psychological ownership at work, tested its performance implications, and investigated error management culture and affective commitment as important antecedents. In order to do so, we collaborated with Ernsting's family a large German retailer for clothing to create a unique dataset composed of three sources. First, we collected 1,813 answers to a survey questioning employees of 809 business units. Second, we collected performance data of these business units from 66 regional managers. Finally, we added archival data on each of the 809 business units including but not limited to information on employee fluctuation, business unit size, and age of the employees. The analyses of our final sample of 1,536 individuals widely confirmed our theorizing. Our findings suggest that psychological ownership towards the business unit enhances its performance, and mediates the direct effect of psychological ownership towards the organization on organizational performance. Beyond that, we find that error management culture and affective commitment enhance the development of psychological ownership towards the business unit among employees. Our theorizing and empirical results contribute to a more holistic picture on psychological ownership, and its antecedents and consequences.

References

Allen, N. J., & Meyer, J. P. 1990. The measurement and antecedents of affective, continuance and normative commitment to the organization. ***Journal of Occupational Psychology***, 63: 1-18.

Baer, M., & Brown, G. 2012. Blind in one eye: How psychological ownership of ideas affects the types of suggestions people adopt. ***Organizational Behavior and Human Decisions Processes***, 118(1): 60-71.

Baron, R. M., & Kenny, D. A. 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. ***Journal of Personality and Social Psychology***, 51(6): 1173-1182.

Beaglehole, E. 1932. ***Property: A study in social psychology***. New York, NY: Macmillan.

Belk, R. W. 1988. Possessions and the Extended Self. ***Journal of Consumer Research***, 15: 139-168.

Brasel, S. A., & Gips, J. 2013. Tablets, Touchscreens, and Touchpads: How Varying Touch Interfaces Trigger Psychological Ownership and Endowment. ***Journal of Consumer Psychology***, 24(2): 226–233.

Brown, T. L. 1989. What will it take to win? ***Industry Week***, June 19: 15.

Brown, R. S., Williams, C. W., & Leeshaley, P. R. 1994. The effects of hindsight bias and causal attribution on human response to environmental events. ***Journal of Applied Social Psychology***, 24: 661–674.

Buchanan, B. 1974. Building organizational commitment: The socialization of managers in work organizations. ***Administrative Science Quarterly***, 19: 533-546.

Camelo-Ordaz, C., Garcia-Cruz, J., & Sousa-Ginel, E. 2011. The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment. ***The International Journal of Human Resource Management***, 22(7): 1442-1463.

Das, G. 1993. Local memoirs of a global manager. ***Harvard Business Review***, 71(2): 38–46.

Das, T. K., & Teng, B. 1998. Between trust and control: Developing confidence in partner cooperation in alliances. ***Academy of Management Review***, 23(3): 491–512.

Deci, E. L., & Ryan, R. M. 1987. The support of autonomy and the control of behavior, ***Journal of Personality and Social Psychology***, 53(6): 1024-1037.

Dirks, K. T., Cummings, L. L., & Pierce, J. L. 1996. Psychological ownership in organizations: Conditions under which individuals promote and resist change. In R. W. Woodman & W. A. Pasmorw (Eds.), ***Research in organizational change and development***: 1–23. Greenwich, CT: JAI Press.

Dittmar, H. 1992. ***The social psychology of material possessions: To have is to be***. Birmingham: Harvester Wheatsheaf.

Edmondson, A. 1999. Psychological safety and learning behavior in work teams. ***Administrative Science Quarterly***, 44: 350–383.

Etzioni, A. 1991. The socio-economics of property. ***Journal of Social Behavior and Personality***, 6(6): 465–468.

Frese, M. 1991. Error management or error prevention: Two strategies to deal with errors in software design. In H.-J. Bullinger (Ed.), ***Human aspects in computing: Design and use of interactive systems and work with terminals***: 776–782. Amsterdam: Elsevier.

Frese, M. 1995. Error management in training: Conceptual and empirical results. In C. Zucchermaglio, S. Bagnara, & S. Stucky (Eds.), ***Organizational learning and technological change***: 112–124. Berlin: Springer.

Frese, M., & Keith, N. 2014. Action Errors, Error Management, and Learning in Organizations. ***Annual Review of Psychology***, 66(1): 661-687.

Furby, L. 1978a: Possessions: Toward a theory of their earning and function throughout the life cycle. In: P. B. Baltes (Ed.), ***Life span development and behavior***: 297-336. New York: Academic Press.

Furby, L. 1978b. Possession in humans: An exploratory study of its meaning and motivation. ***Social Behavior and Personality***, 6(1): 49–65.

Garud, R., Nayyar, P. R., & Shapira, Z. 1999. Technological choices and the inevitability of errors. In R. Garud, P. Nayyar, & Z. Shapira (Eds.), ***Technological innovation: Oversights and foresights***: 19–40. Cambridge, England: Cambridge University Press.

Han, T.-S, Chiang, H.-H., & Chang, A. 2010. Employee participation in decision making, psychological ownership and knowledge sharing: mediating role of organizational commitment in Taiwanese high-tech organizations. ***The International Journal of Human Resource Management***, 21(12): 2218-2233.

Hayes, A. F. 2015. An index and test of linear moderated mediation. ***Multivariate Behavioral Research***, 50(1): 1-22.

Helmreich, R. L., & Merritt, A. C. 2000. Safety and error management: The role of crew resource management. In B. J. Hayward & A. R. Lowe (Eds.), ***Aviation resource management***: 107–119. Aldershot: Ashgate Publishing.

Isaacs, S. 1933. Social development in young children. ***British Journal of Educational Psychology***, 3(3): 291-294.

Kanter, R. M. 1968. Commitment and social organization: A study of commitment mechanisms in Utopian communities. ***American Sociological Review***, 33: 499-517.

Kostova, T. 1998. Quality of inter-unit relationships in MNEs as a source of competitive advantage. In M. Hitt, J. Ricart, & R. Nixon (Eds.), ***New managerial mindsets: Organizational transformation and strategy implementation***: 299–324. Chichester, UK: Wiley.

Liu, J., Wang, H., Hui, C., & Lee, C. 2012. Psychological ownership: How having control matters. ***Journal of Management Studies***, 49(5): 869–895.

Mathieu, J. E., Goodwin, G. F., Heffner, T. S., Salas, E., & Cannon-Bowers, J. A. 2000. The influence of shared mental models on team process and performance. ***Journal of Applied Psychology***, 85: 273–283.

Mayhew, M. G., Ashkanasy, N. M., Bramble, T., & Gardner, J. 2007. A Study of the Antecedents and Consequences of Psychological Ownership in Organizational Settings. ***The Journal of Social Psychology***, 147(5): 477-500.

Mead, G. H. 1934. ***Mind, self and society***. Chicago: University of Chicago Press.

Merriam-Webster 1967. ***Webster's seventh new collegiate dictionary***. Springfield, MA: G. & C. Merriam Company.

Murphy, L. R. 1996. Stress management in work settings: A critical review of health effects. ***American Journal of Health Promotion***, 11: 112–135.

O'Driscoll, M. P., Pierce, J. L., & Coghlan, A.-M. 2006. The Psychology of Ownership, Work Environment Structure, Organizational Commitment, and Citizenship Behaviors. ***Group & Organization Management***, 31(3): 388-416.

Peters, T. 1987. ***Thriving on chaos***. New York: Harper & Row.

Peters, T. J., & Austin, N. 1985. ***A passion for excellence: The leadership difference***. New York, NY: Random House, Inc.

Pierce, J. L., Kostova, T., & Dirks, K. T. 2001. Toward a theory of psychological ownership in organizations. ***Academy of Management Review***, 26: 298-310.

Pierce, J. L., Kostova, T., & Dirks, K. T. 2003. The state of psychological ownership: Integrating and extending a century of research. ***Review of General Psychology***, 7(1): 84-107.

Pierce, J. L., O'Driscoll, M. P., & Coghlan, A. M. 2004. Work environment structure and psychological ownership: The mediating effects of control. ***Journal of Social Psychology***, 144: 507–534.

Pierce, J. L., & Rodgers, L. 2004. The psychology of ownership and worker-owner productivity. ***Group & Organization Management***, 29(5): 588–613.

Pierce, J. L., & Gardner, D. G. 2004. Self-esteem within the work and organizational context: A review of the organization-based self-esteem literature. ***Journal of Management***, 30(5): 591–622.

Pierce, J. L., & Jussila, I. 2011. ***Psychological ownership and the organizational context: Theory, research evidence, and application***. Cheltenham: Edward Elgar Publishing.

Preacher, K. J., & Hayes, A. F. 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. ***Behavior Research Methods, Instruments, & Computers***, 36(4): 717–731.

Rochlin, G. I. 1999. Safe operation as a social construct. ***Ergonomics***, 42: 1549 –1560.

Sieger, P., Zellweger, T., & Aquino, K. 2013. Turning agents into psychological principals: Aligning interests of non-owners through psychological ownership. ***Journal of Management Studies***, 50(3): 361–388.

Stebbins, R. A. 1970. On misunderstanding the concept of commitment: A theoretical clarification. ***Social Forces***, 48: 526-529.

Vandewalle, D., Van Dyne, L., & Kostova, T. 1995. Psychological ownership: An empirical examination of its consequences. ***Group and Organization Management***, 20: 210-226.

Van Dyck, C., Frese, M., Baer, M., & Sonnentag, S. 2005: Organizational Error Management Culture and Its Impact on Performance: A Two-Study Replication. ***Journal of Applied Psychology***, 90(6): 1228-1240.

Van Dyne, L., & Pierce, J. L. 2004. Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behavior. ***Journal of Organizational Behavior***, 25: 439-459.

Wiener, Y. 1982. Commitment in organizations: A normative view. ***Academy of Management Review***, 7: 418-428.

ESSAY II

Activating the Sustainable Consumer: The Role of Customer Involvement in Corporate Sustainability

Abstract

The success of the ongoing sustainability transformation depends in large parts on both the sustainability in firms' production of goods and the consumption choices of individuals. While firms and consumers already separately contribute to sustainable development, a key challenge still lies in accelerating collaborative efforts. In this study, we develop a conceptual model to demonstrate how firms can motivate sustainable consumption behavior amongst their customers by involving them in their sustainability activities. In particular, we introduce psychological ownership as the underlying mechanism that explains how customer involvement in sustainability activities translates into changes in individuals' consumption choices. We further argue that this mechanism depends on the type of sustainability that a firm undertakes, i.e., whether it is embedded in or peripheral to a firm's core business. Results from two scenario experiments and one field experiment broadly support our theorizing and contribute to management research by showing how firms can go beyond delivering sustainable products and services toward actively shaping consumption behavior. Our results additionally reveal that firms can derive further benefits from customer involvement in embedded sustainability since it incites higher extra-role behavior in the form of feedback-giving than involvement in peripheral sustainability, which firms can exploit to develop their sustainability strategy further.

Keywords: Customer involvement; sustainable consumption; psychological ownership; embedded versus peripheral sustainability

Introduction

The world faces unprecedented sustainability challenges such as the climate crisis, loss of biodiversity, and general resource scarcity. According to the United Nations, our worldwide consumption heavily rests on using the natural environment and resources in a way that continues to destructively impact the planet and thereby endangers human existence (United Nations, 2019). However, the transformation toward a more resource-efficient economy depends not only on firms' sustainable production but also critically hinges on the sustainable consumption choices of individuals. However, while consumers typically announce that they want firms to offer more sustainable products, they paradoxically refrain from buying them, a phenomenon which White, Hardisty, and Habib (2019) referred to as "the elusive green consumer."

Over the last decades, research on this attitude-behavior gap (e.g., Devinney, Auger, & Eckhardt, 2010; ElHaffar, Durif, & Dubé, 2020) has focused on consumer-related factors such as (1) their knowledge and concern about sustainability, (2) their ability and willingness to pay for it, and (3) their exposure to social influences and biases against sustainable products (Öberseder, Schlegelmilch, & Gruber, 2011; ElHaffar et al., 2020) but widely neglected the role that firms can play for sustainable consumption. This void is somewhat surprising as firms increasingly shift their activities from a mere supplier of sustainable products toward a purpose-driven enabler of change (e.g., statement of the Business Roundtable 2019) that seeks to reduce the attitude-behavior gap of sustainable consumption (Winterich, 2021).

Initial research on how firms affect their customers suggests that effective appeal-based communication can motivate sustainable consumption (e.g., Edinger-Schons, Sipilä, Sen, Mende, & Wieseke, 2018; White & Simpson, 2013). Apart from that, some studies show that the active involvement of customers in corporate sustainability[1] improves their attitudes and behavior towards a firm and its products and services (Edinger-Schons, Lengler-Graiff, Scheidler, Mende, & Wieseke, 2019; Robinson, Irmak, & Jayachandran, 2012; Kull & Heath, 2016). However, these studies on customer involvement do not explain sustainable consumption behavior and are mostly limited to the involvement of customers in cause-related marketing activities and, thus, do not encompass the effect of involving in sustainability that lies at the heart of a firm's operations. The latter, in turn, is likely to have more substantial leverage for corporate sustainability than mere marketing activities that are somewhat decoupled from a firm's core (Porter & Kramer, 2006).

To explain the underlying mechanism that connects customer involvement to sustainable consumption, we draw on the concept of psychological ownership (Pierce, Kostova, & Dirks, 2001). Psychological ownership is a feeling of possession of an object that is independent of legal ownership (Brown, Pierce, & Crossley, 2014; Kamleitner & Mitchell, 2018) and has recently been touted as a new theoretical lens to understand consumers' sustainability behaviors (Süssenbach & Kamleitner, 2018). It emerges when individuals gain knowledge, control, and the opportunity to invest themselves in a desirable object which satisfies individual needs for self-efficacy and self-identity (Fuchs, Prandelli, & Schreier, 2010; Shu & Peck, 2011). As the involvement of customers in developing and implementing a firm's sustainability activities provides them with the opportunity to gain control and invest the self into these activities, we

[1]Management literature uses different terms such as "corporate social responsibility" and "corporate sustainability" to refer to social and environmental management issues. Although definitional differences exist, these terms are increasingly converging (e.g., van Marrewijk, 2003; Montiel, 2008). To reduce complexity, we apply the term "corporate sustainability" throughout this study to refer to firm activities "demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders" (van Marrewijk, 2003, p. 102).

argue that psychological ownership for a firm's sustainability can arise and shape customers' sustainable consumption.

Furthermore, we use Aguinis and Glavas (2013) concept of "embeddedness" to distinguish between (1) embedded sustainability activities, which involve a firm's core competencies and are integrated within its strategy, routines, and operations, and (2) peripheral activities, which are not central to the firm and therefore often less substantial. Given the immense potential for firms to contribute to sustainability by actively shaping consumer behavior, we set out in this study to identify and explore firm activities that affect their customers' sustainable consumption. In particular, we try to answer the following research questions: *What role does customer involvement in firms' sustainability activities play as a driver for sustainable consumption? And how does the embeddedness of firms' sustainability efforts moderate this relationship?*

To test our theorizing, we conducted three experiments in collaboration with a large German fashion retailer – i.e., two scenario experiments and one field experiment. Our findings broadly support our theorizing as they show that customer involvement enhances sustainable consumption behavior and customers' feelings of ownership toward the firm's sustainability efforts mediates this relationship. Furthermore, they show that the embeddedness of corporate sustainability efforts moderates the positive indirect effect of involvement over psychological ownership on sustainable consumption.

Our study makes several contributions to the literature on customer involvement and sustainable consumption. First, we introduce psychological ownership as the underlying mechanism that explains how customer involvement in organizational practices translates into real changes in individuals' behavior. In particular, we theorize that customer involvement actually pertains to the antecedents of psychological ownership and that the development of psychological ownership is critical for the shift in individual behavior. Second, we argue and show that the outcomes of customer involvement are context-specific depending on the embeddedness of the activity in a firm's core business. Finally, we applied an online shop simulation as a novel, more realistic, and comprehensive approach to capture customers' consumption behavior compared to the conventional scale-based measures of purchase intentions.

Conceptual Background and Hypotheses

The Attitude-Behavior Gap in Sustainable Consumption

Responsible consumption and production as the twelfth sustainable development goal are at the center of achieving the global sustainable development agenda (United Nations, 2015). Although academia, business, and governments agree that today's consumption patterns must become more sustainable (see the IPCC Report 2021), minimal consensus exists on what sustainable consumption means (Dolan, 2002; Peattie & Collins, 2009; Lim, 2017; Fischer et al., 2021). The debate about the concept revolves around what should change and how (Lim, 2017), including such tensions as (1) generally reducing consumption or just prioritizing sustainable over conventional products (Lorek & Fuchs, 2013) and (2) limiting sustainable consumption to the purchase itself – i.e., consumers' responsibility – or widening its scope to the product life cycle – i.e., collective responsibility (Lim, 2017; Fischer et al., 2021).

Some researchers even go so far as to generally question sustainable consumption as a concept by arguing that it is an oxymoron since consumption always involves some form of depleting or destroying resources, which they claim to be the opposite of sustainability (Gordon, Carrigan & Hastings, 2011; Peattie & Collins, 2009). Acknowledging the complex and multi-faceted nature of the concept, we argue that sustainable consumption relates to purchasing decisions of individuals and spans between consumers' desire to act responsibly and their needs of consumption (Vermeir & Verbeke, 2006). Depending on the strength of these poles, consumers will choose conventional products over sustainable products or vice versa.

Numerous surveys show that consumers proclaim to favor sustainable products and services over conventional ones as part of adopting a more eco-friendly and socially responsible lifestyle – a trend that has been fueled even further by the COVID-19 pandemic (IBM, 2023; BCG, 2020; pwc, 2023). Despite the growing importance of sustainability, the price and convenience of products and services still remain the key aspects of purchasing decisions (pwc, 2023). This observation points to the discrepancy between attitudes toward sustainable products and services and the extent to which these attitudes translate into behavior (Prothero et al., 2011).

Scholars refer to this discrepancy as the attitude-behavior gap (Caruana, Carrington, & Chatzidakis, 2016). With regards to sustainable consumption, researchers attribute the gap to (1) the lack of information about and availability of sustainable product alternatives, (2) the social and physical context of the purchase, and (3) consumers' financial situation, beliefs, perceptions, and biases (Chatzidakis, Hibbert, & Smith, 2007; Luchs, et al., 2010; Park & Lin, 2020; Öberseder et al., 2011; ElHaffar et al., 2020).

Firms' Response to the Attitude-Behavior Gap in Sustainable Consumption

The attitude-behavior gap is also a critical issue for firms, as many firms face exactly the dilemma that their customers demand more sustainable products and services but then do not purchase them (Kuokkanen & Sun, 2018). To better grasp the gap between consumers' attitudes and behaviors, firms increasingly explore new ways to engage with their customers, learn about sustainable consumption, and incentivize such behavior (see the EU Green Consumption Pledge Initiative launched in 2021; Bocken, 2017). Taking the fashion industry as an example, one of Europe's largest online fashion retailers recently published a report describing how it wants to work with consumers to close the attitude-behavior gap for sustainable fashion (Heiny & Schneider, 2021). However, encouraging behavior change amongst consumers not only requires firms' commitment but an in-depth understanding of potential techniques to identify and address leverage points.

