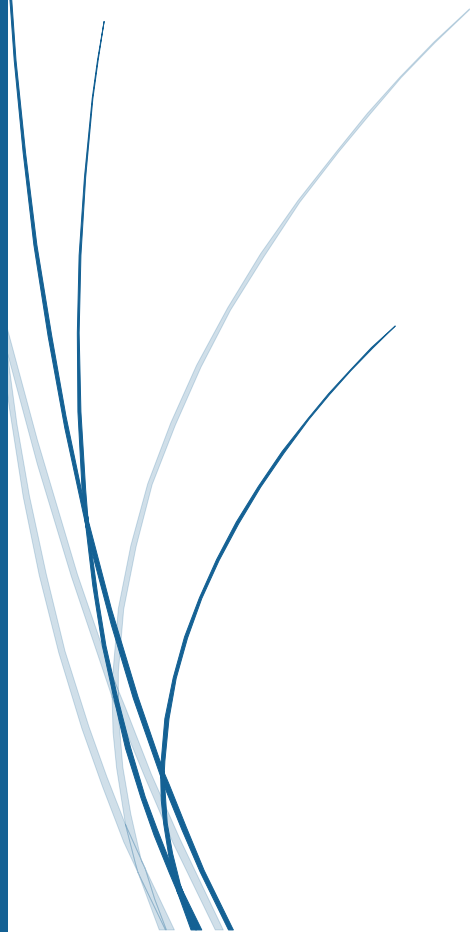




PhD by Portfolio

# M3 Capstone Project

Introduction of an  
AI-driven,  
personalised  
shopping app at  
ALDI SÜD



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## 1. Introduction

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***“Looking backward, there is one path to the present;  
looking forward, there are infinite paths to the future.”***  
*(Koulopoulos and Keldsen, 2014)*

The impact of artificial intelligence (AI) on our daily life and the way we shop is set to continue to grow. It seems probable that, in the near future, AI will become an integral part of our daily routines, without us necessarily noticing. The obstacles to the adoption of technology appear to be diminishing, with technology becoming increasingly user-friendly and accessible, primarily due to the development of voice-recognition technology. This may facilitate the adoption of technology by most people of all age spans.

To stay ahead of this development, an AI-driven, personalised shopping experience shall be offered to ALDI SÜD customers in German by introducing a modern, state-of-the-art shopping app. The app may utilise customer data, such as preferences, past purchases and dietary requirements, to offer tailored product recommendations. In addition, the app may provide real-time information on promotions and availability instore. Furthermore, the app may create a shopping list in the correct order of the store layout the customer chooses, add gaming options for the younger generations whilst shopping and provide information on sustainability impact and eco-friendly options. Chat bots and virtual dressing rooms may increase the digital shopping experience even further.

The application of artificial intelligence (AI) to the field of food retailing has the potential to greatly enhance the customer experience, while simultaneously offering retailers in the food retail sector a means of improving their operational efficiency and gaining valuable insights into their customers.

The proposed app will be genuinely disruptive to the retail environment and may create a dynamic of real change in the organisation of ALDI SÜD Germany.

## 2. ALDI SÜD – A Leading German Discount Retailer

ALDI SÜD is the leading discount chain in Germany, offering a limited assortment with a focus on private-label products at low prices (Siebert, 2023a). In May 2024, ALDI SÜD achieved a market share of 14.6%. Over the course of the year to date, the company's market share has remained at 14.4%. This makes ALDI SÜD the unquestionable market leader in both periods under review, with a clear lead over EDEKA which achieved 12.9% in May 2024 and 13.2% YTD (source: internal sources).

The company has built a reputation for efficiency, cost-effectiveness, and a no-frills shopping experience. ALDI SÜD's success in the German food retail market is attributed to its ability to meet the needs of price-conscious consumers while maintaining a high standard of product quality. ALDI SÜD's commitment to sustainability and responsible sourcing practices also contribute to its appeal among environmentally conscious shoppers. ALDI SÜD's presence in the German food retail market has had a significant impact on shaping consumer preferences and industry dynamics in Germany (see Siebert, 2023a).

The core business of ALDI SÜD revolves around the sale of groceries and household products at its 2,000 brick-and-mortar stores in Southern and Western Germany.



Figure 1: ALDI SÜD in Germany  
Source: internal presentation, ALDI SÜD 2024

Further details about the company ALDI SÜD are included in Appendix 1.

ALDI SÜD’s online presence is limited to its company website (Figure 2) with a link to its digital services (Figure 3), its online-shop website (Figure 4) and its customer app (see Figure 5).

The purely informative ALDI SÜD website features a user-friendly interface that enables customers to explore product offerings, access the weekly "ALDI inspiriert" leaflet, browse recipes, and find store locations. Furthermore, the website provides a basic shopping list and a range of online services, including those related to travel, mobile tariffs and photo services.

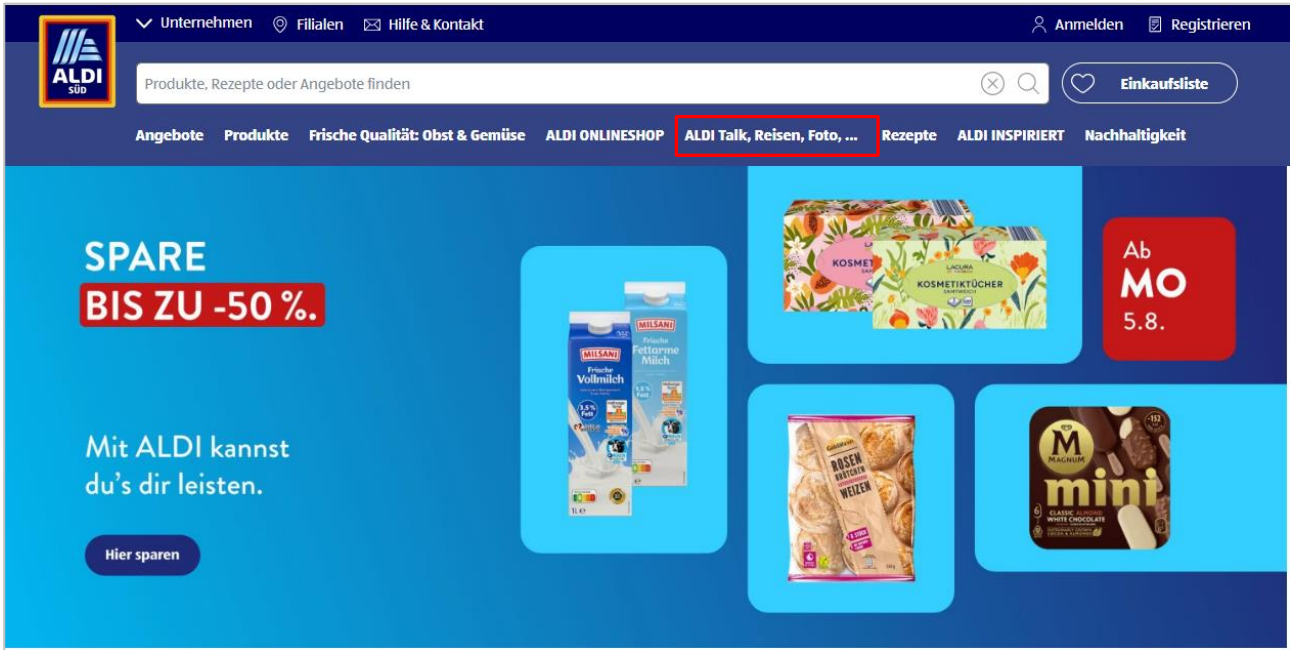


Figure 2: Screenshot ALDI SÜD company website  
Source: <https://www.aldi-sued.de/de/homepage.html> (07.08.2024)

ALDI SÜD offers a variety of digital services via its website under name of “ALDI Möglichkeiten” (translated: “ALDI opportunities”, such as mobile phone tariffs, photo services, energy, sports and prize draws.

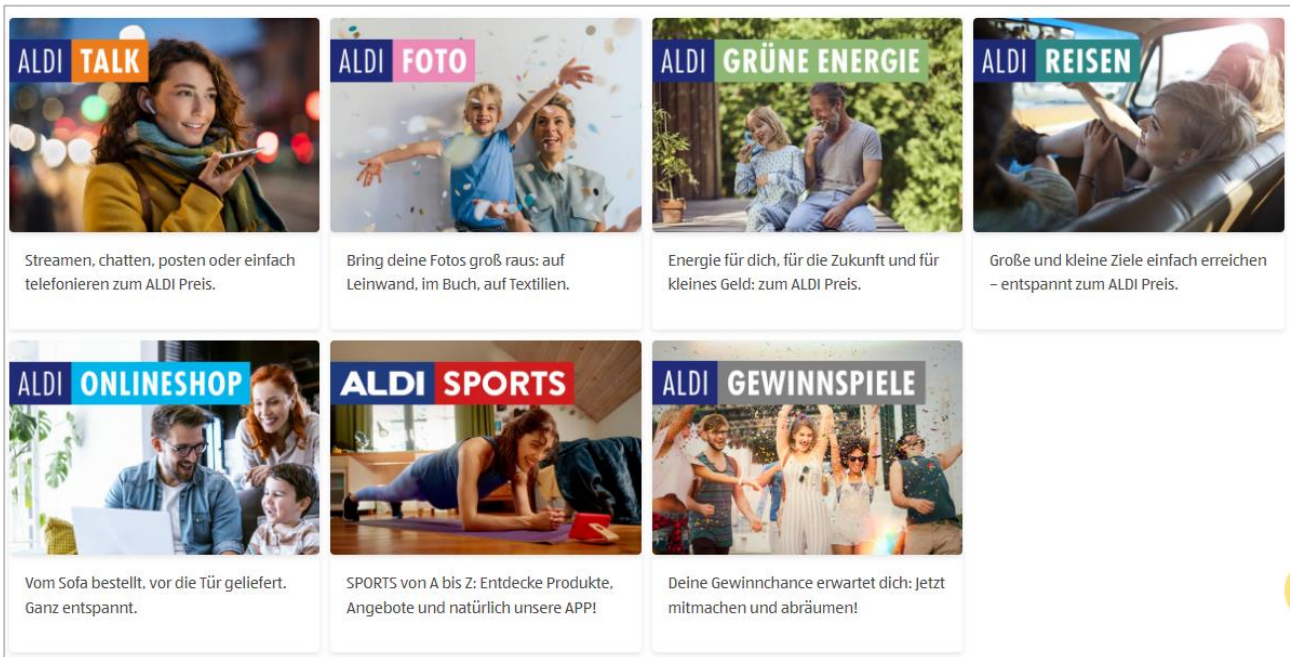


Figure 3: ALDI Möglichkeiten  
Source: <https://www.aldi-sued.de/de/aldi-moeglichkeiten.html> (07.08.2024)

The ALDI SÜD online shop allows customers to conveniently purchase a selection of special buys, e.g. technical goods, gardening equipment, toys, and furniture. The German online shop does not sell groceries.

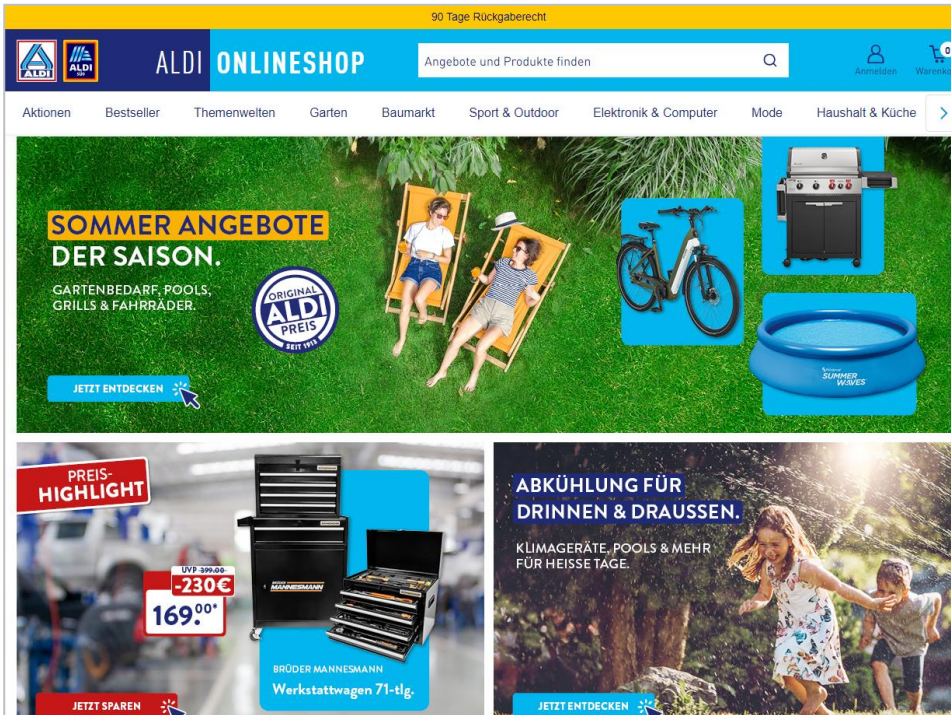


Figure 4: Screenshot ALDI Online shop for Special Buys

Source: <https://www.aldi-onlineshop.de/> (07.08.2024)

Furthermore, ALDI SÜD provides customers with a basic mobile application that enables them to view weekly specials, create simple shopping lists, and find store locations (Figure 5). The application does not include the option of online shopping.

