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FROM THE EDITORS

The February issue of *Quarterly Review of Business Disciplines* offers theoretical and practical pieces that help to enhance the body of knowledge in our field. In the first article, Alyssa Johnson and Richelle Oakley DaSouza, review the literature related to the impact of student housing and student health, especially as it relates to HBCU institutions. We are proud to offer this article and concur with the authors that, "this study fills a critical gap by focusing specifically on HBCU housing, a topic underrepresented in existing literature."

The second article by Birgit Leisen Pollack offers the results of two studies related to consumer perceptions of green service initiatives. As noted by Pollack, service organizations can signal their commitment to the environment through internal actions that directly reduce the organization's environmental impact or offer external initiatives that attempt to influence other stakeholders to reduce their impact. Pollack concludes that internally directed corrective actions are seen by consumers "as more environmentally responsible than externally focused initiatives."

Lynne Patten and Paul Brown argue in the third article that recent advancements in AI allow for improved planogram compliance and that well-designed planograms have been shown to have benefits for the retailer and for the customer.

In the final article, Robert Bennett, Gaynor Cheokas, and Paul Fadil used qualitative interviews to determine the perceptions of the leadership of family firms regarding family member employment in the firm. While numerous research questions are answered in the article, the overriding conclusion was the study "…found resoundingly positive results about family members working in the family firm, much more positive than some of the family firm research might have predicted."

In this issue, QRBD offers a new service to our readers – reviews of books, software and other educational materials. John Fisher's review of *Using AI in Academic Writing and Research* is the first such review in QRBD. We encourage our readers to suggest other educational materials to review and/or to volunteer to write future reviews.

Charles A. Lubbers, *University of South Dakota,* Editor-in-Chief

John Fisher, *Utah Valley University,* Associate Editor

H. Paul LeBlanc III, *The University of Texas at San Antonio,* Associate Editor

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REVIEW OF INSTRUCTIONAL MATERIALS

THE IMPACTS OF THE HBCU HOUSING ISSUES ON STUDENT HEALTH

Alyssa Johnson, North Carolina A&T State University

Richelle Oakley DaSouza, North Carolina A&T State University

ABSTRACT

Rising enrollment and aging infrastructure have led to significant housing shortages at Historically Black Colleges and Universities (HBCUs). Both incoming and returning students face increasing difficulty in securing adequate housing, which threatens institutional reputation, student retention, and financial sustainability. To explore solutions to these challenges, this study presents a literature review of 30 studies on collegiate housing management and student housing experiences. The review reveals a notable lack of focused research on housing management within the HBCU context, despite the unique challenges these institutions face. This study identifies three dimensions of student health affected by housing challenges: mental, physical, and academic. Housing issues are further categorized into two primary areas of concern: affordability and process inefficiencies. These findings highlight the need for targeted capital investment, public-private partnerships, and policy reforms to enhance housing stability and institutional resilience. Overall, this study integrates insights from higher education, public policy, and strategic management, offering an interdisciplinary framework for addressing student housing insecurity in higher education. This study fills a critical gap by focusing specifically on HBCU housing, a topic underrepresented in existing literature.

Keywords: Institutional Strategy, Higher Education Infrastructure, Student Housing Insecurity

INTRODUCTION

As student admissions continue to rise, the demand for adequate housing becomes increasingly urgent. Historically Black Colleges and Universities (HBCUs) face unique challenges in this regard, with students encountering issues such as inadequate maintenance, flooding, and high housing costs. For instance, Fisk University has resorted to using shipping containers to accommodate its expanding student population (*HBCUs Are Getting Creative to Meet Growing Student Housing Demand*, 2023). Although campus housing is generally more affordable than off-campus alternatives (Cheskis-Gold & Danahy, 2012), the quality at some HBCUs falls short of expectations, leaving students dissatisfied and feeling shortchanged.

The body of research specifically addressing housing issues at HBCUs is limited. However, insights can be drawn from studies at non-HBCU institutions to inform potential improvements (Ong, Petrova, & Spieler, 2013). Many HBCU students struggle with the affordability of both on-campus and off-campus housing. On-campus living, despite its shortcomings, often proves more convenient, offering easier access to food and essential services compared to unaffordable off-campus apartments or low-income housing (Sackett, Goldrick-Rab, & Broton, 2016). This study contributes to the literature by addressing the limited focus on HBCU housing and identifying how these unique institutional challenges affect student health and academic outcomes.

Shifting housing priorities to provide rising sophomores with more options aims to enhance their on-campus experience, potentially fostering a stronger community among younger students. However, this shift may result in dissatisfaction among upperclassmen who previously enjoyed more housing. Broton and Goldrick-Rab (2013) recommend several strategies to address housing instability among college students, including collecting data on the educational status of housing-assistance participants, integrating housing-stability assessments into national surveys, and re-envisioning colleges as hubs for housing support.

Addressing housing instability requires a multifaceted approach involving institutional support, community partnerships, and robust social-support systems. By understanding the unique challenges these students face and implementing targeted interventions, educational institutions can help promote stability, belonging, and success among this vulnerable population. While Elsayed (2023) focuses on on-campus housing, it is crucial to compare these findings with the experiences of students living off-campus. Off-campus housing, while offering greater independence, also presents challenges such as isolation and a lack of immediate support services. Research indicates that students living off campus may engage in higher levels of risky behaviors due to reduced supervision; however, it can also provide a more conducive environment for those who prefer solitude and quiet study spaces. Additionally, Elsayed notes that the demand for campus housing has surged due to rising enrollment and the limited availability of affordable options, emphasizing the need for institutions to expand housing capacity and improve living conditions.

A national survey by *Temple University's Hope Center* revealed that 43 percent of students at four-year colleges experienced housing insecurity, with 14 percent facing homelessness, highlighting the severe shortage of stable housing options for students nationwide (Budd, 2024). Economic factors driving this crisis include the rising costs of tuition, fees, and room and board, which have increased by 32 percent over the past two decades—outpacing inflation and significantly burdening students financially (Green, n.d.). The COVID-19 pandemic has exacerbated this situation, increasing demand for on-campus housing as students sought normalcy after prolonged periods of online learning.

Economic factors driving this crisis include the rising costs of tuition, fees, and room and board, which have increased by 32 percent over the past two decades—outpacing inflation and significantly burdening students financially (Green, n.d.). The COVID-19 pandemic has further exacerbated this situation, increasing demand for on-campus housing as students sought normalcy after prolonged periods of online learning. Green also highlights that inadequate housing conditions—such as overcrowding, poor maintenance, and lack of privacy—can negatively impact students' health, particularly for expatriate students who may face additional cultural adjustment challenges. Student housing plays a crucial role in fostering a conducive learning environment by providing better access to academic resources, increased faculty interaction, and stronger social networks, all of which are associated with higher retention rates and improved academic performance.

Throughout this paper, we will explore how HBCU housing issues affect students' health, detailing the specific challenges these students face. This paper synthesizes findings from academic journals and identifies critical gaps in existing research related to housing at HBCUs.

METHOD: LITERATURE REVIEW

The literature review included a systematic search for articles published between 2000 and 2024 using Google Scholar, ProQuest, and EBSCOhost databases. Search terms included *"campus housing shortage," "HBCU housing issues," "college housing issues,"* and *"campus housing affecting student health."* A total of 30 relevant articles were identified, while those referring to international institutions were excluded. Only peer-reviewed journal articles were included to ensure academic credibility, and reports lacking empirical data or institutional context were omitted.

Once the articles were gathered, they were organized by topic and summarized according to relevance to HBCU housing and student health outcomes. Thematic analysis was conducted by identifying recurring patterns, concepts, and findings across studies, which were then grouped into broader categories. Two primary themes emerged from this process: (1) the impact of housing challenges on mental, physical, and academic health, and (2) institutional housing issues related to affordability and process inefficiencies. Table 1 provides a summary of the articles reviewed.

RESULTS

Only one academic article among those reviewed addressed HBCUs, highlighting a significant research gap in this area. Of the 30 studies examined, approximately 97 percent focused on predominantly white institutions (PWIs), while only about 3 percent focused on HBCUs. Our literature review identified two primary themes concerning housing issues and their impact on student health. The first theme involves significant concerns regarding students' mental, physical, and academic well-being. While a diverse range of articles discussed these aspects of student health, the overwhelming majority examined them within PWI contexts. The second theme relates to institutional housing challenges, including affordability, selection processes, and living conditions. Similarly, most studies concentrated on PWIs rather than HBCUs, underscoring the need for more targeted research addressing housing issues within the HBCU environment.

Discussion of Student Health

Mental Health

Housing insecurity significantly impacts African American college students' mental health. Students experiencing unstable housing often face heightened stress, anxiety, and social isolation, which can affect academic focus and overall well-being (Greer & Chwalisz, 2007; Darden, 2023; Kornbluh, 2024). Poor dormitory conditions, including mold or infestations, exacerbate mental and physical stress (Badmus, 2022).

Financial stress, often linked to housing instability, reduces students' cognitive resources and contributes to mental health challenges (Broton & Goldrick-Rab, 2013; Cruz, n.d.; Dawoud, 2023). Self-esteem, self-efficacy, and perceived social support are important protective factors, with satisfaction in student housing positively influencing these outcomes (Hasan & Fatima, 2018). Housing insecurity among HBCU students compounds these issues, affecting mental, physical, and academic health (The Inconsistencies of Housing and Shelter for HBCU Students, n.d.;

Weissman, 2022). Chronic stress from poor or overcrowded housing is associated with higher rates of social isolation, anxiety, and suicidal ideation (Kornbluh, 2024; Söderpalm, 2017).

Table 1. Summary of Literature Review Findings

Article	Source	Context		Student Health			Housing Issues	
		PWI	HBCU	Mental	Physical	Academic	Afford-ability	Process
Bailey et al., 2020	Wiley Online				X			
Broton & Goldrick-Rab, 2013	ProQuest	X		X			X	
Budd, 2024	EBSCOhost	X		X			X	
Cheskis-Gold & Danahy, 2012	Google Scholar	X						
Cruz, 2018	ProQuest	X		X				
Dawoud, 2023	ProQuest	X			X			
Elsayed, 2023	Wiley Online	X		X		X		
Gallus, 2022	Google Scholar	X					X	X
Ghani & Suleiman, 2016	Google Scholar	X				X		
Green, 2003	ProQuest		X				X	
Hallett, 2010	Sage Journals	X					X	
Hasan & Fatima, 2018	ProQuest	X		X		X		
Hendrix, 2023	ProQuest	X						
Johnson et al., 2009	ProQuest	X			X			
Kornbluh et al., 2024	Google Scholar	X		X				
Long, 2014	Google Scholar	X				X		
López Turley & Wodtke, 2010	Sage Journals	X				X		
Maribojoc, 2023	ProQuest	X					X	
Mendoza, 2018	ProQuest	X						
Moore et al., 2019	Google Scholar	X						
Navarez, 2017	ProQuest	X			X			
Ong et al., 2013	Google Scholar	X						
(Sackett et al., 2016)	Google Scholar	X					X	
Söderpalm, 2017	Google Scholar	X		X		X		

Physical Health

Substandard housing at HBCUs such as mold, pests, and structural problems poses serious physical health risks, including respiratory issues, skin rashes, and allergic reactions (CDC, n.d.; Black Students at HBCUs Live in Horrific Conditions: What Can Be Done, n.d.). Student protests at several HBCUs highlight the urgent need for safer housing (Weissman, 2022).
Financial underfunding of HBCUs contributes to deteriorating infrastructure, underscoring the need for renovations and new housing to safeguard student health (Badmus, 2022; Peebles, 2023). On-campus students often enjoy better physical health due to safer living conditions and access to campus facilities, whereas off-campus students may face nutritional challenges, higher obesity risk, and alcohol misuse (Bailey et al., 2020). Students struggling with housing instability often experience unmet basic needs, worsening physical and mental health (Dawoud, 2023).

Research highlighted by Bailey et al. (2020) indicates that students living off-campus face unique nutritional challenges primarily due to their exclusion from school meal plans. A cross-sectional study found that off-campus students exhibited significantly lower consumption of fruits, vegetables, and dairy products compared to those living on-campus. Additionally, these students were more likely to have overweight or obesity and consumed more alcohol than their on-campus or with-parents counterparts (Bailey et al., 2020). Living conditions affect physical health but the stress of not being financially stable can harm students physically. The thematic analysis of interviews conducted by Dawoud (n.d.), revealed that students facing housing instability often struggle with unmet basic needs, leading to a cascade of negative health outcomes. For instance, students who reported chronic mental health issues and an inability to afford therapy exemplify how unmet safety and physiological needs can worsen physical and mental health (Dawoud, n.d.). The stress of managing living expenses and the lack of stable housing contribute to a decline in physical health, as these students are unable to prioritize their well-being over immediate survival needs.

Academic Health

Housing instability negatively affects academic performance by increasing stress, reducing study time, and requiring students to work long hours to meet housing costs (Budd, 2024; Darden, 2023). Stable on-campus housing provides proximity to academic resources, structured living, and engagement with faculty and peers, supporting academic success (López Turley & Wodtke, 2010; Kowalski, 2022).

Students with unstable housing are more likely to experience absenteeism, lower grades, and decreased retention, particularly at HBCUs with overcrowded or unsafe dormitories (Green, n.d.; Mendoza, 2018). Housing insecurity affects a substantial portion of students, with 37% of four-year and 46% of two-year institution students experiencing some form of housing insecurity (Mendoza, 2018). Expanding and improving housing options, along with sustainable funding, is critical to enhancing student well-being and academic outcomes (McCray, 2023).

Quality housing is linked to better academic outcomes and personal development. A positive living environment enhances comfort, convenience, and life satisfaction, contributing to improved academic productivity and social stability. Conversely, inadequate housing can lead to stress, health problems, and hinder academic performance (Ghani & Suleiman, 2016). For female

expatriate students, these challenges are often more pronounced due to additional stressors related to cultural and academic adjustment Green (2003)

Discussion of Housing Issues

Housing Issues

- **Operational Inefficiencies:**
    - Timing of financial aid disbursements can delay students' ability to pay upfront housing costs like security deposits (Sackett et al., 2016).
    - NSU housing selection prioritizes rising sophomores, then juniors and seniors, aiming to address prior concerns about seniors living off campus.
    - NCAT requires a $175 housing fee and application; seniors may still need off-campus housing with no fee refund if housing is unavailable.
- **Affordability:**
    - 42% of CUNY students reported housing insecurity within the past year (Broton & Goldrick-Rab, 2013).
    - Tuition, fees, room, and board have increased 32% over two decades; room and board costs have risen faster than tuition (Budd, 2024).
    - Over half of off-campus students live below the poverty level, struggling to find affordable housing (Sackett et al., 2016).
    - Affordable housing reduces financial strain, improves focus on academics, and fosters community development (Green, 2003; Maribojoc, 2023).
    - Investments in affordable housing can provide modest but stable financial returns for institutions (Wood & Schuch, 2021).
- **Living Conditions:**
    - Mold, dampness, and pest infestations negatively impact health, comfort, and **student residential satisfaction (SRS)** (Johnson et al., 2009; Navarez, 2017).
    - On-campus housing supports higher student involvement and academic outcomes (Navarez, 2017).

LIMITATIONS AND FUTURE RESEARCH

Our literature review only included universities in the United States. For example, a relevant article at the University of Ibadan in Nigeria revealed that on-campus students had better academic performance compared to their off-campus counterparts (Owolabi, n.d.). The reduced commute time and immediate access to libraries and study groups contribute significantly to this disparity

(Owolabi, n.d.). Including international institutions may give a broader assessment of the issues in future studies.

Future studies could include a survey aimed at capturing the perspective of students to get a better understanding of the impact the housing issues have on the three aspects of student health. This methodological approach would provide insight into the magnitude of the impact. Also, focus groups could provide more insight into the unique experiences that students have with housing issues and how they overcame those challenges in support of their health.

CONCLUSION

As student enrollment continues to rise, adequate housing at Historically Black Colleges and Universities (HBCUs) is increasingly urgent. Many institutions face challenges such as mold, flooding, and high housing costs. While on-campus housing is generally more affordable than off-campus alternatives, quality issues contribute to student dissatisfaction and can negatively impact mental and physical health, as well as academic performance. Innovative temporary solutions, like Fisk University's use of shipping containers, illustrate the severity of these challenges.