One way to engage with consumers is through marketing interventions (i.e., social marketing) incentivizing sustainable behavior (e.g., Gordon et al., 2011; Peattie & Peattie, 2009; Kotler, 2011). This comprises nudging techniques to influence individuals' judgment (Thaler & Sunstein, 2008), through signaling, asking, or labeling (Kristensson, Wästlund, & Söderlund, 2017), and changes to the physical purchase environment or the default option (Lehner, Mont, & Heiskanen, 2016). Another way to engage with customers is an appeal-based communication on sustainable behavior, including need (White, MacDonnell, & Ellard, 2012), normative (White & Simpson, 2013), and extrinsic and intrinsic appeals (Edinger-Schons et al., 2018). White, et al. (2019) suggest that appeal-based communication can influence sustainable behavior by changing social influence, habit formation, individual self, feelings and cognition, and tangibility.

Although the existing body of research provides valuable insights that can be exploited to narrow down the attitude-behavior gap, it mainly considers interventions as one-way dissemination of information directed to customers while neglecting the potential of two-way interaction for social marketing (Peattie & Peattie, 2009; Fischer et al., 2021). For example, in a field experiment at a consumer fair for sustainable products, Weber, Loschelder, Lang, and Wiek (2021) showed that visitor participation in an interactive presentation about a coffee firm resulted in a significantly higher willingness to pay for the coffee than the control group.

While these findings show that firms can affect their customers, the underlying activities remain one-directional. However, empirical insights on bidirectional interaction on sustainable consumption, such as is the case for customer involvement, remain scarce. Initial research in related contexts indicates various favorable outcomes. For instance, Edinger-Schons et al. (2019) reported that involving customers in sustainability activities by offering feedback and dialogue strengthened customer outcomes such as loyalty and identification with the firm under certain conditions. Additionally, various studies on cause-related marketing highlight the potential positive influence of customer involvement via the choice of cause to enhance outcomes such as purchase intentions (Robinson, Irmak, & Jayachandran, 2012), word-of-mouth (Christofi, Vrontis, Leonidou, & Thrassou, 2018), participation intentions (Howie, Yang, Vitell, Bush, & Vorhies, 2018), and firm perceptions (Kull & Heath, 2016). Based on the above, we conclude that customer involvement could be a promising avenue to promote sustainable consumption behavior.

Conceptual Framework

Our conceptual framework is rooted in the literature streams on corporate sustainability, customer involvement, psychological ownership, and sustainability embeddedness. Our main framework suggests that firms can motivate their customers to increase their purchases of sustainable products by actively involving them in their sustainability activities. The mechanism we outline to explain this effect is customers' feeling of ownership of the firm's sustainability. Further, we propose that this effect is strengthened if the firm's sustainability activities are embedded in its core business (versus peripheral) and thus more authentic and attractive as a target for ownership. Figure 4 shows our conceptual model.

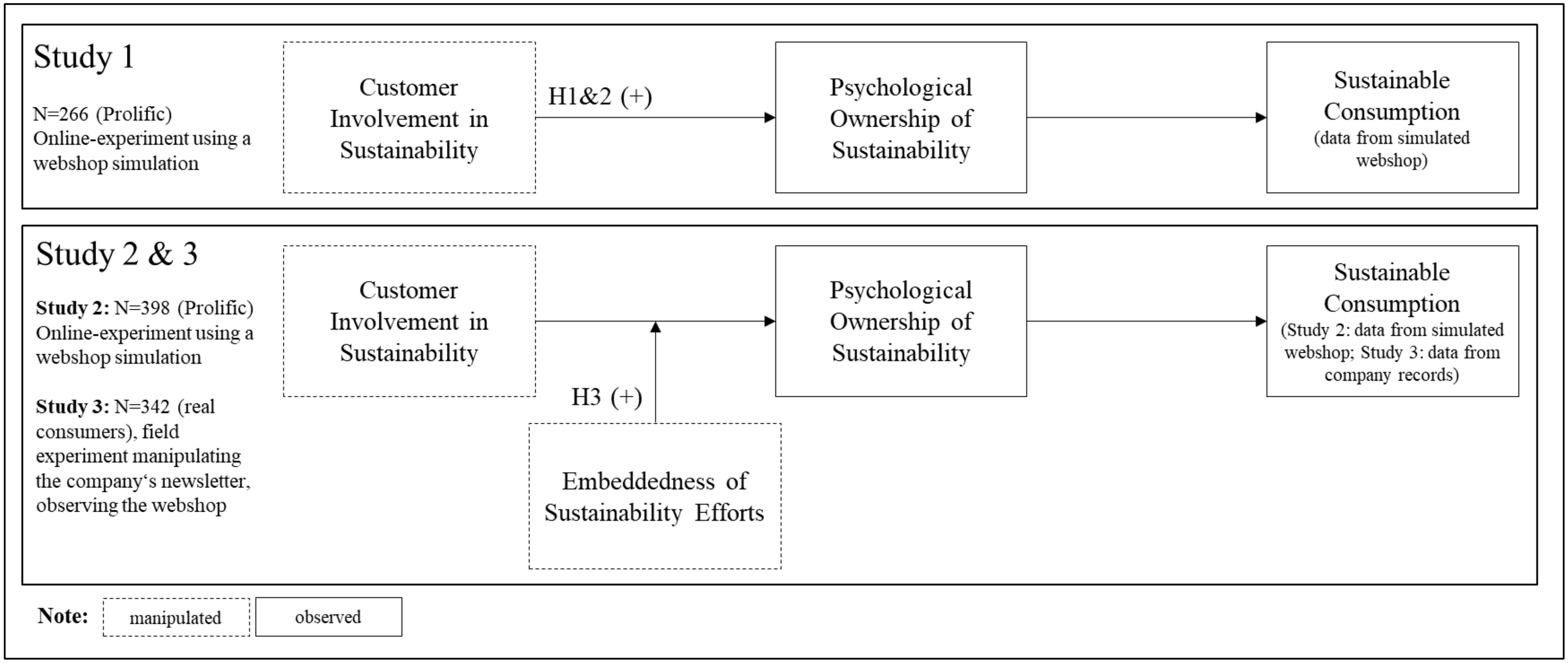

Figure 4: Conceptual framework

Psychological Ownership

According to Pierce, Rubenfeld, and Morgan (1991), ownership exists in two forms, as "formal (objective) and as psychologically experienced phenomenon" (p.124). The latter – i.e., psychological ownership – is a state in which an individual feels as though a target object, or a part of it, is his or her "own" (i.e., this is "my" shirt rather than "a" shirt) regardless of the presence of legal rights or the actual physical possession (Pierce et al., 2001; Pierce, Kostova, & Dirks 2003). Research in this field attempts to answer three main questions: (1) For what, (2) why, and (3) how do we develop feelings of psychological ownership?

As for the "for what," individuals can develop feelings of possession for almost anything, including objects that are tangible such as clothes or intangible such as brands, and elusive such as ideas or common goods such as environmental issues (Süssenbach & Kamleitner, 2018; Peck, Kirk, & Luangrath, 2021). As for the "why," feelings of ownership do not depend on the physical composition of the target but rather on the characteristics that it embodies to serve at least one of three basic human needs (Pierce et al., 2001, 2003). As such, a target that is psychologically owned needs to be (1) attractive and relevant to the self to satisfy the self-identity motive – i.e., defining, expressing, and maintaining continuity of the self – (Dittmar, 1992), (2) manipulable and controllable to fulfill the desire of efficacy and effectance – i.e., being the cause of change in the environment – (White, 1959), (3) open and familiar to provide a sense of having a place or home – i.e., feeling personal security and belongingness – (Heidegger, 1967; Duncan, 1981; Porteous, 1976). As for the "how," if one or more of these properties are present, we can derive a sense of ownership for the target through one of three different routes – i.e., (1) exercising control over it, (2) gaining intimate knowledge about it, and (3) investing oneself in it (e.g., through money, time, or psychological effort) (Brown et al., 2014; Kamleiter & Mitchell, 2018).

Previous management research identified various targets for psychological ownership, including (1) the workplace and the employer organization (e.g., Pierce, O'Driscoll, & Coghlan, 2004), (2) a seller of products (Wiggins, 2018), and (3) products (e.g., Peck & Shu, 2009). Ownership feelings for products were particularly observed when customers became involved in the product development (Franke, Schreier, & Kaiser, 2010) and the selection of products (Fuchs et al., 2010), which relates to the three different routes to psychological ownership. By being involved, consumers exercise control over the product development, gain intimate knowledge, and invest themselves in the product. Picking up this notion, we argue that customers can similarly develop ownership feelings for firms' sustainability activities through involvement.

Customer Involvement, Psychological Ownership, and Sustainable Consumption

We expect that consumer involvement in firms' sustainability activities will enhance their sustainable consumption behavior and that this relationship is mediated by psychological ownership. Several arguments support this claim. As mentioned earlier, sustainability is a topic of increasing societal importance (Geng, Liu, & Zhu, 2017). Hence, firms' sustainability efforts can entail characteristics perceived as attractive, relevant, socially esteemed, and self-revealing for consumers, which, in turn, satisfies psychological ownership's motive of self-identity (Griskevicius, Tybur, & van den Bergh, 2010). When firms communicate a topic to consumers, it becomes visible and claimable, such that consumers can intellectually grasp it and, consequently, consider it a potential target of ownership. Offering consumers to participate in sustainability activities strengthens the feeling that the target is, at least to a certain extent, manipulable and controllable, satisfying their need for self-efficacy and self-fulfillment (Pierce et al., 2001). Depending on the extent of involvement, that is, based on the extent of receiving information, providing feedback, and engaging in a dialogue, the salience of the mentioned characteristics can vary (Morsing & Schultz, 2006).

Involving customers in the sustainability activities not only shapes the target's characteristics such that its possession becomes more desirable but also serves as the facilitator enabling the experience of psychological ownership through customer's perceived control over and investment of the self into these activities. Following this, we conclude that all conditions are fulfilled for firms' sustainability such it can be an attractive target of ownership and that involvement creates the experience necessary to instill psychological ownership in customers.

An increase in psychological ownership typically enhances the valuation and attitudes toward the object of ownership (i.e., the endowment effect) (Loewenstein & Issacharoff, 1994), which, in turn, induces favorable behavior to protect, maintain, develop, or nurture it as various field experiments demonstrate (see Shu & Peck, 2018). For example, in one of their studies at a local lake, Shu and Peck (2018) asked customers at a kayak rental to propose a nickname for the lake before starting the kayak tour, while they did not ask other customers who served as a control group. This intervention can be considered as an investment of the self. The findings show that individuals that were asked to propose a name picked up floating trash during their tour significantly more often than individuals in the control group. A survey additionally revealed that higher psychological ownership feelings mediated the trash-collecting. These findings demonstrate that psychological ownership can foster sustainable behavior in certain contexts.

Taking all aspects into consideration, we argue that customer involvement in a firm's sustainability activities will lead to an enhanced feeling of ownership of the firm's sustainability which will translate into increased willingness to engage in sustainable consumption, as costumers will consider firms' sustainability efforts as their own projects. Thus, we argue that firms that actively involve their consumers can serve as role models by getting customers on board, creating a feeling of ownership of the firm's sustainability amongst them, and thereby impacting sustainable consumption patterns. Therefore, we propose:

> ***H1.*** *Customer involvement in a firm's sustainability activities will be positively associated with customers' sustainable consumption.*

> ***H2.*** *Customers' psychological ownership of a firm's sustainability activities mediates the positive effect of involvement on sustainable consumption.*

Embeddedness of Sustainability

Many firms have "hopped on the bandwagon" of communicating about their sustainability efforts within the last decade. These efforts range from substantive transformational practices to superficial greenwashing activities, while the latter leads to higher skepticism towards firms' sustainability efforts amongst consumers (Skarmeas & Leonidou, 2013; Leonidou & Skarmeas, 2017), which inhibits sustainable consumption (Zhang, Li, Cao, & Huang, 2018; Szabo & Webster, 2021). The proliferation of corporate scandals has further fueled this critical stance (Carson, 2003; Wagner, Lutz, & Weitz, 2009).

Consequently, past research has developed various frameworks to structure different types of sustainability practices (e.g., Peloza & Shang, 2011; Yuan, Bao, & Verbeke, 2011; Kuokkanen & Sun, 2018). At the center of this is the role of the perceived consistency of sustainability activities with societal demands (i.e., external consistency) and the core value creation of the firm itself (i.e., internal consistency) (Yuan et al., 2011). Porter and Kramer (2006, p. 80) criticize the lack of internal consistency of firms' when conducting sustainability practices by stating that "the prevailing approaches to CSR (Corporate Social Responsibility) are so disconnected from business as to obscure many of the greatest opportunities for companies to benefit society."

In recent years, various other concepts have evolved, capturing the idea of internal consistency from different angles to make predictions about its impact on organizational and stakeholder-related outcomes. According to these concepts, sustainability activities can be classified into (1) substantive vs. symbolic (e.g., Schons & Steinmeier, 2016), (2) business process vs. philanthropic (e.g., Edinger-Schons et al., 2019), and (3) embedded vs. peripheral (Aguinis & Glavas, 2013). These concepts share the notion that sustainability activities that substantially affect a firm's core (i.e., its products, processes, or capabilities) are superior in various ways to activities decoupled from the core and symbolic in nature (e.g., Crane & Glozer, 2016).

In this article, we refer to Aguinis and Glavas's (2013) well-established understanding of sustainability embeddedness, meaning organizational practices in which sustainability is at the core of firms' competencies and holistically integrated into their strategies, routines, and operations. In contrast, Aguinis and Glavas (2013) describe activities not aligned with the core business, such as philanthropic giving, community development, and volunteering initiatives, as peripheral sustainability. In line with prior research on internal consistency, we argue that consumers perceive embedded activities as requiring more effort and commitment and yielding a more positive and longer-lasting impact on society than peripheral activities (Porter & Kramer, 2006; Peloza & Shang, 2011; Yuan et al., 2011, De Jong & Van der Meer, 2017). Following this, we reason that consumers perceive embedded activities as more attractive and relevant, which, in turn, relates to their motive of self-identity more appropriately, making them a worthier target of psychological ownership than peripheral practices.

The theory of cue diagnosticity suggests that individuals form judgments about firms or activities based on multiple cues that they observe in the form of information about, e.g., the firm's characteristics and values. Cues can vary in their predictive value. They are perceived as diagnostic if they convey information allowing clear and unambiguous judgment on a firm's characteristics and values (Lichtenstein & Slovic, 1971; Skowronski & Carlston, 1987). Since embedded sustainability activities provide a strong link between a firm's true nature and the greater good, they should embody a higher predictive value concerning a firm's purpose and impact on its environment than peripheral activities. Consequently, embedded activities could provide a valuable cue that incentivizes customers to affiliate with the firm's sustainability efforts to increase their positive self-concept and self-determination. Based on this notion, we hypothesize that involvement in embedded vs. peripheral sustainability has distinct effects on the development of psychological ownership feelings and, indirectly, on sustainable consumption behavior:

> ***H3.*** *The embeddedness of a firm's sustainability efforts moderates the positive indirect effect of customer involvement on sustainable consumption via customers' psychological ownership of sustainability in a way that the indirect effect will be more pronounced for embedded than for peripheral sustainability activities.*

Study 1

Method

Study design. Study 1 tested the effect of involvement in a fashion retailer's sustainability activities on consumers' share of sustainable products in their shopping carts (H_1) and the mediating role of consumers' psychological ownership feelings (H_2). We developed this study and the subsequent Studies 2 and 3 together with a real German fashion retailer in 2021. With over 12,000 employees and 1,900 stores across the country, the firm is among the largest retailers in Germany. It offers a wide range of clothes and accessories, mainly for women and children.

The study was designed as a single factor (customer involvement versus no involvement) between-subjects scenario experiment with a control group (generic communication about the firm's activities without sustainability information). For the treatment development, we applied the retailer's weekly newsletter template. As shown in the Appendix, we manipulated it to provide information about a selection of the firm’s sustainability activities along the value chain (e.g., sourcing sustainable organic cotton and offering firm-owned daycare centers to employees). The control group received a non-sustainability-related newsletter about the firm’s general business activities (e.g., expanding the store network and implementing a logistics system).

The experiment comprised four parts. First, we randomly allocated and presented the manipulated newsletter to 377 participants recruited via Prolific. Since most Prolific users are from the UK (United Kingdom), we focused on this market in Studies 1 and 2. We informed respondents that the retailer intended to expand into the UK market.

Second, after reading the treatment texts, we only invited the participants in the involvement group to provide their ideas and feedback on the presented activities to develop them further through several tasks. This included evaluating the activities on a scale, prioritizing them, and providing suggestions on their development and communication on the retailer’s website.

Third, we asked all respondents to pretend to shop in the retailer’s webshop. To render the experience realistic to the participants, we simulated an online shop visit by directing participants to a self-programmed, mock online shop with the retailer’s branding, which opened in a separate window to avoid disrupting the flow of the survey. We asked them to compile a shopping cart by choosing from about 150 products (a subset of which were labeled as sustainable) for men and women. The product portfolio and pricing were aligned with those used by the retailer in their existing market. We instructed respondents to behave as they would during a real online store visit.

Fourth, after finishing the online shopping, we again showed the newsletter and asked all participants to continue with the online survey and respond to a subsequent questionnaire programmed as a series of web pages. Of the 377 recruited participants, we could match the survey data with the shop data in 266 cases ($n_{involvement}$ = 106; $n_{no\ involvement}$ = 84; $n_{control}$ = 76). The final sample consists mostly of women (66%) from the UK with an average age of 36 years.

Measurement, Reliability, and Validity Diagnostics. We measured sustainable consumption through the share of products with a sustainability tag in the customer's shopping cart, ranging from 0% to 100%. We captured psychological ownership using well-established scales which we slightly adapted to fit this study's context. Specifically, based on Fuchs et al. (2010) and Kirk, Peck, and Swain (2018), we included five items covering both the possessive nature (e.g., "I feel a sense of personal ownership of [the firm name's] sustainability activities") and the extended self-aspect (e.g., "I feel connected to the sustainability activities of [firm name]") of psychological ownership measured on a 7-point Likert scale (1 = "Strongly disagree"; 7 = "Strongly agree"). The measure achieved adequate values for Cronbach's alpha (Nunnally, 1978) and average variances extracted (Fornell & Larcker, 1981) as depicted in Table 4.

Table 4: Descriptive Statistics, Reliability Diagnostics, and Correlations (Studies 1 to 3)

Study 1							
Variable	**M**	**SD**	**A**	**AVE**	**1**	**2**	
1 Sustainable Consumption[a]	.70	.32	_	_			
2 Customer Involvement[b]	_	_	_	_	.26**		
3 Psychological Ownership	3.51	1.43	.93	.77	.27**	.22**	
Study 2							
Variable	**M**	**SD**	**A**	**AVE**	**1**	**2**	**3**
1 Sustainable Consumption[a]	.70	.35	_	_			
2 Customer Involvement[b]	_	_	_	_	.21**		
3 Sustainability Embeddedness[b]	_	_	_	_	.12*	_	
4 Psychological Ownership	3.70	1.54	.93	.79	.18**	.11*	.16**
Study 3							
Variable	**M**	**SD**	**A**	**AVE**	**1**	**2**	**3**
1 Sustainable Consumption[a]	.33	.30	_	_			
2 Customer Involvement[b]	_	_	_	_	.12*		
3 Sustainability Embeddedness[b]	_	_	_	_	.09	_	
4 Psychological Ownership	4.63	1.38	.92	.80	.20**	.10**	.14**

Notes: Two-tailed tests of significance. A = Cronbach's alpha; AVE = average variance extracted.
aSingle-item measure.
bDummy variable (treatment).
**p < .01.