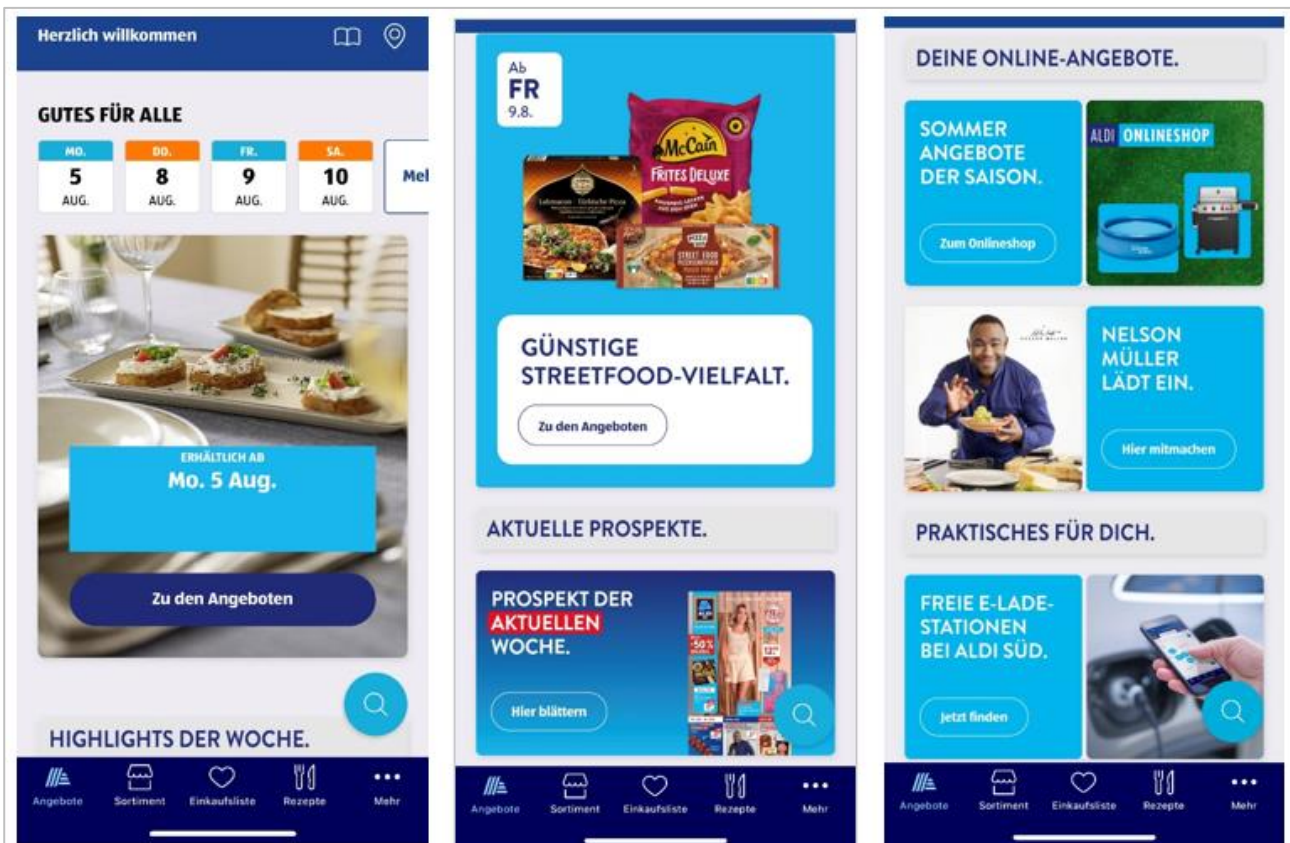


Figure 5: Screenshots ALDI SÜD customer app

Source: ALDI SÜD app, 2024

A brand-new digital offering was launched on 13<sup>th</sup> August 2024 called 'ALDI deals' (Figure 6). Customers can use this digital service to secure exclusive discount offers from various partner companies, e.g. festival tickets, theme parc tickets, flights and hotel accommodation. To date, there are only two offers available.



Figure 6: ALDI deals

Source: <https://www.aldi-deals.de> (14.8.2024)

### 3. Disruptive innovations

#### 3.1 Innovation: A Crucial Factor to Growth

Innovation is the process of systematically creating and marketing new products and services that significantly differ from existing ones (McKinsey, 2022, para. 1). Innovation is vital for a business's growth and long-term success.

A recent McKinsey study outlines four best practices to enhance innovation (McKinsey, 2024):

- Integrate innovation with growth objectives and company strategy.
- Pursue growth opportunities within core businesses and expand into related markets with high value potential.
- Invest comprehensively in innovation, covering research, development, resources, and flexibility.
- Strengthen M&A capabilities, focusing on systematic deal-making.

#### 3.2 Disruptive Innovation

The term 'disruptive' refers to significant changes or interruptions to established processes or systems. Disruptive innovations drastically transform businesses and industries by offering more affordable, accessible, or convenient products or services. The concept was introduced by Christensen and Bower (1995), who defined it as the ability of new technologies to create new markets or significantly disrupt existing ones.

#### 3.3 Innovation in a Post-COVID World

The global COVID-19 pandemic has significantly affected all aspects of life, influencing both personal routines and professional practices. Bar Am et al. (2020) note that crisis like the pandemic present not only dangers but also choices that can lead to substantial opportunities: A 2020 McKinsey study found that 71% of retail executives saw the pandemic as a major growth opportunity for their industry. However, other sectors, such as industrial and basic materials, viewed the pandemic's impact less favourably (see Figure 7).

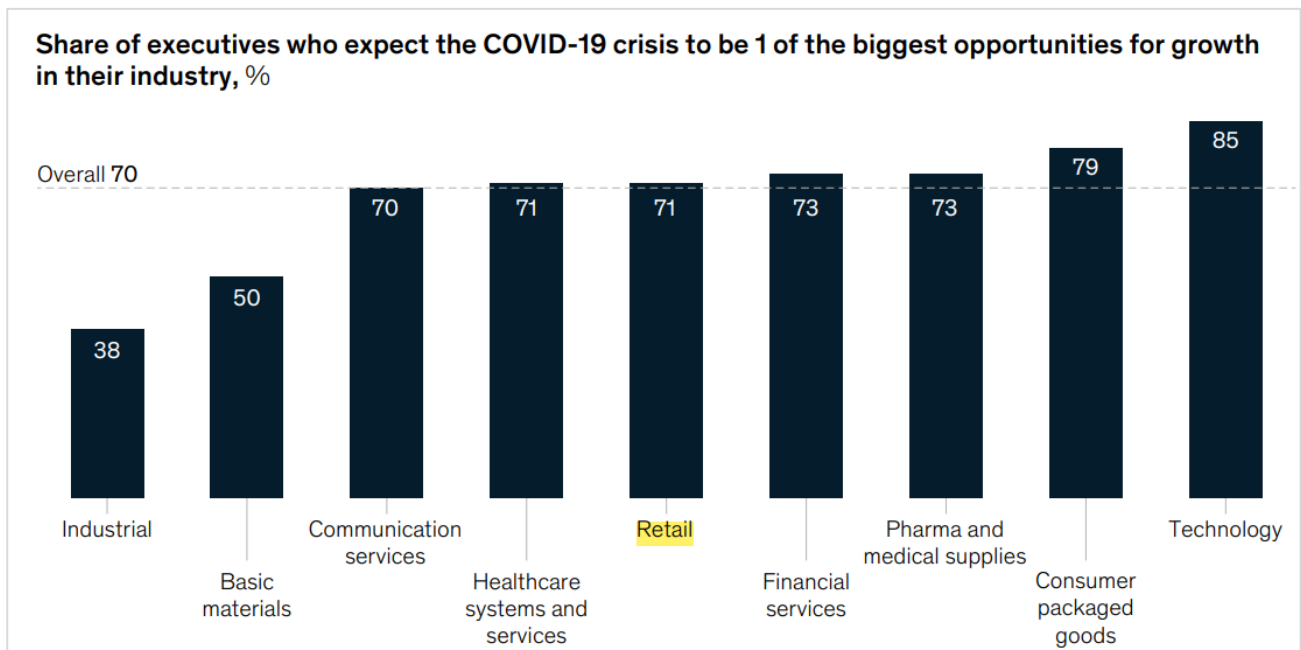


Figure 7: McKinsey Survey April 2020

Source: Bar Am et al. (2020)

The study highlighted that, contrary to the four best practice ideas for innovation (see 3.1), most businesses focus on maintaining business continuity within their core units rather than pursuing new and innovative opportunities. Despite

claims that innovation-led growth is a priority, many executives admit their organisations are more focused on cost reduction and productivity improvements within core units (Bar Am et al., 2020).

The pandemic has accelerated digital adoption across industries (Holm, 2022), with retailers like ALDI SÜD potentially benefiting by offering personalised experiences through digital tools, such as an AI-driven shopping app. The challenge for organizations like ALDI SÜD lies in adapting their core businesses to meet changing customer needs, such as digitalization and eCommerce, while also identifying future trends like AI technology. This is particularly true given the extent to which these future trends may seem futuristic (see 0). Introducing an AI-driven, personalised shopping app to its customers contributes to the aim of turning a threat such as the COVID-19 pandemic into a great opportunity for ALDI SÜD.

### **3.4 Innovation in a New Cultural Setting: Gen Z and Technology**

The increasing accessibility, availability, and affordability of the internet and technology have helped bridge generational gaps (Koulopoulos and Keldsen, 2014). For today's younger generation, technology is a natural part of life, seen not as a threat but as an essential and enriching element of daily living. The simplification of technology, e.g. through voice control, has made it easier for people of all ages to adopt new innovations, leading to a faster rate of adoption without requiring prior experience.

This trend suggests that an AI-driven, personalised shopping app for ALDI SÜD customers may be introduced successfully across all age groups. To stay competitive, ALDI SÜD must recognise and adapt socio-cultural changes and evolving customer needs, ensuring that it can meet both current and future demands. By anticipating major trends, such as the rise of AI-driven tools, ALDI SÜD may gain a competitive edge. Introducing a personalised shopping app may position ALDI SÜD at the forefront of technological innovation, offering its customers of all ages a simpler, more intuitive shopping experience—an area where no other retailer currently offers a similar service.

### **3.5 AI and its Power to Transform**

AI is emerging as a transformative technology with the potential to revolutionise various aspects of society by enhancing efficiency, productivity, and decision-making. Through complex algorithms and machine learning, AI can analyse large datasets, identify patterns, and make highly accurate predictions. Its power lies in the ability to automate tasks, optimise workflows, and drive innovation across industries, fundamentally changing how we live, work, and interact in the digital age.

In food retail, AI is set to revolutionise the industry by improving customer experience, optimising supply chain management, and streamlining operations. AI-powered tools like predictive analytics can help retailers anticipate consumer demand, manage inventory, and personalize marketing efforts. AI-driven virtual assistants and chatbots can provide tailored recommendations, improve customer service, and enhance shopping experiences both online and in-store. By embracing AI, the food retail sector can achieve greater efficiency, profitability, and customer satisfaction in the evolving digital landscape.

### **3.6 Conclusion**

Integrating innovation into ALDI SÜD's growth strategy is crucial for achieving long-term success and adaptability in the dynamic food retail landscape. In the post-COVID era, the emphasis on disruptive innovation underscores the need for ALDI SÜD to explore new growth opportunities while maintaining continuity in its core operations, particularly its brick-and-mortar stores. The pandemic has accelerated digital adoption, pushing companies to rethink their approaches to innovation and customer engagement.

The introduction of an AI-driven, personalised shopping app presents a transformative opportunity for ALDI SÜD. Given AI's transformative impact across industries, deploying such an app would align with the broader trend of digital transformation. It would give ALDI SÜD a competitive edge by offering innovative solutions tailored to its customers' individual needs. With technology being rapidly adopted across all demographics, an AI-driven app may not only meet current market demands but also anticipate future trends, ensuring ALDI SÜD's sustained relevance and growth.

## 4. Food Retail Shopping – Today and the Future

### 4.1 Food Retailing in Germany Today

The German food retail sector is marked by intense competition, strong price sensitivity, and a strong emphasis on quality (Siebert, 2023a). Various retailers, including traditional supermarkets, discount chains, local speciality stores, and online platforms, compete for market share. About 15% of private consumer spending in Germany is on food, making the market lucrative and relatively resilient to economic fluctuations (Statista, 2023a). The pandemic and rising inflation have shifted consumer preferences towards online food shopping, leading retailers to focus on price-consciousness and digitalisation for cost efficiency. Sustainability, convenience, and health awareness are also shaping the competitive landscape.

E-commerce is a growing trend in the retail industry, with online retail generating around €85 billion in Germany in 2022 (Statista, 2023a). However, its penetration in the fast-moving consumer goods (FMCG) segment is still modest, due to ingrained consumer behaviour favouring impulsive purchases and concerns about product freshness. Despite these challenges, e-commerce is gaining popularity among consumers seeking convenience and flexibility in grocery shopping (Siebert, 2023c).