This study highlights a critical gap in research on HBCU housing but draws on broader findings from non-HBCU institutions to inform potential improvements. Affordable and quality housing supports student well-being, academic success, and social engagement. Policy recommendations include expanding housing options, securing funding for renovations and new construction, and strengthening institutional and community support systems to address housing instability.

By examining the unique housing challenges faced by HBCU students, this study contributes to advancing knowledge on student well-being, equity, and access to higher education. Future empirical work can build on these findings to evaluate the effectiveness of targeted interventions and guide evidence-based policies for improving housing conditions and student outcomes.

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HOW GREEN IS THIS? CONSUMER PERCEPTIONS OF INTERNAL VS. EXTERNAL GREEN SERVICE INITIATIVES

Birgit Leisen Pollack, University of Wisconsin Oshkosh

ABSTRACT

In this study, I investigate how consumers assess green service claims and perceive the environmental value of various sustainability initiatives in the retail service context. It distinguishes between internal corrective actions, such as implementing energy-efficient environments, and external efforts like charitable donations. These internal initiatives are further sub-categorized according to key service quality dimensions, offering a nuanced view of how consumers differentiate and evaluate the relative greenness of these approaches. I employ a scenario-based methodology across two studies. Participants evaluated six types of green service initiatives—four internally directed and two externally directed. ANOVA with post-hoc testing was used to assess differences in perceived greenness. The varied internally focused initiatives, such as offering green products and adopting energy-efficient buildings, are perceived as equally green initiatives by consumers. In contrast, externally directed efforts, such as donations to environmental causes, are viewed as significantly less green. This research contributes to the literature on sustainability perceptions by differentiating between internal corrective and external green initiatives. The findings highlight that internal efforts are seen as more authentic, offering guidance for service firms aiming to enhance their green credibility.

Keywords: Sustainability, Green Initiative, Service, Retailing

INTRODUCTION

As sustainability becomes a defining concern in business strategy, firms are increasingly integrating environmentally responsible practices into their operations. This shift aligns with growing consumer demand as products featuring environmental, social, and governance claims have seen a 28 percent increase in sales over a five-year period (McKinsey & Company, 2023). However, this surge in green marketing is accompanied by rising consumer skepticism. For instance, a global YouGov survey found that 60 percent of consumers question the credibility of companies' environmental claims (Fernandes, 2023).

Much of this distrust is fueled by greenwashing where firms exaggerate or misrepresent their environmental efforts. Studies show that consumers struggle to verify the authenticity of sustainability claims (Field, 2023), prompting increasing calls for regulatory oversight (Holger, 2023). For service firms, where sustainability can manifest across different elements of the customer experience, the challenge lies in how consumers interpret and evaluate diverse green initiatives.

In this research I address a critical gap in understanding how consumers assess the "greenness" of services. As service providers adopt a range of sustainability strategies, from offering eco-friendly products and redesigning store environments to donating to environmental causes, it remains

unclear whether consumers interpret these efforts as equally meaningful. Do internal operational changes convey greater environmental credibility than external philanthropic contributions?

To structure this investigation, I draw on and adapt the typology of corporate social responsibility (CSR) initiatives proposed by Nickerson, Lowe, Pattabhiramaiah and Sorescu (2022), applying it specifically to green services. The typology distinguishes among three forms of sustainability initiatives: corrective, compensating, and cultivating. Corrective initiatives aim to reduce the firm's own environmental footprint—such as improving operational efficiency or reducing waste—and are internally focused. Compensating initiatives attempt to offset the firm's impact through external contributions, like carbon offset programs or reforestation efforts. Cultivating initiatives involve supporting broader environmental causes, such as environmental education, without directly addressing the firm's own impact. While corrective measures are internal, compensating and cultivating efforts are externally oriented. This internal versus external distinction forms the theoretical basis of this study.

It is hypothesized that the type of green initiative—specifically, whether it is internally or externally directed, significantly shapes consumer perceptions of greenness. Prior findings suggest that corrective and compensating efforts are perceived as more credible than cultivating ones (Nickerson et al., 2022). Building on prior work, this study proposes that consumers will perceive internally focused corrective actions as more authentic and impactful than externally focused efforts. By comparing responses to different types of green initiatives across two studies, this research aims to clarify how the *type and location* of sustainability efforts influence perceptions of service greenness and contribute to firms' environmental credibility.

To examine these hypotheses, Study 1 broadly investigates whether consumers differentiate between internally and externally directed green service actions. Study 2 builds on this by comparing six specific types of initiatives—four internally focused (core service, process, environment, and peripheral) and two externally focused (compensating and cultivating). Together, these studies offer a more detailed understanding of how consumers interpret different sustainability strategies and how the type of initiative influences perceived environmental credibility.

LITERATURE REVIEW

Green initiatives are often broadly defined as actions undertaken by firms to reduce the environmental impact associated with the lifecycle of their products or services (Chen, Ngniatedema & Li, 2018). However, these definitions often focus on internal operational measures and may underrepresent externally oriented sustainability efforts, such as charitable environmental contributions. A more inclusive understanding of green practices must consider both inward-facing corrective actions and outward-facing commitments.

Green initiatives have been categorized in various ways. One common framework is the lifecycle-based approach, which organizes initiatives into pre-production, production/post-production, and end-of-life stages (International Organization for Standardization, 2024). Pre-production initiatives focus on sustainable design and sourcing; production efforts emphasize energy and

resource efficiency; and end-of-life strategies target recycling and waste reduction, often guided by ISO standards.

Another approach uses environmental impact as the basis for classification (Initiative for Climate Action Transparency, 2021). This framework identifies three categories of green activity: carbon reduction (e.g., renewable energy adoption), resource conservation (e.g., water-saving technologies), and biodiversity preservation (e.g., habitat protection). These typologies emphasize different environmental dimensions but often overlook how firms balance internal versus external responsibility.

To address this, Nickerson et al. (2022) proposed a corporate social responsibility (CSR)-based classification that distinguishes among three forms of sustainability initiatives: corrective, compensating, and cultivating. Corrective initiatives aim to reduce a firm's own environmental footprint, such as by using recycled materials or minimizing emissions. Compensating initiatives offset impact by supporting related causes, such as carbon offset programs. Cultivating initiatives support unrelated environmental efforts, such as donations to local green campaigns. Corrective initiatives are generally internal, while compensating and cultivating efforts are externally directed.

Corrective actions can be implemented across different components of a service operation. Leisen Pollack (2021) identified four areas where green practices may influence consumer perceptions: the core service (e.g., sustainable products), the service process (e.g., paperless receipts), the service environment (e.g., energy-efficient buildings), and peripheral services (e.g., recycling programs). Each of these represents a point of contact through which customers may infer the firm's environmental responsibility.

This perspective aligns with foundational service quality models. Grönroos (1984) proposed that service quality consists of technical quality (the service outcome) and functional quality (the service process). Bitner (1990) emphasized the importance of the physical service environment in shaping perceptions. Rust and Oliver (1994), followed by Brady and Cronin (2001), extended this into three components: service product, service delivery, and service environment. These models collectively suggest that consumers form evaluations based not only on what a service offers, but also how it is delivered and in what context.

Corrective green initiatives can span all of these service dimensions and are often perceived as more sincere and effortful than external efforts. They represent a firm's direct commitment to addressing its environmental impact and thus reflect a higher level of accountability (Nickerson et al., 2022). However, it is not yet clear whether consumers evaluate each type of corrective effort equally, or whether some dimensions (e.g., core service vs. peripheral service) have a stronger influence on perceived greenness.

Compensating initiatives are more indirect. Rather than changing the firm's operations, they involve financial or symbolic efforts to support external environmental goals. For example, a café that continues to use single-use plastics may donate to plastic recycling programs. Such efforts may signal concern but do not necessarily demonstrate a reduction in the firm's own environmental harm.

Cultivating initiatives are even further removed from the firm's operations. These involve support for unrelated environmental causes without addressing the firm's own footprint. For instance, an airline donating to a river clean-up campaign may be seen as well-intentioned, but not necessarily accountable. Consumers may interpret such efforts as symbolic or even deceptive. According to Earth.Org (2022), greenwashing occurs when companies present misleading or exaggerated environmental claims. As consumers, especially younger and more environmentally aware demographics, become more discerning, superficial efforts may damage brand credibility. To this end, Nickerson et al. (2022) suggest that consumers generally favor firms that engage in corrective and compensating efforts over those relying on cultivating strategies. While cultivating initiatives may improve public image, they are often perceived as attempts to fulfill CSR expectations rather than to address actual environmental issues.

Building on the corrective–compensating–cultivating framework (Nickerson et al., 2022) and integrating insights from service quality models, this study investigates how consumers evaluate green service initiatives according to their internal or external orientation. These relationships are portrayed in Figure 1.

Given this conceptual distinction, the following hypotheses are proposed and tested in Study 1:

H_1: Internally corrective green initiatives (core, process, or service environment) will lead to higher consumer evaluations of service greenness than externally directed green initiatives.

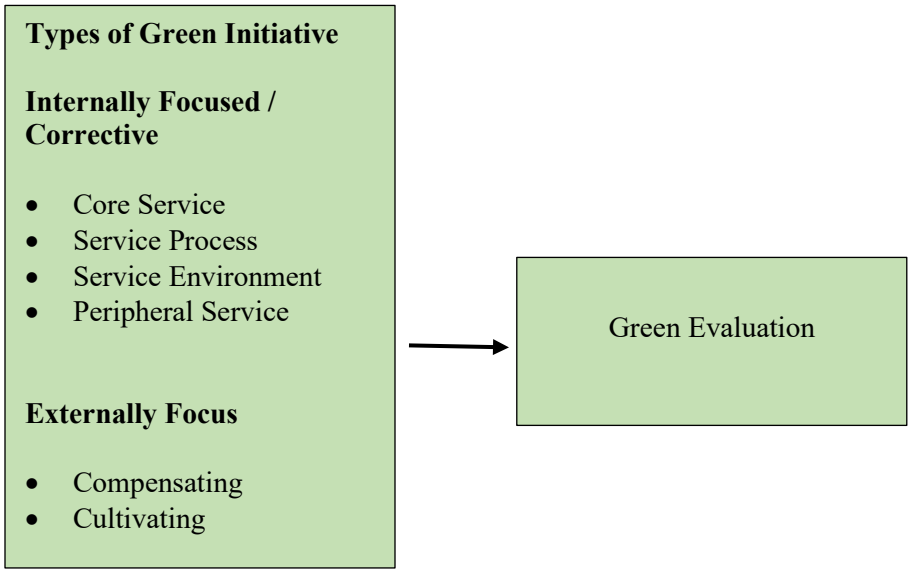

Figure 1. Consumer Evaluation of Green Initiatives

Building on this, Study 2 disaggregates internal corrective actions further and tests them against both types of external initiatives:

H_2: Each type of internally corrective green initiative (core, process, service environment, and

peripheral) will lead to higher evaluations of service greenness than externally directed compensating initiatives.

H_3: Each type of internally corrective green initiative (core, process, service environment, and peripheral) will lead to higher evaluations of service greenness than externally directed cultivating initiatives.

H_4: Externally compensating green initiatives will lead to higher evaluations of service greenness than externally cultivating initiatives.

STUDY 1

Method

The purpose of Study 1 was to broadly determine whether internally directed green service initiatives lead to significantly higher evaluations of environmental friendliness compared to externally directed efforts. Data were collected via a self-administered online questionnaire from a convenience sample of 89 undergraduate students enrolled in an "Essentials of Marketing" course at a U.S. university. Participants received extra credit for their participation. The use of student samples is considered appropriate for theory testing, as their relative homogeneity in age, education, and background reduces extraneous variability, facilitating the identification of significant effects and enhancing internal validity (Ashraf & Merunka, 2017; Calder, Phillips & Tybout, 1981; Peterson & Merunka, 2014). Prior to starting the survey, participants were informed of the study's aims/objectives and the right to refuse participation or withdraw from the study at any time. I confirm that this study adheres to the relevant ethical guidelines for human subjects, and that the anonymity and confidentiality of the participants were maintained throughout the study. This study's procedures were reviewed and approved by the university's Institutional Review Board.

Four different scenarios reflecting the three major internal service dimensions, and one externally focused initiative were developed for the hypothetical clothing retailers Yosemite, Grand Canyon, Yellowstone, and Rocky Mountain. The scenarios were informed by prior literature (e.g., Leisen Pollack, 2021) and the Patagonia store served as inspiration because it is identified as one of the greenest firms. The green service dimensions were manipulated for each scenario. The identical environmental benefits (e.g., xxx uses 23% less water and produces 37% less carbon emission) was added to each scenario. At the beginning of the survey, the respondents were given some background knowledge of the environmental impact of the textile industry. The following statement, based on data from the World Economic Forum (McFall-Johnsen, 2020), was included

> *Making clothing has a negative impact on the environment. The fashion industry produces 10% of all humanity's carbon emissions, is the second-largest consumer of the world's water supply and pollutes the oceans with microplastics. The making of clothing includes environmentally harmful dying processes. What is more, 85% of all textiles go to the dump each year. And washing some types of clothes sends thousands of bits of plastic into the ocean.*

The respondents then received instructions on the four service scenarios. For the scenario related to core service greenness, these read

> *Please read the following scenario about shopping at the clothing retailer Yosemite. Imagine, as best as you can, that you are buying a new high performance outdoor sweater for your hiking activities. Yosemite is a clothing retailer specialized in selling high performance outdoor clothing. Yosemite embraces the environmental movement and offers a clothing line made from recycled materials. The making of these clothing uses 23% less water and produces 37% less carbon emission.*

For the service process dimension, an almost identical scenario was presented except the third and fourth sentenced was replaced with

> *Grand Canyon is a clothing retailer specialized in selling high performance outdoor clothing. Grand Canyon embraces the environmental movement and uses recycled paper bags for the purchased clothing and paperless receipts.*

For the service environment, the altered sentences read

> *Yellowstone is a clothing retailer specialized in selling high performance outdoor clothing. Yellowstone embraces the environmental movement and uses a store design involving solar energy and green building materials.*

And lastly, for the external (compensating) service dimension these read

> *Rocky Mountain is a clothing retailer specialized in selling high performance outdoor clothing. Rocky Mountain embraces the environmental movement and donates money to environmental preservation causes.*

Also included were four manipulation check variables for the green service components. The question *xxx offers environmentally friendly products made from recycled materials* was the variable assessing core service greenness (mean for core service scenario = 4.72, mean for service process scenario = 3.56, mean for service environment scenario = 3.43, mean for peripheral service scenario = 3.15; $F = 27.672$, $p < 0.000$). The question *xxx uses recycled paper bags for the purchased clothing and paperless receipts* was the variable assessing service process greenness (mean for core service scenario = 3.51, mean for service process scenario = 4.74, mean for service environment scenario = 3.37, mean for peripheral service scenario = 3.20; $F = 25.751$, $p < 0.000$). The question *xxx's environmentally friendly store design uses solar energy and green building materials* was the variable assessing service environment greenness (mean for core service scenario = 3.56, mean for service process scenario = 3.33, mean for service environment scenario = 4.48, mean for peripheral service scenario = 3.21; $F = 32.478$, $p < 0.000$). The question *xxx donates money to environmental preservation causes* was the variable assessing external service greenness (mean for core service scenario = 3.46, mean for service process scenario = 3.28, mean for service environment scenario = 3.39, mean for peripheral service scenario = 4.99; $F = 36.978$, $p < 0.000$). The study employed a within-subject design, with each participant exposed to all scenarios.

Perceptions of environmental friendliness were measured using an adapted version of the scale by Gershoff and Frels (2015), with sample items such as "This company deserves to be labeled environmentally friendly." The scale demonstrated strong internal consistency: Cronbach's alpha was .86 for both the core and process conditions, and .91 for both the service environment and external initiative conditions. All items used a 6-point Likert scale from 1 = strongly disagree to 6 = strongly agree.

Results

The data were analyzed using a repeated measures ANOVA to assess whether perceived environmental friendliness varied across the four green service initiatives. Mauchly's test indicated that the assumption of sphericity was violated; therefore, the Greenhouse-Geisser correction was applied. The results revealed a significant main effect of initiative type on perceived greenness, $F(2.70, \text{df-adjusted}) = 7.79$, $p < 0.001$, $\eta^2 = 0.081$. The mean green ratings for the corrective core service ($M = 4.40$), corrective service process ($M = 4.20$), corrective service environment ($M = 4.36$), and externally oriented initiative ($M = 4.05$) are graphically displayed in Figure 2.