*p < .05.
†p < .10.

Table 5: The Mediating and Moderated Mediating Effect of Psychological Ownership on Sustainable Consumption (Studies 1 to 3)

	Study 1 Effect (SE)	Study 2 Effect (SE)	Study 3 Effect (SE)
Direct Effects			
Sustainable Consumption (SC)			
Customer Involvement → SC	.08 (.05)†	.15 (.03)**	.07 (.04)†
Psychological Ownership → SC	.05 (.02)**	.04 (.01)**	.05 (.01)**
Psychological Ownership (PO)			
Customer Involvement → PO	.57 (.20)**	-.21 (.22)	.61 (.06)*
Embedded Sustainability → PO		.05 (.81)	.27 (.24)
Interaction effect			
Customer Involvement × Embedded Sustainability → PO		.85** (.22)	.94 (.35)**
Control effects			
Gender → SC	.02 (.45)	-.09* (.04)	.02 (.18)
Age → SC	.00 (.00)	.00 (00)	-.00 (.00)
Income → SC	-.03* (.12)	-.01 (.01)	
Education → SC			-.02 (.02)
Gender → PO	-.14	-.02 (.16)	.67 (.75)
Age → PO	.01	.01 (.00)	-.01 (.01)†
Income → PO	.08	.07† (.04)	
Education → PO			-.05 (.58)
Indirect Effect			
Index of Moderated Mediation		.03 (.01)	.04 (.02)
CI (95%)		.007 to .058	.009 to .091
Type of Sustainability: Embedded			
Customer Involvement → PO → SC	.03 (.02)	.02 (.01)	.02 (.01)
CI (95%)	.005 to .063	.006 to .045	-.002 to .038
Type of Sustainability: Peripheral			
Customer Involvement → PO → SC		-.01 (.01)	-.03 (0.15)
CI (95%)		-.025 to .010	-.062 to -.004

Note. SE = standard error; CI = confidence intervals.
***p* < .01.
**p* < .05.
†*p* < .10.

Results

Manipulation checks. We performed a manipulation check to ensure that the manipulation worked as intended. For this means, we developed three items to measure the degree of customers' perceived involvement in the retailer's embedded sustainability activities (e.g., "[firm name] offered me the opportunity to become involved in planning and developing its future sustainability activities"; $\alpha = .93$). All items were rated on 7-point Likert scales ranging from 1 "Strongly disagree" to 7 "Strongly agree". We used a one-way ANOVA to compare the means of the treatment groups. The results revealed that participants in the involvement group reported on average significantly higher values on the perceived involvement scale (M = 5.99) than the non-involvement groups (M = 3.44, $F(1, 266) = 166.12$, $p < .001$). Further, the mean in the involvement group is above the scale's midpoint of 4, whereas it is below in the non-involvement group. Hence, we conclude that our involvement treatment had the intended effect.

Testing H1 and H2. We created dummy variables for the involvement manipulation (1 for involvement and 0 for no involvement). We then ran an ANOVA with the two groups that received the sustainability communication to estimate the effect of the involvement treatment on participants' sustainable consumption behavior (testing H_1). Table 5 depicts the results. The proportion of sustainable products in the shopping cart significantly varied across the treatment groups ($F(1, 188) = 5.61$, $p < .05$) with significantly higher proportions of sustainable products purchased in the involvement than in the non-involvement group ($M_{involvement} = .81$, $M_{no\ involvement} = .70$; $p < .05$). The results confirm H_1. A Bonferroni post hoc test further revealed that the share of sustainable products was also significantly higher in the involvement than the control group ($M_{control} = .57$, $\Delta M = .24$; $p < .001$) as well as the non-involvement group compared to the control group ($\Delta M = .13$; $p = <.05$).

We then conducted an ANOVA using only the treatment groups with psychological ownership as the dependent variable and involvement as the independent factor. We found a significant difference in customers' feelings of psychological ownership of the firm's sustainability efforts between the involvement (M = 3.36) and non-involvement group (M = 3.98, $F(1, 188) = 9.46$, $p < .01$). To empirically test the indirect effect of involvement on sustainable consumption behavior via psychological ownership feelings (i.e., H_2), we used SPSS version 28 and the SPSS PROCESS macro-Release 4.0 (Hayes, 2017). We ran model 4 (5,000 bootstrap samples) with involvement as an independent dummy variable (no involvement as reference category), psychological ownership as a mediator, and the proportion of sustainable products as the dependent variable. We further included demographic factors (age, gender, and income) as controls. In full support of H_2, we found a significant positive effect of involvement on customers' psychological ownership feelings ($\beta = .57$, $p < .01$) as well as a significant positive indirect effect of involvement on sustainable consumption via psychological ownership ($\beta = .03$, 95% CI = .005 to .063).

Discussion

The results of Study 1 support our theorizing proposing that firms' involvement of customers in sustainability activities can incentivize them to purchase more sustainable products. Our results further support the assumption that customers' feelings of psychological ownership for the firm's sustainability activities is the underlying mechanism to explain this observation. Tests with reasonable alternative mediators, such as CCI (Customer-Company Identification) or perceived meaningfulness of the activities, show no significant mediation effect. Although the findings provide insights into new pathways to foster customers' sustainable consumption behavior, they also raise further questions concerning the conditions under which involvement is an effective strategy. Study 2 replicates Study 1 while incorporating the moderating role of embedded vs. peripheral sustainability (H_3).

Study 2

Methods

The design, measurements, and procedure in this study were identical to study 1, with two exceptions. First, we distinguished between the type of sustainability the retailer engages in, resulting in a 2 (involvement vs. no involvement) × 2 (embedded sustainability vs. peripheral sustainability) between-subject scenario design. While the sustainability activities used in the Study 1 treatments were directly related to the firm's value creation, thus falling into the "embedded" category, we additionally selected activities of the retailer for the second study, which we categorized as "peripheral" – i.e., philanthropic activities which are unrelated to the firm's core business. The newsletter shown to participants in the peripheral sustainability group thus contained information about activities such as sponsoring youth sports programs and supporting reforestation initiatives. Second, we did not include a control group (i.e., no sustainability communication) since we have already determined the baseline in Study 1. We used Prolific to invite 553 respondents to our experiment and assigned them to one of the treatment groups. The final sample, including the matched shop and survey data, comprised 398 valid cases (n_{embedded} = 81, $n_{\text{peripheral}}$ = 105, $n_{\text{embedded \& involvement}}$ = 127, $n_{\text{peripheral \& involvement}}$ = 85). The participants' demographics in this sample matched those in Study 1 (all ps > .05).

Results

Manipulation checks. We again asked participants in the involvement and non-involvement groups to assess the extent to which they felt involved in the retailer's sustainability activities, showing a significantly different perception between the groups as in Study 1. In this study, we additionally evaluated respondents' perceptions of the activities as embedded in or decoupled from or peripheral to the retailer's core business. We measured embedded (α = .96) and peripheral sustainability ($\alpha = .96$) with three items each (scale anchors from 1 = "Strongly disagree" to 7 = "Strongly agree"). As intended, participants in the embedded (peripheral) group reported significantly higher (lower) values on the embedded scale ($M_{embedded} = 5.96$, $M_{peripheral} = 3.99$; $p < .001$) and lower (higher) on the peripheral scale ($M_{embedded} = 3.33$, $M_{peripheral} = 5.91$; $p < .001$) and vice versa. Again, the mean values lie above and below the scale midpoint as intended.

Testing of H1, H2, and H3. As a first step, we replicated H_1 by running an ANOVA with involvement in sustainability as the predictor of the share of sustainable products in the shopping cart. The results confirmed that the participants chose sustainable products more often when offered to get involved (M = .77) than when offered no involvement (M = .62, $F(1, 396) = 18.88$, $p < .001$). We then repeated the ANOVA with psychological ownership as the dependent variable, showing that the involvement group reported higher psychological ownership feelings than the non-involvement group ($M_{involvement} = 3.85$, $M_{no\ involvement} = 3.52$; $F(1, 396) = 4.41$, $p < .05$). Hence, the results provide additional support for H_1 and H_2. Moreover, indicating an interaction effect, the Bonferroni post hoc test revealed that the highest feelings of psychological ownership were displayed by the group that received the combination of involvement and embedded sustainability activities (M = 4.18). Conversely, the participants provided with the involvement in peripheral sustainability activities showed the lowest feelings of psychological ownership (M = 3.35; others: $M_{embedded} = 3.53$, $M_{peripheral} = 3.52$).

To formally test the moderated mediation (i.e., H_3), we used SPSS Process Model 7 (5,000 bootstrap samples) with involvement (versus no involvement) as the independent variable, psychological ownership as the mediator, and a dummy variable for sustainability embeddedness as moderator (peripheral sustainability is the reference). The results in Table 5 support H_3, as they show a significant moderated mediation ($\beta = .03$, 95% CI = .007 to .058) with sustainability embeddedness moderating the positive effect of involvement on psychological ownership (β = .85, $p < .01$), which, in turn, enhances sustainable consumption.

Discussion

The results of Study 2 add to the findings of Study 1 by showing that the stated mediation effect of involvement on sustainable consumption behavior via psychological ownership feelings (H_2) is only present if companies involve their customers in sustainability activities that are embedded in the firm's core business. If firms involve their customers in sustainability activities that are peripheral to its value creation, the positive effect of involvement diminishes. This supports our reasoning in H_3. To determine whether we find support for our theoretical framework (H_1 to H_3) under real conditions (i.e., involving real customers-company relationships and real purchase behavior), we conducted a third study with the fashion retailer in which we were allowed to manipulate the firm's real newsletter and observe customers' subsequent online-shopping behavior. In addition to Studies 1 and 2, we further investigated outcomes related to customers' extra-role behaviors, approximated by their willingness to provide the retailer with feedback. Such customer feedback can be a valuable source of information for a firm's strategy building.

Study 3

Method

Study design. We adopted the 2 (involvement versus no involvement) × 2 (embedded versus peripheral sustainability) between-subjects design from Study 2 and added a control group that received no information about the retailer's sustainability activities. We slightly adapted the experimental procedure and the treatments in line with the preferences of the partner firm. This time, we collected data at two different time points. At t_0, customers on the retailer's mailing list received the manipulated newsletters. In the newsletter, we included buttons that customers could click, which resulted in additional windows that opened. In all groups, we included a button directing customers to the online shop. In the involvement group, we additionally included a button that opened a feedback window.

After discussion with the partner firm, the length of the newsletter texts and involvement tasks was reduced to avoid cognitively exhausting participants. Regarding the newsletter texts, we shortened the information about the individual sustainability activities. Further, since the firm engages in a wide variety of embedded sustainability activities, we decided to create two different newsletter versions for the embeddedness stimulus, including a distinct selection of the activities used in the previous studies. Through this, we could test the robustness of our manipulation using varying selections of specific embedded activities. In the involvement group, customers were asked to evaluate the activities and share their ideas and suggestions in a text field as in Studies 1 and 2. However, according to the retailer's preferences, we did not ask them to prioritize the activities. Furthermore, they received less specific information about how the retailer planned to use their feedback to avoid creating unrealistic expectations. Two days after the first newsletter mailing at t_0, we invited customers to participate in an online survey (t_1). At the beginning of the survey, we again presented the manipulated newsletter to remind participants of the treatments. We offered respondents in the involvement groups to provide their feedback if they had not already done so at t_0. Subsequently, participants answered the survey.

Measurement and sample characteristics. We tracked the shopping behavior of customers who clicked on the shopping button and agreed to the use of their data. As in our programmed webshop simulation, the retailer used tags to indicate the sustainability features of its products. This allowed us to measure sustainable consumption as in Studies 1 and 2. To assess customers' perceived psychological ownership, we reduced the number of items from five to four due to constraints on the questionnaire length. The reliability and validity assessment of the scale provided appropriate results.

The manipulated newsletters in t_0 and the survey invitation in t_1 were sent to 516,230 customers from Germany who were on the retailer's mailing list. We received 6,809 survey responses and matched them with the collected purchase information, resulting in a sample of 342 customers ($n_{involvement\ \&\ embedded}$ = 86; $n_{embedded}$ = 98; $n_{involvement\ \&\ peripheral}$ = 44; $n_{peripheral}$ = 36; $n_{control}$ = 87) comprising 98.8% women with a mean age of 46. The demographic profiles of the participants in the sample with the matched purchasing data resemble those of the full sample.

Results

Manipulation checks. We verified if all manipulations worked as expected by using the same items as in the prior studies to evaluate the degree of perceived involvement in the activities as well as embedded and peripheral sustainability. ANOVA results revealed that participants' perceptions of the newsletters vary significantly across the groups. Participants in the involvement groups reported a higher perception of involvement ($M_{involvement}$ = 5.55) than those in the non-involvement groups ($M_{no\ involvement}$ = 5.14, F(1, 262) = 6.60, $p < .001$). Likewise, respondents in the embeddedness groups perceived the activities presented in the newsletter as significantly more related to the retailer's core business than respondents in the peripheral groups ($M_{embedded}$ = 5.21; $M_{peripheral\ =}$ 4.74; F(1, 5382) = 197.67, $p < .001$). Conversely, respondents in the peripheral sustainability groups reported higher values on the items measuring perceived peripheral sustainability than respondents from the embedded sustainability groups ($M_{embedded}$ = 4.90; $M_{peripheral\ =}$ 5.28; F(1, 5382) = 110.46, $p < .001$). It has to be noted that, unlike in our previous studies, all means are above the respective scales' midpoints, regardless of the stimuli respondents were provided with. This fact can probably be explained by a positive bias amongst respondents towards the firm of which they are already customers and registered users of the newsletter.

As a subsequent step, we ran a Bonferroni post hoc test which confirmed that both versions of the embedded sustainability activities were rated similarly on all three manipulation check scales and did not differ in terms of the general likeability (i.e., “I liked the newsletter shown at the beginning”; all *ps* > .05). Furthermore, in the involvement groups we measured respondents’ perceptions of the activities when asking them for their feedback. We only have this information for the involvement groups. But for these groups the data shows that participants evaluated the activities almost equally on a scale ranging from 1 (“I don’t like the activities at all”) to 10 (“I like the activities very much”; $M_{\text{embedded version 1}} = 8.68$; $M_{\text{embedded version 2}} = 8.33$; $p >= .05$). As there are no differences in customer perceptions between the two versions of the embedded sustainability treatment, we collapsed them into one group for further analyses (i.e., we created a dummy with the value 1 for both versions of the embedded manipulation and 0 for the peripheral stimulus).

Testing of H1, H2, and H3. First, we conducted an ANOVA to replicate H_1 with involvement as the predictor of the share of sustainable products in the customers’ shopping carts. Again, results indicated that customers tended to replace conventional with sustainable products if they had previously been involved by providing feedback on the retailer’s sustainability activities ($M_{\text{involvement}} = .40$; $M_{\text{no involvement}} = .33$; $F(1, 262) = 3.89$, $p < .05$). Next, we tested the moderated mediation (H_3) using SPSS Process Model 7 (5,000 bootstrap samples) with involvement (versus no involvement as an independent variable, psychological ownership as a mediator, sustainable consumption behavior as a dependent variable, and embedded (versus peripheral) sustainability as a moderator. We found evidence in support of the theorized moderated mediation. As shown in

Table 5, the embeddedness of the sustainability activities moderated both the direct effect of involvement on perceived psychological ownership ($\beta = .94$, $p < .01$) and the indirect effect on the proportion of sustainable products in the shopping cart via psychological ownership ($\beta = .04$, 95% CI = .009 to .091). The results of Study 2 and 3 slightly differ with regard to the moderated mediation effect. In Study 2, involvement only had a positive effect on sustainable consumption behavior via psychological ownership for embedded sustainability, while the effect was insignificant for peripheral sustainability. In Study 3, the positive effect of involvement in the case of embedded sustainability is insignificant, whereas the effect of involvement on psychological ownership even turns out significantly negative for peripheral sustainability.

To further explore the moderation effect in Study 3, we analyzed the full sample (i.e., comprising the 6,809 customer survey responses without purchasing information) by running SPSS Process Model 1 (5,000 bootstrap samples). Here we found, consistent with the results of Study 1, that sustainability embeddedness indeed led to a significantly higher positive effect of involvement on perceived ownership ($\beta = .46$, $p < .001$). Taken together, we can conclude that the results of Study 3 strengthen our theorizing in H_3 while also pointing to a potential backlash effect on sustainable consumption if a retailer offers customers to become involved in peripheral sustainability in line with the backlash effects observed by Wang, Krishna, and McFerran (2017).

Supplemental analyses

In addition to customers' purchasing behavior, we collected data concerning customers' willingness to provide feedback in the involvement groups, as a type of customers' extra-role behaviors (Karaosmanoglu, Altinigne, & Isiksal. 2016). Customers could share ideas and suggestions after the initial newsletter mailing at t_0 and at the beginning of the survey at t_1 if they submitted no feedback at t_0. We created two variables intended to approximate the extent to which customers became engaged. The first extra-role behavior measure ranged from 0 to 2, coded 0 if customers in the involvement group did not provide feedback, 1 if they at least participated in one of the two involvement tasks (either evaluating the activities using the slider or writing feedback in the open text field), and 2 if they performed both tasks. Further, we created a second variable capturing the length of the feedback text by the number of characters. When coding the responses, we only included feedback in our analysis if it was related to the retailer or its activities. As we only have these behavioral outcomes in the involvement groups, we only include participants from these groups in the analysis.

We conducted one-way ANOVAs with sustainability embeddedness as the independent variable and the respective extra-role behavior measures as the dependent variables, which revealed that in both cases, customers were willing to share more feedback when the firm involves them in embedded sustainability activities than in peripheral activities (extent of feedback-giving behavior $M_{embedded} = 1.18$; $M_{peripheral} = 1.08$; $p < 0.001$; text length: $M_{embedded} = 102.40$; $M_{peripheral} = 64.33$; $p < 0.01$). As a next step, we tested whether psychological ownership mediated the direct effects of sustainability embeddedness on extra-role behaviors using SPSS Process Model 4 (5,000 bootstrap samples). The results indicated that for the first of our two outcome variables, sustainability embeddedness increased customers' psychological ownership and, through this, enhanced the extent to which customers were willing to share feedback (i.e., extra-role behavior; $\beta = .05$, 95% CI = .035 to .065). However, we found no significant mediation effect to explain the text length measure.

Discussion

Taken together, we conclude that the results of the field experiment provide further support for the hypotheses stated in our conceptual model. Most importantly, our findings indicate that customer involvement in embedded sustainability activities can foster sustainable consumption behavior via feelings of psychological ownership while also incentivizing extra-role behavior in the form of more feedback that can be exploited to further develop the retailer's sustainability activities. Moreover, the results suggest a potentially harmful effect on sustainable consumption behavior if a retailer enables customers to engage in peripheral sustainability activities.