Online delivery services like 'REWE Lieferservice' and 'Amazon Fresh' have primarily flourished in urban areas (Siebert, 2023a). Startups like 'Flink' and 'Gorillas' introduced rapid delivery services in major cities, though Gorillas already ceased operations in May 2024 due to profitability issues. ALDI SÜD's exploration of delivery services near its headquarters in Mülheim reflects the company's effort to gain expertise in this domain (Siebert, 2023c).

ALDI SÜD is currently testing 'Click & Collect' services at selected locations near their headquarters to gather insights without immediate plans for a national rollout (ALDI SÜD, 2024).

REWE has integrated technology into their offerings with a click & collect service and self-scanning options to enhance customer convenience and streamline the shopping experience.



**Figure 8: ALDI SÜD "Click & Collect" Test Setting in Germany (left) and REWE Scan&Go (right)**

Source: ALDI SÜD internal and Schader (2021)

Amazon continues to push the boundaries of retail technology with concepts like 'Amazon Go' (see 4.2.1) and 'Amazon Dash Carts' (see 4.2.2), though these innovations are being tested in the USA and have not yet been introduced in the German market.

In times of persistent inflation, high energy costs and expensive food prices, a significant proportion of consumers in Germany have adopted a savings-oriented approach to their spending. Those with a keen awareness of price movements are engaging in more rigorous price comparisons when procuring goods from supermarkets or discount retailers. Therefore, now might just be the right time to introduce a shopping app for ALDI SÜD customers that caters to the needs of price sensitive customers.

## 4.2 Emerging Trends in Retail

Emerging trends in retail are expected to be driven by technology, with a growing emphasis on seamless omnichannel experiences blending physical and digital shopping. Personalisation and customisation will play a key role in enhancing customer engagement and loyalty, with a clear focus on the usage of data analytics to offer tailored products and services. Sustainability and eco-conscious practices may continue to gain importance, as consumers increasingly seek out ethical and environmentally friendly options when making purchasing decisions (Siebert, 2023c).

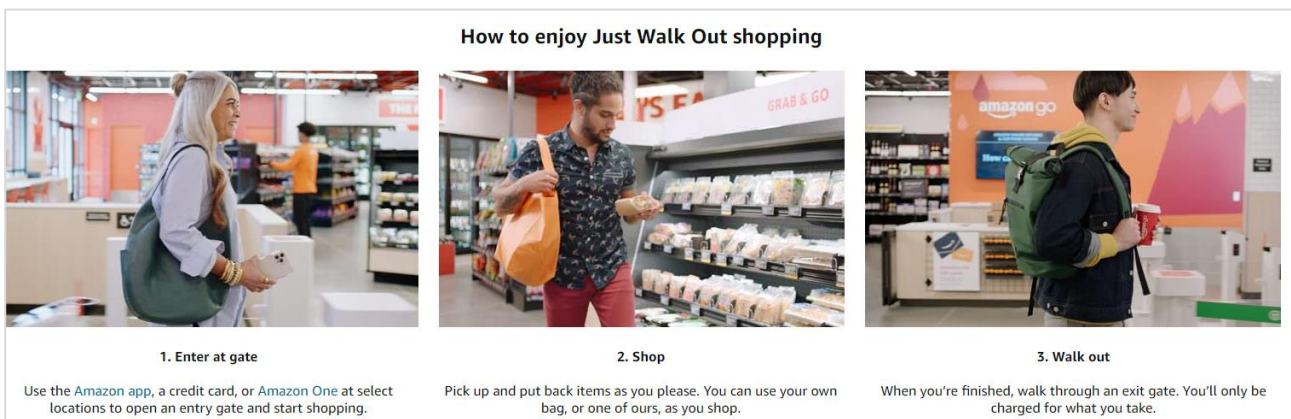
In considering future trends in the retail sector, it is important to recognise that the future cannot be forced into the mould of the past. To anticipate future developments in the retail sector, it is essential for ALDI SÜD to adopt an open-minded and imaginative approach.

### 4.2.1 “Just-Walk-Out”-Technology

When reimagining the grocery shopping experience, one constant challenge is shoppers' aversion to waiting in lines. Just-Walk-Out-Technology (JWO) addresses this issue by allowing customers to enter a store, select their items, and leave without waiting in line.

JWO-technology relies on AI, image recognition, and sensors (Enescu, 2021). Sensors are placed on aisles or shelves to track the products that shoppers pick up and move. Cameras positioned throughout the store monitor shopper activity. Before entering, customers must use a specific mobile application that processes their personal information and payment method.

Amazon USA already offers such a fully automated store set-up in the USA, using JWO to allow its customers to shop without the traditional checkout process (see Figure 9).



**Figure 9: AmazonGo ‘Just-Walk-Out’-shopping**

Source: Amazon USA, 2024

According to Amazon (2023), the 'Just-Walk-Out'-technology is made possible by the application of AI-techniques, including computer vision and deep learning, in conjunction with generative AI, which enables the accurate determination of the items taken by a customer. However, there may be a significant number of physical employees tasked with monitoring shoppers' journeys through the store, rather than the technology performing this function (Lin-Fisher, 2024a).

ALDI USA had also launched a trial store with a “Just-Walk-Out”-technology in Aurora, Illinois, to test this new technology (see Figure 10). Ash (2024) asserts that the technology was not yet sufficiently reliable to warrant further rollouts. Consequently, the store has ceased its JWO-operation.



Figure 10: ALDIgo at the ALDI store in Aurora, Illinois (USA)

Source: Lin-Fisher (2024b)

Additionally, ALDI UK operates an automated store in London under the designation 'ALDI SHOP&GO' (Figure 11). Giles Hurley, the chief executive of ALDI UK and Ireland, states that the company is continually seeking to redefine the concept of a discounter. He further asserts that the technology employed in this trial will afford the business a substantial degree of insight (Spiegel, 2021).




Figure 11: ALDI SHOP&GO store in London, UK

Source: ALDI UK (2024)

The technology utilised at the ALDI UK store is comparable to that employed at Amazon Go (see Figure 12).


## Welcome to Aldi SHOP&GO - a checkout-free shopping experience

Our very first SHOP&GO store uses state-of-the-art technology so you can shop faster and easier without queues through our checkout-free shopping experience. You'll find all your favourite groceries, toiletries and alcohol inside, at the Aldi prices you love, without a till in sight!




**App**

Download our SHOP&GO App to enter.




**OR Tap**

OR Tap your contactless payment to enter.



**Shop**

Just pick up an item or bag it.



**&Go**

No tills or queues, that's it.

### Your receipt

Once you've finished shopping, you'll be charged and will receive your receipt via the App. Alternatively if you've entered using your contactless payment you can view your receipt at [shopandgo.aldi.co.uk](https://shopandgo.aldi.co.uk)

[VIEW RECEIPT](#)




Figure 12: ALDI UK 'Shop&Go'-process with JWO-technology  
Source: ALDI UK (2024)

It seems plausible to suggest that automated stores may become the norm rather than the exception in the future. Although the current practice relies on human employees to stock shelves, there is potential for robots to be employed for restocking, customer assistance, and the management of logistics within stores.

#### 4.2.2 Smart Shopping Carts

The utilisation of intelligent shopping carts, exemplified by the 'Amazon Dash Cart', enables customers to efficiently navigate the product range via an on-cart screen featuring maps and navigation. The customer is presented with personalised offers and product suggestions, which serve to enhance the overall shopping experience (Amazon, 2024). Furthermore, customers can monitor their expenditure and savings in real time.

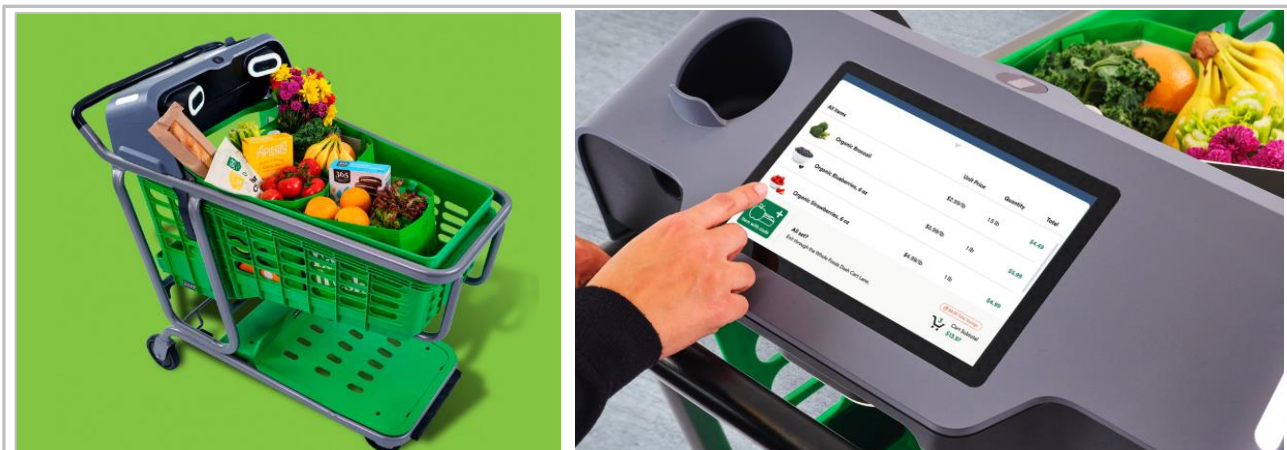


Figure 13: Amazon Dash - smart shopping cart  
Source: Amazon (2024)

### 4.2.3 Ultra-fast Delivery Options

Customers prioritise convenience and safety after the COVID19-pandemic, which allows delivery formats to gain relevance. Statista (2024a) reports that 43% of respondents of a recent survey value rapid delivery for online grocery shopping. Ultra-fast delivery, like Tesco's "TESCO Whoosh" in the UK, where orders are delivered by Uber drivers in under 30 minutes, is expected to grow, especially in urban areas.



**Figure 14: Tesco Whoosh ultra-fast delivery**

Source: Tesco UK (2024)

### 4.2.4 Artificial Intelligence

AI is expected to significantly impact future consumer behaviour by reshaping interactions with products, services, and brands. Businesses can use AI algorithms and machine learning to analyse data, offering personalised recommendations, targeted ads, and customised experiences based on individual preferences.

### 4.2.5 Internet of Things

The Internet of Things (IoT) is transforming daily interactions with technology by enabling seamless communication between devices. This facilitates personalised consumer experiences and also has the potential to revolutionise retail through tailored shopping, targeted marketing, and smart inventory management. As IoT advances, consumer behaviour will likely shift towards more connected and customised interactions.

## 4.3 Conclusion

By embracing innovative solutions and staying attuned to evolving consumer expectations, ALDI SÜD can position itself as a leader in delivering a seamless, personalised shopping experience in the competitive retail landscape.

The strategic adoption of an AI-driven, personalised shopping app may present a promising opportunity for ALDI SÜD to enhance its competitive edge, foster customer loyalty, and adapt to the dynamic retail landscape of the future.

## 5. Survey

*“Good ideas come from the bottom up!”*  
 S. Janson (2018)

### 5.1 Contextualisation & Objective

The question arises as to the extent to which German customers are prepared to accept AI as an integral component of their shopping experience, and whether they would utilise and place value on an AI-driven, personalised shopping application.

The primary objective of the survey was to explore the factors influencing customer acceptance of AI in shopping apps, especially in light of emerging technological trends. Other German retailers have already successfully introduced shopping apps to boost customer loyalty and gather valuable data, e.g. Lidl. The survey sought to fill the gap in understanding how customers perceive these technologies and their potential impact on shopping behaviours.

The full-length version of the survey can be found in Appendix 2.