Bonferroni-adjusted post hoc comparisons were conducted to examine specific group differences. Results showed that both the core service initiative ($p < 0.001$) and the service environment initiative ($p < 0.001$) were rated significantly higher in perceived greenness than the externally oriented initiative, supporting H_1. However, the service process initiative was not rated significantly different from the external initiative ($p = 0.116$), indicating that consumers did not clearly distinguish this internal process improvement from the externally focused green action. Additionally, no significant differences were found among the three internally focused initiatives (all $p > 0.05$), suggesting that consumers evaluate internal corrective efforts as similarly green, regardless of the specific service component.

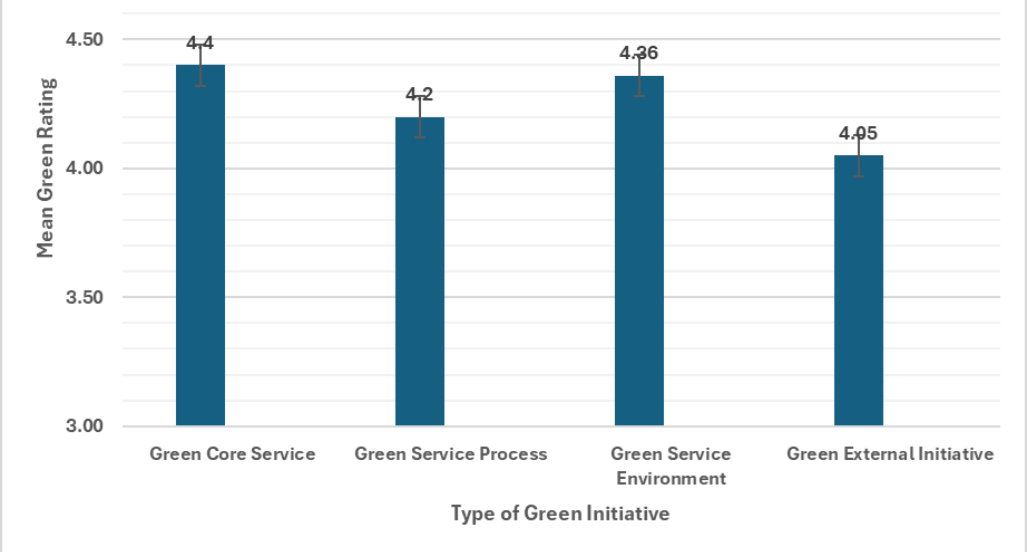

Figure 2. Mean Green Ratings of Service Initiatives from Study 1

Discussion

The findings from Study 1 offer several theoretical and practical insights. Theoretically, it is expected that core service greenness, such as offering environmentally friendly products, would yield higher ratings of perceived environmental friendliness. However, it is noteworthy that service process and service environment initiatives were evaluated similarly to the core initiative. This suggests that consumers may apply a holistic lens when assessing internal sustainability efforts, viewing all internally focused corrective actions as comparably credible and impactful, regardless of where in the service delivery system they occur.

STUDY 2

Method

The objective of Study 2 was to assess how consumers evaluate different types of green service initiatives, specifically, corrective, compensating, and cultivating efforts, and to test three hypotheses regarding their perceived environmental friendliness. The data were collected from a convenience sample of 65 undergraduate students enrolled at a U.S. university. Participants received extra credit for completing a self-administered online questionnaire. Prior to starting the survey, participants were informed of the study's aims/objectives and the right to refuse participation or withdraw from the study at any time. I confirm that this study adheres to the relevant ethical guidelines for human subjects, and that the anonymity and confidentiality of the participants were maintained throughout the study. This study's procedures were reviewed and approved by the university's Institutional Review Board.

Consistent with Study 1, each participant evaluated six distinct green service scenarios, allowing for within-subject comparisons. Each scenario was tied to a fictional clothing retailer and represented one of six sustainability initiative types: four internally focused corrective initiatives (core, process, environment, and peripheral) and two externally directed initiatives (compensating and cultivating). The six hypothetical retailers, Yosemite, Grand Canyon, Yellowstone, Rocky Mountain, Denali, and Glacier, served as the basis for scenario presentation. The scenarios were informed by Study 1 and prior literature (e.g., Leisen Pollack, 2021).

The scenarios followed a consistent narrative structure, differing only in the specific green initiative described. Below is the full text of the scenario for the corrective core service initiative (Yosemite):

> *"Please read the following scenario about shopping at the apparel retailer Yosemite. Imagine, as best as you can, that you are buying a new outdoor sweater for your hiking activities. Yosemite is an apparel retailer specialized in selling outdoor clothing. The sweater that you are interested in is offered at a price you can afford. The store recently announced that it now offers a clothing line made from recycled materials."*

The other scenarios used the same structure, with the final sentence altered to reflect each green initiative: Corrective – process: *The store recently announced that it now uses recycled paper bags for the purchased clothing and paperless receipts*.; Corrective – environment: *The store recently announced that it uses a store design involving solar energy and green building materials.*;

Corrective – peripheral: *The store recently announced that it offers a trade-in program for worn clothing items.*; Compensating: *The store recently announced that it makes financial donations to a third-party clothing recycling program.*; Cultivating: *The store recently announced that it makes financial donations to a local community garden.* Manipulation checks revealed statistically significant differences across conditions (χ^2 (df = 25) = 1704, $p < 0.001$), confirming the validity of the experimental manipulations.

Following each scenario, participants responded to a single item measuring perceived environmental friendliness. For instance, the item following the Yosemite scenario read: "Offering clothing made from recycled material reduces Yosemite's environmental harm." The item was measured using a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree).

Results

The data were analyzed using a repeated measures ANOVA to compare participants' ratings of environmental friendliness across six green service initiatives. As indicated by Mauchly's test, the Greenhouse-Geisser correction was applied. The analysis revealed a significant effect of green initiative type on perceived environmental friendliness, F (3.38, *df*-adjusted) = 16.651, p < .001, η^2 = 0.206. Bonferroni-adjusted post hoc comparisons were conducted to examine specific differences between initiative types.

The mean ratings of environmental friendliness for each initiative were as follows: corrective core service (M = 4.42), corrective service process (M = 4.42), corrective service environment (M = 4.74), corrective peripheral service (M = 4.35), compensating service initiative (M = 3.86), and cultivating service initiative (M = 3.71). The mean ratings are graphically displayed in Figure 3.

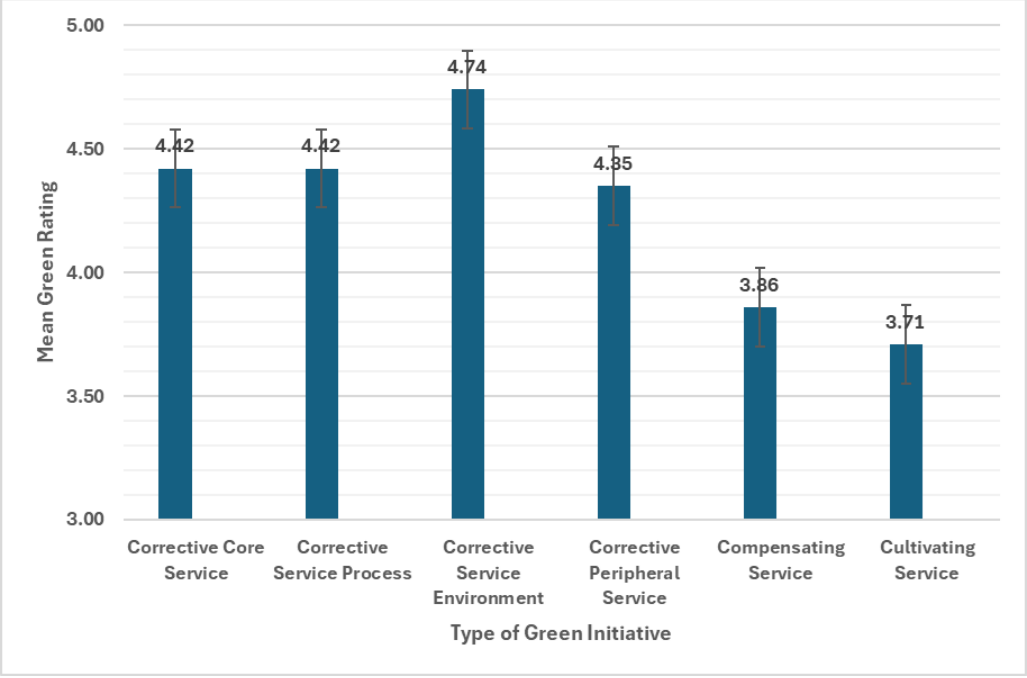

Figure 3. Mean Green Ratings of Service Initiatives from Study 2

H_2 was confirmed for all four corrective initiatives: core ($p < 0.01$), process ($p < 0.001$), environment ($p < 0.001$), and peripheral service features ($p < 0.001$). Each was rated significantly greener than the externally directed compensating initiative. H_3 was also supported, showing that all corrective initiatives, core ($p < 0.001$), process ($p < 0.001$), environment ($p < 0.001$), and peripheral ($p < 0.001$), were perceived as significantly greener than the cultivating initiative. H_4 was not supported. No significant difference was found between the compensating and cultivating initiatives, suggesting that consumers evaluate both types of externally directed green efforts as equally green.

Discussion

The findings from Study 2 reinforce the distinction between internally and externally focused green initiatives in shaping consumer perceptions. Specifically, internally directed corrective actions, whether applied to the core service, service process, physical environment, or peripheral features, were consistently rated as more environmentally friendly than their externally directed counterparts. This pattern held across all comparisons with both compensating and cultivating initiatives.

As in Study 1, a notable finding is the absence of significant differences among the four corrective initiatives. This implies that consumers may rely on a general heuristic—when a company implements direct, visible efforts to reduce its environmental impact internally, the initiative is viewed as credible and authentic, irrespective of where within the service system it occurs.

Conversely, the results indicate that externally focused initiatives, whether compensating for environmental harm or cultivating general goodwill, are viewed with more skepticism. The fact that no significant difference emerged between compensating and cultivating initiatives suggests that consumers may not distinguish between efforts to offset harm and those aimed at unrelated environmental causes. Both may be perceived as less substantial or sincere compared to corrective actions that alter the firm's own operations.

CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH

The findings from both studies consistently affirm that consumers perceive internally directed corrective actions as more environmentally responsible than externally focused initiatives. Across the studies, all types of internal actions, whether tied to the product, process, environment, or peripheral features, were evaluated similarly, suggesting that consumers rely on a broad heuristic: visible, internal efforts are trusted as authentic, regardless of their specific location within the service system. These findings reinforce the relevance of the internal versus external distinction in classifying green initiatives.

The findings have significant implications for both marketing theory and practice. Service firms have two primary routes to signal their environmental commitment. Internal measures directly reduce the environmental impact through actions like using recycled materials, adopting biodegradable packaging, or investing in renewable energy. Such tangible efforts are easily observed and evaluated by consumers, fostering trust and demonstrating a more genuine commitment. Such corrective measures send the message as the service firm is taking direct

responsibility for its environmental footprint. Consumers of such services may feel that they are more active participants in a greener future. This alignment with their values resonates most likely with eco-conscious individuals. Conversely, external initiatives focus on influencing stakeholders through activities like charitable donations or environmental advocacy. While often well-intentioned, their impact on the firm's own environmental footprint may seem less apparent, leading to lower perceived greenness. Further, such initiatives may signal a deflection of accountability and a lack of authenticity, potentially leading consumers to interpret them as greenwashing.

Given this, managers should prioritize corrective internal initiatives whether offering green products, using solar powered energy sources, or adopting sustainable processes. This means that firms have flexibility in choosing which internal initiatives to pursue, as long as the effort visibly reduces the company's own environmental footprint. Managers can therefore select initiatives that align best with their operational capabilities and strategic goals, without concern that one type will be perceived as less green than another.

Additionally, the research reveals that consumers do not differentiate between compensating and cultivating external initiatives, viewing both with similar skepticism. This suggests that external efforts—such as donations to environmental causes or support for unrelated green campaigns—may lack the perceived authenticity of internal actions. Managers should be cautious when relying on these strategies, especially if their goal is to build trust with environmentally conscious consumers.

The lack of differentiation among the four internal measures, as well as among the two external measures, is a surprising finding. Future research could examine if this uniformity potentially arises from limited environmental literacy. Thus, incorporating a measure of objective knowledge in future studies would be beneficial to explore this possibility more directly.

Future research into the types of green initiatives may want to explore whether internal green initiatives can effectively improve the perception of companies with a negative environmental reputation? This study used Patagonia, a renowned green company, as a model. Could companies with a poor "green" image achieve similar results? Can firms with weak reputations improve perceptions with corrective initiatives? Additionally, how long would these initiatives need to be implemented for a significant reputational shift? Does repeated exposure to external initiatives change consumer attitudes over time?

Future research should test the hypotheses using a broader sample. Although the use of student samples is justified for theory testing due to their relative homogeneity, future research should consider employing a more diverse sample from the general population to assess the robustness and external validity of the findings.

The present research contributes to the development of guidelines regarding *who* should promote their green initiatives and *what* communication tools are most effective in engaging sustainability-conscious audiences. While this study demonstrates that green initiatives positively influence consumer perceptions and purchase intentions, not all firms may benefit equally from publicizing their efforts.

Amores-Salvadó, Martin-de Castro, and Albertini (2023) propose a matrix to guide such decisions, categorizing firms based on environmental performance (low to high) and environmental disclosure (low to high). This framework yields four strategic types: *Green Leading Companies*, *Green Quiet Companies*, *Green Parrot Companies*, and *Blackbird Companies*.

Green Leading Companies such as Patagonia excel in both performance and disclosure. These firms incorporate sustainability across their operations, from ethical sourcing and recycled materials to consumer education and environmental advocacy (Patagonia, 2024). REI follows a similar path, emphasizing durable product design, waste reduction, and renewable energy use (REI, 2024).

In contrast, *Green Quiet Companies* like Walmart and Aldi demonstrate strong environmental performance but engage in limited promotion. Reasons for this restraint may include risk aversion, reputational caution, or concerns about being accused of greenwashing (Birch, 2024; Visram, 2023). This aligns with the emerging trend of *greenhushing*, where companies underreport their sustainability actions to avoid public scrutiny (Joselow, 2023; Letzing, 2022).

Green Parrot Companies engage in environmental communication but lack credible performance. This positioning can damage consumer trust and backfire, reinforcing perceptions of insincerity or greenwashing (Ginder, Kwon, and Byun, 2021). Meanwhile, *Blackbird Companies*, low on both dimensions, show minimal environmental engagement or transparency.

This framework underscores the importance of ethical alignment between sustainability performance and messaging. Even *Green Leading Companies* must consider the relative importance of green attributes compared to core product features. Dalsace and Challagalla (2024) argue that effective green messaging must be tailored to consumer segments whose values align with environmental goals. For these audiences, sustainability messages carry greater persuasive power when combined with high-quality service delivery.

As for *what* communication tools could be effective, emerging research points to the role of marketing communication in shaping green attitudes and behavioral intentions. One promising area is influencer marketing. Influencers who advocate for eco-friendly lifestyles and products can help normalize green behaviors and embed them within consumer identity (Zhao, Zhu, Shan, Cao, & Chen, 2024). Such a social endorsement may enhance credibility and may help bridge the gap between consumer awareness and action.

As I indicated, in this research I examine how consumers evaluate green service claims and perceive the environmental value of different sustainability initiatives within the retail service context. I have identified the significance of internal corrective green initiatives as more authentic indicators of environmental responsibility. I suggest that visible, credible, and operationally integrated green practices can enhance consumers' perceptions of the firm's environmental commitment.

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INTEGRATING AI INNOVATION AND RETAIL OPERATIONS: A TAM APPROACH TO PLANOGRAM COMPLIANCE

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ABSTRACT

In retail, planograms can have a significant impact on a customer's experience and a company's bottom line. For retailers, well-designed planograms can help to increase sales and improve inventory management, while customers benefit from things like an enhanced shopping experience and easier decision-making. Given the dynamics of the retail environment, one of the major issues with planograms is compliance. One of the major challenges with store level compliance is being able to visualize the store shelves to determine the state of compliance. Traditionally, retailers have relied on human judgment and labor to perform the planogram compliance tasks, resulting in lost sales, out-of-stocks and data errors. Recently, there have been technological advancements in artificial intelligence that can help to significantly improve planogram compliance. Through the lens of the technology acceptance model, this paper utilized a literature review to assess the likelihood of retailers adopting artificial intelligence tools for planogram compliance. After a thorough review of the literature, there appears to be a high likelihood of retailers adopting artificial intelligence tools, as these tools can help to revolutionize planogram compliance with an easier audit process, more accurate data, reduced labor costs and improved customer satisfaction.