General Discussion

Summary of Findings

The results of our three studies support our theorizing, as they confirm Hypotheses 1, 2, and 3. In particular, they show that psychological ownership mediates the link between customer involvement and sustainable consumption and that the embeddedness of the sustainability activity in a firm's core business moderates this mediation. Beyond that, we made further observations regarding the interplay between sustainability embeddedness and customers' feedback behavior. As we outline in the following, these findings extend the research about sustainability and consumer involvement in several meaningful ways and yield valuable implications for practice.

Implications for Research

This study contributes to the literature about customer involvement and sustainable consumption in at least three meaningful ways. First, we establish psychological ownership as a critical mechanism for explaining how individuals' involvement in organizational practices translates into real changes of these individuals' behavior. In particular, we theorize that customer involvement actually pertains to the antecedents of psychological ownership, as it makes an object controllable and manipulable and consequently a more attractive target for ownership and enables customers to experience control of and self-investment in the target. Our results support the notion that the process of involvement operationalized by feedback-giving and participation in decision-making leads to psychological ownership, which in turn affects customers' consumption behavior.

Through identifying psychological ownership as the underlying mechanism that connects customer involvement and sustainable consumption, we also intertwine involvement and ownership research, which are two streams that have not been connected so far. This bringing together offers new theoretical insights into research about incentivizing consumer behavior beyond well-established social marketing interventions such as appeal-based communication. While previous research investigated individuals' preferences for different forms of involvement, it did not establish a potential underlying mechanism explaining the outcomes of customer involvement (Edinger-Schons et al., 2019). This notion is critical since it fills a relevant research void and simultaneously addresses the increasing need among practitioners for approaches affecting customer behavior with regard to sustainability.

Second, we use the concept of embedded and peripheral sustainability to argue and demonstrate that the underlying mechanism between involvement and behavior is context-specific. Our findings suggest that psychological ownership mediates the effect of involvement on both, purchasing behavior and extra-role behavior only if the target of ownership (i.e., the activity) is embedded within the firm's core business. Drawing from cue diagnosticity theory, we argue that targets entailing a high predictive value – i.e., allowing a clear assessment of the social relevance and individual impact on the environment stemming from the involvement – serve the need of self-identity. Thus, in line with the ownership literature, we suggest that the type of activity in which a firm offers to participate facilitates the development of psychological ownership.

This notion also contributes to research about embedded sustainability and extra-role behavior. Aguinis and Glavas (2013) propose that involving employees in embedded sustainability can result in extra-role behavior such as organizational citizenship. Although they admit the possibility that this mechanism similarly applies to customers, one could argue that this transfer cannot be easily made, as the role of customers differs substantially from the role of employees, who are closely connected to the firm. Our results indicate that the embeddedness of sustainability activities indeed plays a role in enhancing the amount of customers' feedback. Beyond that, our findings add the concept of psychological ownership as an antecedent to extra-role behavior next to (1) CCI (e.g., Ahearne, Bhattacharya, and Gruen, 2005; Paulssen, Brunneder, & Sommerfeld, 2019), (2) customer satisfaction (Paulsen, et al. 2019), and (3) firm motives for CSR (Karaosmanoglu, et al., 2016).

Finally, we methodologically contribute to management and marketing research by addressing the call to create more realism in experimental designs and develop measures that allow researchers to move beyond traditional scale-based intentions, such as buying intention, to increase the veracity and believability of research (Morales, Amir, & Lee 2017). Past consumer research repeatedly emphasized that self-reported buying intentions are limited in their predictability of real behavior (e.g., Warshaw, 1980; Jamieson & Bass, 1989; Bemmaor, 1995), leading to potentially biased conclusions about individuals' actual behavior (Sun & Morwitz, 2010; Morales, Amir, & Lee, 2017). As described early in this paper, the problem of substantial variation between stated attitudes and actual behavior is especially present in the context of sustainable consumption. Against this backdrop, we applied a novel way to approximate customers' consumption behavior by developing an online shop simulation for Study 1 and Study 2. Although our approach is still fictitious and self-reported, we argue that it can enhance the measurement of buying behavior in two ways. First, compared to conventional scale-based measures, our approach allows for a more comprehensive approximate of consumption behavior by capturing a broader set of outcomes (e.g., total product value in the shopping cart, share of sustainable products, shopping time etc.). Second, the simulation creates an experimental environment that is much more realistic, which is, in turn, supposed to promote more realistic responses (Morales et al., 2017).

Practical Implications

Beyond our theoretical implications, our research provides several important implications for practitioners. First, the ability to identify relevant action fields of sustainability requires firms to have open ears and eyes as stakeholders' expectations are a constantly evolving target (Morsing et. al, 2006). Therefore, firms should seek an ongoing dialogue with consumers to learn about their attitudes and integrate the feedback into future decisions (Edinger-Schons et al., 2019). Furthermore, our study indicates that involvement has a significant effect on sustainable consumption, which is mediated by psychological ownership. This finding is critical for successfully executing a sustainability strategy, as it indicates that enabling the development of psychological ownership can help to overcome the attitude-behavior gap in sustainable consumption. In particular, practitioners need to be aware of the prerequisite to psychological ownership and enable them by providing customers with the opportunity to develop feelings of control, gain intimate knowledge, and invest in their sustainability activity.

In our study, we designed involvement by the implementation of newsletters and the opportunity to give feedback by rating the activity and giving a written statement. While these are simple measures to enable practitioners to recede from one-way communication and facilitate customer collaboration for sustainability, it remains the corporate responsibility to absorb the feedback and use its information to gain further insights and develop solutions to potential problems. Firms that are interested in going beyond our suggested measures for establishing psychological ownership toward sustainability initiatives should invite customers to explore their Ivis-a-vis the firm.

Additionally, it is necessary that the firm is willing and capable of fulfilling consumer demands (Morsing et al., 2006). Consequently, firms must engage systematically in dialogue with their stakeholders in order to explore mutually beneficial action.

What is more, our research provides evidence that embedded sustainability activities foster sustainable consumption as they trigger higher levels of psychological ownership than peripheral activities due to their attractiveness and relevance for consumers. Hence, firms need to be open to customer feedback for sustainability activities that have been holistically implemented in the business model. As customers' advice and suggestions on embedded activities might be too sophisticated or even counterproductive from an economic point of view, firms could be tempted to consider and implement the more simple feedback on peripheral sustainability activities, which does not affect the core business. However, our study shows that the involvement in peripheral sustainability activities does not elicit sustainable consumption. Hence, we recommend that firms should take the rocky road to shed light on consumer feedback for substantial sustainability activities and systematically evaluate it internally to develop authentic plans for action.

Limitations and Future Research

This study has several limitations that yield potential for future research. First, our studies are cross-sectional. Using longitudinal data might help to observe the development of customers' psychological ownership and subsequent changes in consumption patterns. According to existing literature, psychological ownership is a phenomenon that especially evolves through repeated interaction with the target object to strengthen the experiences linking to ownership feelings (i.e., intimate knowledge, control, and self-investment; Peck & Luangrath, 2018). Future research might also take into account potential backlashes resulting from repeated involvement and its consequences for sustainable consumption due to, e.g., customers' perceptions of high involvement effort (Howie et al., 2018) and territorial behavior resulting from psychological ownership feelings (Kirk et al., 2018). Hence, we encourage future research to explore how ownership develops and affects sustainable consumption behavior over time while also considering potential side effects.

Second, Kamleitner and Mitchell (2018) prompt another research direction by describing different forms of experiences of control (i.e., spatial, configuration, temporal, transformation, and rate control) and self-investment (i.e., creation, repair and maintenance, repository, and preference recall). Since the application of these forms is context-specific and might vary in their influence on an individual, we consider the differentiation between these forms as a promising path to gain a finer-grained understanding of how to increase sustainable consumption most effectively.

Last but not least, the firm's characteristics, such as the size and the legal ownership structure, could also intervene in the process of psychological ownership development since they might lead to different perceptions of the target's (i.e., the activity) characteristics and affects the extent to which the object is considered as controllable and the investment in it as meaningful to the self. For example, Bernhard & O'Driscoll (2011) show how psychological ownership leads to organizational citizenship behavior among employees in small, family-owned organizations, arguing that the physical and psychological barrier between the organization's legal owners and the employees is less present. Since we conducted our study in cooperation with a family-owned retailer and communicated this characteristic prominently in our treatments, future research might explore potential differences stemming from the nature of family-owned firms.

Conclusion

In this study, we explore how firms can motivate sustainable consumption behavior amongst their customers by involving them in their sustainability activities. In particular, we introduced psychological ownership as the underlying mechanism that explains how customer involvement in sustainability activities translates into changes in individuals' consumption choices. Hence, we conducted two scenario experiments and collaborated with Ernsting's family, a large German retailer for clothing, to conduct a field experiment with more than 500,000 customers to verify and substantiate the results. The analyses of our final sample confirmed our theorizing and showed how firms can go beyond delivering sustainable products and services toward actively shaping consumption behavior. We further revealed that this mechanism depends on the type of sustainability that a firm undertakes, i.e., whether it is embedded in or peripheral to a firm's core business. Our results additionally highlighted that firms can derive further benefits from customer involvement in embedded sustainability since it incites higher extra-role behavior in the form of feedback-giving than involvement in peripheral sustainability, which firms can exploit to develop their sustainability strategy further.

References

Aguinis, H., & Glavas, A. 2013. Embedded Versus Peripheral Corporate Social Responsibility: Psychological Foundations. ***Industrial and Organizational Psychology***, 6(4): 314–332.

Ahearne, M., Bhattacharya, C. B., & Gruen, T. 2005. Antecedents and Consequences of Customer-Company Identification: Expanding the Role of Relationship Marketing. ***Journal of Applied Psychology***, 90(3): 574–585.

BCG 2020. ***The Pandemic Is Heightening Environmental Awareness***. https://www.bcg.com/de-de/publications/2020/pandemic-is-heightening-environmental-awareness.

Bemmaor, A. C. 1995. Predicting Behavior from Intention-to-Buy Measures: The Parametric Case. ***Journal of Marketing Research***, 32(2): 176–191.

Bernhard, F., & O'Driscoll, M. P. 2011. Psychological Ownership in Small Family-Owned Businesses: Leadership Style and Nonfamily-Employees' Work Attitudes and Behaviors. ***Group & Organization Management***, 36(3): 345–384.

Bocken, N. 2017. Business-led sustainable consumption initiatives: Impacts and lessons learned. ***Journal of Management Development***, 36(1): 81–96.

Brown, G., Pierce, J. L., & Crossley, C. 2014. Toward an Understanding of the Development of Ownership Feelings. ***Journal of Organizational Behavior***, 35(3): 318–338.

Carson, C. 2003. Scandal Proof: Do Ethics Laws Make Government Ethical? ***Public Integrity***, 5(2): 173–176.

Caruana, R., Carrington, M. J., Chatzidakis, A. 2016. Beyond the Attitude-Behaviour Gap: Novel Perspectives in Consumer Ethics: Introduction to the Thematic Symposium. ***Journal of Business Ethics***, 136(2): 215-218.

Chatzidakis, A., Hibbert, S., & Smith, A. P. 2007. Why People Don't Take their Concerns about Fair Trade to the Supermarket: The Role of Neutralisation. ***Journal of Business Ethics***, 74(1): 89–100.

Christofi, M., Vrontis, D., Leonidou, E., & Thrassou, A. 2020. Customer engagement through choice in cause-related marketing. ***International Marketing Review***, 37(4): 621–650.

Crane, A., & Glozer, S. 2016. Researching corporate social responsibility communication: Themes, opportunities & challenges. ***Journal of Management Studies***, 53(7): 1223-1252.

De Jong, M. D., & van der Meer, M. 2017. How does it fit? Exploring the congruence between organizations and their corporate social responsibility (CSR) activities. ***Journal of Business Ethics***, 143(1): 71-83.

Devinney, T. M., Auger, P., & Eckhardt, G. M. 2010. ***The myth of the ethical consumer***. Cambridge: Cambridge University Press.

Dittmar, H. 1992. ***The social psychology of material possessions: To have is to be***. New York: St. Martin Press.

Dolan, P. 2002. The Sustainability of "Sustainable Consumption". ***Journal of Macromarketing***, 22(2): 170–181.

Duncan, J. S. 1981. ***Housing and identity: Cross-cultural perspectives***. London: Croom Helm.

Edinger-Schons, L. M., Sipilä, J., Sen, S., Mende, G., & Wieseke, J. 2018. Are Two Reasons Better Than One? The Role of Appeal Type in Consumer Responses to Sustainable Products. ***Journal of Consumer Psychology***, 28(4): 644–664.

Edinger-Schons, L. M., Lengler-Graiff, L., Scheidler, S., Mende, G., & Wieseke, J. 2019. Listen to the voice of the customer—First steps towards stakeholder democracy. ***Business Ethics: A European Review***, 29(3): 510–527.

ElHaffar, G., Durif, F., & Dubé, L. 2020. Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. ***Journal of Cleaner Production***, 275: 1-20.

Fischer, D., Reinermann, J.-L., Guillen Mandujano, G., DesRoches, C. T., Diddi, S., & Vergragt, P. J. 2021. Sustainable consumption communication: A review of an emerging field of research. ***Journal of Cleaner Production***, 300: 1-14.

Fornell, C., & Larcker, D. F. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. ***Journal of Marketing Research***, 18(1): 39–50.

Franke, N., Schreier, M. and Kaiser, U. 2010 The "I Designed It Myself" Effect in Mass Customization. ***Management Science***, 56: 125-140.

Fuchs, C., Prandelli, E., & Schreier, M. 2010. The Psychological Effects of Empowerment Strategies on Consumers' Product Demand. ***Journal of Marketing***, 74(1): 65–79.

Geng, D., Liu, J., & Zhu, Q. 2017. Motivating sustainable consumption among Chinese adolescents: An empirical examination. ***Journal of Cleaner Production***, 141: 315–322.

Gordon, R., Carrigan, M., & Hastings, G. 2011. A framework for sustainable marketing. ***Marketing Theory***, 11(2): 143–163.

Griskevicius, V., Tybur, J. M., & van den Bergh, B. 2010. Going green to be seen: Status, reputation, and conspicuous conservation. ***Journal of Personality and Social Psychology***, 98(3): 392–404.

Hayes, A. F. 2017. ***Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*** (2nd ed.). New York City: Guilfod Publications.

Heidegger, M. 1967. ***Being and time***. Oxford: Basil Blackwell.

Heiny, K., & Schneider, D. 2021. ***Zalando: Attitude-Behavior Gap Report***. https://corporate.zalando.com/de/attitude-behavior-gap-report.

Howie, K. M., Yang, L., Vitell, S. J., Bush, V., & Vorhies, D. 2018. Consumer Participation in Cause-Related Marketing: An Examination of Effort Demands and Defensive Denial. ***Journal of Business Ethics***, 147(3): 679–692.

IBM 2023. ***Covid-19 Consumer Survey***. https://www.ibm.com/thought-leadership/institute-business-value/report/covid-19-consumer-survey.

Jamieson, L.F., Bass, F. M. 1989. Adjusting Stated Intention Measures to Predict Trial Purchase of New Products: A Comparison of Models and Methods. ***Journal of Marketing Research***, 26(3): 336-345.

Kamleitner, B., & Mitchell, V.-W. 2018. Can Consumers Experience Ownership for Their Personal Data? From Issues of Scope and Invisibility to Agents Handling Our Digital

Blueprints. In J. Peck, S. B. Shu (Eds.). ***Psychological ownership and consumer behavior***: 91–118. Basel: Springer International Publishing.

Karaosmanoglu, E., Altinigne, N., & Isiksal, D. G. 2016. CSR motivation and customer extra-role behavior: Moderation of ethical corporate identity. ***Journal of Business Research***, 69(10): 4161–4167.

Kirk, C.K., Peck, J., Swain, S.D. 2017. Property Lines in the Mind: Consumers' Psychological Ownership and Their Territorial Responses. ***Journal of Consumer Research***, 45(1): 148–168.

Kotler, P. 2011. Reinventing Marketing to Manage the Environmental Imperative. ***Journal of Marketing***, 75(4): 132–135.

Kristensson, P., Wästlund, E., & Söderlund, M. 2017. Influencing consumers to choose environment friendly offerings: Evidence from field experiments. ***Journal of Business Research***, 76: 89–97.

Kull, A. J., & Heath, T. B. 2016. You decide, we donate: Strengthening consumer–brand relationships through digitally co-created social responsibility. ***International Journal of Research in Marketing***, 33(1): 78–92.

Kuokkanen, H., & Sun, W. 2020. Companies, meet ethical consumers: Strategic CSR management to impact consumer choice. ***Journal of Business Ethics***, 166(2): 403-423.

Lehner, M., Mont, O., & Heiskanen, E. 2016. Nudging – A promising tool for sustainable consumption behaviour? ***Journal of Cleaner Production***, 134: 166–177.

Leonidou, C. N., & Skarmeas, D. 2017. Gray Shades of Green: Causes and Consequences of Green Skepticism. ***Journal of Business Ethics***, 144(2): 401–415.

Lichtenstein, S., & Slovic, P. 1971. Reversals of preference between bids and choices in gambling decisions. ***Journal of Experimental Psychology***, 89(1): 46–55.

Lim, W. M. 2017. Inside the sustainable consumption theoretical toolbox: Critical concepts for sustainability, consumption, and marketing. ***Journal of Business Research***, 78: 69–80.

Loewenstein, G., & Issacharoff, S. 1994. Source dependence in the valuation of objects. ***Journal of Behavioral Decision Making***, 7(3): 157–168.

Lorek, S., & Fuchs, D. 2013. Strong sustainable consumption governance – precondition for a degrowth path? ***Journal of Cleaner Production***, 38: 36–43.

Luchs, M. G., Naylor, R. W., Irwin, J. R., & Raghunathan, R. 2010. The Sustainability Liability: Potential Negative Effects of Ethicality on Product Preference. ***Journal of Marketing***, 74(5): 18–31.

Montiel, I. 2008. Corporate social responsibility and corporate sustainability: Separate pasts, common futures. ***Organization & Environment***, 21(3): 245-269.

Morales, A. C., Amir, O., & Lee, L. 2017. Keeping it real in experimental research—Understanding when, where, and how to enhance realism and measure consumer behavior. ***Journal of Consumer Research***, 44(2): 465-476.

Morsing, M., & Schultz, M. 2006. Corporate social responsibility communication: Stakeholder information, response, and involvement strategies. ***Business Ethics: A European Review***, 15(4): 323–338.

Nunnally J. C. 1978. ***An Overview of Psychological Measurement***. In B. B. Wolman (Ed): Clinical Diagnosis of Mental Disorders. Boston, MA: Springer.

Öberseder, M., Schlegelmilch, B. B., & Gruber, V. 2011. "Why Don't Consumers Care About CSR?": A Qualitative Study Exploring the Role of CSR in Consumption Decisions. ***Journal of Business Ethics***, 104(4): 449–460.

Park, H. J., & Lin, L. M. 2020. Exploring attitude–behavior gap in sustainable consumption: Comparison of recycled and upcycled fashion products. ***Journal of Business Research***, 117: 623–628.

Paulssen, M., Brunneder, J., & Sommerfeld, A. 2019. Customer in-role and extra-role behaviours in a retail setting: The differential roles of customer-company identification and overall satisfaction. ***European Journal of Marketing***, 53(12): 2501–2529.