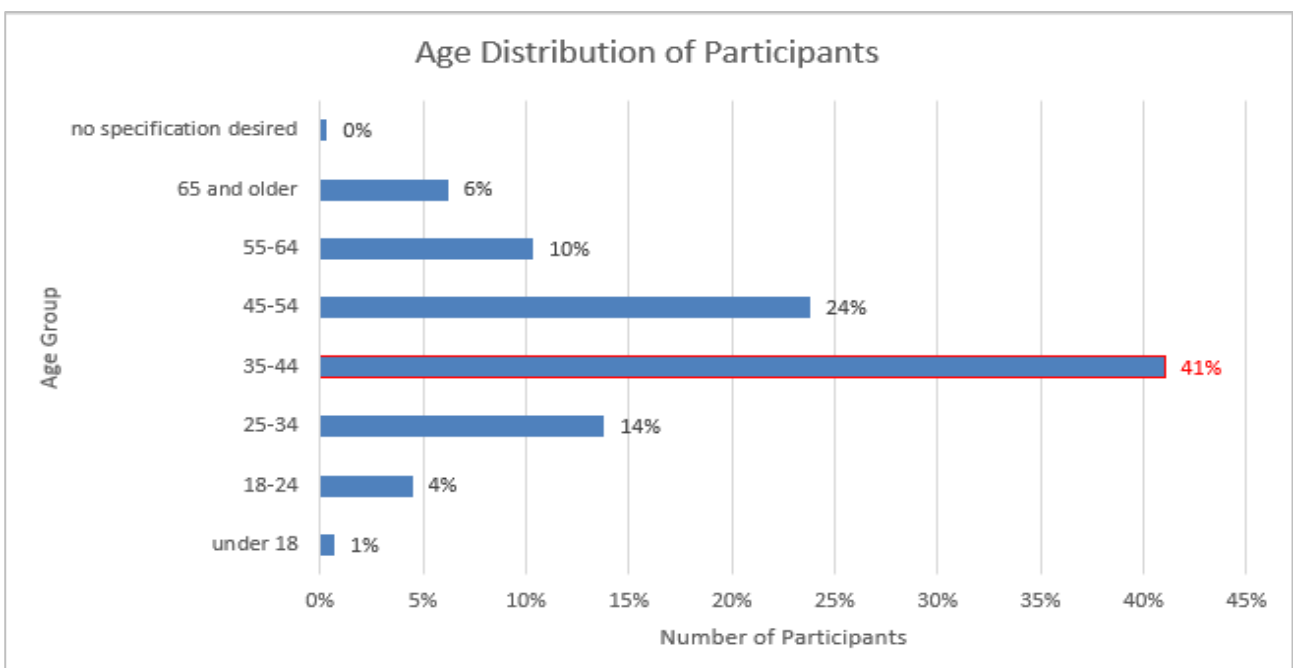
### 5.2 Methodology

The survey was conducted online, reaching participants through social media platforms (WhatsApp, LinkedIn, Facebook). A total of 292 individuals participated over a two-week period. The survey design included 15 questions, utilizing a mix of Likert-scale items, multiple-choice and single-choice questions, and an open-ended question for general feedback. Before full deployment, the survey was pilot tested for clarity and reliability.

### 5.3 Key Findings

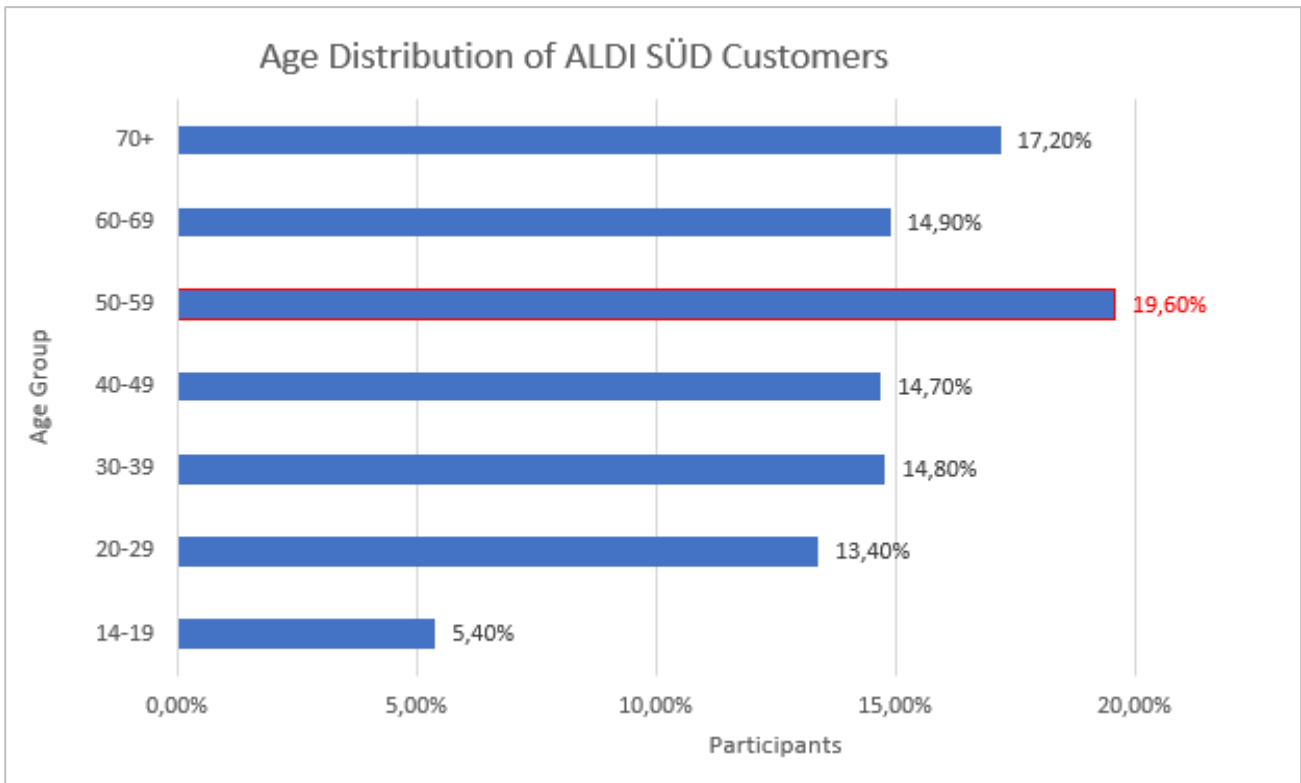
#### 5.3.1 Demographics

The age distribution of the participants indicated that the majority were middle-aged adults, particularly those between 35 and 44 years old (Figure 15). This may not fully represent the broader customer base of ALDI SÜD, where older age groups (50-59 and 70+) dominate (Figure 16).



**Figure 15: Age distribution of survey participants**

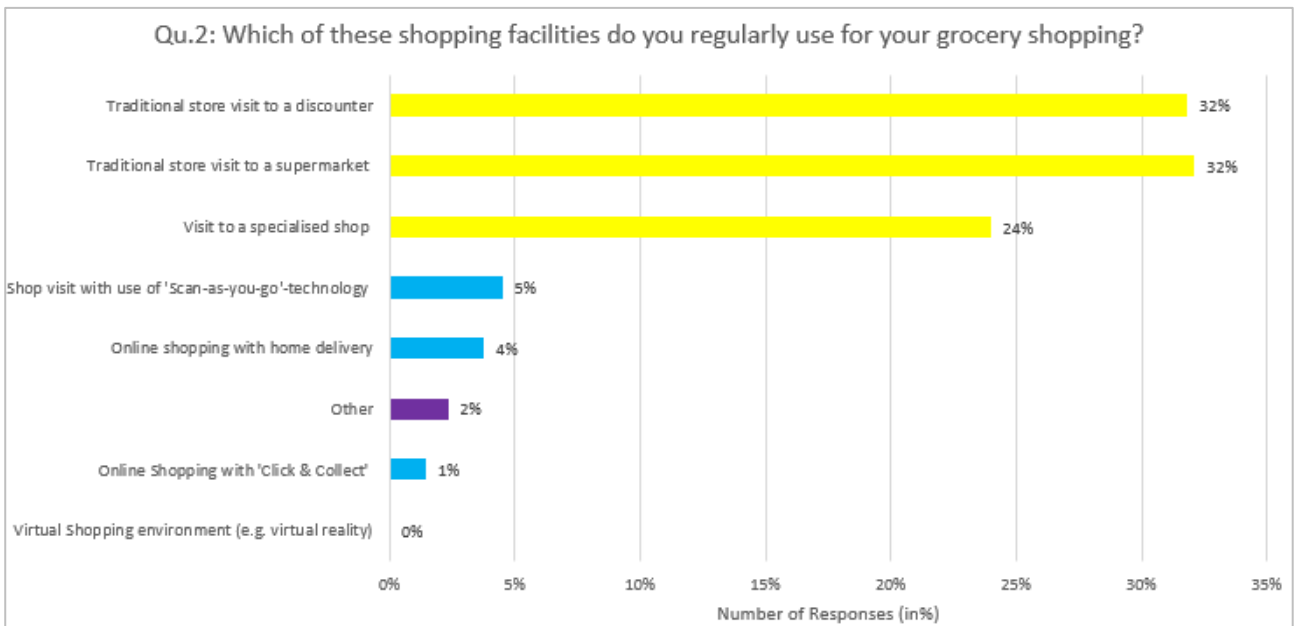
Source: Survey data (see Appendix 2)



**Figure 16: Age distribution of ALDI SÜD customers**  
 Source: Statista (2021)

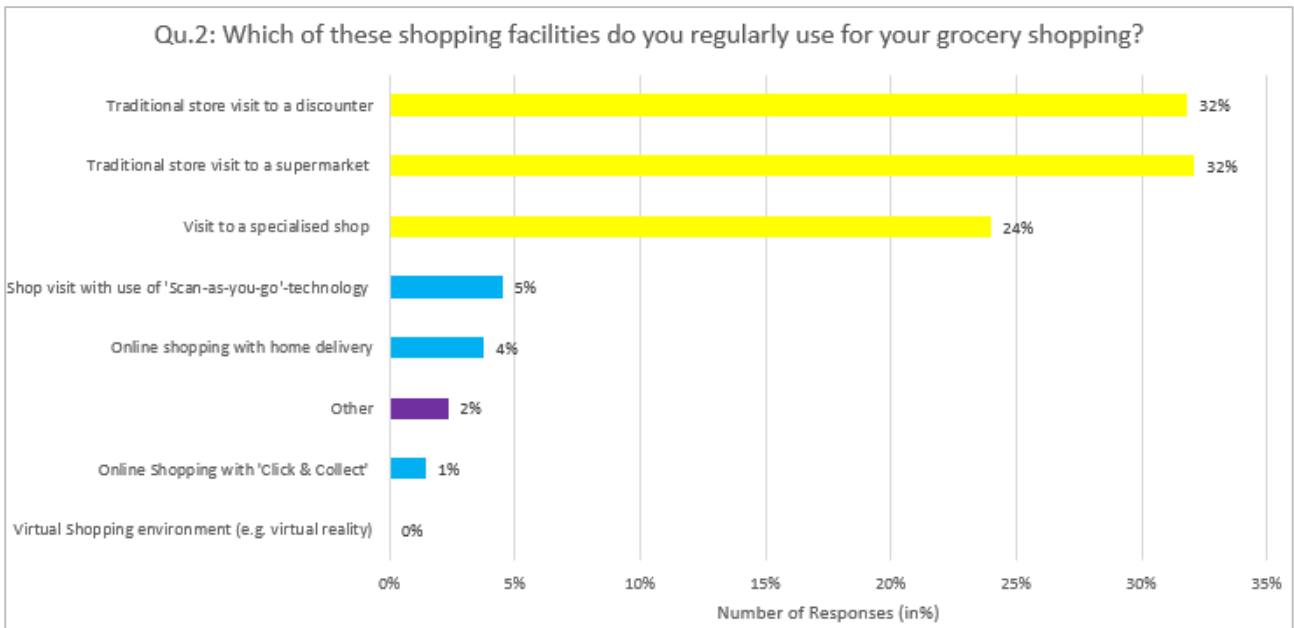
### 5.3.2 General Shopping Habits of Participants

The data revealed a strong preference for traditional shopping methods, with 88% of participants shopping at supermarkets, discount stores, or specialty shops like butchers and bakeries. Modern shopping methods, such as ‘Scan-as-you-go’ and online shopping with home delivery, were less popular (



**Figure 17).**

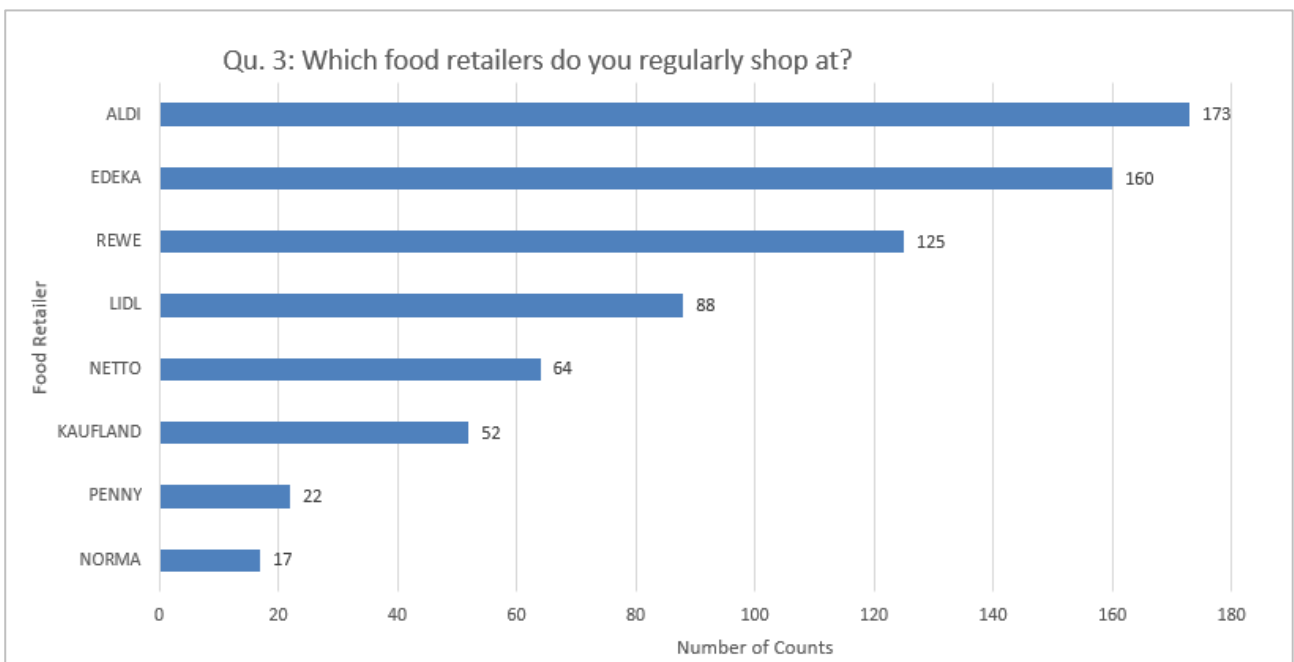
Overall, traditional shopping remains predominant among the participants.