Keywords*:* Planograms, Planogram Compliance, Artificial Intelligence, Generative Artificial Intelligence, Deep Learning

INTRODUCTION

In retail, planograms can have a significant impact on a customer's experience and a company's bottom line. Effective planograms can help retailers increase sales and improve inventory management, while customers benefit from things like an enhanced shopping experience and easier decision-making. Given the highly dynamic retail environment, one of the key issues with planograms is compliance. Without planogram compliance, maximizing the benefits from its use may be difficult to achieve. The retail environment can be complex, as it is filled with market nuances, rapid product rotation and unforeseen challenges. These realities can make it more challenging to ensure that retail stores are complying with the requirements of the planogram. One of the major challenges with store level compliance is being able to visualize the store shelves to determine the state of compliance. Traditionally, retailers have relied heavily on human judgment and labor in planogramming, which has often led to lost sales, out-of-stocks, and increased expenses (Sadayappan and Kumar, 2021). While companies use technology with hand-held computers, cameras and the internet, the labor-intensive process is prone to data errors. There is general agreement among scholars that incorporating modern technological advancements can help to improve compliance and lead to a process that is more effective and efficient. Recently, there have been significant technological advancements in artificial intelligence that can help to revolutionize and improve planogram compliance. Through the lens of the technology acceptance

model, this paper utilizes a literature review to provide a thoughtful perspective on planograms, the dynamics of planogram compliance, the likelihood of retailers adopting new artificial intelligence tools and the potential impact that artificial intelligence can have on planogram compliance.

THEORETICAL FRAMEWORK

To better understand the likelihood of retailers adopting artificial intelligence (AI) to assist with planogram compliance, this research will use the technology acceptance model (TAM) as the theoretical framework. This framework was developed in 1989 by Fred Davis when he wrote an article titled, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", which began a discussion on how an individual's perceptions impacted use and acceptance of technology (Davis, 1989). In this article, Davis (1989) argues that a person's perceptions regarding how easy the technology is to use and whether or not the technology is useful will shape an individual's intention to adopt and subsequently use a new technology. The foundation of TAM came from the theory of reasoned action, which was developed by psychologists Martin Fishbein and Icek Ajzen in 1975 as an improvement to the information integration theory (Fishbein and Ajzen, 1975). The theory of reasoned action is a psychological model that helps to explain how attitudes and norms will influence a person's intention to perform a task and posits that a person's intention to act is the best predictor of whether they will actually perform the behavior (Davis et al., 1989). Davis extended this theory and applied it to technology by arguing that an individual's likelihood to adopt a new technology is driven by two perceptions, perceived usefulness and perceived ease of use. Perceived usefulness (PU) refers to the belief that the technology will help to improve job performance, while perceived ease of use (PEOU) refers to the belief that the new technology will be easy to use. Davis (1989) posits that these perceptions shape a person's intention to use the technology and can help to predict whether or not a new technology will be adopted. TAM has been validated and employed in many areas beyond technology including studies on healthcare, autonomous vehicles, e-learning platforms and e-business systems (Alshammari and Alkhwaldi, 2025). King and He (2006) conducted a meta-analysis of TAM, which included 88 published studies and found it to be a valid and robust model with the potential for much wider applicability. Later, Doulani (2018) conducted research that analyzed 164 studies and found that the core TAM variables of PU and PEOU continued to be strong measures and ideal constructs in the field.

While TAM is a highly useful theory, there are some criticisms regarding the lack of social and cognitive constructs. Venkatesh and Davis (2000) conducted a study with 156 participants at 4 different organizations, that extended TAM to include social influences and cognitive instrumental processes. They found that PU accounted for 40%-60% of the variation and 34%-52% of the variation in usage intentions, but that other social factors like subject norms, voluntariness and image and cognitive factors like job relevance, output quality, results demonstrability, and PEOU also have significant influence. This was a hallmark study and validated the extension of TAM2. Given the popularity and impact of TAM and TAM2, there was another extension. This extension is called TAM3 and focuses on further exploring PEOU. Venkatesh and Bala (2008) extended TAM2 by adding a set of determinants for PEOU, which included computer self-efficacy, perceptions of external control, computer anxiety, computer playfulness, perceived enjoyment, objective usability. However, TAM3 has been criticized for its complexity and lack of relevant research validating its effectiveness (Huang and Yang, 2025).

This study with utilize TAM and TAM2, but without the social influence variables. That is because the social influences variables include subject norms, voluntariness and image. While important, social influences are less relevant than the cognitive internal processes with regard to the potential of retailers adopting AI tools to better manage planogram compliance. As such, the cognitive processes of job relevance, output quality and results demonstrability are included in this evaluation.

METHODS

The purpose of this article is to investigate the likelihood of retailers adopting AI tools for the purposes of improving planogram compliance. Due to the lack of research regarding planogram compliance and AI, a structured literature review was used as the basis for this study. This approach allows for a synthesis of existing literature since the research is fragmented across these disciplines. This literature review can help to serve as a precursor to empirical research by helping to establish the relationship and impact between AI and planogram compliance. In addition, it can also highlight possible areas of future research.

The search for relevant articles spanned across several databases including Scopus, Web of Science, ABI/Form, Google Scholar, and Research Gate. The types of evidence included empirical studies, articles with relevant theoretical frameworks, peer-reviewed journal articles, conference proceedings, technical perspectives from industry experts and industry reports. These data were limited to research that was written in English and published between 2006-2025. To ensure a thorough search and review of the literature, the search focused on relevant key words regarding planogram compliance and AI. For planograms, the key words included planograms, planogram compliance, retail shelf management, shelf management at retail and challenges with planograms. For AI, the focus was on the current technology and automation used in planogram compliance and retail shelf monitoring, research that was focused on AI imaging and the emerging role of AI in retail operations. These key words included artificial intelligence, generative artificial intelligence, deep learning and machine learning. These terms were used in various combinations and refined to ensure a comprehensive review of the literature in planogram research, emerging technologies in planograms, and AI in the retail environment. There was also a significant focus on the intersection of planograms and AI, which was limited due to the emergence of this area of study.

The identification of articles included a 4-step iterative process. First, databases were searched for information and research. Once research was identified, a review of the abstract and/or overview was screened for potential relevancy. Once an article made it through the screening process, it was assessed via a full-text review. If an article was deemed relevant and useful, it was included in the literature review. Research that was seemingly related, but not relevant was excluded. Some examples include articles that focused explicitly on consumers, online retail, e-commerce, or retail operations not related to planograms. Additionally, research was excluded if the data was opinionated, lacked methodological transparency, or was from a non-credible source.

LITERATURE REVIEW

The following discussion provides a review of the literature regarding the likelihood of retailers adopting AI tools and the potential impact that it can have on planogram compliance. This

evaluation is done through the lens of TAM and TAM2 framework. As noted earlier, these theories argue that PE, PEOU, job relevance, output quality and demonstrable results are predictive and can help to determine the likelihood of adopting a technology. While there is limited research on planogram compliance through the lens of this theoretical framework, it appears to be particularly relevant for its ability to provide insight into adopting technologies across a variety of industries. To begin this review, the upcoming dialogue will explore the definition of planograms, the importance of planogram compliance at retail, key challenges with planogram compliance, relevant new AI tools and how these AI tools can help to improve planogram compliance.

Planograms and Compliance

In the retail environment, there can be significant variation among stores within the same chain. This variation can make it challenging to manage inventory, forecast product needs and provide effective shelf management. However, planograms can help to manage this variation by ensuring that products are in the ideal location on the shelf and that there is appropriate and consistent merchandising to help drive sales. Marder et al. (2015) support this notion and suggest that strategically optimized planograms are instrumental in enhancing sales and overall profitability.

Planograms are primarily used in the retail industry to help manage products on the shelves and standardize visual merchandising in retail store outlets. That is because major retailers like Walmart, CVS, Walgreens, Kroger and others have thousands of stores across the United States (US), which makes planograms even more important. According to the National Retail Federation (2023), in 2022, there were 4.2 million US retail stores with the top 10 retailers having more than 35,000 store fronts across the country. Given the sheer number of store fronts among top US retailers, it is important for them to have well-designed planograms if these companies expect to continue to grow and maximize sales. Retail stores can have a lot of variation due to things like store size, product trends, differences in product sell through, dynamic customer needs and geography. Additionally, there is further complexity due to the constant in-store shelf rotation of removing non-performing products and replacing them with new ones. To help deal with the variation and complexity at the store level, many retailers will use planograms. Planograms visualize the predefined ideal arrangement of products, where each product should be on the shelf and how many facings each product should have (Czerniachowska et al., 2021; Goel and Sharma, 2020; Laitala and Ruotsalainen, 2023; Marinelli et al., 2021; Saqlain et al., 2022). Czerniachowska et al. (2021) note that available shelf space is a limited resource in most local retail stores so having a planogram to follow helps retailers achieve desired sales. Ideally, planograms help to ensure that the right product is in the right place at the right time to maximize sales (Wiles et al., 2013). Marinelli et al. (2021) contend that a planogram allows retailers to use product categories to present products in an organized manner, which can help to increase sales. Furthermore, Marinelli et al. (2021) remind us that visual merchandising is the presentation of products in the best possible way to help retailers get a consumer's attention, which is a key aspect to increasing store traffic and sales. Goel and Sharma (2020) posit that planograms are useful at the point of sale, as they can lead to improved store layout/design and better space utilization, as it demonstrates the exact positioning of products. Similarly, the research supports the effectiveness of using planograms at retail. Mondol et al. (2021) conducted a study on visual merchandising with 365 respondents in fashion stores with the results showing a positive and significant relationship between store layout and a consumer's willingness to purchase. Lees (2024) notes a 2020 study by Visual Merchandising and Store Design that showed 73% of customers say good visual merchandising

makes them more likely to return. According to Lees (2024), customers are likely to spend 20% more time in stores with well-designed visual merchandising.

Using planograms can be a critical aspect to success in the retail environment. However, it all hinges on compliance. Chong et al. (2016) note this point and suggest that planograms are models that specify exactly how products should be displayed on the shelves to ensure maximum sales, while planogram compliance ensures that the products on display are in accordance with the planogram. For retailers to realize the benefits of having a well-designed planogram, it is necessary to have store level compliance, which ensures that the products on the shelf at the retail store match the desired arrangement in the planogram (Laitala and Ruotsalainen, 2023). For retailers, one of the most critical aspects of planogram compliance is the potential impact on sales. Saqlain et al. (2022) contend that monitoring store shelves to keep track of product availability and planned merchandising are crucial factors that can help to boost sales and improve customer satisfaction. Czerniachowska et al. (2021) agree and note that compliance can help retailers to maximize sales. The research supports this notion as well. A study by the National Association for Retailing Merchandising Services (as cited by Frontoni et al., 2015) found that 100% planogram compliance after an initial reset can help increase sales by 7.8%. Similarly, Saqlain et al. (2022) found that following an optimal planogram can amplify sales more than 7%. Laitala and Ruotsalainen (2023) agree but note that suboptimal merchandising can lead to a loss of up to 1% of sales. It is not only important for retailers to develop a planogram, but every effort also needs to be made to ensure that the retail store shelves are in compliance so the benefits can be realized. That being said, with many retailers having thousands of retail stores, ensuring compliance is an essential, but daunting task.

Key Challenges with Planogram Compliance

While there are well-established tools and software to develop planograms, there continue to be retail level concerns with planogram compliance. That is because compliance is more complicated than it may seem on the surface. For the most part, the current approach is labor-intensive, time-consuming and prone to human errors (Pietrini et al., 2024). The following discussion delves into these challenges that include a mostly manual process that lacks effective technology, which results in a costly, less desirable process that is prone to human errors.

Manual Process

One of the main challenges with planogram compliance is that the process for evaluating compliance tends to be a manually driven process. For decades, shelf monitoring has been carried out manually where qualified field workers periodically visit the store and manually scan and measure products (Pietrini et al., 2024). This process not only lacks efficiency, but also effectiveness, as the timing of these checks is not systematic, nor are the compliance checks linked to product rotations or seasonal fluctuations. Sadayappan and Kumar (2021) explain how problematic this approach is by noting that it often results in lost sales, late responses, more out-of-stocks, increased product waste and higher costs. Importantly, Melek et al. (2023) point out that an approach that goes beyond the traditional methods is needed to solve many of the problems associated with the lack of planogram compliance, including out-of-stocks, lack of effective shelf management and poor customer experience. Pietrini et al. (2024) agree and note that many retailers and brands are actively seeking automated solutions to improve this process.

Faulty Technology

While retailers use some technology for planogram compliance, it lacks effectiveness and is wrought with challenges. Saqlain et al. (2022) argue that improved technology is necessary for effective planogram compliance and optimized retail management. Computer vision is the key technology used in shelf management, but it continues to lack the necessary upgrades to be effective. Pietrini et al. (2024) posit that computer vision has made significant progress in identifying products at retail, but that it is still considered a challenging task from a computer vision perspective. While computer vision technology is available, the planogram compliance process continues to be faulty, as it relies on older equipment and requires human intervention to be completed. Specifically, human intervention is needed to take a picture of the shelf, determine if there are inconsistencies and then report back the results. Saqlain et al. (2022) posited that to automate this process, object detection of the products on the shelves can help to solve the problem of monitoring distinct categories and subcategories of products, assessing whether there are missing products and matching planograms continuously. However, currently, there are some problems with imaging and object detection that need to be improved to make the process more reliable. Many problems associated with object imagery for products on store shelves are linked to packaging with nuanced differences. This is a pretty significant challenge to address, as new products are introduced daily, product packaging is updated often and different varieties of the same product make it more difficult for product detection software to correctly identify and distinguish between products (Pietrini et al., 2024).

Data Errors

The reliance on a mostly manual process and faulty technology leads to another challenge with planogram compliance, which is that the data often has errors. It is labor-intensive and more likely to have errors. When employees are conducting compliance procedures manually, they need to go down each aisle in a store, look at each shelf and compare the products on the shelf to a visualization of the planogram, which is a process that can be prone to mistakes (Melek et al., 2023). Similarly, Sadayappan and Kumar (2021) agree and suggest that, traditionally, many retailers rely heavily on exploratory methods and human judgment to perform a planogram product assessment. Laitala and Ruotsalainen (2023) also agree and posit that the possibility of human error is always present with people conducting the compliance process. Many scholars agree that planogram compliance needs to move away from the traditional manual process and begin to incorporate more effective computer vision and object detection technology.

Due to the lack of modern technology, many retailers continue to be challenged with effectively managing compliance and are not fully realizing the benefits of having planograms. Using modern technological advancements can go a long way towards helping to improve planogram compliance, increase sales and reduce data errors. While this task has been challenging in the past, fast-paced technological advancements have given hope to new opportunities in planogram compliance. Like many other industries, these advancements are linked to AI. Up next, the focus will shift to AI tools and how these technological advancements can impact planogram compliance.

Artificial Intelligence and Planogram Compliance

Planogram compliance is essential to driving sales, improving store-level accountability and improving customer satisfaction in the retail environment. The traditional approach to compliance is labor-intensive, prone to mistakes and can benefit from impactful technologies (Popli, 2024). Retailers have begun to realize that the traditional approach of performing planogram product detections has its limitations and needs to be reimagined (Sadayappan and Kumar, 2021). While the more progressive retailers have begun to use AI, but for planogram compliance (Sadayappan and Kumar, 2021), it is far from an industry standard. As noted above, planograms are effective at providing a visual guide on how to display products in the retail environment, but there continue to be problems with compliance that can be significantly improved by incorporating AI into the process. The following discussion provides insight into how incorporating AI into planogram compliance can positively impact retailers.