Peattie, K., & Collins, A. 2009. Guest editorial: Perspectives on sustainable consumption. ***International Journal of Consumer Studies***, 33(2): 107–112.

Peattie, K., & Peattie, S. 2009. Social marketing: A pathway to consumption reduction? ***Journal of Business Research***, 62(2): 260–268.

Peck, J., & Shu, S. B. 2009. The Effect of Mere Touch on Perceived Ownership. ***Journal of Consumer Research***, 36(3): 434–447.

Peck, J., & Luangrath, A. W. 2018. Looking ahead: Future research in psychological ownership. In J. Peck, S. B. Shu (Eds.). ***Psychological ownership and consumer behavior***: 239–258. Basel: Springer International Publishing.

Peck, J., Kirk, C. P., Luangrath, A. W., & Shu, S. B. 2021. Caring for the Commons: Using Psychological Ownership to Enhance Stewardship Behavior for Public Goods. ***Journal of Marketing***, 85(2): 33–49.

Peloza, J., & Shang, J. 2011. How can corporate social responsibility activities create value for stakeholders? A systematic review. ***Journal of the Academy of Marketing Science***, 39(1): 117–135.

Pierce, J. L., Rubenfeld, S. A., & Morgan, S. 1991. Employee Ownership: A Conceptual Model Of Process And Effects. ***The Academy of Management Review***, 16(1): 121-144.

Pierce, J. L., Kostova, T., & Dirks, K. T. 2001. Toward a Theory of Psychological Ownership in Organizations. ***The Academy of Management Review***, 26(2): 298-310.

Pierce, J. L., Kostova, T., & Dirks, K. T. 2003. The State of Psychological Ownership: Integrating and Extending a Century of Research. ***Review of General Psychology***, 7(1): 84–107.

Pierce, J. L., O'Driscoll, M. P., & Coghlan, A.-M. 2004. Work Environment Structure and Psychological Ownership: The Mediating Effects of Control. ***The Journal of Social Psychology***, 144(5): 507–534.

Porteous, J. D. 1976. Home: The Territorial Core. ***Geographical Review***, 66(4): 383-390.

Porter, M., & Kramer, M. 2006. Strategy & Society: The Link Between Competitive Advantage & Corporate Social Responsibility. ***Harvard Business Review***, 84: 78-92.

PricewaterhouseCoopers. 2023. ***PwC's Global Consumer Insights Survey 2021***. https://www.pwc.com/gx/en/industries/consumer-markets/consumer-insights-survey/archive/consumer-insights-survey-2021.html.

Prothero, A., Dobscha, S., Freund, J., Kilbourne, W. E., Luchs, M. G., Ozanne, L. K., & Thøgersen, J. 2011. Sustainable Consumption: Opportunities for Consumer Research and Public Policy. ***Journal of Public Policy & Marketing***, 30(1): 31–38.

Robinson, S. R., Irmak, C., & Jayachandran, S. 2012. Choice of Cause in Cause-Related Marketing. ***Journal of Marketing***, 76(4): 126–139.

Schons, L., Steinmeier, M. 2016. Walk the Talk? How Symbolic and Substantive CSR Actions Affect Firm Performance Depending on Stakeholder Proximity. ***Corporate Social Responsibility and Environmental Management***, 23(6): 358-372.

Shu, S. B., & Peck, J. 2011. Psychological ownership and affective reaction: Emotional attachment process variables and the endowment effect. ***Journal of Consumer Psychology***, 21(4): 439–452.

Shu, S. B., & Peck, J. 2018. Solving Stewardship Problems with Increased Psychological Ownership. In J. Peck, S. B. Shu (Eds.). ***Psychological ownership and consumer behavior***: 227–237. Basel: Springer International Publishing.

Skarmeas, D., & Leonidou, C. N. 2013. When consumers doubt, Watch out! The role of CSR skepticism. ***Journal of Business Research***, 66(10): 1831–1838.

Skowronski, J. J., & Carlston, D. E. 1987. Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. ***Journal of Personality and Social Psychology***, 52(4): 689–699.

Sun, B., & Morwitz, V. G. 2010. Stated intentions and purchase behavior: A unified model. ***International Journal of Research in Marketing***, 27(4): 356–366.

Süssenbach, S., & Kamleitner, B. 2018. Psychological Ownership as a Facilitator of Sustainable Behaviors. In J. Peck, S. B. Shu (Eds.). ***Psychological ownership and consumer behavior***: 211–225. Basel: Springer International Publishing.

Szabo, S., & Webster, J. 2021. Perceived greenwashing: the effects of green marketing on environmental and product perceptions. ***Journal of Business Ethics***, 171(4): 719-739.

Thaler, R.H., & Sunstein, C.R. 2008. ***Nudge: Improving Decisions About Health, Wealth, and Happiness***. New Haven: Yale University Press.

United Nations 2015. ***Transforming Our World: The 2030 Agenda for Sustainable Development***. Resolution (70/1) adopted by the General Assembly on 25 September 2015.

Van Marrewijk, M. 2003. Concepts and definitions of CSR and corporate sustainability: Between agency and communion. ***Journal of Business Ethics***, 44(2): 95-105.

Vermeir, I., Verbeke, W. 2006. Sustainable Food Consumption: Exploring the Consumer "Attitude – Behavioral Intention" Gap. ***Journal of Agricultural and Environmental Ethics***, 19(2): 169-194.

Wagner, T., Lutz, R. J., & Weitz, B. A. 2009. Corporate Hypocrisy: Overcoming the Threat of Inconsistent CSR Perceptions. ***Journal of Marketing***: 73(6), 77–91.

Wang, W., Krishna, A., & McFerran, B. 2017. Turning off the Lights: Consumers' Environmental Efforts Depend on Visible Efforts of Firms. ***Journal of Marketing Research***, 54(3): 478–494.

Warshaw, P. R. 1980. A new model for predicting behavioral intentions: An alternative to Fishbein. ***Journal of Marketing Research***, 17(2): 153–172.

Weber, H., Loschelder, D. D., Lang, D. J., & Wiek, A. 2021. Connecting consumers to producers to foster sustainable consumption in international coffee supply – a marketing intervention study. ***Journal of Marketing Management***, 37(11-12): 1148–1168.

White, R. W. 1959. Motivation reconsidered: The concept of competence. ***Psychological Review***, 66(5): 297–333.

White, K., MacDonnell, R., & Ellard, J. H. 2012. Belief in a Just World: Consumer Intentions and Behaviors toward Ethical Products. ***Journal of Marketing***, 76(1): 103–118.

White, K., & Simpson, B. 2013. When Do (and Don't) Normative Appeals Influence Sustainable Consumer Behaviors? ***Journal of Marketing***, 77(2): 78–95.

White K., Hardisty D. J., & Habib, R. 2019. The elusive green consumer. ***Harvard Business Review***, 11: 124–133.

Wiggins, J. 2018. Can Consumers Perceive Collective Psychological Ownership of an Organization?. In J. Peck, S. B. Shu (Eds.). ***Psychological ownership and consumer behavior***: 177–194. Basel: Springer International Publishing.

Winterich, K. P. 2021. ***Three Ways to Engage Consumers for Sustainable Consumption***. Impact at JMR. https://www.ama.org/2021/09/23/three-ways-to-engage-consumers-for-sustainable-consumption/.

Yuan, W., Bao, Y., & Verbeke, A. 2011. Integrating CSR Initiatives in Business: An Organizing Framework. ***Journal of Business Ethics***, 101(1): 75–92.

Zhang, L., Li, D., Cao, C., & Huang, S. (2018). The influence of greenwashing perception on green purchasing intentions: The mediating role of green word-of-mouth and moderating role of green concern. ***Journal of Cleaner Production***, 187: 740-750.

Appendix

Embedded Sustainability Treatment

Peripheral Sustainability Treatment

Control Group Treatment

Figure 5: Newsletter treatments

ESSAY III

Users' Technology Acceptance in the Digital Transformation of Family Firms' Supply Chain

Abstract

New technologies and enhanced information systems are fueling digital transformation in many industries, including through the creation of new digital interfaces to communicate with and involve customers and suppliers. Information systems and management scholars have emphasized the far-reaching consequences of these endeavors for such areas as strategy, innovation, and entrepreneurship. The success of digital transformation depends on the willingness of the individuals involved, including customers, employees, and suppliers, to embrace these new technologies. Digital transformation is particularly difficult for family firms, as they usually follow conservative strategies, show resistance to change, and face resource restrictions, factors that limit their ability to pursue such substantial change to their business model. However, other factors can help family firms as they seek to transform and thrive: their strong and continuous organizational culture and their sustainable business activities, both of which are rooted in their socioemotional wealth considerations and strong social capital. Drawing on the technology acceptance model, we set out to explore the following research question: How do organizational characteristics of family firms shape the acceptance of new technologies among members within their supply chain? Our grounded theory model contributes to the literature about digital transformation in family firms by linking firm-level strategy to organizational and individual attributes; identifying factors that facilitate or hinder family firms' digital transformation, such as a culture of innovation and change, as well as social capital embedded in inter- and intra-organizational relationships; and guiding managers of family firms on how to enhance their digital agenda.

Keywords: Digital Transformation; Technology Acceptance; Family Firms; Supply Chain.

Introduction

In recent years, the pressure of globalization and the advancement of new technologies and information systems have led to digital transformation efforts among firms of many industries (Kohli & Johnson, 2011; Matt, Hess, & Benlian, & Wiesböck, 2015; Nambisan, Wright, & Feldman, 2019). This digital transformation includes creating new digital interfaces to communicate with and involve customers (Hansen & Kien, 2015; Xue, Zhang, Ling, & Zhao, 2013) as well as the implementation of digital interfaces to interact with suppliers (Andal-Ancion, Cartwright, & Yip, 2003; Xue et al., 2013). Information systems and management scholars have emphasized the far-reaching consequences of these endeavors for such areas as strategy, innovation, and entrepreneurship (Hess, Matt, Benlian, & Wiesböck, 2016; Nambisan et al., 2019). The success of digital transformation depends thereby on the willingness of involved individuals, i.e., customers, employees, entrepreneurs, and suppliers, to embrace these new technologies (Berman, 2012; Hansen & Kien, 2015).

Digital transformation is particularly difficult for family firm businesses (Kammerlander & Ganter, 2015), as these firms usually follow conservative strategies, resist change, and face resource restrictions (Arregle, Hitt, Sirmon, & Very, 2007; De Massis, Frattini, Pizzurno, & Cassia, 2015; Duran, Kammerlander, & van Essen, & Zellweger, 2016; Fiss & Zajac, 2004), which limits both their will and their ability to substantially alter their business models (Andal-Ancion et al., 2003). However, other factors can help family firms as they seek to transform and thrive: their strong and continuous organizational culture and their sustainable business activities, both of which are rooted in their socioemotional wealth considerations and strong social capital (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2012). We expect that all these factors constitute important contingencies that influence how family firms pursue digital transformations, as well as determine the success with which users such as family firm members, customers, and suppliers accept these new technologies. Drawing on the technology acceptance model introduced by Venkatesh et al. (2003), we set out to explore the following research question: *How do organizational characteristics of family firms shape the acceptance of new technologies by users along the supply chain?*

Due to the inductive nature of our research question, we conducted 14 in-depth interviews with organization members and suppliers of a German family firm in the retailing industry and added additional information from websites, business reports, and transcripts of executive meetings. Following a grounded theory approach described in Gioia, Corley, & Hamilton (2013), we create a theoretical model that describes the antecedents and consequences of technology acceptance in family firms and introduces these firms' characteristics as important contingencies for technology acceptance. We argue that family firms are better than non-family firms at gaining the trust of the members of their supply chains, at involving those supply chain members in organizational processes, and at shaping the scope and degree of customization of the technology they implement. Our grounded theory model shows how users' experience with and attitude toward technologies leads to the behavioral intention to use a digital collaboration platform and ultimately to real behavior.

Within the process from user attitude toward and experience with digital technologies through the behavioral intention to behavior, family firms can use their socio-economic wealth, trust among partners, favorable reputation, and solidarity with employees to improve (1) users' ability to participate, (2) the characteristics of the technology, and (3) the trust in the organization. As for the ability to participate, we show that family firms outperform non-family firms concerning involvement in development, continuous support, and training. As for the characteristics of the technology, family firms excel at identifying the right scope of technology and the degree of customization. Beyond that, family firms typically inspire more trust among their employees than non-family firms do, because of the strength of the relationships they maintain, their transparency in organizational processes, and their financial support of their employees.

Our study contributes to the literature about digital transformation, technology acceptance, and family firm business in several important ways. First, we link firm-level strategy to organizational and individual attributes, proposing that users' technology acceptance within the supply chain is critical for the success of firms' digital transformation strategy. Second, we examine digital transformation within the supply chain against the backdrop of a family firm business and argue that family firms possess certain attributes that hinder and facilitate the success of these ventures. In particular, we propose that a strong culture for innovation and change as well as strong social capital embedded in inter- and intra-organizational relationships support the acceptance of technologies among users when managers overcome their reservations against change and devote sufficient resources to the digital transformation process. Finally, we guide managers of family firms on how to use the strengths of family firms to enhance their digital agenda.

Theoretical Background

Digital transformation in global supply chains

The emergence of digital devices, tools, and platforms has changed our business environment significantly over the past decade. The phrase "digital transformation" is broadly used to describe a wide variety of technological innovations that can transform organizations, infrastructures, and business models (Nambisan et al., 2019). It is of paramount importance for firms to identify the potential for digital transformation within and beyond the organization, especially with regard to interactions with customers and suppliers in global supply chains. On the sales side, for instance, digital co-creation and crowdsourcing provide new ways to collaborate with customers (Younkin & Kashkooli, 2016) that leverage the improved possibilities for interaction, communication, and cooperation that the digital environment provides (Foege, Lauritzen, Tietze, & Salge, 2019; Schäper, Foege, & Schäfer, 2021). Involving customers in digital development processes increases the transparency and, consequently, the visibility of a firm's products and services (Kristensson, Matthing & Johansson, 2008).

On the procurement side, the digitization of supply chain management has been emphasized by researchers and practitioners over the past decades (Kakwezi & Nyeko, 2019; Tate, Ellram, & Schmelzle, 2017). It has been recognized as a strategic element to generate competitive advantages (Mena, Van Hoek & Christopher, 2018). The increasing volatility, uncertainty, complexity, and ambiguity of the 21st century and the COVID-19 crisis highlight the imperative to digitize the underlying processes (i.e. Srai & Lorentz, 2019; Muffatto & Payaro, 2004; Reddy & Kalpama, 2021). To respond to these threats, firms have begun to implement digital collaboration platforms that enable the active participation of all stakeholders in firms' processes (Grzybowska & Tubis, 2022).

Digital collaboration platforms rely on specific technologies that have been developed and adapted to tackle current challenges in supply chains. For instance, blockchain technologies help firms to achieve traceability throughout the supply chain as well as to manage material flows and ensure trustworthiness in complex multi-tier relationships (Song, Sung, Park, & Procedia, 2019). Sensor technologies handle production monitoring and scheduling to improve decision-making in distributed manufacturing environments (Guo, Ngai, Yang, & Liang, 2015). Collaboration technologies enable actors to exchange real-time data and mutually reduce supply risks due to a more transparent flow of information (Bienhaus & Haddud, 2018). All these technologies share the idea to orchestrate and harmonize complex processes among all parties to increase efficiencies and reduce costs (Vanpoucke, Vereecke, & Muylle, 2017).

Against the backdrop of the immense potential of these technologies, firms need to create and design effective measures to harness their potential. Members of the supply chain, as users of these technologies, play key roles in implementing these measures and facilitating change on the operational level (Denolf, Trienekens, Wognum, van der Vorst, & Omta, 2015). The most important players are the individual employees who are responsible for transactions along the supply chain. For them, effective communication and efficient exchange of information are needed to facilitate functional supply chains across organizational borders (Romero & Vernadat, 2016; Scuotto, Caputo, Villasalero, & Del Giudice, 2017). At the same time, business relationships between customers and suppliers are sensitive interfaces that have evolved and depend on well-practiced procedures (Ryals & Humphries, 2007). Hence, it is important to look at the technological acceptance of those individuals who will use the new technology.

Technology acceptance

Over the past decades, numerous scholars examined the reasons why firms and their employees accept or reject technologies (i.e., Davis, Bagozzi, & Warshaw, 1989; Taylor & Todd, 1995; Hameed, Counsell, & Swift, 2012). It is widely acknowledged that individual attributions and organizational characteristics have significant influences on technology acceptance (Martinko, Zmud & Henry, 1996). Researchers in this area refer to various outcomes. Some focus on individual acceptance of technology by using intention or usage as outcomes (Davis et al., 1989), whereas others concentrate on implementation success at an organizational level (Goodhue, 1995). While technology acceptance is discernable at the different levels, the present study remains focused on the level of the individual user. Researchers predict that the digitization of collaboration in supply chains will develop rapidly in the coming years (Agrawal & Narain, 2018). The individual users who will operate them cooperate intra- and inter-organizationally and come from different hierarchical levels with distinct qualifications and tenures.

Technology acceptance is an important factor for organizations to successfully make use of the potential of digital transformation in supply chains (Lin & Lin, 2014). High technology acceptance in supply chains is beneficial for organizations due to the unimpeded effectivity and efficiencies in collaboration that the new technology provides (Khan, Ahmed & Abdollahian, 2013). Meanwhile, users can fail to take up the technology in various ways. First, some individuals do not pay proper attention to the adoption of the technology, which will lead to a flat learning curve (Turner, Ledwith, & Kelly, 2010). Second, some individuals resist the technology, try to bypass it, and fall back on their previous methods for carrying out tasks (Bauer, 1995). Third, some individuals might feel stressed and even leave the organization or business relationship due to the technology implementation (Carayon-Sainfort, 1992). These various ways to reject the technology can result in reduced performance and/or immense costs for changes in the IT (information technology) infrastructure (Devaraj & Kohli, 2003; Mlekus, Bentler, Paruzel, Kato-Beiderwieden & Maier, 2020). Many examples from industries like biotechnology, healthcare, nuclear power, and retail depict the overall relevance of technology acceptance (AlQudah, Al-Emran, & Shaalan 2021; James, Pirim, Boswell, Reithel & Barkhi, 2006; Kovesdi, 2021; Vijayasarathy, 2004).

Venkatesh et. al (2003) consolidated the different studies and created a synthesis of eight explanatory approaches to achieve a profound understanding of technology acceptance. This model is called the unified theory of acceptance and use of technology (UTAUT) and has been widely validated and acknowledged in many disciplines (Chan et al., 2010; Bhatiasevi, 2016; Park, Yang, & Lehto, 2007). It refers to the constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003).

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to improve job performance (Venkatesh et al., 2003). This construct is derived from five factors that evolved from former research: perceived usefulness (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989), extrinsic motivation (Davis et al., 1992), job fit (Thompson et al., 1991), relative advantage (Moore & Benbasat, 1991), and outcome expectations (Compeau & Higgins, 1995). Effort expectancy refers to the extent of ease associated with the use of the system. It is based on the constructs of perceived ease of use (Davis, 1989), complexity (Thompson, Higgins, & Howell, 1991), and ease of use (Moore & Benbasat, 1991). Venkatesh et al. (2003) define facilitating conditions as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. They take the factors of perceived behavioral control (Ajzen & Madden 1986; Taylor & Todd 1995), facilitating conditions (Thompson et al., 1991), and compatibility (Moore & Benbasat, 1991) as a basis. Rad et al. (2019) confirm that facilitating conditions are critical for technology acceptance in human resource management. Beyond that, Baker and Delpechitre (2013) provide additional evidence in the field of sales. Social influence is a factor in the model of Venkatesh et al. (2003) which will not be examined in our research or outlined in our theoretical framework.