**Figure 17: Use of different shopping facilities**

Source: Survey data (see Appendix 2)

ALDI SÜD emerged as the most frequented supermarket chain among respondents, followed by EDEKA and REWE (Figure 18).

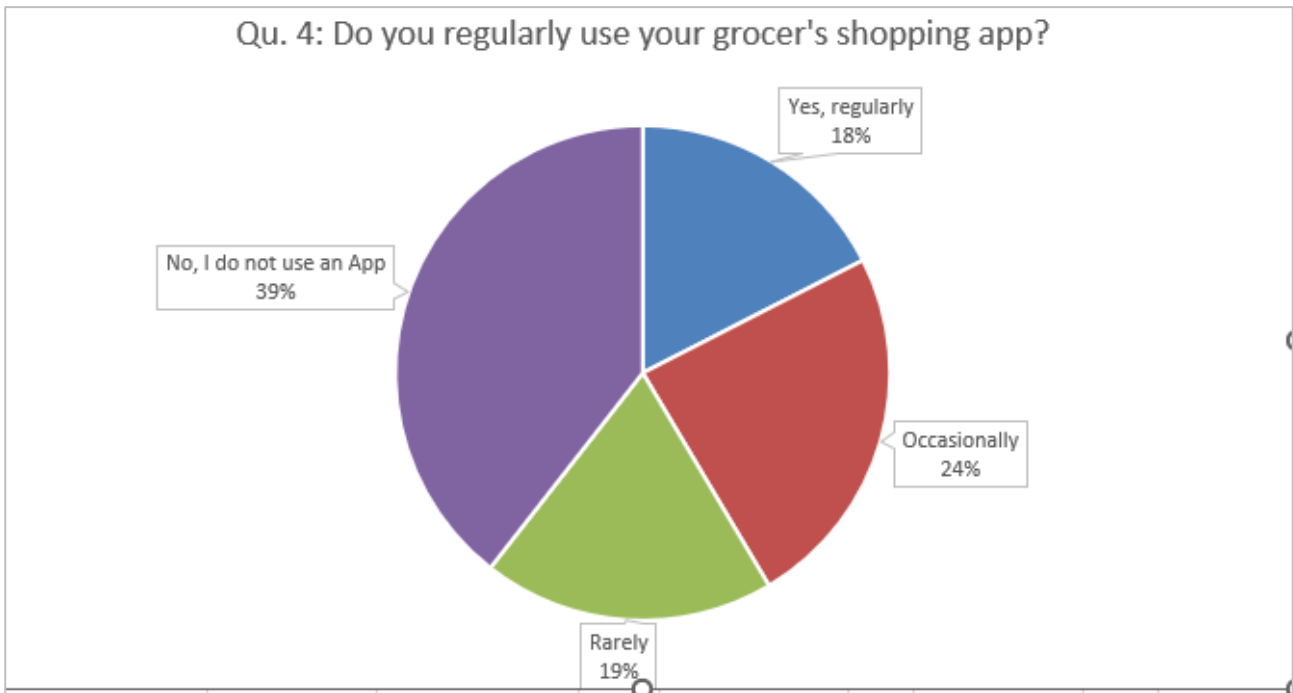


**Figure 18: Preferred food retailers**

Source: Survey data (see Appendix 2)

### 5.3.3 Current App Usage of Participants

A minority of respondents regularly use shopping apps, with 18% using them consistently and 24% occasionally. A significant portion (39%) does not use shopping apps at all, indicating a continued preference for traditional shopping methods (Figure 19).



**Figure 19: Usage rate of grocer's shopping app**

Source: Survey data (see Appendix 2)

App usage also varied across age groups, with younger participants being more likely to use grocery shopping apps regularly (Figure 20). Overall, all age groups do use shopping apps regularly or at least occasionally.

Age band	participants	Yes, regularly	%	Occasionally	%	Rarely	%	No	%
under 18	2	0	0%	0	0%	0	0%	0	0%
18-24	13	3	<b>23%</b>	3	23%	2	15%	2	15%
25-34	40	4	10%	7	18%	9	<b>23%</b>	10	25%
35-44	119	18	15%	25	21%	19	16%	43	36%
45-54	69	10	14%	14	20%	11	9%	23	33%
55-64	30	4	13%	8	<b>27%</b>	6	20%	8	27%
65 and older	18	3	<b>17%</b>	2	11%	0	0%	10	<b>56%</b>
<b>Total:</b>	<b>291</b>	<b>42</b>		<b>59</b>		<b>47</b>		<b>96</b>	

**Figure 20: Correlation between age band and app usage**

Source: Survey data (see Appendix 2)

### 5.3.4 Importance of a Personalised App to ALDI SÜD Customers

When asked about the importance of a personalised shopping app from ALDI SÜD, responses were mixed. While the average rating was relatively low, indicating a general perception of the app as unimportant, a notable segment of customers would value the app highly (Figure 21).

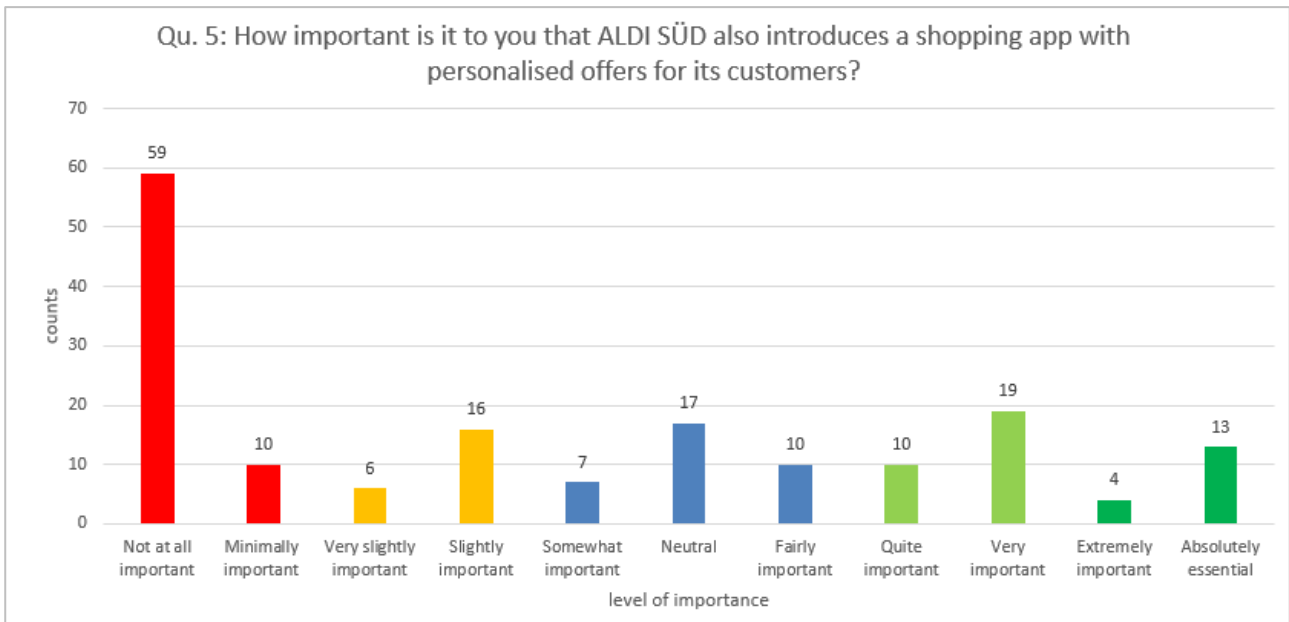


Figure 21: Importance of an ALDI SÜD shopping app to participants

Source: Survey data (see Appendix 2)

This mixed sentiment indicates that while introducing a personalised ALDI SÜD app is not universally regarded as a crucial tool by all customers, it does hold significant value for a particular segment. It may therefore be beneficial for ALDI SÜD to conduct further research to gain insight into the needs and preferences of those who find the app important and to identify potential avenues for enhancing its appeal to those who do not.

### 5.3.5 Importance of Personalised App Functions

Receiving special offers and exclusive discounts, price checks, viewing the current advertising brochure and collecting loyalty points (reward programs) are rated as most important for participants (Figure 22). This highlights the price-awareness of German customers. Self-scanning and contactless payment, digital receipts, and real-time notifications about special offers are also valued by a significant number of users. The least important functions to users are personalised recommendations, use of the 'Click & Collect' function, and additional product information.

	important	%	neutral	%	not important	%
special offers and exclusive discounts	166	68%	36	15%	43	18%
price check	150	63%	48	20%	42	18%
view current advertising brochure	141	58%	48	20%	53	22%
loyalty points and reward programmes	130	54%	48	20%	62	26%
self-scanning and contactless payment	131	54%	48	20%	65	27%
digital receipt	124	51%	53	22%	68	28%
real-time notifications about special offers	106	44%	62	26%	74	31%
digital shopping lists	104	43%	52	21%	88	36%
payment function in the app	93	39%	51	21%	96	40%
review and repeat previous purchases	86	36%	78	32%	78	32%
online ordering and delivery	82	34%	60	25%	98	41%
product reviews	76	32%	75	32%	87	37%
additional product information	77	32%	85	35%	80	33%
use of the 'Click & Collect' function	63	27%	72	31%	100	43%
personalised recommendations	61	26%	66	28%	111	47%

Figure 22: Rating of functionalities

Source: Survey data (see Appendix 2)

### 5.3.6 Future App Functionalities

Respondents were interested in several new app functionalities, solving some of their most common problems when shopping in-store (see Figure 29): Waiting-time at tills and finding the desired (and available) product in-store. JWO-technology and scan-as-you-go are perceived positively in this respect. Product recommendations based on preferences and dietary restrictions and smart shopping lists are also favoured (Figure 23). These features suggest a desire for a more personalised and convenient shopping experience.

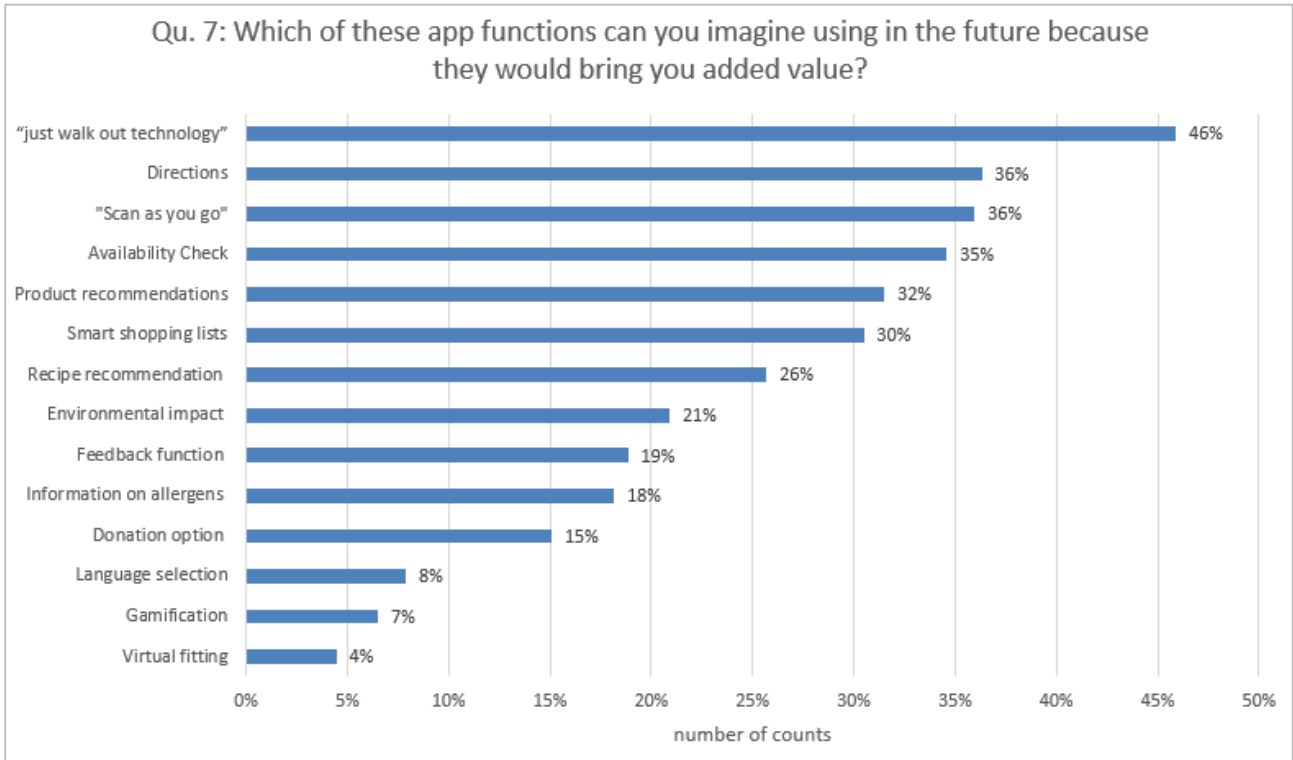


Figure 23: Desired, future functionalities of an app

Source: Survey data (see Appendix 2)

### 5.3.7 Newsletter versus App

A survey by the Association of the Internet Industry found that 65.5% of Germans receive between one and ten email newsletters daily (eco, 2023). The internal survey reveals that only 16% of respondents are likely to act on offers in newsletters, indicating that apps might be more effective for customer engagement due to their dynamic and interactive nature (Figure 24).