It is important to understand the process for visualizing the store shelf, which is detailed in the five-stage planogram compliance framework. Early shelf-space optimization models, such as Corstjens and Doyle (1981), established these specification stages. With the development of computer vision, planogram checking became an image analysis task (Tonioni et al., 2017), resulting in automated detection, classification and metric-based compliance scoring (Hübner and Kuhn, 2012). The previous literature on shelf-space reallocation optimization (Hwang et al., 2005) inspired the correction stage, which was later unified under the modern AI-planogram framework. The Planogram Compliance Framework (Figure 1) details the typical process for collecting planogram compliance data, serving as a conceptual roadmap that links retail operations, AI-driven analytics and ethical governance into a continuous improvement cycle. Beginning with planogram specification, the framework proceeds through image capture, detection and classification, compliance scoring and correction. Each stage represents a distinct function, from defining ideal shelf arrangements to using deep learning algorithms for product recognition and generative AI models for layout correction.

Figure 1. Planogram Compliance Framework

Integrating AI into planogram compliance can help to transform how stores manage space and inventory. That is because AI is a powerful tool that has already begun to revolutionize the planogram compliance process, as recent developments have impacted every part of the five-stage planogram compliance framework. Chong et al. (2016) examined various types of training images to determine which are most suitable for achieving product image classification on retail store shelves and found that training on a mix of images from the internet and retail stores outperformed the other models. Likewise, AI tools can photograph in-store assortments to identify variations by comparing in-store shelves to planograms, which can then fully reach planogram compliance (Taylor, 2023). Furthering this discourse, Sadayappan and Kumar (2021) underscored the transformative application of using AI to refine retail planograms, as they can help to better rank and recommend products, gain data-driven insights, improve customer satisfaction and enhance sales.

One area that has driven advancements in this area include deep learning (DL), which has emerged as a powerful tool for planogram compliance and retail product detection, as it offers significant improvements in efficiency and accuracy. It was first introduced in 2006 as research on pattern recognition (Hinton et al., 2006) and has been instrumental in retail. It displayed improved performance metrics, as it can automatically learn features from images, such as those used in computer visualization and planogram compliance (Saqlain et al., 2022). However, some challenges with DL include high resource demands and adaptability issues, as it requires a large amount of annotated data for training and flexibility issues. Convolutional neural networks (CNNs), a subset of deep learning, has been at the heart of the enhanced image-based compliance and product detection improvements that are helping to overcome challenges in differentiating between products with similar packaging and sizing. CNN algorithms take in an image, assign importance to various objects and differentiate among them (Saha, 2018). CNNs have achieved remarkable performance on image classification tasks, leading to more accurate results (Goel and Sharma, 2020). Higa and Iwamoto (2019) conducted a study that used supervised learning to improve on shelf availability. The authors focused on ensuring high shelf availability by using CNNs to observe the changes in shelf regions. Their experiments achieved a success rate of 89.6% for product availability, which was much higher than that of traditional methods. Recently, Laitala and Ruotsalainen (2023) used CNNs for retail product detection where products were detected and classified, then compared to planograms to evaluate compliance. Their method provided an improved planogram compliance evaluation pipeline with accurate product location estimations. In the compliance scoring stage, Yucel et al. (2022) modified the Needleman-Wunsch algorithm for planogram compliance control by finding the optimal global alignment between two sequences by maximizing a similarity score and then evaluating how well they align overall to produce planogram alignments. Laitala and Ruotsalainen's (2023) research built an end-to-end pipeline in which DL based product detection and classification were compared to the reference planogram to compute a normalized planogram compliance error. Finally, Muthugnanambika et al. (2018) proposed an algorithm using image processing and machine learning to find and detect changes in the arrangement of objects in retail stores. Their research indicated that the proposed algorithm was capable of counting objects of similar types and helping to track changes, which could be used to detect changes occurring in planogram compliance.

Deep Learning is a recent technological advancement with significant promise for retail management and planogram compliance. However, other technological advancements, including generative artificial intelligence (GAI), have emerged as an important force in driving the next

level of AI adoption (Kshetri et al., 2023). GAI combines machine learning, image processing and computer vision (Banh et al., 2023) and uses algorithms to generate new text and images to enhance product visualizations (Susarla et al., 2023), thereby providing an opportunity to further improve planogram compliance. This creative capacity enables automated generation of shelf layouts that reflect diverse retail constraints and dynamic merchandising strategies (Nahid-Ull-Islam, M. et al., 2025). Pagidoju and Agarwal (2025) used diffusion models to generate store-specific planogram within a cloud-native architecture automatically. Their study showed a significant reduction in planogram creation time, resulting in measurable gains and demonstrable outcomes (Venkatesh and Davis, 2000), and demonstrated that GAI can be extended to constrained physical spaces with real-world limitations. With GAI, there is less reliance on real-world data because it can generate synthetic data, which is essential for planogram compliance. Synthetic data are artificial data generated by a model trained to learn the crucial characteristics of a real-world data set (D'Amico et al., 2023). Synthetic data are new datasets that mimic the original data, but are artificially generated. In terms of detection and classification, He et al. (2023) presented the first study on the state-of-the-art text-to-image generation models. They showed that synthetic data can improve classification, is suitable and adequate for model pre-training and can work collaboratively with real data. In addition, GAI can generate synthetic shelf images that capture diverse lighting conditions, packaging angles and occlusion patterns, which improves model training and reduces cold-start issues, aligning with output quality that provides perceived usefulness (Venkatesh and Bala, 2008). Wei et al. (2022) conducted a breakthrough study that proposed a multi-angle generative adversarial networks (MAGAN) that generated realistic training images at different angles for data augmentation. The research sought to create training images of grocery products from multiple angles to improve recognition accuracy. The research demonstrated that the data augmentation based classifier was able to recognize grocery products as accurately as when using authentic images. This research indicated that GAN-generated synthetic data can effectively fill data gaps, reduce the cost of manual image collection to augment limited real-world retail datasets, enhance model generalization and improve product level performance. Travucco et al. (2023) investigated whether pre-trained text-to-image diffusion models can serve as powerful generative data augmentation engines for vision tasks. They applied prompt-guided, label-preserving image edits and showed that augmented models trained on small or imbalanced datasets can achieve higher classification accuracy and demonstrability than those trained with standard augmentations.

In summary, while DL has helped to advance planogram compliance, there continue to be shortcomings with these models because they require a significant amount of data with well-defined rules and needs retraining often. Using AI for retail product detection, an essential component of planogram compliance, has been an issue due to limited training and test data (Laitala and Ruotsalainen 2023). However, GAI can address these gaps by creating models with synthetic data that mimic the real-world distribution of products, shelves and planogram configurations that adhere to the basic rules but go beyond existing data sets. While the use of AI is currently limited at retail, there is a growing rate of adoption with GAI, which is promising for planogram compliance.

Application of Technology Acceptance Model

Now that we have evaluated the potential impact of AI technologies on the effectiveness of planogram compliance, it is important to view these advancements through the lens of the TAM,

which will help to provide insight into the likelihood of AI adoption for planogram compliance. This theory provides a framework to evaluate the likelihood of adoption via two important factors, PU and PEOU. This study will also utilize a portion of the TAM extension, TAM2. The TAM2 extension seeks to further explore the underpinnings of PU in TAM. Venkatesh and Davis (2000) posit that since PU is a fundamental driver of usage intentions, it is important to understand the determinants of its construct. These clarifying constructs include both social influence processes and cognitive instrumental processes. Given the focus of this evaluation, this discussion will focus on the more relevant cognitive instrumental processes that include job relevance, output quality and demonstratable results. These cognitive processing factors are highly relevant, as thus, can help to contribute to the understanding of the likelihood of retailers adopting AI technologies for planogram compliance.

Technology Acceptance Model

As noted earlier, Davis (1989) argues that a person's perceptions impact their intention to adopt a new technology. Specifically, this theory posits that PU and PEOU are key factors in determining intentions, which lead to adoption. With regard to planogram compliance, AI has the potential to not only be useful, but also easy to use. As previously discussed, deep learning's capabilities can help to significantly improve compliance specification, detection and classification and image detection. That is because it can capture an image, evaluate the data in the visualization, analyze the data and make recommendations within seconds with good training data, which can help to improve overall shelf management and sales. GAI that utilizes training data to create new synthetic data, fill gaps in real-world datasets (Eastwood, 2023) and replace obsolete or otherwise unusable historical data (Klubnikin, 2023) is a powerful tool. This synthetic data mimics real-world patterns, which can be extremely useful at retail due to its dynamic nature and constant rotation of products. This is an important characteristic for planogram compliance, as these models can learn from current data on product variations, sizing, pricing, etc. and create new data without needing new training data to assess compliance. GAI can also generate multiple design options based on predefined objectives, such as maximizing sales or improving customer navigation that will get better options by using adaptive and continuous learning to adjust based on feedback and new data. This capability allows the models to improve performance and generate outputs that align better with user preferences and objectives (Singh, 2022). Additionally, Leibowitz (2023) contends that the power of GAI will allow retailers to conduct virtual experiments with different configurations without physically rearranging the store shelves. With successful implementation of AI into planogram compliance, retail management can make better decisions more quickly than before, as deep learning can help to gather retail data, process it and make recommendations much more quickly than in the past. This effectively can lead to improved planogram compliance, which is highly useful to retail management. Through the lens of TAM, this discussion supports the likelihood of retailers adopting AI advancements for improved planogram compliance. Not only are the recent advancement in AI useful, but they will also make the job of planogram compliance much easier.

Technology Acceptance Model Extension

Job relevancy refers to whether or not the new technology is relevant to the job, which further explores perceptions regarding usefulness. With regard to relevancy, incorporating AI into improving planogram compliance is highly relevant for retailers. As noted earlier, visualizing

products on the shelf is one of the most critical aspects of planogram compliance. As such, the recent advancements in deep learning based computer vision are highly relevant to improving how shelf data is gathered and analyzed. According to Swagler (2023), predictive AI and deep learning can help to optimize planograms and compliance by analyzing historical sales data, customer flows, shelf layouts and other data sources efficiently. While there will still be a need for personnel to take pictures for current visualizations of the shelves, they would not have to input any data or assess the accuracy of the planogram, as AI models would be able to automate that portion of the process, which can also reduce the error rate associated with a manual process. These advancements can help to improve planogram compliance, reduce errors and lower labor costs.

Output quality refers to how well AI would be able assist in performing the necessary tasks in planogram compliance. With regard to output quality, AI has the ability to significantly improve the ability of retailers to visualize what is on the shelf and whether or not the products on the shelf are in compliance with the planogram. As noted earlier, visualizing products on the shelf is one of the challenges associated with the current state of planogram compliance. That is because the current computer visioning technologies lack the ability to clearly differentiate between the products on the shelf due to package nuances in product packaging like sizes and package similarities. The advancements in computer vision and object detection, the process to visualize products on the shelf will be vastly improved and have a pretty significant increase in quality. With these advancements, the new technology will be able to more accurately visualize store shelves, differentiate between products and perform an assessment in real time.

For result demonstrability, this would be associated with the ability to link the improvements in planogram compliance back to AI tools. Venkatesh and Davis (2000) posit that new systems can fail to garner acceptance if the user has difficulty attributing the gains back to the new system. With regard to AI, retailers should have very little trouble attributing the gains of improved planogram compliance back to incorporating AI into the process. Czerniachowska et al. (2021) contend that some potential benefits of compliance include improved shelf space management, supply chain, inventory management and product assortment selection. In addition, retailers are likely to see decreases in labor costs, increased sales at retail and improved sell-through on promotions. With these benefits being realized, retail management will be able to see these gains with improved planogram compliance and attribute these improvements back to incorporating AI into the process.

Ethical Considerations

There are some impressive AI advancements on the horizon that can positively impact planogram compliance. That being said, there are some ethical considerations that should also be part of the discussion. While the list is not all encompassing, some of the key areas of ethical concern include bias, human interactions and data transparency.

Data Bias

As with most data, it is important to effectively manage it to eliminate as much bias in the data as possible. According to Feldman and Peake (2021), bias in AI systems occurs from unbalanced training data and model design choices. Correctly classifying items on shelves via DL across brands and packaging can be challenging due to the nuances on packaging (Melk et al., 2023).

There is also the possibility of demographic bias. To mitigate the potential impact of bias in the data, a bias audit should be performed when incorporating AI tools into planogram compliance. A bias audit is when an assessment of an AI algorithm's decision-making processes is conducted to identify and mitigate unfairness or discrimination against specific groups based on sensitive attributes, such as race, gender, or age (Sandvig et al., 2016). To make potential discriminatory effects observable, Raji et al. (2020) call for internal, end-to-end algorithmic auditing tied to the organization's own AI lifecycle, a concept also explored by Feldman and Peake (2021). They introduced an end-to-end bias mitigation approach that combines preprocessing, in-processing and post-processing algorithms. This approach helps to find out whether the framework outperforms the baselines with respect to several fairness metrics without significantly compromising accuracy.

Human Interaction

While incorporating AI into planogram compliance can help to reduce time and costs associated with the process, there will still be a need for human interaction. Recent deep-learning shelf-monitoring systems, such as those that redesign shelf monitoring systems to utilize deep learning, do so in a way that still anticipates human operators acting on the alerts raised by the system (Pietrini et al., 2024). Liu et al. (2015) note that store managers and in-store staff are the ones who actually apply planograms to shelves and verify them on-site, often by visually checking that the shelf matches the layout sent from headquarters. That manual, store-level responsibility persists even when computer vision is introduced, because vision models still struggle with packaging changes, occlusions, mixed facings and store-specific substitutions. As a result, there are still some concerns with ensuring data quality.

Data Transparency

Like other data sets, it is important to establish and maintain data transparency. This is especially important as AI tools become more prevalent and standardized in the industry. This can help to ensure that the proper protocols are in place to access, handle and store data are in place. One of the tactics to assist with data transparency is dataset documentation. Dataset documentation acts as a safeguard for planogram compliance, as it establishes transparency regarding how shelf imagery is produced and used across the compliance framework. Pezoulas et al. (2024) argue that thorough documentation of open-source resources should accompany synthetic-data work and that future work must address fidelity and bias in synthetic data, which is only possible if the generation process is transparent. Pietrini et al. (2024) adds to this debate by encouraging labeled datasets for shelf monitoring when using a mobile device to capture images and annotated at the product level, which will allow the dataset to be reused for planogram-compliance experiments.

AI driven planogram compliance must be designed as a sociotechnical system that is able to deal with ethical concerns. While AI can help to improve the planogram compliance process, the concerns regarding data bias, human interaction and data transparency Bias audits make model behavior visible, human-in-the-loop steps keep store-level judgment in the process and rigorous dataset documentation provides the traceability to fix performance gaps across brands and stores, allowing retailers to improve accuracy without sacrificing fairness, transparency, or operational trust. These safeguards also enhance job relevance and output quality by demonstrating that AI decisions accurately reflect shelf conditions across locations and are documented adequately.

IMPLICATIONS

Planograms are an essential part of driving retail sales and necessary for keeping up with the highly competitive modern retail market (Laitala and Ruotsalainen, 2023). However, as discussed, to achieve the benefits of having a planogram, the store shelves need to be in compliance with the planogram. This helps to ensure that retail stores are accurately executing planograms at retail. While there is no predictable timeline for the majority of retailers adopting AI for planogram compliance, there is a strong likelihood that AI will be adopted by many retailers within the near future. The following provides insight into the implications of this shift on planogram compliance, retail management and customers.

Overall, the shift to incorporating AI into planogram compliance has a positive outlook. By incorporating AI that can help to significantly improve computer vision and detection, retailers will likely see better adherence to the planograms. Additionally, the process to determine planogram compliance will likely be more effective, as AI tools have the capability to complete an assessment of the retail shelves, with more accuracy and in a timelier manner, which in turn can decrease the errors and help to increase effectiveness. Not only that, but AI driven tools can help to adjust to market changes and dynamics faster, as the data will be more accurate and processed more quickly. While there remain some challenges with DL tools as they require a significant amount of data with well-defined rules and needs retraining often, advancements in GAI are happening rapidly and expect that these challenges will be minimized in the near future.

For retail management, incorporating AI into planogram compliance can result in several benefits, including reduced costs, better inventory management and increased sales. Data will also be received faster and have fewer errors, which will help management to make better decisions more quickly. Additionally, there are management implications on two organizational levels, including store level and corporate management. For store level management, incorporating AI into planogram compliance will help to reduce labor costs, gather data more quickly and efficiently, gain flexibility in performing store audits and get better data regarding inventory. In addition, they will be able to better focus on meeting merchandise requirements, promotional objectives and sales objectives. At the corporate level, decision-makers will benefit from having better access to planogram compliance data in a timelier manner. In addition, corporate managers will be able to better differentiate between local and regional dynamics, which can lead to having products and services that better meet local and regional customer needs. All of these benefits can lead to significant reduction in operating expenses, which can help to improve profitability.