Family firms

The majority of businesses are family businesses; in Germany, the total is over 90% (La Porta, Lopez De Silanes, & Shleifer, 1999; Gottschalk, S., Lubczyk, M., Hauer, A., & Keese, D., 2019).

The question of how to define family firms has been discussed frequently in research. Two major approaches have evolved and been acknowledged by the research community. The first approach focuses on the involvement of a family, including its power to influence goals, strategies, and behaviors (Le Breton-Miller & Miller, 2013; Villalonga & Amit, 2006). This involvement can be recognized by the level of ownership and presence on the board (Chrisman, Chua, Pearson, & Barnett, 2012; Le Breton-Miller & Miller, 2011). The second identifies the essence of family firms as the distinctive feature (Chua, Chrisman, & Sharma, 1999; Gomez-Mejia, Haynes, Nunez-Nickel, Jacobsen, & Moyano-Fuentes, 2007). The essence is defined as the relevance of the family for the identity of the family firm (Mahto, Davis, Pearce, & Robinson, 2010). It can be recognized by the family's name in the firm's name, which enhances the members' identification with the organization (Deephouse & Jaskiewicz, 2013). Our study considers both approaches as they both apply to the examined corporation.

Socioemotional wealth is a concept that is often applied to family firms. It refers to the noneconomic value that can be derived from the ownership of an organization (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010). It includes common goals like passing the firm to the next generation (Schulze, Lubatkin, & Dino, 2003; Bendig, Foege, Endriß, & Brettel, 2020), having a good reputation (Dyer & Whetten, 2006), maintaining the family's influence, and keeping up long-established ties within and outside the firm (Zellweger, Kellermanns, Chrisman & Chua, 2012). To support the achievement of these goals, family firms often demonstrate solidarity with their employees (Uzzi, 1997) and create trust in their network (Coleman, 1988). These networks with their human capital and the routines that guide them, are beneficial for the implementation of innovations due to the supply of new ideas (Gassmann, Enkel, & Chesbrough, 2010) and valuable feedback (Tyre & Von Hippel, 1997). Within their reciprocal relationships, family firms pay attention to and implement the suggestions of their partners (Piezunka & Dahlander, 2015).

Nonetheless, family firms' preferences towards continuity, community, and connections constrain the resources and capabilities, which results in inertia (König, Kammerlander, & Enders, 2013). Additionally, their reluctance to invest in uncertain projects and to draw on external capital limits the potential for innovation input (Miller & Folta, 2002; Gomez-Mejia et al., 2007). Furthermore, family firms are relatively cautious regarding diversification decisions, since decision-makers could be emotionally attached to existing assets, or fear losing control over the firm (Gomez-Mejia, Makri, and Kintana, 2010).

Digital transformation is a key challenge for family firms to ensure competitiveness and survival in a globalized and dynamic environment (Prügl & Spitzley, 2020; Ceipek, Hautz, De Massis, Matzler & Ardito, 2020; Hess et. al., 2016). Their supply chains, which are commonly characterized by well-established and trust-based networks, are especially challenged by the need for transformation (Ireland & Webb, 2007). Our study addresses this specific field of tension and outlines the idiosyncrasies of family firms and their impact on technology acceptance for digital innovations within and beyond organizational borders.

Methods

Research setting

To tackle our research question, we collaborated with Ernsting's Family, a German family firm that is active in the retailing industry for textiles, home textiles, and decoration. Founded in 1968, Ernsting's Family has approximately 1,850 shops in Germany and Austria. Generating a turnover of 1.15 billion euros in the business year 2017-2018, it is one of the ten largest textile retailers in

Germany. In September 2019, Ernsting's Family implemented a product life cycle management system to digitalize and automatize its existing supply chain processes and invited us to accompany the process and conduct our research on digital transformation in family firms. As part of this project, we collected qualitative data from business reports, executive meetings, and interviews with employees and suppliers of Ernsting's Family.

Research design and data collection

To answer our research question and compose a theoretical model, we applied a qualitative research design. While collecting hard data about the firm, we also conducted 14 semi-structured interviews. Subsequently, we followed a method for grounded theory as described by Gioia et al. (2013). This approach allowed us to perform an in-depth analysis of digital transformation in family firms and identify interdependencies and patterns that resulted in a grounded theory model (Bell, Bryman, & Harley, 2015).

The interviewees were managers and employees of Ernsting's Family and its suppliers who worked at different hierarchical levels and were responsible for digital transformation activities. This broad range of interviewees ensured a wide variety of perspectives (Padgett, 2016). While the members of Ernsting's Family were all located in Germany, the members of the supplier firms were located in China and Bangladesh. The fourteen interviews took place from March to April 2019.

The interviews took place at Ernsting's Family's firm headquarters, or via telephone. The interview languages were German and English. The German interviews were professionally translated into English before we conducted our analysis. Ahead of time, we created a four-section interview guide, which we did not share with the interviewees to avoid predefined answers (Danner-Schröder & Müller-Seitz, 2017). After a short introduction, the first section requested some sociodemographic information. The following sections then covered the different levels of acceptance, as per Chau and Hu (2002), in relation to the respondent's personality, the technology, and the organization. Every section began with an open question to give the interviewees the chance to freely articulate their thoughts, followed by theory-related questions to make explicit the respondent's implicit cognitions. The sections closed with a question to allow a reflection in light of the preceding answers and provide space for alternative perspectives (Flick, 2018b). The average interview length was 33 minutes.

We took additional notes during the interviews, which we also used in the analysis (Howitt, 2019). All interviewees accepted the recording of the conversation. We transcribed the interviews and anonymized them (Rosario & Wa-Mbaleka, 2022), which resulted in a text corpus of more than 65,000 words.

Sample description

Table 6 provides an overview of the sociodemographic information of the interviewees. The gender ratio is balanced. The age varies from 22 years to 55 years, with an average of 37.6 years. Their average number of years of professional experience is 11.2 and their average tenure is 8.7 years.

Table 6: Information about the 14 interviewees

Demographics of the sample			
Age	**in percent**	**Education**	**in percent**
15-24	7.1	High school	7.1
25-34	28.6	College	28.6
35-44	35.7	Bachelor	7.1
45-54	21.5	Master	21.5
>55	7.1	missing	35.7

Work experience	in years	Gender	in percent
Average seniority[a]	11.2	male	50.0
Average tenure[b]	8.7	female	50.0

Comment: N = 14; [a]N=6 due to omissions; [b]N=10 due to omissions

Data analysis

This study seeks to examine the attitude towards digital transformation in family firms and to identify factors that influence users' technology acceptance. For the qualitative analysis, we used the approach of Gioia et al. (2013) to gain knowledge in an inductive process that iteratively develops categories and topics from the empirical material and reflects relevant literature on technology acceptance (i.e., Legris, Ingham, & Collerette, 2003). We coded the data material with the help of the qualitative data analysis software Atlas.ti (Muhr, 1991). The first-level analysis started with in-vivo and descriptive coding; only phrases from the raw data were recorded by the interviewer (Gioia et al., 2013). We did not perform an interpretational abstraction of stakeholder-centered codes in this first stage (Clark, Gioia, Ketchen, & Thomas, 2010). We visualized the codes in the network view of Atlas.ti to grasp the key elements and link them to the theoretical background (Corley & Gioia, 2004; Foege et al., 2019). Subsequently, we used focused coding to identify similarities and differences between the emerging categories. Finally, we merged coherent codes (Gioia & Chittipeddi, 1991) and reduced the initial number of codes from 72 to 19 codes.

The second-level analysis used the constant comparative method to condense the codes into categories (Strauss & Corbin, 1996), which resulted in the identification of several abstract technology acceptance factors. The network view of Atlas.ti facilitated the process of second-level analysis as well (Friese 2019). The author steadily documented ideas in the examination process with the help of memo writing (Flick, 2022).

The third-level analysis captured relations between the data material, relevant literature, and the categories, which finally defined the overarching and aggregated dimensions of technology acceptance. Figure 6 illustrates the structure of the data analysis and its results (Gioia et al., 2013).

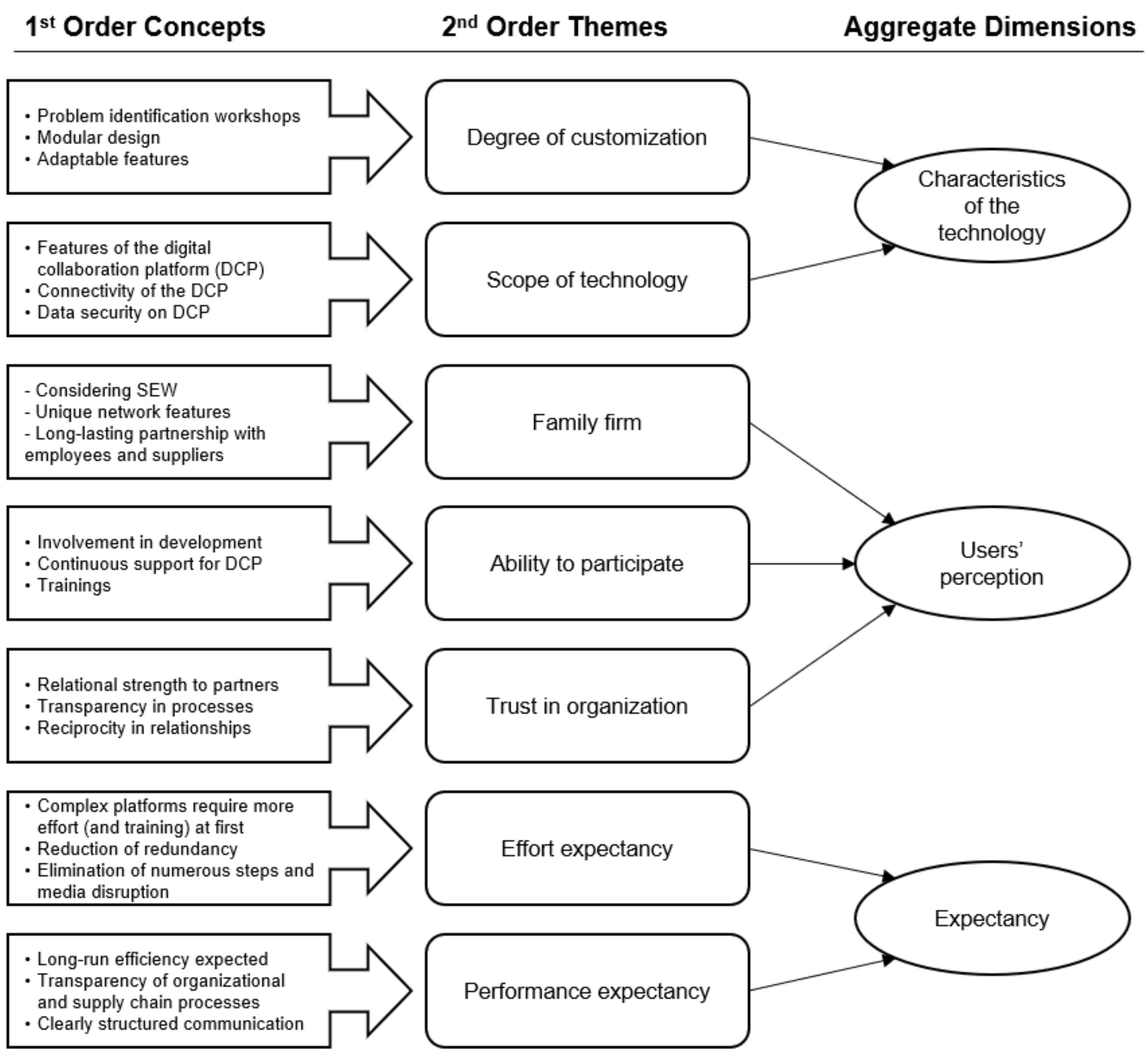

Figure 6: Data structure

Findings

Overview of the grounded theory model

We draw from the UTAUT model and extend it with factors explaining technology acceptance in the context of the introduction of a digital collaboration platform in family firms. Our model shows how users move from their attitude towards and experience with technologies through behavioral intention to behavior – i.e., usage. In the present case, this process moves from users' *ability to participate* in the development of digital collaboration platforms through the *characteristics of technology*, i.e., *scope of technology* and *degree of customization*, to *trust in the organization*.

Our model shows that family firms can influence their users' ability to participate, the characteristics of the technology, and the trust in the organization. Family firms are better at influencing this process than non-family firms, as they have advantages in the areas of (1) socio-economic wealth, (2) trust, (3) reputation, and (4) solidarity with employees. These factors impact users' performance expectancy and effort expectancy, which determine their behavioral intention. Hence, we show in the model that family firms influence the three processes that motivate users to accept and use technology – *ability to participate*, *characteristics of technology*, and *trust in the organization*, and thus support the journey from attitude and experience through behavioral intention to behavior. Figure 7 depicts our grounded theory model of technology acceptance in family firms.

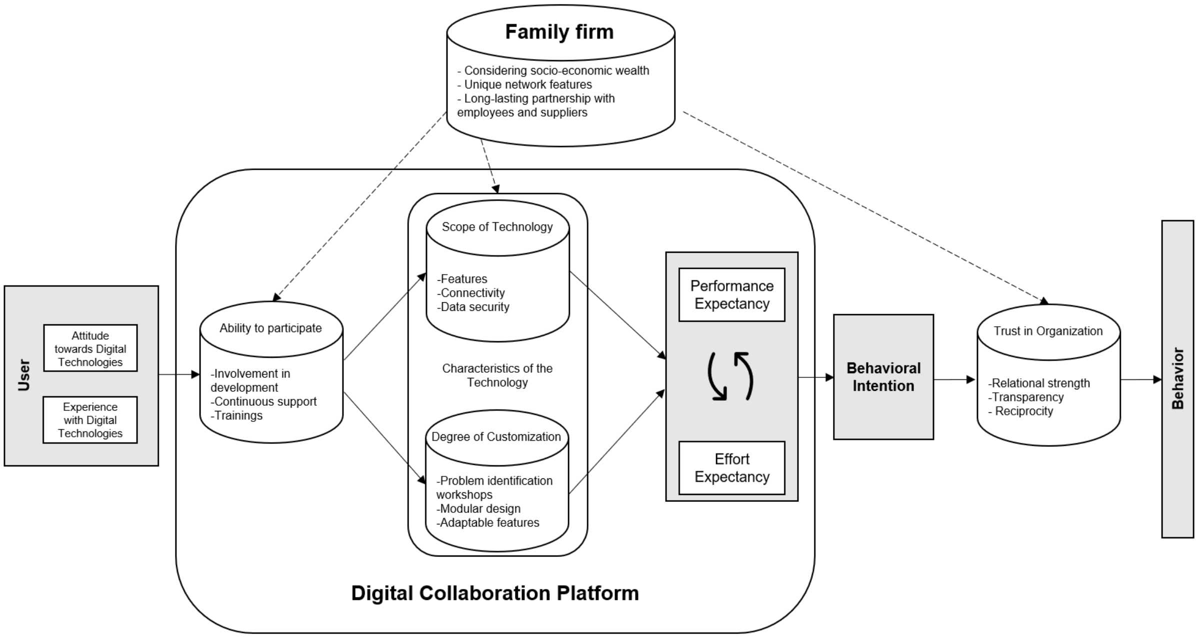

Figure 7: Grounded Theory Model of Technology Acceptance in Family Firms

In the following, the aforementioned interdependencies are illuminated in four different sub-chapters. First, we depict user stories in the context of a digital collaboration platform and outline their ability to participate and its consequences for the characteristics of the technology. Second, we dive into the characteristics of the technology and their impact on users' expectations for operational business. Third, we show how trust, with its elements of relational strength, transparency, and support, helps translate intention into real behavior. Finally, we step back and examine family firm characteristics in the context of the model's determinants.

Users' ability to participate in the development of a digital collaboration platform

The users of digital collaboration platforms come from the procuring and supplying organizations. In most cases, the procuring organization is the initiator of new technologies. However, it is necessary to involve both user groups in the development process to avoid technological inefficiencies, failures, and user resistance. This involvement can take place at different levels of intensity. Employee 7 states: *"Frequent briefings are essential, in which the* *team reports on the current status and the challenges of the implementation. This kind of transparency with quick feedback cycles is of paramount importance."* Supplier 5 recommends providing guidelines and face-to-face meetings when needed, depending on the complexity of the task and the competence of the user. Two interviewees suggest a multi-level concept of involvement (Supplier 7, Employee 6). First of all, the organization solicits feedback by surveying its users to grasp initial ideas. Next, interviews allow more insights into the specific use cases. Workshops are an additional option to facilitate discussions among users against the backdrop of new technologies. A frequent appointment of key users is an additional way to involve them and give them a voice. In this case, the organization may decide the level of decision-making power it wants to assign to the designated team.

The users' ability to participate determines their ability to influence the technology and achieve an enhancement for them personally in their daily operations. Those users obtain explicit knowledge about the focal organization's processes within and beyond its borders and about its shortcomings and potential for improvement. This knowledge helps these users articulate their own needs and the difficulties they are having, giving the focal organization a chance to find previously undetected problems and overcome them through user participation in the development phase. These users may be able to provide solutions for problems affecting both their own organization and the focal organization. It is, therefore, crucial to create an environment in which users feel comfortable presenting their concerns and ideas. Continuous support is vital to help users to appropriately express themselves in the technological context. Specific training is advised to close potential gaps.

Characteristics of technology

While the organizing firm generally determines the scope of the technology, it is of course important to also account for all other stakeholders in the supply chain to create a well-functioning and value-creating digital collaboration platform. Therefore, it is necessary to anticipate the needs of external stakeholders to enhance performance and effort expectancy and consequently increase their willingness to change their processes. Otherwise, the new technology could interfere with the processes of these stakeholders and require more resources, effort, and transparency. If the suppliers' interests are not properly addressed, their technology acceptance is at risk. Therefore, it is important to determine the scope of technology, which we found to be made up of the *features*, *connectivity*, and *data security*.

Holism of features refers to the comprehensive depiction of processes within the digital collaboration. It is beneficial for all participants to execute a maximum number of tasks and processes within the platform so that there is a minimum number of tools or programs with individual logics and interfaces between the users of both organizations. This benefit should be carefully balanced, as technologies should not be developed beyond their proficiencies. If they are, inefficiencies and failures may occur. Employee 4 recommends to maximize the features within the platform to execute a larger variety of tasks. However, Supplier 6 warns of drawbacks from too much complexity.