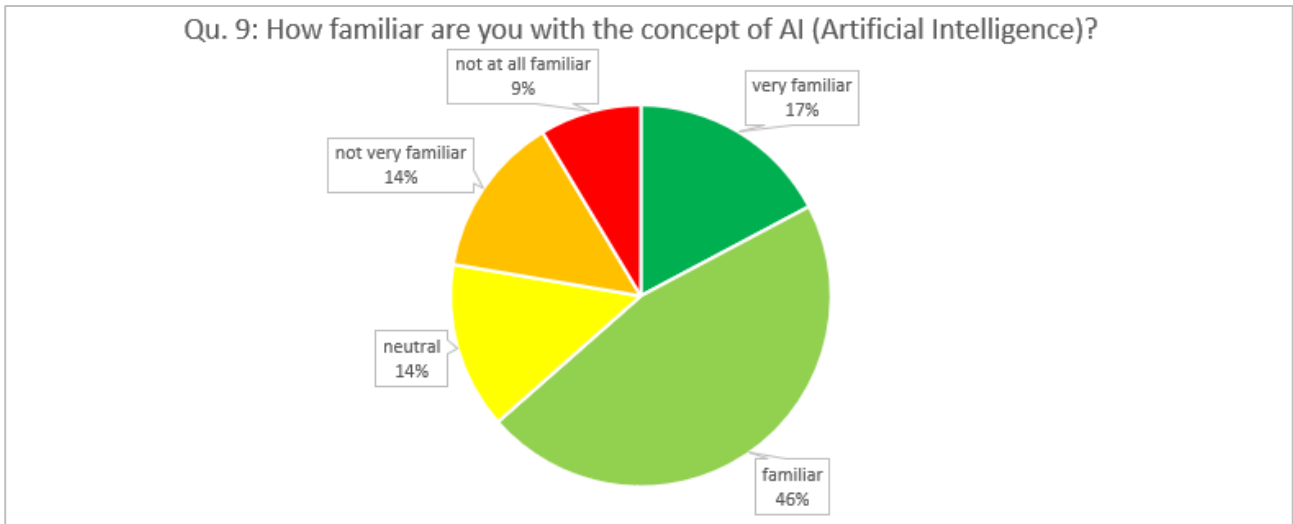


Figure 24: Newsletter conversion

Source: Survey data (see Appendix 2)

### 5.3.8 Familiarity with Artificial Intelligence

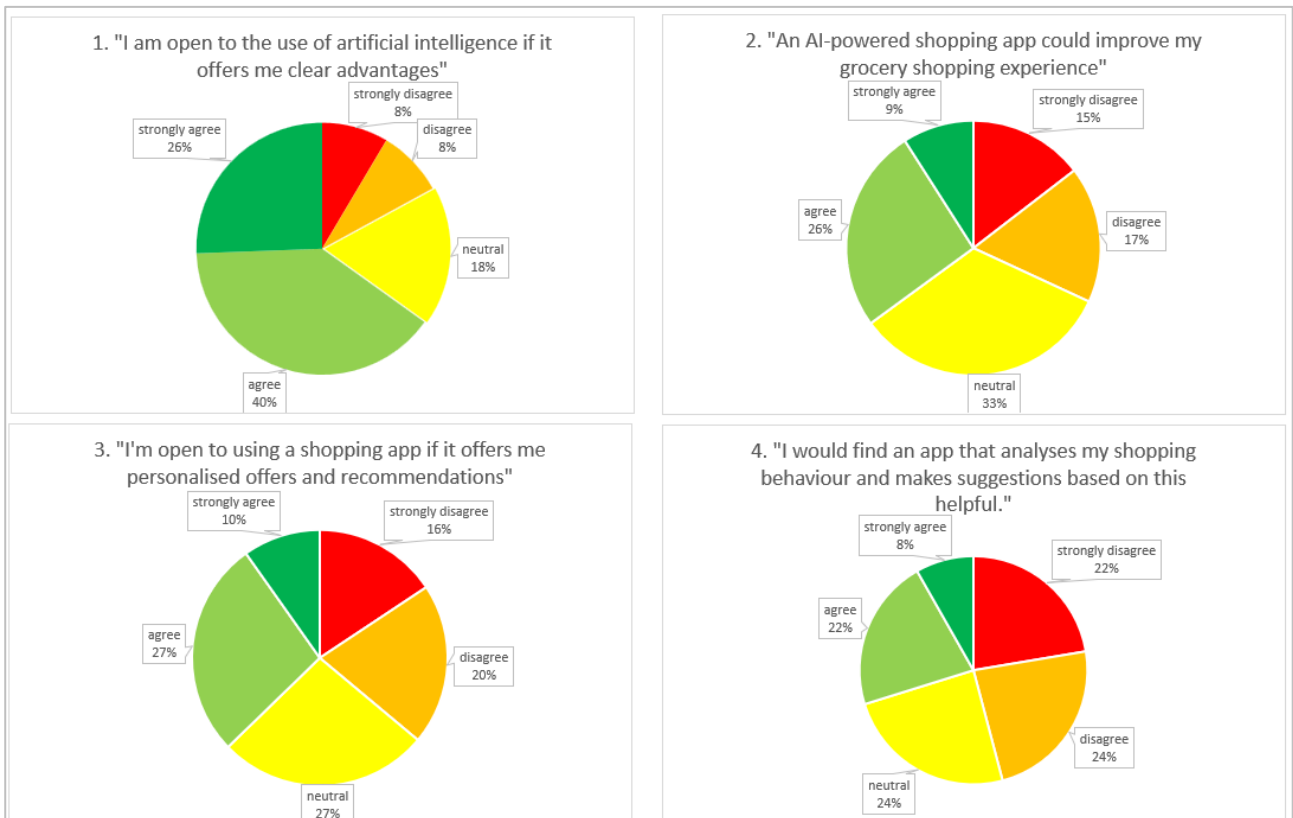
The survey revealed varying levels of familiarity with AI among respondents (Figure 25): While a majority of 63% states to be very familiar or familiar with AI, the rest is either neutral (14%) or not very (14%) or not at all familiar (9%) with AI. This suggests opportunities for education and awareness-building to increase acceptance of AI-driven technologies.



**Figure 25: Familiarity with AI**  
Source: Survey data (see Appendix 2)

### 5.3.9 Acceptance of AI

Attitudes toward AI in shopping apps were mixed (Figure 26). While many respondents were open to using AI if it provides clear advantages, privacy and security concerns were significant factors influencing acceptance. Many respondents emphasised the importance of data protection, indicating that trust is a crucial element in the adoption of AI technologies.



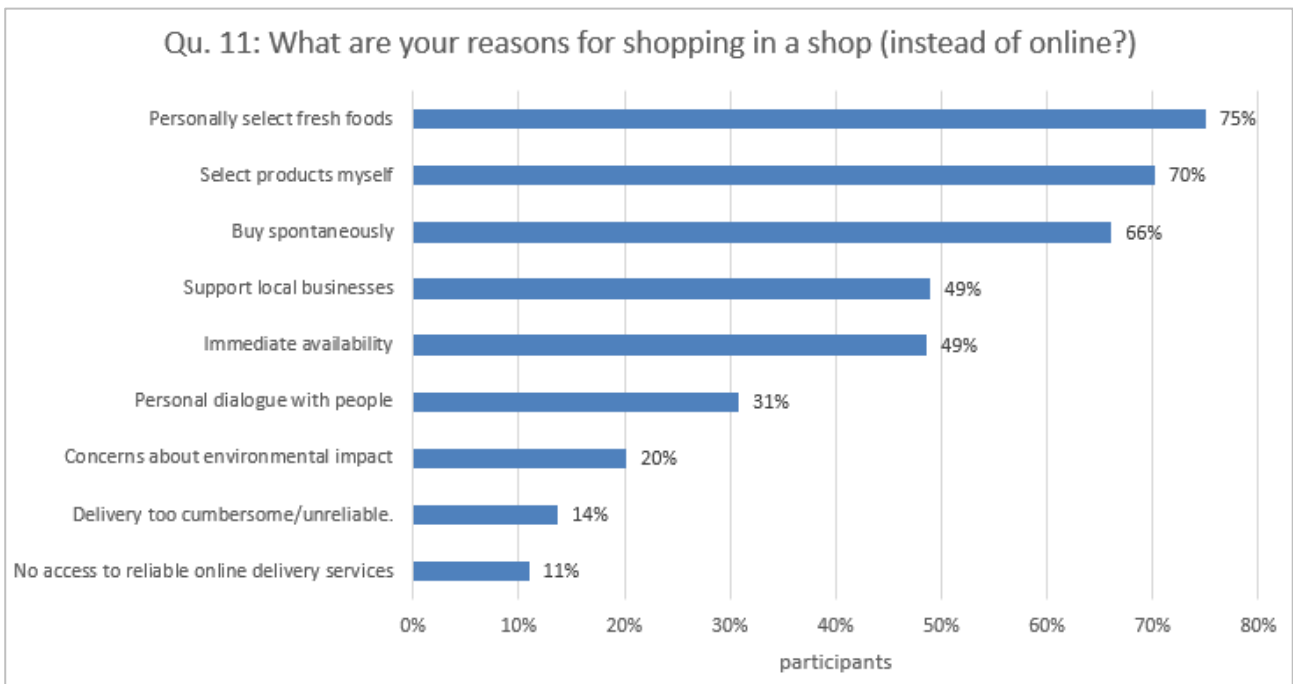


**Figure 26: Acceptance of AI if it offers advantages**

Source: Survey data (see Appendix 2)

### 5.3.10 In-store versus online shopping

The survey also explored reasons for preferring in-store shopping over online platforms (Figure 27). The ability to personally select fresh foods (75%) and make spontaneous purchases (66%) were key drivers for in-store shopping. Supporting local businesses and the immediate availability of purchased goods was also ranked highly amongst participants (both 49%).



**Figure 27: Reasons for in-store shopping**

Source: Survey data (see Appendix 2)

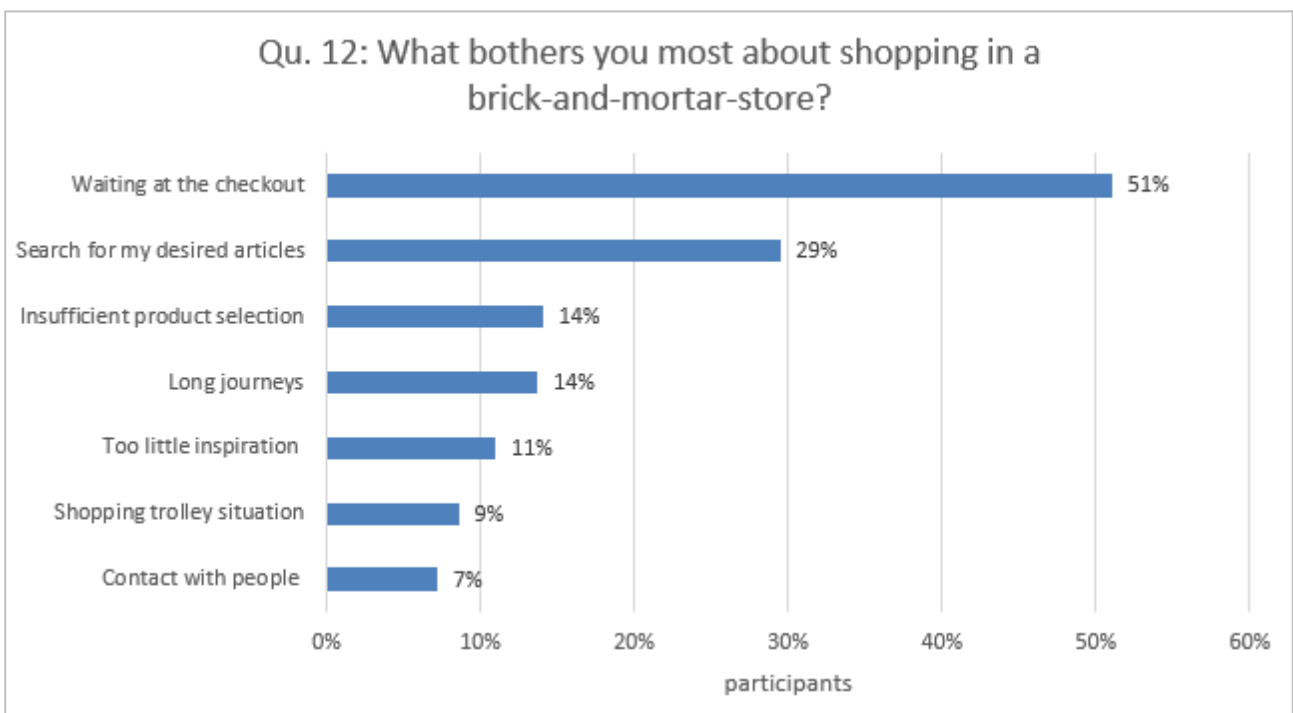
Conversely, online shopping was valued for its convenience (49%), particularly because it saves time by not having to get to the store (40%), by not having to queue (35%) and due to home delivery options (28%) (see Figure 28).