When retail stores comply with a well-designed planogram, it can positively impact consumers as well. While retailer benefits are more closely linked to the lower labor costs, increased sales and better inventory management, there is also a positive impact for consumers, including a better shopping experience and ease of finding products. To improve the customer shopping experience, many retailers use planograms to help provide impactful visual merchandising that include elements like product displays, tailored shelf placement and well displayed pricing. Mondol et al. (2021) concluded that customers are more likely to shop and purchase at retailers where the store is well-organized, there is a pleasant atmosphere, and they can quickly locate the items they desire. In some cases, consumers are deterred by stores that are not in compliance with a planogram or are unorganized. Iberahim et al. (2019) suggest that effective visual merchandising can help to establish and maintain a positive store image in the customer's mind, which makes them more

comfortable and willing to purchase. When customers are comfortable with the store layout, can easily locate products and are engaged by displays, then they are more likely to purchase.

CONCLUSION

Effective planograms can help retailers make better decisions, better understand product trends and respond to customer needs. The realities of the retail environment can make it challenging to ensure that retail stores are complying with planogram requirements. Currently, much of planogram compliance is driven by poor technology and reliance upon human interactions, which can be time consuming, labor-intensive and increase labor costs. While some of the process is utilized technology, there is a lack of an industry wide automated standardized approach to planogram compliance. Challenges with relying upon a traditional labor driven process and not being able to reliably visualize whether store shelves are in compliance in a timely manner can lead to lost sales, out-of-stocks, and increased expenses. While there remain some ethical considerations, AI is positioned to address many of these challenges. When evaluating the likelihood of retailers adopting AI for planogram compliance through the lens of TAM and TAM2 cognitive constructs, it is likely that there will be widespread adoption of AI into planogram compliance appears That being said, the For retail operations and the likelihood of adopting AI for planogram compliance, looking at the through the lens of TAM and the cognitive internal processing elements of TAM2 suggests that there is likely to be widespread adoption of AI for planogram compliance. Using a literature review to assess these factors suggests that AI adoption is likely, as AI advancements are likely to provide improved visual output, lessen data errors and provide more timely results, which fit nicely with job relevance, output quality and results demonstrability. This can result in significant benefits, including improved compliance, lower labor costs, improved inventory management and higher customer satisfaction.

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LEADER PERCEPTIONS OF FAMILY MEMBER EMPLOYMENT IN FAMILY FIRMS: LITERATURE REVIEW AND INTERVIEWS

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ABSTRACT

The leaders of family-owned firms are often themselves members of the family. Many of these firms have other family members in positions of management or employment. The family business literature details interesting dynamics that arise where the leader of the company is also a family member. We look specifically at the perceptions and observations of family firm leaders who work with family members. This research explores several major questions raised by our review of the family business literature. How do leaders feel about family employees and do they have good relations? How do they judge the performance and dedication of family members and how do they compare to non-members? Does the leader see evidence of the benefits of stewardship and socioeconomic wealth and do leaders perceive less risk of agency costs or nepotism? What are leader views toward the development of younger members, mentorship, and prior experiences of family members before they joined the firm? And finally, what are the views on compensation of family members vs. non-members? In this study we explore several research questions via personal interviews with 20 top leaders of 20 well-established family businesses located throughout the Southeastern U.S. We were impressed by how positive leaders were generally about family employees. Many of the potential negatives predicted in the family business literature were not confirmed. It was enlightening to find that leaders of family firms are highly committed to the development and preparation of up-and-coming family members Several key insights on family employee compensation were revealed.

Keywords: Family-Owned Firms, Family Firm Leadership, Stewardship, Socioeconomic Wealth, Nepotism, Agency Theory, Family Firm Compensation

INTRODUCTION

Family business is extremely important to global commerce with upwards of 80% of companies being family-owned and literally millions employed, providing an out-sized proportion of long-term wealth creation (Astrachan & Shanker, 2021a). In 2021, 62% of the workforce was employed by family-owned businesses and family business created over 70% of new jobs. Further, an astonishing 60% of global GDP is attributable to family business (Family Firm Institute, 2023). In the U.S. there are over 30 million family businesses that generate upwards of $7 trillion in GDP (Astrachan & Shanker, 2021a; Family Firm Institute, 2023; Smith Family Business Initiative, 2024). Research has also shown family business to play a tremendous positive role in the local community with a large economic impact and also serving as a well-engaged and active corporate citizen (Family Firm Institute, 2023). Family business is a highly trusted business model and

usually benefits from a very strong company culture and shared vision/strategy as well as a pronounced resilience and longevity (Anderson & Reeb, 2003; Astrachan & Shanker, 2021b; Smith Family Business Initiative, 2024). Over 70% of family firms last for longer than 30 years (Family Enterprise USA, 2023).

The research indicates family businesses have unique corporate governance issues related to the prevalence of family involvement in the firm (Bellow, 2003; Huybrechts, Voordeckers, & Lybaert, 2022). The interplay between the family and the operation of the business creates interesting dynamics. It is quite common to employ at least one or two family members in the firm, often working with a leader who is also from the family (Neffe, Wilderom, & Lattuch, 2020; Stirpe, 2023). One key question that has been researched over the years is the perception and attitudes of the family firm leader toward the family members employed in the firm and the general effectiveness of these firms (Cunningham, Seaman, & McGuire, 2016; Davis, Allen, & Hayes, 2010; Lambrechts, Huybrechts, DeMassis, & Lehmann, 2022; Huybrechts, Voordeckers, Lybaert, & Vandemaele, 2011; Powell & Eddleston, 2017). In general, the family and especially leadership of the firm view employment of competent family members as a largely positive means to benefit (as family) from family ownership but at the same time a means to contribute to the long-term well-being of the firm (Anderson & Reeb, 2003; Huybrechts, et al., 2022; Jennings & McDougald, 2007; Lambrechts, et al., 2022). Leadership has been shown to be positive about family members working in the business due to loyalty, trust, commitment, enjoyment, enhanced knowledge of the business, strategic value of legacy and longevity, stability and other factors (Cater and Justis, 2009; Huybrechts, et al., 2022; Powell & Eddleston, 2017). Family-firm leaders are aware of the ability to pay good salaries to family members (along with various perks and benefits) on a pre-tax basis which seems preferable to other means of financially benefiting family members (Chrisman, Chua, & Litz, 2004; Tax Adviser, 2019). Family members tend to be shareholders of the firm and maintain a keen interest in the performance and livelihood of the organization and their individual ownership (Anderson & Reeb, 2003; Davis, et al., 2010; Schulze, Lubatkin, & Dino, 2003). There is evidence that working together with family is a source of great enjoyment and the ability to work together to build and grow the organization is one of the greatest benefits of family ownership (Bellow, 2003; Huybrechts, 2022: Powell & Eddleston, 2017).

Issues can arise, however, that can strain relationships and cause negative outcomes. Many of these problems evolve through conflict and role ambiguity/confusion, lack of innovation, succession issues, governance challenges, and other forms of tension and dysfunction (Donaldson, 2024; Eddleston & Kellermanns, 2007; Zellweger & Kammerlander, 2015). Charges of nepotism, favoritism, and overall lack of fairness have been considered a major negative when perceived by non-family employees of the firm (Bellow, 2003; Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013; Padgett & Morris, 2005). A major potential drawback of depending too heavily on family members is the potential to employ some who are less competent and less qualified when compared with potential non-family candidates (Davis, et al., 2010; Calabro, Minola, Campopiano, & Pukall, 2016; Wang & Chu, 2020). Of course, the propensity of family members to conflict with each other and have negative feelings toward one another is an age-old problem. There is great potential for conflict between family members and non-family employees and non-family could potentially view family members as incompetent or lacking motivation (Padgett & Morris, 2005).

To summarize, the research indicates that there are numerous strong positive and negative factors/issues that could arise in the governance and operation of family firms due to family employment. It is important and instructive to gather better insight from the family member who must deal with the multitude of positive and negative issues more than anyone, the leader of the family firm. The family/firm leader is in a tremendous position to share detail on the nuances (positive and negative) of the family members working in the family firm. **So the overall goal of this paper is to explore directly the views and attitudes (on a variety of issues) of the leaders of family-owned businesses, all of whom are themselves members of the family.** We will first provide a more detailed review of the existing literature and then report the results of semi-structured personal interviews with 20 top leaders of 20 different family-owned firms located in Georgia, Alabama, and Mississippi. This paper provides potentially unique insight as the interviewer (lead author) spent many years as a bank executive and is at least acquainted with each of the respondents personally. While the respondents were aware the interviewer was conducting research, the relaxed conversations and familiarity of participants leads one to believe the overall quality and candor of responses would be strong.

LITERATURE AND BACKGROUND

The management of family-owned firms is characterized by several interesting dynamics. Taking care of the family and its members is a very important goal for ownership of family firms (Bellow, 2003; Gomez-Mejia, Cruz, Berrone, & DeCastro, 2011). Many or perhaps most family firm leaders view family employment as fulfilling the firm's purpose of being a multi-generational enterprise (Cater & Justis, 2009; Davis, et al., 2010; Jaskiewicz, Combs, & Rau, 2015). Leaders often report a strong sense of security recognizing that family members share critical core values and can be implicitly trusted in sensitive roles (Huybrechts, et al., 2011, 2021; Powell & Eddleston, 2017). Leadership of family firms, often themselves members of the family, hold great influence in decisions about the involvement of family members. The overall view of the family leader about family employment will greatly shape structure, culture, company governance, and company performance. **The general hypothesis in this line of research is there are many positives of family involvement but also a number of complications, moderators, and potential negatives.** Regardless of the view taken by leadership or findings from research, family member employment and involvement must be viewed as largely positive because in practice most family businesses have at least two or three family member employees, oftentimes in key positions of leadership (Davis, et al., 2010).

Stewardship/preservation and safe keeping of the firm and family reputation for future generations is important. Also of utmost importance is the overall performance and well-being of family members. Under stewardship theory, family members are viewed as stewards who are motivated by long-term collective family goals rather than individual (often personal and financial goals) (Davis, et al., 2010; Miller & LeBreton-Miller, 2006). Family members feel a strong responsibility to the family long-term. So heavy involvement of family members in the firm is potentially a solution or mitigator to the agency problem where hired managers place personal goals ahead of the goals of the firm/owners (Chrisman, et al., 2004; Miller & LeBreton-Miller, 2006). When the emotions associated with individual compensation, status, and fairness clash with the family's long-term interests and viability, there is a recipe for potential conflict and angst (Eddleston & Kellermanns, 2007). According to stewardship views, there is a compelling force

among leaders to employ family members not only because they are family but because they can positively affect the firm's success in a number of ways: strengthening bonds, engagement, support, and psychological commitment while also enhancing morale and identifying closely with long-term firm values (Davis, et al., 2010; Madison, Holt, Kellermanns, & Ranft, 2016). This is an interesting dynamic for future research as Berrone, Cruz, and Gomez-Mejia (2012) revealed that millennial family members were more likely to put personal individual (often financial) goals ahead of family goals like stewardship, taking care of family members, and strategic family advantage in the firm. More senior members of the family, for example founders, perhaps because their financial vitality is less in question, adopted much more of a stewardship approach and favored family employment because it reinforced loyalty, cohesion, and long-term survival (Eddleston & Kellermanns, 2007).

The **Socioeconomic Wealth (SEW)** perspective is valuable in considering this overall issue. The SEW perspective makes the point that leaders and family members generally derive great emotional returns such as identity, pride, long-term control, overall legacy, and belonging from family involvement in the firm (Gomez-Mejia, et al., 2011). Leaders seem to greatly enjoy family employment when it strengthens SEW, though this may come at the cost of strong professionalism and rigorous qualifications/standards in the hiring process (Berrone, et al., 2012). Many leaders indicate that working in the family business together with family members is one of the greatest benefits of family ownership and one of the most enjoyable aspects of family life. They take pride in the family's status and family member representation in the community. The ability to mentor and work daily with family is a personal and emotional payoff rather than a financial one. Studies on SEW show these leaders derive great pride and meaning from the involvement of family (Berrone, et al., 2012; Lambrechts, et al., 2022). For example, Dallas Cowboys President Jerry Jones emotionally remarked in a cameo appearance on the Paramount Plus series *Landman* that working daily with his grown children running the world-famous football club was one of the "absolute greatest joys" in his life and perhaps the greatest benefit of owning the team.

Leaders of family firms often describe family members as more trustworthy and loyal than outsiders and that heavy involvement of family members at the top can be a safeguard against the agency problem (Chrisman, et al., 2004). Most CEOs concede that at some point in the history of a growing firm, outsiders will have to come in to provide additional expertise and competency, but leaders perceive family employment and the trust/confidence that comes with it as crucial to the overall legacy and vitality of the firm (Bellow, 2003; Madison, et al., 2016; Miller, LeBreton-Miller, Minichilli, Corbetta, & Pitino, 2014). Continued family involvement reinforces the legacy, history, and dependability of the family business (Padgett & Morris, 2005). Jaskiewicz, et al., (2015) revealed that the dynamics of highly interested and committed family members leads to novel ideas and continued competitive advantage. In general, family involvement appears to foster a very positive emotional tone in the firm. Huybrechts, et al., (2022) found that family-run firms tended to provide great energy and positive emotions and vibes. In their poll of nearly 1,200 family business owners, 82% reported that intergenerational collaboration was critical for growth. Owners cited loyalty, trust, and emotional support as key benefits of family employment. Many young people are going to work with their family firms because they feel a sense of duty and pride while at the same time the firm gives them a sense of stability in uncertain economic times (Berrone, et al., 2021).

A few potential negatives have been revealed in the literature over the years. First, valued non-family employees often view special treatment of family members and unfair or uneven treatment of family vs. non-family as distasteful and even offensive (Bellow, 2003; Padgett & Morris, 2005). There is great professional benefit that comes from the employment of outsider leaders with competence and managerial experience/talent being first and foremost (Anderson & Reeb, 2003; Stirpe, 2023). Research indicates that non-family employees tend to identify strongly with non-family leaders and often view them as more competent because the family element was not present when they secured their role (Jaskiewicz, et al., 2013; Neffe, Wilderom, & Lattuch, 2020). Secondly, there would appear to be great stress and pressure upon the lead family member to treat family members in a fair and consistent manner while also carefully considering what the firm can afford and what they contribute to the firm's success (Schulze, et al., 2003). The leader has not only business responsibilities but also family responsibilities.

Leaders are (or should be) very cautious about appearing biased toward family members. Research indicates that charges of nepotism and favoritism would be extremely distressing to the family and to non-family employees alike (Padgett & Morris, 2005). Favoritism has been shown to erode morale and positivity among non-family employees, which could lead to disengagement. Leaders appear to be very sensitive to charges of nepotism or favoritism. Enlightened, conscientious leaders tend to institute and enforce meritocracy (Stirpe, 2023; Wang & Chu, 2020). One CEO in this study said he would love all of his children to join the firm but "it isn't for everyone." He added that he didn't want family members to feel obligated because "everyone must make a serious contribution." Another CEO said, "you probably are going to work much harder in here than you would for other companies." Eddleston and Kellermanns (2007) cautioned that family members often juggle overlapping roles (family member vs. critical employee) which can create destructive conflict. Leaders are certainly troubled when conflict due to role ambiguity undermines cohesion and other positive energy in the firm.

The research tends to reveal some "conditional" or perhaps moderated relationships as well. Stirpe (2023) demonstrated that the more professional a growing firm becomes, adding such elements as HR systems (e.g. performance evaluation), formal boards of directors, more outsider involvement, succession planning, and various other advancements, leaders tend to get much more sensitive to the issue of employing family members and may even become much more selective. Studies indicate that while family leadership values family employment, there is also a strong demand for qualifications, competence, and external experience (Anderson & Reeb, 2003; Davis, et al., 2010). Miller (2014) discussed the extreme importance of shared vision and an open communication environment among family members. The research revealed that an autocratic leadership approach seemed incompatible with family business scenarios and participative governance tends to foster positive energy and perceptions among family members.