Connectivity is another determinant of technology scope due to its impact on process efficiency among the supply chain actors. Thus, the interaction and resulting arrangements can be transferred to all relevant systems without any media disruption. Employee 2: *"I expect that all stakeholders can access the platform simultaneously and examine the relevant information and data."*

Furthermore, the scope of technology also includes data security, as sensitive information is transferred via a digital collaboration platform. Supplier 5 emphasizes: *"You key in sensitive data and there must not be a mistake that allows this information to be visible to competitors."*

While the scope of features that can be used by all participants is crucial, it is likewise important to provide each of the involved stakeholders with an appropriate degree of customization. However, organizations need to preserve competitive advantages within the processes of the supply chain. In many cases, effective and efficient processes evolved incrementally so that vigorous changes have not been necessary. Employee 1 highlights the importance of key process maintenance as follows*: "I would recommend not implementing a digital collaboration platform if we only find a service provider with a standard software that forces our superior processes into a corset and diminish our core competencies."*

The potentials of digital transformation are not always taken into account in a running endeavor. On the one hand, an evolutionary approach is recommended to reflect the uniqueness of the organizations' successful processes and to adapt technologies and enhance them. On the other hand, customization results in complex programming within the digital collaboration platform, which commonly inherit industry best practices. As a result, firms need to diligently review the pertinence of their processes in light of the intricacy of the customization. Qualified and involved users are a vital source for a firm to precisely define the suitable scope of technology and degree of customization.

Technology characteristics on performance and effort expectancy

Generally, the users' expectancy is related to what benefits the digital collaboration platform provides and how much it is designed and customized to their needs. The features of the technology are, of course, crucial for what the user expects concerning its performance. Users expect that each feature should enhance performance and that the comprehensive depiction of tasks increases transparency within the processes. In supply chains, users need to follow up on a variety of milestones which are the responsibility of different stakeholders. A holistic technology scope helps to interlink the different milestones and to detect shortcomings immediately. Hence, it will provide enough time to address challenges properly and prevent failures in an early stage. Beyond that, the high level of transparency reduces coordination loops and accelerates the time to market (Employee 6, Supplier 2). Doubts remain concerning the remedy of complicated issues: *"There are parts of the business which cannot be taken over by the platform. These issues are not always black or white, but rather, we need to iteratively find alternatives or make offers and find a solution"* (Supplier 6). Additionally, customization is essential for users' performance expectancy due to their unique capabilities in the specific field. That means that the better the technology fits the users' needs, the higher the users' performance expectations. A good fit means users can create more value with the digital collaboration platform.

The technology characteristics also have a major impact on users' effort expectancy. Concerning the scope of technology, users expect to handle fewer different platforms and programs for the tasks in collaboration with other stakeholders. Interconnectivity makes it possible to transfer information barrier-free to other locations. It is not necessary to back up data, as this happens automatically. Nonetheless, new features that go beyond the former collaboration might require more effort. The supplier side is often asked to be more transparent and provide more sophisticated data for the procuring party. Supplier 5 expresses the following doubts: *"It could be more time-consuming if everything needs to be keyed in twice. Those issues could be handled quickly via telephone or email."*

Customization, too, impacts users' effort expectancy. Logically, higher customization leads to less effort expectancy, as users anticipate less change in their well-functioning processes, albeit resulting in a more complex and sophisticated programming requirement for the organization (Employee 1, Supplier 2). Thus, customization can be a double-edged sword, because more resources will be required for the maintenance of the system, while fewer resources will be needed on the operational level. This tradeoff needs to be taken into account by the management.

Translation of behavioral intention into behavior

Performance expectancy and effort expectancy play major roles in behavioral intention. When users expect higher performance and less effort when they operate the technology, it is more likely that they will intend to work on the digital collaboration platform.

Firms need to address the potential gap between behavioral intention and real behavior. The attitude toward a digital collaboration platform might be good – especially if performance and effort expectancies are high. However, a good attitude often does not lead to real use and adoption. This is problematic due to the need for proper technology adoption. We argue that trust in the implementing organization is a key element in amplifying the effects of behavioral intention on real behavior. When there is trust, users will believe that the technology will work as promised, and that the effort they put into it will be rewarded with performance gains. Trust is created when there is a strong and reciprocal relationship between the focal organization and its users. Trust is maintained when the focal organization gives these users the ability to participate and articulate their needs, then responds by implementing their ideas in the design of the interface.

Long-term collaboration among the participants creates certainty for all stakeholders that the organizations will keep its promises (Supplier 2, Employee 7). Transparent communication underpins this certainty in the dynamic implementation of technologies. The organization needs to explain which user suggestions will be implemented, and more importantly, which user suggestions will not be implemented, and why. Furthermore, user support and training before, during, and after the implementation of a digital collaboration platform create a feeling of personal security (Employee 3). This in turn will lead to trust and, consequently, real behavior. In conclusion, we can consolidate the abovementioned arguments into three vital elements of trust in organizations – relational strength, transparency, and support.

The role of the family firm

Two major characteristics of family firms are that they pursue long-term relationships and value the opinions and perceptions of their employees and networks. Thus, they can consider explicit knowledge about the environment in which the digital collaboration platform will be embedded by giving their stakeholders the ability to participate in the development of the technology. Feedback will provide valuable opportunities to stake the right characteristics of the technology. Supplier 7 appreciates the family firm's conduct: *"From the very beginning, all stakeholders will participate and know about the plans. Thus, we have the opportunity to make specific suggestions about what needs to be changed."* As a consequence, performance and effort expectancy will be enhanced when the family firm can authentically explain to employees and partners which changes have been made and which suggestions could not have been implemented due to certain constraints.

The members of family firms have a strong focus on the operations of their organizations. They have an advanced understanding of the competitive advantages of their processes and how they can achieve effectiveness and efficiency. Hence, it is essential to accurately define the right scope of technology and to transfer the competitive advantage by customization. However, the perception might be biased, and potential best practices that come with new technology will be averted due to wrong evaluations (Employee 1). A bias can occur in family firms that their own procedures are perceived as superior, although other well-established and standardized processes are more effective. This issue is even more relevant when fluctuation is below average and new insights mainly come from external sources.

Family firms emphasize personal, long-term, and trustful relationships. The knowledge about the relevance of reputation for family firms signals its stakeholders that decisions are not made for unilateral benefits and short-term success. This also means that the organization's actions are more transparent and predictable for its stakeholders. In contrast, the actions of the users are more transparent for the organization. This transparency could be misused as surveillance and decrease the technology acceptance if there is no trust towards the firm (Employee 6). Hence, internal and external users have fewer second thoughts about the technology and more pervasively cooperate on the digital collaboration platform. However, employees and suppliers fear that relationships, which are key in family businesses, will suffer and become substitutable if the personal contact diminishes and a merely mechanistic procurement process dominates (Supplier 6, Employee 5). Employee 1 comments on these fears as follows: *"It is just as important to allay our suppliers' fears because the platform naturally offers transparency and perhaps suggests interchangeability, and so we not only have to train the supplier."* Hence, it is recommended to take opportunities to keep personal contact and cherish the relationship and sustain mutual understanding (Supplier 2, Supplier 6, Supplier 7).

Discussion

Summary of findings

Information systems have a significant impact on a firm's performance. However, this link depends on their acceptance by users. In this study, we provide evidence that certain characteristics of family firms can help or harm users' technology acceptance. Our grounded theory model shows how users' attitude and experience toward technologies leads to behavioral intention via a digital collaboration platform and ultimately to real behavior. In particular, we argue that family firms are better at shaping (1) users' trust in the firm, (2) their ability to participate in organizational processes, and (3) the characteristics of the technology (i.e., the scope of the technology and degree of its customization) than non-family firms.

Three main findings emerge from our analysis. First, we show that the transformation of behavioral intention into real behavior can be facilitated by trust in the implementing organization. Transparency, certainty, and reciprocity are key elements to translating intention into behavior. Attributes that are typically associated with family firms. Second, the ability to participate creates self-efficacy and strengthens the intrinsic motivation of users. Third, the inclusion of users actively shapes the characteristics of the technology. On the one hand, it effectively demarcates the scope of technology, and on the other hand, it identifies the relevant fields of customization to keep the firm's competitive advantage. Finally, we show the characteristics of family firms and their impact on the distinguished factors.

Implications for research

Our study contributes to the literature about digital transformation, users' technology acceptance, and family firm business in several important ways. First, we identify, develop, and outline three determinants with explanatory power to enrich the model. Building on this, we affiliate family firm characteristics and illuminate their impact on these factors.

Second, we link firm-level strategy to organizational and individual attributes, provide explanations for relevant contingencies, and propose concepts on how to safeguard users' technology acceptance within the supply chain and prevent pitfalls of digitization. Turner et al. (2010) argue that users might not pay proper attention to the adoption of the technology, which will lead to a flat learning curve. We show that participation in the early stage of technology implementation, but also throughout the process will uphold attention and allow a steeper learning curve. It will also prevent resistance and bypassing (Bauer, 1995) due to the inclusive and integrative concept, which will absorb users' ideas and doubts.

Third, we highlight that the characteristics of technology are relevant determinants in the model and significantly influence users' performance and effort expectancy and their underlying factors. In line with Davis et al. (1992), we argue that the scope of technology increases the perceived usefulness and extrinsic motivation. Users feel that a holistic setup will be more beneficial for them and increase their performance. Data security ensures that the users' and their employer's environment is protected. Moreover, we find that connectivity and a higher degree of customization decrease effort expectancy, which is based on the constructs of perceived ease of use (Davis, 1989; Davis et al., 1989), complexity (Thompson et al., 1991), and ease of use (Moore & Benbasat, 1991). Users do not need to consider manifold destinations to be informed in their operations so that amplified connectivity leads to less redundancy and complexity. Furthermore, the users' preferences and habits can be captured during customization, which leads to higher perceived ease of use.

Fourth, and on this basis, we explore digital transformation stimuli within the supply chain against the backdrop of a family firm business and argue that family firms possess certain attributes that hinder and facilitate the success of these ventures. Their endeavor to achieve a favorable reputation (Dyer & Whetten, 2006) creates long-term relationships characterized by solidarity and trust with employees and their network (Uzzi, 1997). We suggest that this form of trust is a major facilitator to translating behavioral intention into real behavior and consequently yields technology acceptance. However, the nature of digitization on the supply chain is to automize and standardize communication, resulting in less relational strength among stakeholders. Nevertheless, digitization can create opportunities for personal exchange on a more strategic level due to higher process efficiency.

Taking all aspects into consideration, our research supports the argument of Duran et al. (2016) that a strong family firm culture for innovation and change, and strong social capital embedded in inter- and intra-organizational relationships, support the acceptance of technologies among users. The early integration of employees and suppliers and their ability to participate and shape the characteristics of technology will evoke new ideas (Gassmann, Enkel & Chesbrough, 2010), valuable feedback (Tyre & Von Hippel, 1997), supporting their intention to use the technology.

Implications for practice

Practitioners know best that the successful technical implementation of a collaboration platform is just one part of a project and that users must not be neglected in that process. Hence, we derive three key implications for managers of family firms.

First, managers need to identify the right project members as knowledge carriers and facilitators to strengthen technology acceptance. Their attitude towards and experience with digital technologies are important prerequisites to successfully participate. Users' willingness and competence determine whether the opportunity to shape the technology will be utilized. These project members should have two major skills. On the one hand, they need to have comprehensive knowledge about the affected processes and their interdependencies. On the other hand, they should have excellent communication skills to seek and distribute relevant information.

Second, these project members will be pivots among the users to create a low threshold to get in touch with the technology. A project with different degrees of involvement will include these users in the different stages of technology implementation. A comprehensive kick-off meeting can address all stakeholders and outline the technology's performance and the effort needed to use it. Frequent stand-up meetings can show the progress of technology implementation and the consideration of user suggestions. In this phase, the technology can be customized and consequently improved. However, it is not trivial to customize the technology and it is important to achieve quick solutions and signal willingness to adopt user recommendations. When user recommendations are adopted, performance expectancy will be improved and users' self-efficacy will be increased – two factors that support technology acceptance. Comprehensive training will transfer operational know-how and enable all users to actively work on the technology and dismantle the last barriers. The installation of helpdesks will invite users to address concerns and prevent undermining.

Finally, we encourage all managers to invest resources to create trust among the affected stakeholders. This especially applies to the digitization of collaboration, a process that significantly changes the way people work with each other. People might fear that they will lose personal contact with their partners and consequently have less transparency, context, and business opportunities. Hence, we recommend team-building events among the partners to strengthen the relational ties and to emphasize the importance of trust beyond the digitization of processes.

Limitations and future research

This study has several limitations related to the applied methodology and the reliability, representability, and validity of the subsequent evaluation. These limitations provide avenues for future research. In the following, we present an agenda for future research indicating ways in which our insights can be verified and developed to make an essential contribution to theory and practice.

First, while the semi-structured interview fits best to the complex topic of technology acceptance in family firms to provide a deep understanding, language might be an obstacle for respondents to express their thoughts on the topic properly in a semi-structured interview. As it happened, only two out of twelve interviewees responded in their native language.

Second, another problem resulting from the resulting data of semi-structured interviews is the interpretation, as there is no explicit suggestion for how to proceed (Flick, 2009). As a consequence, different approaches to analyzing the data may lead to different results. This thesis chose the Gioia et al. (2013) approach to code and analyze the data. Referring to this approach, Flick (2009) states that “one problem […] is that the distinction between method and art becomes hazy” (p. 317). This highlights the endlessness of options for coding and comparisons, and, therefore, the subjectivity of the results. In the present case, following Silverman (2011), two researchers independently coded the interviews and compared the results to control for inter-coder reliability.

Finally, a critical limitation of the interviews is the risk of a social desirability bias. This bias refers to the tendency of respondents to give socially desirable responses instead of those which reflect their true opinion (see Fisher, 1993). The topic of technology acceptance is highly sensitive. This phenomenon could have significantly biased the results of the thesis.

Future research should address the limitations of this study. A qualitative research methodology should be applied to a larger sample size to cover all facets of technology acceptance. It would be highly beneficial to verify the results with an anonymous survey, which would be analyzed quantitatively. A subsequent triangulation would combine qualitative and quantitative methods to complement each other and compensate for the weaknesses and blind spots of each method (Flick, 2018a). Thus, our contribution will be validated and provide a substantial contribution to the research. In addition to that, the contribution to practice would be much higher due to the representability of the results. Furthermore, Salo (2021) found mixed results about the intensity of cooperation in the context of digitized systems. Hence, we encourage scholars to further examine this relationship.

Conclusion

In this study, we set out to explore digital transformation in family firm businesses. We argued that these firms usually follow conservative strategies, show resistance to change, and face resource restrictions, while they have a strong and continuous organizational culture and sustainable business activities rooted in their socioemotional wealth considerations and strong social capital. Against the backdrop of this tension, we examined how organizational characteristics of family firms shape the acceptance of new technologies among users within their supply chain. The findings of our grounded theory model contribute to the literature about digital transformation in family firms by linking firm-level strategy to organizational and individual attributes, identifying factors that facilitate family firms' digital transformation success – such as a strong culture for innovation and change and strong social capital embedded in inter- and intra-organizational relationships – and guiding managers of family firms on how to enhance their digital agenda.

References

Agrawal, P. & Narain, R., 2018. Digital supply chain management: An overview. ***IOP Conference Series: Materials Science and Engineering***: 455.

Ajzen, I., & Madden, T. J., 1986. Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. ***Journal of Experimental Social Psychology***, 22(5): 453-474.

AlQudah, A. A.; Al-Emran, M., & Shaalan, K. 2021. Technology Acceptance in Healthcare: A Systematic Review. ***Applied Sciences***, 11(22): 10537.

Andal-Ancion, A., Cartwright, P.A., Yip, G.S. 2003. The digital transformation of traditional business. ***MIT Sloan Management Review***, 44(4): 34–41.

Arregle, J.-L., Hitt, M.A., Sirmon, D.G., Very, P. 2007. The development of organizational social capital: Attributes of family firms. ***Journal of Management Studies***, 44(1): 73–95.

Baker, D. S., & Delpechitre, D. 2013. Collectivistic and individualistic performance expectancy in the utilization of sales automation technology in an international field sales setting. ***Journal of Personal Selling & Sales Management***, 33(3): 277-288.

Bauer, M. W. 1995. ***Resistance to New Technology: Nuclear Power, Information Technology And Biotechnology***. Cambridge: Cambridge University Press.

Bell, E., Bryman, A., & Harley, B. 2022. ***Business Research Methods*** (6th ed.). Oxford: Oxford University Press.

Bendig, D., Foege, J. N., Endriß, S., & Brettel, M. 2020. The effect of family involvement on innovation outcomes: the moderating role of board social capital. ***Journal of Product Innovation Management***, 37(3): 249-272.

Berman, S.J. 2012. Digital transformation: Opportunities to create new business models. ***Strategy & Leadership***, 40(2): 16–24.

Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. 2010. Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less?. ***Administrative Science Quarterly***, 55(1): 82-113.

Berrone, P., Cruz, C., Gomez-Mejia, L.R. 2012. Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. ***Family Business Review***, 25(3): 258–279.

Bhatiasevi, V. 2016. An extended UTAUT model to explain the adoption of mobile banking. ***Information Development***, 32(4): 799-814.

Bienhaus, F. & Haddud, A. 2018. Procurement 4.0: factors influencing the digitisation of procurement and supply chains. ***Business Process Management Journal***, 24(4): 965-984.

Carayon-Sainfort, P. 1992. The use of computers in offices: Impact on task characteristics and worker stress. ***International Journal of Human-Computer Interaction***, 4(3): 245-261.

Ceipek, R., Hautz, J., De Massis, A., Matzler, K. & Ardito, L. 2020. Digital Transformation Through Exploratory and Exploitative Internet of Things Innovations: The Impact of Family Management and Technological Diversification. ***Journal of Product Innovation Management***, 38(1): 142-165.

Chan, F. K. Y., Thong, J. Y. L., Venkatesh, V., Brown, S. A., Hu, P. J.-H., & Tam, K. Y. 2010. Modeling Citizen Satisfaction with Mandatory Adoption of an E-Government Technology. ***Journal of Association for Information Systems***, 11(10), S. 519-549.

Chau, P. Y., & Hu, P. J. 2002. Examining a model of information technology acceptance by individual professionals: An exploratory study. ***Journal of Management Information Systems***, 18(4): 191-229.

Chrisman, J. J., Chua, J. H., Pearson, A. W., & Barnett, T. 2012. Family involvement, family influence, and family–centered non–economic goals in small firms. ***Entrepreneurship Theory and Practice***, 36(2): 267-293.

Chua, J. H., Chrisman, J. J., & Sharma, P. 1999. Defining the family business by behavior. ***Entrepreneurship Theory and Practice***, 23(4): 19-39.

Clark, S. M., Gioia, D. A., Ketchen Jr, D. J., & Thomas, J. B. 2010. Transitional identity as a facilitator of organizational identity change during a merger. ***Administrative Science Quarterly***, 55(3): 397-438.

Coleman, J. S. 1988. Social capital in the creation of human capital. ***American Journal of Sociology***, 94: 95-S120.

Compeau, D. R., & Higgins, C. A. 1995. Computer self-efficacy: Development of a measure and initial test. ***MIS Quarterly***, 19(2): 189-211.

Corley, K.G., & Gioia, D.A. 2004. Identity ambiguity and change in the wake of a corporate spin-off. ***Administrative Science Quarterly***, 49(2): 173-208.

Danner-Schröder, A., & Müller-Seitz, G. 2017. ***Qualitative Methoden in der Organisations- und Managementforschung. Ein anwendungsorientierter Leitfaden für Datensammlung und -analyse***. München: Vahlen Verlag.