**Figure 28: Reasons for online shopping**

Source: Survey data (see Appendix 2)

The main factors leading to customer dissatisfaction in physical retail environments include the time spent waiting at the checkout (51%), challenges in finding desired items (29%), and a limited selection of products on offer (14%) (see Figure 29).



**Figure 29: Pain-points when shopping in-store**

Source: Survey data (see Appendix 2)

### 5.3.11 Customer Suggestions and Concerns

Respondents offered several comments and suggestions for enhancing shopping apps, including features such as suggestions for sustainable products, personalised recipe recommendations, and real-time updates on store utilisation. Concerns were raised regarding the potential for AI-driven apps to prioritise retailer' profits over consumer benefits, underscoring the importance of transparency and customer-focused design. As one respondent noted: "A company's AI

is not neutral but likely serves to promote sales rather than prioritise customer benefits such as health and sustainability" (survey, question 15, respondent #72).

Another respondent also expressed a critical view, stating: "In my opinion, AI is the biggest nonsense there is. It's a significant manipulation of humanity" (survey, question 15, respondent #141).

Additionally, respondents expressed a desire for an app that compares offerings across multiple retailers, rather than focusing on just one, to enhance price transparency. One individual commented: "The issue with apps is their sheer number. If I only shopped at one store, it would be manageable, but having multiple apps doesn't appeal to me, much like loyalty cards" (survey, question 15, respondent #150).

A sentiment was expressed regarding the absence of a personalised ALDI SÜD app, which would be a valuable addition to the company's offerings:

"As a customer, I think it's a shame that ALDI doesn't offer a personalised app. "  
(survey, question 15, respondent #126).

### **5.3.12 Conclusion**

The survey provides valuable insights into customer behaviours and preferences in the context of modern retail and app usage. While there is a general interest in personalised and AI-driven shopping apps, traditional shopping methods still dominate. Privacy and security concerns remain significant barriers to the widespread acceptance of AI technologies in retail.

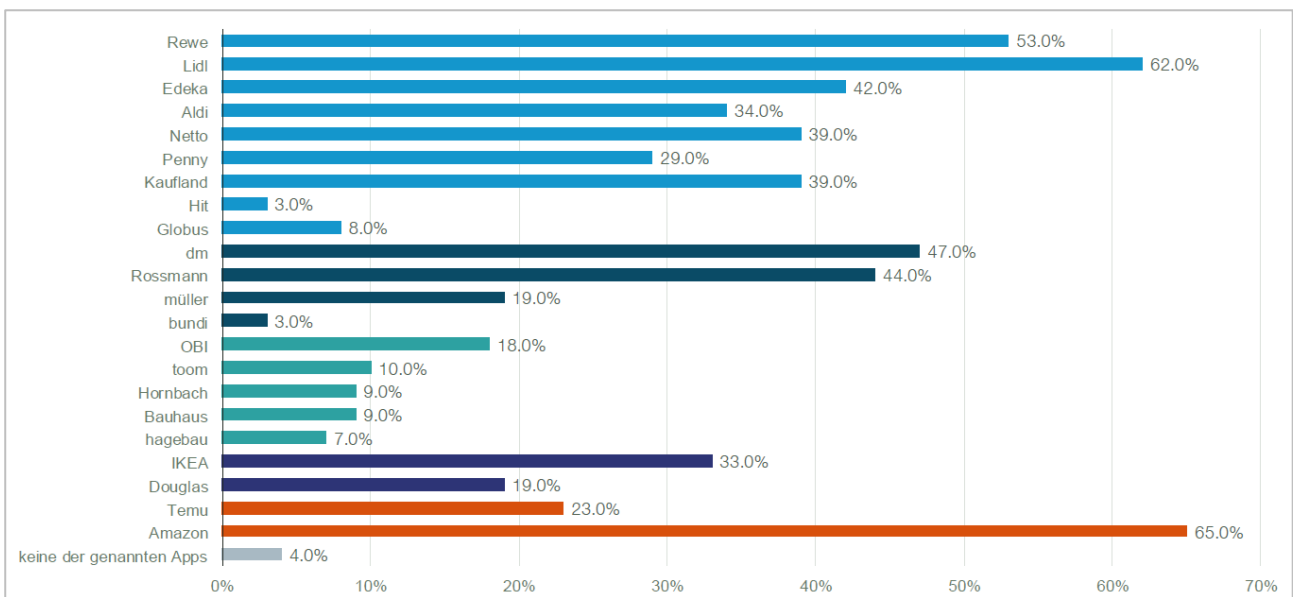
Retailers like ALDI SÜD can benefit from further research to better understand customer needs and preferences, particularly in developing apps that enhance the shopping experience while addressing these concerns.

## 6. Competition and Further Market Research

While the survey provides valuable insights, additional market research, case studies, and examples of similar successful implementations in the retail sector shall be explored to ensure that the app offers true, unbiased benefits to ALDI SÜD.

### 6.1 Market Research and Case Studies

A study of retail customers conducted in 2024 revealed that the usage rate of retail apps is becoming increasingly important (Gunter, Goller & Kröll, 2024). Lidl has the highest usage rate among German food retailers, at 62%, which is nearly on par with Amazon, a prominent player in the non-food sector, with a usage rate of 65%. A total of 34% of participants indicated that they use the ALDI app at least occasionally.



**Figure 30: Which of the apps from the following retailers do you use at least occasionally?**

Source: Guenter, Goller & Kröll, 2024

Guenter, Goller and Kröll discovered that 50% of customers who use the retailer's mobile application make additional purchases as a result of doing so, while 49% make more frequent purchases. A majority (56%) of customers indicate that they are more inclined to sample new products when they are recommended by the app. 47% of participants indicated that they select products based on product suggestions provided by the app, while 69% stated that they base their purchasing decisions on discounts offered by the app. When queried as to when a retailer's app might persuade the customer to make a purchase from that retailer, 60% of respondents indicated that they would do so if they were offered a higher discount than elsewhere. A 50% majority cite free trial products as a reason, while 45% indicate that loyalty programmes and prize draws influence their decision to purchase from a particular retailer. This once more demonstrates the price sensitivity of German retail customers.

Another survey conducted amongst 1.048 German shoppers (Statista, 2022) revealed that the most important criteria for choosing an online shop and buying a product there is getting the lowest possible price (65%), followed by free delivery (56%). This again highlights the strong price awareness of German customers. Consequently, the ALDI SÜD app may emphasize its price competitiveness to its users and highlight that ALDI SÜD offers the lowest possible price, even without special offers. Price leadership is one of the ALDI SÜD's most important strategic goals.

Another study from 2022 reveals that approximately 30% of respondents indicated that they would occasionally use applications from retailers to ascertain information regarding discounted promotions or offers (Statista, 2024c). While 16% of respondents indicated that they frequently utilise such applications, a quarter of respondents nevertheless asserted that they never do so. Again, the focus on cost benefits becomes apparent.

Finanztest, a renowned financial journal in Germany, evaluated 13 customer apps in 2023. The journal found that digital loyalty apps usually bring few savings, but collect endless amounts of customer data (Finanztest, 2023). The Lidl Plus app (see 6.2.1), being the only food retailer app at the time, only reached 7<sup>th</sup> place out of 13.

A market research study commissioned by ALDI SÜD in December 2020 with 1.902 participants revealed that the reaction of potential customers to introducing an ALD SÜD food online shop was unanimously positive and was considered as the logical, contemporary, and desirable next step for ALDI SÜD (ALDI SÜD, 2020). The high level of customer satisfaction and trust in ALDI SÜD suggested excellent starting conditions for the expansion of the e-commerce offering in the food sector. Given that the study is now nearly four years old and technological advancements have accelerated since, it is reasonable to anticipate an even higher rate of acceptance for such an offering today. So far, this step has not been taken by ALDI SÜD. An app offering might bridge the gap between in-store and online food retailing.

## 6.2 Competition in Germany

The German retail market is highly competitive, with all major players already exploring or implementing shopping apps to enhance customer experiences (Knitter, 2024). The degree of AI-integration however varies.

A test conducted by chip.de, a recognised computer magazine, rated the apps as follows:

Ranking	Retailer	Total Result	Offers (20%)	Functionalities (50%)	Service (30%)
1	Netto	1,6	1,0	2,3	1,0
2	Rewe	2,4	2,2	1,4	4,4
3	Kaufland	2,5	3,1	1,3	4,1
4	Lidl Plus	3,1	4,8	1,0	5,6
5	EDEKA	3,3	6,0	1,3	4,9
6	ALDI SÜD	4,2	2,4	4,1	5,7
7	Norma	4,4	2,7	4,6	5,2
8	Penny	4,4	5,4	3,0	6,0
9	ALDI NORD	4,8	3,7	4,1	6,0

Figure 31: Ranking of German retailer's app

Source: Knitter, 2024

### 6.2.1 Lidl App: Lidl Plus

ALDI SÜD'S major competitor LIDL has very successfully introduced its 'Lidl Plus' - shopping app in 2020 (Lidl, 2020). The app offers a range of benefits that enhance the shopping experience for customers, such as personalised discounts and offers based on individual shopping habits and digital receipts, making it easier for users to track their spending and manage returns. Additionally, the LIDL Plus App includes a loyalty program that rewards frequent shoppers with exclusive deals, further incentivising customer engagement and fostering brand loyalty. Customers can also use a payment function integrated in the app. Overall, the app streamlines the shopping process, offering convenience, savings, and a more personalised experience. Werg (2024) states that Lidl Plus has been downloaded more than 50 million times in Germany, showcasing its success with German customers. The app reaches 37.6% of all Germans (OneToOne, 2024). The application of AI technology, however, is not particularly innovative.



Figure 32: Lidl Plus shopping app

Source: Lidl (2020)

### 6.2.2 Netto App

According to Knitter (2024), the Netto app is very user-friendly. The online shop, though only for food orders in larger quantities, is easily accessible via the app and offers various payment options. The use of AI however is limited.

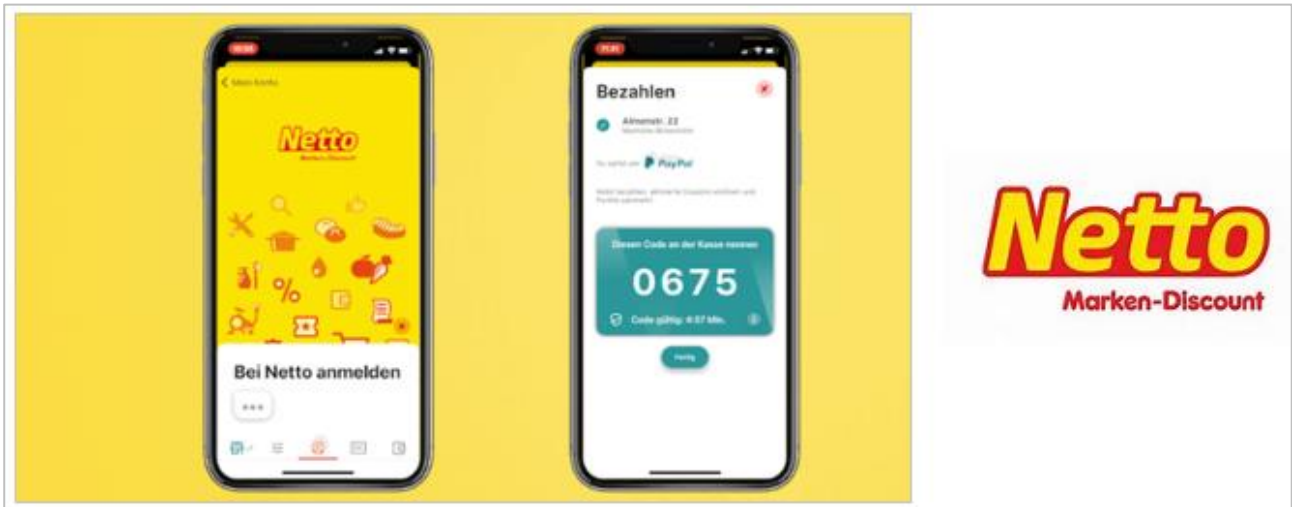


Figure 33: Netto shopping app

Source: netto.de (14.8.2024)

### 6.2.3 REWE App:

The REWE app offers a comprehensive digital shopping experience, enabling customers to browse and purchase groceries online, access personalized offers, and manage their loyalty points. The app also features a convenient delivery or click-and-collect service, allowing users to choose between home delivery or picking up their orders from a nearby store.