Zellweger, Nason, and Nordqvist (2012) found in their intergenerational research that firm founders were keen on surrounding themselves with family due to their loyalty and the strategic value of family identity/involvement. They found that later generations became less loyal to the family "source" of leadership/employment and took a much more professionalized stance, conditionally considering family members only when they objectively meet all the demands of the job. As we mentioned earlier, research by Berrone, et al., (2021) indicated that millennial leaders may prioritize autonomy and personal career identity over collective legacy, weakening the desire

to maintain heavy family involvement. It isn't that millennials are necessarily being selfish, they just don't seem to be as motivated by the potential less-tangible benefits of stewardship, SEW, and family well-being. Calabro, et al., (2016) revealed in their research that leaders were often conflicted on whether to protect the legacy and traditions or make large strategic investments (such as diversification or product line changes) that could benefit the firm but could undermine family goals related to stewardship and socioemotional wealth.

Leaders of the firm have been shown to be highly committed to education, development, and early/prior work experience of family members. They are very committed to ensuring that these younger members of the family are future key contributors to the success of the firm and they invest heavily in this future performance (Bellow, 2003; Cabrera-Suárez, De Saá-Pérez, & García-Almeida, 2001). Previous research has shown that leaders often encourage their younger family members to affiliate with a mentor, perhaps a friend with a similar type of business elsewhere. Leaders might also encourage affiliation with trade associations to take advantage of educational opportunities and staying up to date in the industry (Cabrera-Suarez, et al., 2001; Miller, 2023; Neffe, et al., 2020).

Compensation for family members is a major issue (Chrisman et al., 2004; Gómez-Mejía, Núñez-Nickel, & Gutiérrez, 2001). Results in previous literature are inconclusive about how family leaders and members working for a family firm are compensated relative to non-members, but there is evidence to suggest that family firm leaders are willing to accept lower financial compensation for the long-term good of the organization and wealth preservation (Gomez-Mejia, et al., 2001). Further, this research indicates that younger family members returning to the business may be expected to forego higher salaries as they develop and mature. Salary is but one form of compensation in family scenarios (Schulze, et al., 2003). It appears there may also be incentives for a job well done, bonuses for family events such as getting married, paid membership to the country club, credit card, car allowance, extended time off, trips to industry association events, and other perks related to family membership. Family members are very sensitive to perceptions regarding compensation and are committed to demonstrating that they are well worth what they are paid. Compensation design reflects trust, fairness perceptions, and stewardship motives, rather than purely market or performance metrics (Chrisman, et al., 2004; Davis, et al., 2010; Gomez-Mejia, et al., 2001). Clearly stewardship concerns won't allow leadership to overpay family members to the detriment of the family firm. On the other hand, family members are aware of the company tax advantages of compensating family members through expense items such as salary and benefits as well as perks such as vehicles or club memberships that can be at least partially expensed through the organization and tax-deductible (Tax Adviser, 2019).

Based on our review of the literature, the following general research questions were constructed to guide the interviews:

1. Tell me how you feel about employing family members? How do they compare to non-family employees?
2. Have you ever had any major problems or poor relations with family members working in the company?
3. Why do you like having family members working in the business? How do family-member employees contribute to the long-term goals of the company?
4. Reflect on your responsibilities to the company, family, and employees.

5. How do non-family employees feel generally about family members in the company? Are there ever any major problems? Do employees perceive that they are treated fairly? Do you sense any issues related to perceived nepotism or favoritism?
6. Have you brought in specific outsiders to expand the knowledge base and business acumen of the firm as it has grown? What has been the impact?
7. As the company grows, do you get the sense that things need to get more structured, detailed, and comprehensive regarding things like handling HR and judging employee qualifications, competence, and merit?
8. Do you ever think of being more oriented toward taking care of yourself and your family? Do you fear that future generations might be less attuned to taking care of family interests and be in it more for their own goals? Do you ever have second thoughts about major decisions you make because they could potentially undermine your leadership position or the status of the family?
9. Tell me about all you do to ensure your up-and-coming family members are well-prepared and viewed as being highly competent contributing employees. Tell me about your use of education, seminars, mentoring, etc. How important is previous experience with other firms before joining the family firm?
10. How do you handle compensation of family members? How do you structure your pay and their pay? Non-pay perks and benefits. Any tax considerations?
11. Other comments or observations you would like to make in order to help us better understand family business management?

METHODS

In this study the lead author interviewed 20 leaders of 20 different family businesses located in Georgia, Alabama, and Mississippi over a period of about four months in late 2024 and early 2025. All firms utilized for interviews were deemed to be performing well and the general business environment and economy was deemed positive. All the leaders interviewed were family members and all had at least two other employees working for the firm who were also family members. All interviewees were either top managers or at least members of the top management team. We did not determine the exact experience level of each leader, but all respondents were deemed seasoned and experienced. We utilized an informal interview format with the questions listed above as a framework but with other questions and clarification potentially included.

In most cases, the top leader was interviewed but in 4 instances a senior manager family member (other than the top leader) was interviewed. Interviewees were from multiple generations. Of the 20, seven were founders of the firm but nine leaders were children of the founder and four were grandchildren or great grandchildren. Of the 20 firms interviewed, 19 had at least two generations represented in the firm. Only five of the 20 interviewees were female. Businesses were all substantial with at least 10 employees in each firm ranging upwards to over 200 employees. Firms had anywhere from $1 million in revenue to just over $50 million in revenue. Family members employed in the company (including the leader) ranged from three to 11. Industries represented included trucking, convenience stores, banking, insurance, lumber production, commercial real estate, oil distributorship, HVAC company, LP gas dealer, law firm, car dealerships, contract food manufacturer, restaurant franchisor, timber and pulpwood company, and family farming operation.

As we have mentioned, the interviews were very casual and conversational and while the lead researcher made some notes during the interview, he mostly listened carefully and participated in the conversation. Shortly after each interview, the interviewer developed a short summary response to each of the research questions listed above. Also following closely after each interview, the interviewer would highlight especially interesting and useful responses. Qualitative information and explanation given by the interviewee were considered and strong examples/quotes are offered in the findings and discussion. The researcher reserved the right to call respondents back for follow-up and clarification and did so with five of the 20 interviewees. Many leaders interviewed frankly didn't provide the lengthy information-rich answers we had hoped to receive but all at least gave the interviewer enough information to formulate good answers to the research questions. Responses from many of these busy executives were relatively brief, very "to the point" with limited explanation, discussion, or interpretation. All five who received a follow-up call were rather brief with their original responses.

MAJOR INTERVIEW FINDINGS

Leaders interviewed were generally enthusiastic and quite positive about family members working for the firm. None of the respondents cited severe misgivings (negatives) about significant employment of family members (other than potential family conflict and minor clashes/misunderstandings). This overall positivity might be expected since we interviewed firms that chose to employ multiple family members and firms that were performing quite well. Among our respondents, it was clear that having family members working in the company was embraced, enjoyable, and very important to the firm leader. Reasons given in positive responses included loyalty, continuity, trust, community relations, and positive culture. As one respondent put it, "having my family in here with me is a great joy, we all work well together, and I never have to worry about their intentions or where their loyalty lies." Another respondent added that "all of us working together is mostly good and sort of defines us in the community." Another respondent said she was lucky to have family members that were very smart, educated, and professional. Only seven of the respondents spoke openly about potential negatives with having family members (most of this related to conflict and personal clashes among family members including across generations). Family members no doubt enhance trust, commitment, and comradery.

Well over half of the leaders indicated that the family dynamic is very strong and that the family members really get along well, like each other, trust each other, and spend time together. In most cases, this includes extended family and even non-family. Half of the respondents indicated that the entire staff was constantly having lunches, holiday events, and doing other things together to build comradery. One leader indicated that he personally cooks for the entire staff once a month. One leader said "we have a family reunion every year and it is a little like a stockholders meeting. We sort of update everybody on how things are going." Another indicated that the family goes to church together and on a regular basis they go out to eat together after church. Another leader indicated that most of the members of the family like to play golf together.

We received a range of answers on the comparison of family members with non-family employees, with the predominant answer being "we need both." If family members are trusted and appreciated so much, how do the leaders feel about non-family outsiders. Responses were mostly positive in favor of non-family (outsiders), especially for more senior outsiders in key

positions. Not as much positive was said about rank-and-file non-family employees but they were viewed as necessary. There definitely was some evidence of negativity and concern about outsiders. Five of our respondents spoke extensively about agency costs associated with outsiders (presumably speaking more about rank-and-file workers), with one remarking "you really have to vet folks from outside the family and know who you are dealing with." Another noted that "I know they are necessary, but I just don't have that inner trust with our hired (i.e. outside) folks, but they have been mostly good for us so far." Most interviewees were very positive about key non-family managerial employees that were brought in as the company grew, though two respondents cited concerns about loyalty, trust, and potential agency issues. One respondent noted they had fired an outside employee for embezzlement. We sensed that while family membership is likely preferred, most leaders are aware of the need for highly competent outsiders as well, if for no other reason qualified family members are probably not available in sufficient numbers or with sufficient skills. One respondent said, "we have gotten big enough that we had to bring in some managers from other companies." Well-vetted outsiders were generally viewed as well-qualified, experienced, professional, and highly objective. One of the respondents said "Greg is not related to us but is like a little brother. We really depend on him. He brings so much to the table and 'keeps us straight' (presumably referring to administrative discipline)." Another respondent stated the company was lucky to have three critical outsiders. One respondent argued passionately that with numerous family members on board it was critical to bring in a well-qualified, unbiased, trustworthy outsider to essentially run the company and receive input and "balance" from all family members.

None of the 20 respondents had any major negative views on family member employment, with seven or eight implying that minor and occasional conflict, arguments, and especially painful bluntness with family were quite common. Only five of the 20 interviewees cited having ongoing negative relations or more serious conflict with one or more family members during their tenure, but they were able to work together despite the negatives. Most cited rather minor incidents and said that conflicts with family members are not different from or more common than those experienced with non-family employees. Five respondents that worked with their spouses implied that the company business often "went home with them" and that problems at the company often caused stress that bled over into their personal lives together. One respondent lamented that he and his spouse often stay up late "fretting" about company business, remarking that "we live it 24/7." Another respondent said, "we definitely talk shop too much at family gatherings." Three respondents cited incidents over the years where they (or others) just couldn't work with family members (one was a brother-in-law, one was a cousin, and one was a sibling) and in all cases there was a somewhat amicable parting of ways. One of those respondents remarked, "I think he was wanting to go do something else anyway." Overall, conflict doesn't appear to be any more or less prevalent than in organizations not having the family ownership scenario.

When asked about the benefits of having family members onboard (or why they liked having family onboard), the majority of interviewees provided positives. Some were quite short and simplistic like "I can count on them to show up," "I know where they are coming from," or "it is easier for us to stay on the same page." One respondent said (paraphrased) "well you are limiting your pool (by) hiring a family member but there is just so much to be said for having a family business." A few respondents basically affirmed or at least hinted that it was fun and rewarding to run a business with family by your side. One man said he was thankful for being able to spend so much time with his children. Another respondent explained that her mother (in her 70's) was still

active and that it was a joy and a blessing working with her daily. We also received some comments in keeping with stewardship and socioeconomic wealth influences and of course agency theory. We received comments like "family is going to be committed long-term." Three of the respondents went so far as to recognize shared vision and positive outlook and several remarked (paraphrased) that all the family members were "working hard to build the firm and help the family rather than just in there working for a paycheck." Keeping with the paycheck theme, a couple more leaders indicated that they really liked having family members in the company because they got so much more out of it than just a paycheck. More than half of the respondents specifically alluded to "taking pride" in the family company. Several respondents admitted that non-family employees won't (usually) have the same level of interest, loyalty, engagement, motivation, and/or dedication to the firm. In most of our interviews, the values and heritage of the family was "front and center" in their personal agenda.

Agency theory plays a role in family member advantages. "Trust and allegiance" was a common theme in the interviews. Because of the innate desire to benefit the family and the firm, overall dedication, and committed hard work of family members, potential agency costs may be lower. Intrinsic goals of firm preservation and pride are critical. While virtually all respondents indicated some family members were "better contributors" than others, there was little concern about things like quality of work, full effort, loyalty, determination, or potential malfeasance or fraud. One leader remarked "in this day and age when good contributors are hard to find, you can still count on your family members." One respondent claimed the company couldn't accomplish all it did without the family members and their "higher level of commitment." A handful of respondents admitted that there was at least one family member who was less "dedicated" (or perhaps less qualified) and didn't share the same level of commitment to the family firm.

When asked to reflect on their obligations to the company, family, and employees, leaders provided a variety of answers. Over half very quickly and somewhat forcefully responded that their first obligation as firm leader is to the company and its stockholders. Most of these said (paraphrased) they "had to ensure that the family employees promoted the interests of the company and not the other way around." The basic theme was that the company must come first. One respondent remarked, "I am not running this company so my children or nieces and nephews can have big jobs." A few respondents alluded to the fact that they really didn't have a lot of time to worry about family matters and that running the company kept them very busy. One of the respondents rather bluntly remarked that they "couldn't be worrying about who got their feelings hurt or who was happy, they had a company to run." When it comes to hiring, a few respondents basically stated that they had to get the best employees they could find and when they have time to plan, family members work very well. It seems that sometimes these leaders don't have time to develop and hire a family member and they must find a highly qualified outsider. Several respondents emphasized that family members don't get the job strictly because of their family membership. Several leaders admitted heavy responsibilities to the family without much explanation. Many admitted they led the family as well as the firm. A few respondents alluded to the fact that they had to be a "peacemaker" and keep harmony in the family.

While leaders did not say a lot explicitly about stewardship or preserving socioemotional wealth, **there was the implication that family leaders view their role and duty as much larger than ensuring good economic success of the firm**. One respondent emphasized that they "had a lot of

pressure on them to promote the company and take care of the family." Several alluded to the fact that the family took great pride in the company, that the firm was a great source of income and wealth to family members, and that he/she was caretaker of the family's legacy. One respondent indicated that the company "is an extension of the family" and the family was dedicated to ensuring that the company thrived.

We asked leaders how non-family employees felt generally about the family and family members working in the company (including perceived fairness). We were interested to see only a few negatives like charges of nepotism or favoritism or any other major issues. However, we observed that family members feel compelled to go to great lengths to demonstrate their effectiveness, dedication, competence, and dependability. This seems very important to maintaining a positive rapport between family and non-family. The responses seem to indicate a mostly positive perception from non-family employed in the firm. Exactly half of the leaders admitted that the relationship between family members working for the company and non-family members **can** be a problem if the family isn't careful. As we noted above, a few leaders seemed almost obsessed with ensuring that outsiders looked up to and respected insiders. One leader spelled out how "you get hit with charges of favoritism if you aren't extra transparent and if you don't hold family accountable." Another respondent said family members have to know they are being watched and must "tow the line" so outsiders don't feel mistreated. One or two respondents admitted that they are probably "overly" worried about how the rank-and-file employees viewed "all the family working in here." Most respondents indicated that conflict was rare, and they felt on balance that all employees valued being part of a family business. Several admitted they had seen one or more occasions where a non-family employee felt negatively about what they perceived to be unfair special treatment. A few of the leaders admitted often it was difficult to be objective, for example with matters like performance evaluation, succession planning and promotion, and discipline. Interestingly, virtually all of them mentioned that they "had always been able to work through it." A couple of respondents specifically mentioned the old cache phrase "business is business" when discussing the more uncomfortable interactions with family members. We sensed that some of these "awkward responsibilities" like performance evaluation or asking about expenses or time management were some of the most challenging interactions between the leader and the family member. Three respondents specifically mentioned that family members were more likely to leave early or go take care of personal matters than non-family employees which had the potential to cause problems. It seems possible that a family member could potentially be a "free rider" and take advantage of their status to not work as hard or contribute as much as non-members. The leaders of the firms seemed convinced that outsiders were not opposed to the presence of family in the firm, but problems could emerge if they didn't do their part. If the family works hard to build a good culture, openness, and governance structure, most outsiders perhaps prefer working in a family firm. Prior research tends to support this notion (e.g. Neffe, Wilderom, & Lattuch, 2020).