Davis, F. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. ***MIS Quarterly***, 13(3): 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. 1992. Extrinsic and intrinsic motivation to use computers in the workplace. ***Journal of Applied Social Psychology***, 22(14): 1111-1132.

Davis, F.D., Bagozzi, R. P. & Warshaw, P. R. 1989. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. ***Management Science***, 35(8), 982-1003.

De Massis, A., Frattini, F., Pizzurno, E., Cassia, L. 2015. Product innovation in family versus nonfamily firms: An exploratory analysis. ***Journal of Small Business Management***, 53(1): 1–36.

Deephouse, D. L., & Jaskiewicz, P. 2013. Do family firms have better reputations than non-family firms? An integration of socioemotional wealth and social identity theories. ***Journal of Management Studies***, 50(3): 337-360.

Denolf, J. M., Trienekens, J. H., Wognum, P.M., van der Vorst, J.G.A.J. & Omta, S.W.F. 2015. Towards a framework of critical success factors for implementing supply chain information systems. ***Computers in Industry***, 68: 1-11.

Devaraj, S. & Kohli, R. 2003. Performance Impacts of Information Technology: Is Actual Usage the Missing Link? ***Management Science***, 49(3): 255-350.

Duran, P., Kammerlander, N., van Essen, M., Zellweger, T. 2016. Doing more with less: Innovation input and output in family firms. ***Academy of Management Journal***, 59(4): 1224–1264.

Dyer Jr, W. G., & Whetten, D. A. 2006. Family firms and social responsibility: Preliminary evidence from the S&P 500. ***Entrepreneurship Theory and Practice***, 30(6): 785-802.

Fisher, R. J. 1993. Social desirability bias and the validity of indirect questioning. ***Journal of Consumer Research***, 20(2): 303-315.

Fiss, P.C., Zajac, E.J. 2004. The diffusion of ideas over contested terrain: The (non) adoption of a shareholder value orientation among German firms. ***Administrative Science Quarterly***, 49(4): 501–534.

Flick, U. 2009. ***An Introduction to Qualitative Research*** (4th ed.). London: Sage Publications.

Flick, U. 2018a. ***Doing Triangulation and Mixed Methods*** (2nd ed.). London: Sage Publications.

Flick, U. 2018b. ***Designing Qualitative Research*** (2nd ed.). London: Sage Publications.

Flick, U. 2022. ***The SAGE Handbook of Qualitative Research Design***. London: Sage Publications.

Foege, J. N., Lauritzen, G. D., Tietze, F. & Salge, T. O. 2019. Reconceptualizing the paradox of openness: How solvers navigate sharing-protecting tensions in crowdsourcing. ***Research Policy***, 48(6): 1323-1339.

Friese, S. 2019. ***Qualitative Data Analysis With ATLAS.ti*** (3rd ed.). London: Sage Publications.

Gassmann, O., Enkel, E. & Chesbrough, H. 2010. The future of open innovation. ***R&D Management***, 40(3): 213-221.

Gioia, D. A., & Chittipeddi, K. 1991. Sensemaking and sensegiving in strategic change initiation. ***Strategic Management Journal***, 12(6): 433-448.

Gioia, D.A., Corley, K.G., Hamilton, A.L. 2013. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. ***Organizational Research Methods***, 16(1): 15–31.

Gomez-Mejia, L. R., Haynes, K. T., Nunez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. 2007. Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. ***Administrative Science Quarterly***, 52(1): 106-137.

Gomez-Mejia, L. R., Makri, M., & Kintana, M. L. 2010. Diversification decisions in family-controlled firms. ***Journal of Management Studies***, 47(2): 223-252.

Goodhue, D. L. 1995. Understanding User Evaluations of Information Systems. ***Management Science***, 41(12): 1827-1844.

Gottschalk, S., Lubczyk, M., Hauer, A., & Keese, D. 2019. ***Die volkswirtschaftliche Bedeutung der Familienunternehmen*** (5th ed.). München: Stiftung Familienunternehmen.

Grzybowska, K. & Tubis, A. A. 2022. Supply Chain Resilience in Reality VUCA—An International Delphi Study. ***Sustainability***, 14(17): 1-13.

Guo, Z. X., Ngai, E.W.T, Yang, C. & Liang, X. 2015. An RFID-based intelligent decision support system architecture for production monitoring and scheduling in a distributed manufacturing environment. ***International Journal of Production Economics***, 159: 16-28.

Hameed, M. A., Counsell, S., & Swift, S. 2012. A meta-analysis of relationships between organizational characteristics and IT innovation adoption in organizations. ***Information & Management***, 49(5): 218-232.

Hansen, R., Kien, S.S. 2015. Hummel's digital transformation toward omnichannel retailing: Key lessons learned. ***MIS Quarterly Executive***, 14(2): 51–66.

Hess, T., Matt, C., Benlian, A., Wiesböck, F. 2016. Options for formulating a digital transformation strategy. ***MIS Quarterly Executive***, 15(2): 123–139.

Howitt, D. 2019. ***Introduction to Qualitative Research Methods in Psychology*** (4th ed.). London: Pearson Education.

Ireland, R. D., & Webb, J. W. 2007. A multi-theoretic perspective on trust and power in strategic supply chains. ***Journal of Operations Management***, 25(2): 482-497.

James, T., Pirim, T., Boswell, K., Reithel, B. & Barkhi, R. 2006. Determining the Intention to Use Biometric Devices: An Application and Extension of the Technology Acceptance Model. ***Journal of Organizational and End User Computing***, 18(3): 1-4.

Kakwezi, P., & Nyeko, S. 2019. Procurement processes and performance: efficiency and effectiveness of the procurement function. International ***Journal of Social Sciences Management and Entrepreneurship***, 3(1): 172-182.

Kammerlander, N., Ganter, M. 2015. An attention-based view of family firm adaptation to discontinuous technological change: Exploring the role of family CEOs' noneconomic goals. ***Journal of Product Innovation Management***, 32(3): 361–383.

Khan, H. U., Ahmad, S. & Abdollahian, M. 2013. Supply Chain Technology Acceptance, Adoption, and Possible Challenges: A Case Study of Service Organizations of Saudi Arabia. ***In Proceedings of the 10th International Conference on Information Technology***: 590-595.

Kohli, R., Johnson, S. 2011. Digital transformation in latecomer industries: CIO and CEO leadership lessons from Encana Oil & Gas (USA) Inc.. ***MIS Quarterly Executive***, 10(4): 141–156.

König, A., Kammerlander, N., & Enders, A. 2013. The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms. ***Academy of Management Review***, 38(3): 418-441.

Kovesdi, C. R. 2021. Examining the Use of the Technology Acceptance Model for Adoption of Advanced Digital Technologies in Nuclear Power Plants. In ***12th International Conference on Applied Human Factors and Ergonomics***.

Kristensson, P., Matthing, J. & Johannsson, N. 2008. Key strategies for the successful involvement of customers in the co-creation of new technology-based services. ***International Journal of Service Industry Management***, 19(4): 474-491.

La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. 1999. Corporate ownership around the world. ***The Journal of Finance***, 54(2): 471-517.

Le Breton-Miller, I., & Miller, D. 2011. Commentary: Family firms and the advantage of multitemporality. ***Entrepreneurship Theory and Practice***, 35(6): 1171-1177.

Le Breton–Miller, I., & Miller, D. 2013. Socioemotional wealth across the family firm life cycle: A commentary on "Family Business Survival and the Role of Boards". ***Entrepreneurship Theory and Practice***, 37(6): 1391-1397.

Legris, P., Ingham, J., & Collerette, P. 2003. Why do people use information technology? A critical review of the technology acceptance model. ***Information & Management***, 40(3): 191-204.

Lin, T.-H. & Lin, I-C. 2014. Factors for information technology acceptance willingness and adoption in logistics industry from supply chain perspectives. ***International Journal of Electronic Business Management***, 12(3): 167-177.

Mahto, R. V., Davis, P. S., Pearce, J. A., & Robinson Jr, R. B. 2010. Satisfaction with firm performance in family businesses. ***Entrepreneurship Theory and Practice***, 34(5): 985-1002.

Martinko, M. J., Zmud, R. W. & Henry, J. W. 1996. An attributional explanation of individual resistance to the introduction of information technologies in the workplace. ***Behaviour & Information Technology***, 15(5): 313-330.

Matt, C., Hess, T., Benlian, A. 2015. Digital transformation strategies. ***Business & Information Systems Engineering***, 57(5): 339–343.

Mena, C., Van Hoek, R., Christopher, M. 2018. ***Leading Procurement Strategy: Driving Value Through the Supply Chain*** (2nd ed.). London: Kogan Page.

Miller, K. D., & Folta, T. B. 2002. Option value and entry timing. ***Strategic Management Journal***, 23(7): 655-665.

Mlekus, L., Bentler, D., Paruzel, A., Kato-Beiderwieden, A.-L. & Maier, G. W. 2020. How to raise technology acceptance: user experience characteristics as technology-inherent determinants. ***Gruppe. Interaktion. Organisation. Zeitschrift für Angewandte Organisationspsychologie***, 51: 273-283.

Moore, G. C., & Benbasat, I. 1991. Development of an instrument to measure the perceptions of adopting an information technology innovation. ***Information Systems Research***, 2(3): 192-222.

Muffatto, M., & Payaro, A. 2004. Implementation of e-procurement and e-fulfillment processes: A comparison of cases in the motorcycle industry. ***International Journal of Production Economics***, 89(3): 339-351.

Muhr, T. 1991. ATLAS/ti—A prototype for the support of text interpretation. ***Qualitative Sociology***, 14(4): 349-371.

Nambisan, S., Wright, M., Feldman, M. 2019. The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. ***Research Policy***, 48(5): 103773.

Padgett, D. K. 2016. ***Qualitative Methods in Social Work Research*** (3rd ed.). Thousand Oaks: SAGE Publications.

Park, J., Yang, S., & Lehto, X. 2007. Adoption of mobile technologies for Chinese consumers. ***Journal of Electronic Commerce Research***, 8(3): 196-206.

Piezunka, H. & Dahlander, L. 2015. Distant Search, Narrow Attention: How Crowding Alters Organizations' Filtering of Suggestions in Crowdsourcing. ***Academy of Management Journal***, 58(3): 856–880.

Prügl, R. & Spitzley, D. I. 2020. Responding to Digital Transformation by External Corporate Venturing: An Enterprising Family Identity and Communication Patterns Perspective. ***Journal of Management Studies***, 58(1): 135-164.

Rad, M. B., Valmohammadi, C., & Shayan, A. 2019. An Empirical Investigation of the Factors Affecting the Use of Social Networks in Human Resources Recruitment, ***International Journal of Public Administration***, 34(1-2): 1-10.

Reddy, K. R. K. & Kalpana, P. 2021. Impact of COVID-19 on Global Supply Chains and the Role of Digitalisation: A VUCA Approach. In A. R. Sakthivel, J. Kandasamy, & J. P. Davim (Eds.), ***Managing Supply Chain Risk and Disruptions: Post COVID-19***: 125-137. Cham: Springer.

Romero, D., & Vernadat, F. 2016. Enterprise information systems state of the art: Past, present and future trends. ***Computers in Industry***, 79: 3-13.

Rosario, A., Wa-Mbaleka, S. 2022. ***The SAGE Handbook of Qualitative Research in the Asian Context***. London: SAGE Publications.

Ryals, L.J. & Humphries, A.S. 2017. Managing Key Business-to-Business Relationships: What Marketing Can Learn From Supply Chain Management. ***Journal of Service Research***, 9(4): 312-326.

Salo, J., Tan, T.M., & Makkonen, H. 2021. Digitalization of the buyer-seller relationship in the steel industry. ***Journal of Business & Industrial Marketing***, 36(7): 1229-1245.

Schäper, T., Foege, J. N. & Schäfer, S. 2021. Determinants of idea sharing in crowdsourcing: evidence from the automotive industry. ***R&D Management***, 51(1): 101-113.

Schulze, W. S., Lubatkin, M. H., & Dino, R. N. 2003. Toward a theory of agency and altruism in family firms. ***Journal of Business Venturing***, 18(4): 473-490.

Scuotto, V., Caputo, F., Villasalero, M. & Del Giudice, M. 2017. A multiple buyer – supplier relationship in the context of SMEs’ digital supply chain management. ***Production Planning & Control***, 28(16): 1378-1388.

Silverman, D., & Marvasti, A. 2008. ***Doing Qualitative Research: A Comprehensive Guide***. Thousand Oaks: Sage Publications.

Silverman, P. D. 2011. ***Interpreting Qualitative Data*** (4th ed.). London: SAGE Publications.

Song, J. M. Sung, J. & Park, T. 2019. Applications of Blockchain to Improve Supply Chain Traceability. ***Procedia Computer Science***, 162: 119-122.

Srai, J. S. & Lorentz, H. 2019. Developing design principles for the digitalisation of purchasing and supply management. ***Journal of Purchasing and Supply Management***, 25(1): 78-98.

Strauss, A. L. & Corbin, J. 1996. ***Grounded Theory: Grundlagen qualitativer Sozialforschung***. Weinheim: Beltz Verlag.

Tate, W. L., Ellram, L. M. & Schmelzle, U. 2017. A little help from my friends: how purchasing gains influence in complex business-to-business services: the case of legal. ***Journal of Business & Industrial Marketing***, 32(2): 206-217.

Taylor, S., & Todd, P. 1995. Assessing IT usage: The role of prior experience. **MIS Quarterly**, 19(4): 561-570.

Thompson, R. L., Higgins, C. A., & Howell, J. M. 1991. Personal computing: Toward a conceptual model of utilization. **MIS Quarterly**, 15(1): 125-143.

Turner, R., Ledwith, A., & Kelly, J. 2010. Project management in small to medium-sized enterprises: Matching processes to the nature of the firm. **International Journal of Project Management**, 28(8): 744-755.

Tyre, M. J. & von Hippel, E. 1997. The Situated Nature of Adaptive Learning in Organizations. **Organization Science**, 8(1): 1-107.

Uzzi, B. 1997. Social structure and competition in interfirm networks. ***Administrative Science Quarterly***, 42(1): 37-69.

Vanpoucke, E., Vereecke, A. & Muyulle, S. 2017. Leveraging the impact of supply chain integration through information technology. ***Journal of Operation & Production Management***, 37(4): 510-530.

Venkatesh, V., Morris, M.G., Davis, G.B., Davis, F.D. 2003. User acceptance of information technology: Toward a unified view. ***MIS Quarterly***, 27(3): 425–478.

Vijayasarathy, L. R. 2004. Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model. ***Information & Management***, 41(6): 747-762.

Villalonga, B., & Amit, R. 2006. How do family ownership, control and management affect firm value? ***Journal of Financial Economics***, 80(2): 385-417.

Xue, L., Zhang, C., Ling, H., Zhao, X. 2013. Risk mitigation in supply chain digitization: System modularity and information technology governance. ***Journal of Management Information Systems***, 30(1): 325–352.

Younkin, P. & Kashkooli, K. 2016. What Problems Does Crowdfunding Solve? ***California Management Review***, 58(2), 20-33.

Zellweger, T. M., Kellermanns, F. W., Chrisman, J. J., & Chua, J. H. 2012. Family control and family firm valuation by family CEOs: The importance of intentions for transgenerational control. ***Organization Science***, 23(3), 851-868.

APPENDIX

Interview Guideline

Introduction and general background

Note: [Hints in italics and square brackets are intended for interviewer only.]

The purpose of this interview is to determine and discuss factors that influence the individual acceptance of a digital data exchange platform. At this point, it is important to note that this interview does not focus on the digital data exchange platform, but on the general individual acceptance of digital technologies for information exchange.

Explanations on the planned course of the interview

The interview consists of two parts. The first part deals with general information about yourself and your company as well as about your concrete position and the job area. The second part of the interview consists of questions regarding the "Acceptance of a digital data exchange platform". The interview will take around 25 minutes. It is important to remember that there are no right or wrong answers. The aim of the interview is to get your personal feedback and assessment. Your answers are going to be handled strictly confidential and will be evaluated anonymously. Therefore, conclusions on your person are not possible at any time.

Logging and data protection information

With your permission, I would record the following conversation in order to transcribe the interview and understand the actual content of the conversation at a later date. The interview protocol is handled in accordance with the applicable data protection laws and will be used for scientific purposes only. No personal data will be passed on or published. Furthermore, all identification data from which conclusions about your person could be drawn will be deleted and/or replaced by pseudonyms during the transcription of the interviews. In addition, you have full control during the interview. The recording can be interrupted at any time at your request.

Do you agree to the recording of the conversation under the above conditions?

[After consultation with the person interviewed: handing over a confidentiality agreement and visible placement of the recording device]

Do you have any questions about the interview at this point? If you have any questions or comments during the interview, please do not hesitate to ask.

The recording device will now be switched on.

Questions on the respondent and background

Age and nationality

Please tell me your age and nationality.

Company Position and Responsibilities

Please briefly describe your career path, your current position and the associated responsibilities in your company.

Individual level

Open questions

Please explain your personal understanding of a digital data exchange platform. What specific characteristics do consider as necessary for such a platform?

Experience

What experience did you already gain with digital data exchange platforms? *(Please describe)*

Theory-based questions

Setting

Article III

Why do you think the introduction of a digital data exchange platform is a good or bad idea for your company?

Personal innovativeness of information technology

To what extent do you feel competent using a digital data exchange platform successfully?

Trust

How important would you consider trust based on your general acceptance of digital data exchange platform?

Concerns

What concerns do you have if Ernsting's family would decide to introduce a digital data exchange platform? *(Please describe)*

Suppliers: data security

How do you assess the data aspect with regards to the implementation and use of a digital data exchange platform?

Personal innovativeness of information technology

Do you like to test new technologies and trends? *(Please describe)*

Readiness to change

How would you describe your readiness for (organizational) change in general?

Confrontational questions

Do you think it would be better to not introduce a digital data exchange platform? *(Please justify)*

Technological level

Open questions

What do you expect from a digital data exchange platform?

Theory-based questions

Performance expectancy

Article III

How would a digital exchange platform affect your personal work performance in your opinion?

Effort expectancy

What would be easy and difficult for you when using a digital data exchange platform?

Confrontational questions

What disadvantages do you associate with the implementation and use of a digital data exchange platform?

Organizational level

Open questions

Which supporting framework conditions are necessary to ensure the successful implementation and use of a digital data exchange platform in your opinion?

Theory-based questions

Facilitating conditions

Would you consider the existing resources are sufficient for a successful roll out of a digital data exchange platform?

Facilitating conditions

Would you consider your personal skillset and knowledge sufficient for a successful implement?

(Please justify)

Social influence

How would you consider the influence of your direct social environment on your acceptance of a digital data exchange platform?

Help: e.g., colleagues, superiors, management, friends

Previous testability

How detailed should a digital data exchange platform be tested before implementation?

Training Offer

To what extent should trainings and learning material be offered?

Confrontational questions

Do you believe that Ernsting's family is currently capable of successfully implementing a digital data exchange platform?

Help: e.g., sufficient personnel, training courses

Conclusion of conversation

The recording device is now switched off. I would like to thank you again for your support. If you have any questions or comments, please do not hesitate to contact me after the interview.