We were interested to learn about the prevalence of family firms specifically looking for outsiders to add needed depth, experience, and professionalism to the management team. Twelve leaders indicated that they deliberately and intentionally brought in key outsiders for top leadership roles (to expand the knowledge base and business acumen of the firm). One leader said "there is no doubt that there are some excellent people we can bring in from elsewhere and we think there is some value to that." Another leader said "I think it would be easy to get a little stale

or outdated sticking with our management team. We needed to shake it up a little." One of the leaders indicated that the outsider they brought in had fully embraced the family and its members and had dedicated themselves to ensuring that family members were competent and productive employees. Three of the firms stated that they had non-members at the very top of the organization with family members technically working for non-members. Family members in these firms expressed great appreciation and admiration for the non-family leaders. One interviewee said of an outsider that "he is such a professional and has fully embraced the family." Another executive said, "that is the smartest man I know.' All these firms seemed very appreciative of their non-family outsider and there was evidence that they had even accepted them as a new member of the family.

Most of the interviewees felt very comfortable with their current level of transparency, professionalism, and objectivity in the HR function and other administrative areas. But most admitted that as they grew there was a greater need for transparency, extreme objectivity, pay scales, evaluation standards, etc. As the company grows, the distinction between family and non-family fades. As we mentioned earlier, most respondents are very convinced of the merits and superiority of their family employees and have experienced very little pushback from non-family employees. Only four of the respondents admitted that they needed to go in and "really tighten things up" and make their HR policies and procedures stronger and more objective. Many respondents alluded to the fact that objectivity and clarity makes the family vs. non-family distinction much more comfortable and manageable. Nearly half of the respondents stated specifically that they viewed their company as already highly professional and sophisticated in their HR and other practices/policies, with no pressing need for change.

Only four of the respondents admitted that they are tempted at times to quit worrying so obsessively about the extended family and start looking out strictly for the company and themselves/their immediate family. Almost all respondents implied that they felt tired at times and that they worried about the future. Five of the respondents told us that they could make more money working elsewhere and they had thought about taking it. About two-thirds of respondents said they understand that future generations of leaders will be less attuned to taking care of the business and family and more interested in personal advancement and outcomes. One leader indicated that they worried about the future leadership and had come to the conclusion that the company would "become less and less a true family enterprise." Another recognized that "this thing is going to get to a point where we should just bring in a professional team of outsiders and let them take care of the company and all of us." Even though one of the firms in the sample has been sold since the time of the interviews, the notion of selling was not brought up in the conversations. **Surprisingly, a few respondents (5) admitted that they had thought very hard (and even worried) about how certain investments or strategic moves would impact the family's well-being and them personally.** One respondent admitted that sometimes when looking at growth opportunities he became concerned that "we could let this thing get away from us and get bigger than we can handle." But only three felt that they had potentially let the impact on them or the family really shape their decision. One manager stated that they always had to be thinking about the company first and couldn't let personal or family interests prevent them from making good long-term decisions. He remarked "we can't let the fact that we are a family hold the company back."

Virtually all the leaders seemed highly interested in and fully committed to investing heavily in developing younger members of the family, including those who were not their own children. This theme seems highly correlated to some of the earlier discussion on ensuring that family members are always respected by non-family and viewed as highly capable. Family vs. non-family relations are no doubt much smoother when non-family members are confident in the leadership capabilities and competence of family members who own and manage the firm. But just over half the leaders also indicated that they took a strong developmental approach with non-family members as well. Perhaps this interest in educating/developing family is viewed as an effective means for ensuring competence and effectiveness and preventing charges of nepotism and favoritism. Stewardship and continuity of the family business is a big objective, and it seems likely that family firms are laser-focused on seeking out development opportunities for all the youngsters in the firm. Seven respondents said they had also encouraged young family employees to find an external mentor. A few of the interviewees mentioned mentorship within the firm and having youngsters learn "every part of the organization" as very important. Six leaders specifically cited the importance of continuity and succession as a driving force behind their obsession with family employee development (especially up-and-comers). Competence and preparation are no doubt key components in ensuring stewardship.

Related to development and training, leaders are keen on finding meaningful experiences for younger family members, often with other employers, before they join the family firm. In many cases, well over half of the firms interviewed (12), family members (including the leaders themselves) worked in another position elsewhere viewed as benefiting their preparation for joining the family firm. Often, they worked for similar firms elsewhere. For example, bankers often work for larger banking organizations with more advanced training programs. One farmer worked for a large seed and fertilizer company before coming on board at the family farm. One insurance executive indicated that he had worked for five years for a similar but much larger firm in a larger city. Leaders noted that this outside experience and success helped young family members build all-important credibility in addition to new perspective and skills. One respondent said, "there is no doubt we are better because some of us bring in experience from bigger companies." Several interviewees also noted that previous experience helped combat complacency and entitlement among younger family members. Several respondents said that they had not properly utilized opportunities to gain outside experience, for themselves or other family members, and planned to do better going forward. Interviewees indicated it was very important to communicate openly and honestly about the plan for gaining outside experience and the importance of bringing back good innovative ideas and beneficial knowledge from host organizations.

Compensation is a very important area of study in family firms. Most of the respondents acknowledged that it was not guaranteed that family members would be more highly compensated than non-members. One leader argued "I don't think you go with the family in order to get a big salary." In fact, over half (11) pointed out that younger members of the family **were not highly compensated,** but admitted with the potential benefits and advantages, the potential for high compensation was certainly there down the road. Most cited the need to be very objective and "fair" in assigning compensation and the importance of patience. One leader was adamant that family members are scrutinized by non-family and the community, and it was important that family members "don't get one dime that they aren't entitled to and earned." Three older respondents said

they told younger members of the family that they wouldn't make very much in the first few years of being at the firm until they proved themselves worthy. Family members are compensated and receive benefits for their performance but also for their ownership of the firm. About half of the 20 respondents specifically cited the tax advantage of being able to pay family members a salary that is an expense. These and a couple of others also noted all the expenses and family perks (such as vehicles) that could be expensed, as opposed to dividends that are double taxed (unless S corporation status had been elected). Over half of the respondents also mentioned that stock ownership was an important part of motivating family members. Several mentioned that once the family member gets to a point of being a major contributor, the firm tries to make all benefits pre-tax to decrease tax exposure as much as possible. As one banker in the survey pointed out, "I try to compensate family as much as I can on a pre-tax 'expense' basis because that way the government pays for a big chunk of it (the tax reduction)." Another respondent offered the old cliché phrase "it's not how much you make it's how much you keep." As we mentioned earlier, family members often make more than non-family members in total benefits (over half of the respondents admitted this) but lack of agency problems and unusually high commitment to the firm seem to justify this. But they are asked to wait for and earn these benefits of family ownership. Promotion doesn't seem to be overly challenging or convoluted by family relations. Leaders indicate that everyone recognizes excellence, and no one is surprised or taken "off guard" when a family member is promoted or takes on a more prominent role in the firm. Some of the leaders even mentioned that everyone had recognized perhaps years earlier how capable each family member is. One leader mentioned that "everyone pretty much knew I would be running the company one day." Only a few respondents indicated that they had received major negative feedback over the years about promotion or role change of a family member. It appears that family firms take a very long-term view of compensation and the benefits of the company for its family members.

CONCLUSIONS AND LIMITATIONS

One key takeaway is that this study generally found resoundingly positive results about family members working in the family firm, much more positive than some of the family firm research might have predicted. The family firm appears to create great joy and belonging among family members, which flows over into life away from the firm. The relationship between family and non-family appears mostly positive, but family members seemingly work very hard to ensure respect from non-family. Leaders seem extremely concerned that family members are always viewed as competent, committed, and highly motivated. This may drive some of the heavy focus on training, development, and career preparation. Problems related to perceived nepotism or favoritism appear rare.

Many respondents specified the strategic importance of critical non-family members. Family member involvement in leadership is a goal but being from the family is not a prerequisite for critical positions. We found evidence that stewardship, socioeconomic wealth, and agency theory were front and center as leaders make decisions. Leaders perceive a great burden of responsibility to multiple stakeholders from family and firm alike and we found only a very few leaders who had ever considered putting their own interests ahead of the family and perhaps relaxing their commitment to the family. We found little evidence of considering withdrawing, leaving the firm, or selling. Leaders seemed dedicated to objective and transparent management and very

professional HR and other processes, especially as the firm grows. Many expressed concerns about the competence, dedication, leadership ability, and family focus of younger generations going forward. Despite these concerns, employee development and competence (especially among family members) are a central focus, perhaps driven by concerns about continuity, stewardship, and respect from non-employees. Interestingly, family firms look in many cases to other family firms and leaders in the industry to serve as hosts and mentors to assist with this critical development of youngsters. Leaders seem enthusiastic and laser-focused on ensuring that the younger members of the family are fully prepared and highly capable. Despite concerns of stewardship and socioeconomic wealth, leaders say they mostly put the firm ahead of the family, but a few admitted they had worried about how rapid growth and key strategic decisions would impact long-term family ownership and benefit. Overall, leaders seem extremely dedicated to ensuring that compensation is fair and equitable for family members (usually erring on under-compensating younger family members) but recognize the long-term desire that family members ultimately benefit greatly from their ownership of the firm. Finally, leaders appear very aware that the family business can take advantage of tax implications when rewarding family members, a point rarely made in existing family firm research.

This research is important because it reveals a wide variety of very important information about the views of family firm leadership regarding their family members, non-family members, themselves, their firms, and the future. Findings emanate from very detailed but relaxed informal discussions between a unique, outstanding, and diverse sample of family firm leaders and a researcher who also happens to have spent many years running a banking organization that had banking relationships with many of these very firms and many other firms much like these. We argue that the researcher's knowing each of the respondents is a strong positive and led to candid relaxed discussion, although we admit that respondents could perhaps be influenced to present themselves in a positive and impressive light.

Unfortunately, the research is somewhat flawed and limited by the rather casual and unstructured/undisciplined research (interview) methodology employed by the study. The results are meaningful because it is an excellent sample and the findings are interesting, but this work must be considered exploratory and should be followed closely with more rigorous methods. The results come from the conclusions and "estimates" of one researcher based on perception and in many cases memory of the interview (although some notes were taken). The interviewer recorded basic answers to each research question and noted important responses immediately after each interview. The fact that the researcher knew the respondents is a positive in that the interviewer had a good memory of what each respondent said (in addition to the notes taken). Qualitative research should generally benefit from formalized and disciplined coding and multiple raters. Strong research wouldn't use words like most or "a few." The relaxed, unrecorded, unverified, and undisciplined methods of interviewing and recording responses is not ideal and this study or a very similar one should be conducted again with much more rigorous methods.

Another limitation is that some leaders were very busy and didn't provide a lot of detail and depth, but many took time out of their busy day to meet with the researcher. While there was a predetermined set of questions, the lead researcher asked some follow-up questions and clarified questions for respondents. The interviewer attempted to give respondents time and opportunity to volunteer interesting information, which was noted by the interviewer. The interviewer also placed

a few follow-up calls to clarify several responses. Clearly, much more methodologically rigorous qualitative research is necessary. There is also a need for quantitative cross-sectional study across larger samples of family firm leaders. Much of the positivity in this study might be attributable to the fact that the firms selected are all high-performing solid companies and admitting performance problems, external challenges, or operating difficulties would potentially lead to more negative responses and potential conflict within the family dynamic. With all of the respondents familiar with the researcher, there certainly could have been an element of "positive self-presentation" and painting a somewhat rosy picture of the family dynamics in the firm. However, the family business model appears to be much more positive than negative with multiple benefits to everyone involved including non-family employees.

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Book Review: Using AI in Academic Writing and Research: A Complete Guide to Effective and Ethical Academic AI

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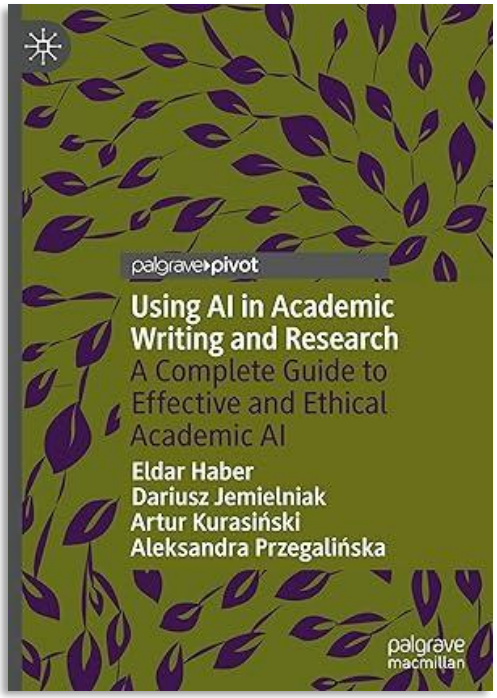

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Introduction and Context

In *Using AI in Academic Writing and Research*, Eldar Haber, Dariusz Jemielniak, Artur Kuraśiński, and Aleksandra Przegalińska present a timely, pragmatic exploration of how generative artificial intelligence (AI) is transforming research, writing, and publication. Situated at the intersection of technology, ethics, and higher education, the book aims to help academics understand how tools such as ChatGPT, Claude, Gemini, and Llama are reshaping scholarly communication, production, and institutional practice. The authors—each an established scholar in AI ethics, law, or digital society—combine their expertise to produce a guide that is practical, balanced, and accessible for a diverse academic audience.

Summary of Content

The book's ten chapters establish the conceptual foundations of generative AI before moving toward hands-on applications. The early chapters trace the evolution of artificial intelligence from symbolic reasoning to deep-learning models, explaining how generative AI creates text and images through probabilistic prediction and pattern recognition. Later chapters focus on research design, data analysis, academic writing, visualization, and publication workflows.

Chapters 4 through 8 contain the most actionable material, offering examples of AI-supported data cleaning, hypothesis generation, and presentation design. Chapter 9 addresses ethical and legal challenges such as authorship, privacy, and intellectual property, while Chapter 10 looks ahead to governance issues and the growing institutionalization of AI in academia.

Throughout, the authors emphasize that AI should function as a partner rather than a replacement for scholarly reasoning—encouraging transparency, accountability, and reflective engagement instead of uncritical adoption.

Analytical Evaluation

The primary strength of *Using AI in Academic Writing and Research* lies in its accessibility and pragmatic orientation. The authors succeed in making complex AI concepts—such as transformer architectures, deep learning, and reinforcement learning—understandable to non-technical readers. The integration of ethics, policy, and pedagogy provides a well-rounded perspective on AI's expanding role in academic life.

Nevertheless, the book remains practical rather than theoretical. Although the authors discuss "theoretical underpinnings," these are computational and algorithmic rather than philosophical. The work does not advance a formal theoretical model but draws instead on the logic of machine-learning theory and AI ethics. The most fitting characterization of its conceptual stance is technological constructivism—the idea that knowledge is co-created through human–machine interaction. This framework encourages innovation and critical reflection, even if it is articulated implicitly rather than developed as a formal theory.

Interdisciplinary Contribution

One of the book's most notable contributions is its cross-disciplinary reach. Designed for researchers, educators, administrators, and graduate students, it bridges the gap between technical understanding and academic application. Business and management scholars can apply its methods for AI-driven analytics, decision-making, and communication; educators can draw from its strategies for teaching digital literacy; and social science researchers will value its balanced treatment of ethics and governance.

Most examples arise from data-intensive disciplines, yet the ethical, organizational, and methodological principles are broadly transferable. The book effectively establishes AI competence as a baseline academic skill, paralleling the importance of information literacy and statistical reasoning.

Although *Using AI in Academic Writing and Research* lacks a single unifying theoretical model, its strength lies in transforming complex AI principles into practical guidance that scholars can confidently apply across fields. Through its technological-constructivist lens, AI is presented as a collaborator in meaning-making and innovation. This pragmatic approach broadens the book's relevance well beyond computer science, offering concrete applications for business analytics, organizational communication, and higher education. For readers in business disciplines, the text serves both as a primer on generative AI mechanics and as a roadmap for integrating ethical and efficient AI use into research and professional practice.

Conclusion

Using AI in Academic Writing and Research is a comprehensive and forward-looking contribution that combines technical clarity with ethical reflection. For scholars in business, management, and education, it provides a vital foundation for integrating AI responsibly into research, writing, and institutional decision-making. The authors remind readers that the future of knowledge creation depends on the synergy between human judgment and transparent collaboration with intelligent systems.

Reviewer's Note

This review was prepared with the assistance of OpenAI's GPT-5 language model, which supported document analysis, organization, and stylistic editing. All interpretive judgments and evaluations reflect the reviewers' independent analysis and verification of the book's content.

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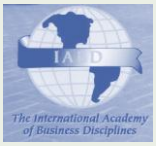

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