REWE is currently the only German food retailer with a brick-and-mortar store network who also delivers its goods to most of its customers. Additionally, the REWE app provides recipe suggestions and the ability to create shopping lists.



Figure 34: REWE shopping app

Source: <https://shop.rewe.de/> (14.08.2024)

### 6.3 Conclusion

The utilisation of AI in shopping applications remains relatively limited amongst Germany's major retail companies. Lidl appears to employ AI technology to a greater extent than other retailers, although the innovative application of this technology, as described in chapter 7, is not yet evident.

To maximise the success of its own AI-driven app, ALDI SÜD may engage in further market research, also abroad, and draw insights from relevant case studies in the retail sector. Understanding the competitive landscape in Germany, and incorporating the AI strategies of major international competitors, may allow ALDI SÜD to refine its approach and ensure the app offers distinct and valuable benefits to its customers.

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## 7. An AI-Driven, Personalised ALDI SÜD Shopping App

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### 7.1 Conceptual Ideas: Features and Functionalities

The findings of Question 6 of the survey (Figure 22) indicate the various functionalities that customers interested in using an app would find valuable. The objective of the AI-driven, personalised app is to facilitate a more convenient, enhanced and rewarding shopping experience for each user, setting the ALDI SÜD app apart from rival competitors' apps.

To achieve this objective, it is recommended that the following features and functionalities be included in the app:

#### 7.1.1 Promotion Highlights

The proposed app may offer personalised discounts and promotions based on the customers' purchasing behaviour. However, this approach is not consistent with ALDI SÜD's principle of "Gutes für alle" ("Good for all"), which emphasizes uniform pricing for all customers, irrespective of their loyalty status (Siebert, 2023c). Thus, providing selective discounts would not align with ALDI SÜD's strategic objectives. Guenter, Goller and Kröll (2024) found that only 23.1% of survey participants considered it to be unfair if not all customers received the same price or discounts. The majority of respondents (67.7%) considered this to be fair. This suggests that ALDI SÜD may need to reconsider the interpretation of its claim in relation to its app.

Special offers are highly valued by app users, with 68% indicating that receiving such offers is important or very important to them (Figure 22). To address this, the app could offer vouchers and coupons for specific products, which could also be available in the printed "ALDI SÜD informiert" brochure. Additionally, the app could send real-time notifications of special offers or deals—available to all customers—when users are near or inside an ALDI SÜD store, or while browsing the app.

Moreover, the app could include small gifts for special occasions. This strategy, like Lidl's practice of offering a free donut on a customers' birthday, is cost-effective and well-received by customers.

#### 7.1.2 Price Check

A price check function within the app allows customers to compare prices of items in-store quickly and easily before making a purchase, helping them make informed decisions and potentially save money. It also enhances transparency and trust between ALDI SÜD and its customers, reducing any confusion or uncertainty about correct pricing during the shopping trip.

#### 7.1.3 Total Bill Summary

Having a total bill summary in the app provides transparency and helps users keep track of their spending, allowing for better budget management and improved shopping decision-making.

#### 7.1.4 Loyalty Points & Reward Programs

Most retailers offer a loyalty program, rewarding customers for shopping at their store regularly. Since this can easily be tracked by the app, a loyalty program shall be included, whilst staying true to ALDI SÜD's uniform pricing strategy.

#### 7.1.5 Additional Features for Advertising Brochure

Whilst the brochure "ALDI informiert" is already available at ALDI SÜD's current app, additional features may be added, such as navigation to the product in store, adding it to the shopping list, dietary information of the product, ecological footprint – just by clicking on the item within the brochure.

### **7.1.6 Seamless Checkout Experience**

The app can streamline the checkout process by integrating various payment options, including mobile wallets, thus eliminating wait times at tills and enhancing customer satisfaction. Self-checkout features enabled by the app allow customers to scan items with their phones and complete purchases independently, further speeding up the process.

### **7.1.7 'Scan-As-You-Go'**

The 'Scan-As-You-Go'-feature allows for a more convenient and efficient shopping experience by enabling customers to scan items as they shop, saving time at checkout (see 4.1).

### **7.1.8 Uber Delivery**

Superfast delivery options, like Tesco Whoosh (see 4.2.3), may be incorporated in the app.

### **7.1.9 Personalised Recommendations**

An AI-driven personalised shopping app may enhance customer experience by providing tailored product recommendations based on the customers' past purchases, browsing history, and expressed preferences.

### **7.1.10 Smart Shopping Lists**

The app may generate automated shopping lists for customers by analysing their frequently purchased items and previous shopping patterns.

### **7.1.11 Automated Re-Ordering**

By enabling quick re-ordering of commonly purchased items, the app enhances convenience and efficiency for customers. The Internet of Things may gain relevance when household appliances, e.g. the fridge, is able to add items to the ALDI SÜD shopping list when running low.

### **7.1.12 Enhanced Search and Store Navigation Function**

In-store navigation features within the app, such as maps and directions to specific products, can significantly improve the shopping experience by helping customers find items quickly and easily.

The app may allow users to take pictures of products already purchased or found in the brochure and then help to navigate to the particular product in store.

### **7.1.13 Dietary Requirements and Recommendations**

The app may consider dietary restrictions and preferences (e.g., vegan, gluten-free, low-carb) to suggest suitable products.

### **7.1.14 Recipe Suggestions**

Recipe suggestions based on purchased ingredients or preferences, may engage customers and add variety.

### **7.1.15 Sustainability and Social Responsibility**

The app may promote eco-friendly products and provide information on the environmental impact of certain choices, thereby encouraging sustainable shopping behaviours among customers (e.g. organic, vegan, share-options).

### **7.1.16 Donation function**

Donation features embedded within the app may prompt customers to contribute to food banks or other charitable causes, integrating social responsibility into the shopping experience.

### **7.1.17 Voice Commands**

To simplify the digital process and make it more accessible to all customers, no matter how tech-savvy they are, voice commands shall be used wherever possible.

### **7.1.18 Multi-language and Natural Language Functions**

Incorporating natural language processing capabilities allows the app to facilitate searches using any language or dialect, making it easier for customers to locate specific items or categories within the store's inventory.

### **7.1.19 Gamification of Shopping**

The term "gamification of retail" refers to the integration of game design elements—such as points, rewards, challenges, and competition—into a retail environment. The aim is to engage customers, increase their interaction with products and services, and enhance their overall shopping experience. By incorporating these gaming elements, ALDI SÜD may create an engaging and interactive atmosphere that encourages customer participation, fosters loyalty, and drives sales – especially amongst younger customers.

### **7.1.20 Feedback Function**

The incorporation of feedback channels within the app allows customers to leave comments on products and services with relative ease, thereby facilitating the acquisition of invaluable insights that can be employed to effect continuous improvement. Such insights may be employed to generate customer-driven key performance indicators (KPIs) and to enhance the overall shopping experience at an ALDI SÜD store. Customers may also express interest in products that have not yet been made available at an ALDI SÜD store. This allows for the collection of valuable insights into customer needs and early trends.

### **7.1.21 Chat Bots**

A chatbot in a shopping app can provide personalised product recommendations and make the whole shopping experience more personal and efficient. It can also inform users of promotions and integrate with Artificial Reality (AR) for virtual try-ons.

### **7.1.22 Virtual Assistants & Virtual Dressing Rooms**

A virtual assistant in a shopping app offers personalised product recommendations, while a virtual dressing room allows users to try on clothes virtually using 3D-avatars or augmented reality. Since ALDI SÜD also sells clothes and shoes, but does not offer changing rooms in its stores, this app functionality may have a positive effect on sales. Together, the two services create a seamless, interactive shopping experience that boosts user confidence and satisfaction.

## **7.2 Conclusion**

An AI-driven, personalised shopping app for ALDI SÜD may offer significant benefits to ALDI SÜD customers: By integrating features like personalised promotions, price checks, seamless checkout, and smart shopping lists, the app aligns with ALDI SÜD's principles while addressing customer needs.

Additionally, incorporating functionalities such as dietary recommendations, sustainability options, and gamification can further enrich the shopping experience, fostering customer loyalty and engagement.

Overall, an AI-powered app has the potential to enhance ALDI SÜD's market position by offering a more convenient, personalised shopping experience that meets contemporary consumer expectations. By incorporating the functionalities discussed, ALDI SÜD could distinguish its app from competitors, effectively addressing challenges in achieving market penetration.

## 8. Micro- and Macro-Level Influences

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The introduction of an AI-driven, personalised shopping experience through a mobile app in the food retail sector may have a significant impact on both micro- and macro levels.

### 8.1 Micro-Level Impact

The micro-level impact refers to the effects and changes experienced by ALDI SÜD, e.g. its consumers, employees, and operations.

#### 8.1.1 Advantages for ALDI SÜD

The implementation of an AI-driven, personalised application for customers will require a significant investment in terms of resources and financial capital. However, being the first to embark on this pioneering venture will confer numerous benefits for ALDI SÜD:

- ✓ **Data-driven insights**  
The data collected by the app can be used by ALDI SÜD to gain truly data-driven insights into its customers. This may assist ALDI SÜD in tailoring its product offerings and improving its assortments to better meet customer demand. Currently, ALDI SÜD predominantly uses newsletters and email contacts to analyse its customers. This is not in line with modern standards of data analysis.  
Overall, data-driven insights help improving operational efficiency and driving sales.
- ✓ **Increased customer loyalty and engagement**  
Offering an AI-driven, personalised shopping app provides ALDI SÜD with the necessary insights of customer engagement and loyalty by tailoring product recommendations and promotions based on individual preferences, leading to increased customer satisfaction and retention.  
The survey showed that the majority of ALDI SÜD customers would like to use a shopping app.
- ✓ **Combining in-store shopping with digitalisation**  
Combining in-store shopping with digitalisation allows ALDI SÜD to provide customers with a seamless shopping experience that integrates the convenience of digital tools with aspects of in-store browsing, enhancing overall customer engagement and satisfaction. By leveraging digitalisation in-store, ALDI SÜD can create personalised promotions, offers, and recommendations based on customer behaviour captured through the app, leading to increased customer loyalty and improved sales opportunities.
- ✓ **Inventory Management**  
ALDI SÜD may use the data collected to optimize inventory levels, thus reducing capital commitment, and reduce waste.
- ✓ **Market leader**  
The introduction of an AI-driven, personalised shopping app may position ALDI SÜD as a leader in personalised shopping experiences in the German retail market, setting a precedent for technological innovation in retail.
- ✓ **Cost Savings and Sales Increase Potential**  
The introduction of an AI-driven shopping app at ALDI SÜD may significantly reduce operational costs through automated inventory management and supply chain optimisation. Additionally, the resulting productivity gains and cost efficiencies could enable more competitive pricing, further stimulating consumer spending and contributing to economic growth.
- ✓ **Cultural Change and process optimisation**  
To successfully implement an AI-driven app, ALDI SÜD will not only focus on technological innovation but also optimise processes, align systems, and foster a culture that embraces change and continuous learning. This holistic approach will ensure seamless integration, maximise efficiency, and drive long-term success.

### 8.1.2 Risks for ALDI SÜD

Introducing an AI-driven, personalised shopping app may pose potential risks and drawbacks for ALDI SÜD.

- ✓ **Customer Resistance**  
Some customers may distrust AI technologies, particularly regarding data usage, leading to resistance in adopting the app (see 5.3.9). Concerns about intrusive personalisation could negatively impact customer experience and brand loyalty.
- ✓ **Security and Data Privacy Risks**  
The accumulation of comprehensive, individualised customer data increases the likelihood of data breaches, which could erode customer trust and result in substantial legal and financial ramifications. It is therefore imperative to ensure compliance with data protection regulations to avoid penalties and legal challenges.
- ✓ **Technical Failures**  
The AI-driven app may experience technical failures, such as system outages or algorithm errors, disrupting service and harming customer satisfaction. Inaccuracies in the AI algorithms could lead to poor recommendations and negative publicity.
- ✓ **Over-Reliance on AI**  
An over-reliance on AI for customer interaction may result in a reduction of the human element in service, which could ultimately lead to a less personalised and empathetic customer experience.
- ✓ **Employee Concerns**  
The introduction of AI could lead to job displacement or changes in roles, which could give rise to employee anxiety and resistance to new technologies. The issue of the skills gap may necessitate a substantial investment in the retraining of existing personnel or the recruitment of individuals with the requisite expertise. By adopting an employee-empowering approach, ALDI SÜD may overcome these concerns.
- ✓ **Financial Risks**  
Developing, deploying, and maintaining the AI-driven app could incur high costs, with unexpected expenses potentially straining financial resources. The uncertain return on investment (ROI) poses a risk if the app fails to meet performance expectations.
- ✓ **Ethical and Reputational Risks**  
AI systems may unintentionally perpetuate biases, leading to unfair treatment of certain customer groups and reputational damage. Negative public perception could arise if the app is seen as prioritising profits over customer welfare or privacy.

### 8.1.3 Strategic Fit

ALDI SÜD clearly states that “AI is an important element on the way to becoming a data-driven company and to secure our long-term corporate success.” (ALDI SÜD, 2024b). Furthermore, the company states that “[...] in an increasingly complex world, the key lies in simplification. AI is an important element on the path.” (ALDI SÜD, 2024).

In its global strategy, ALDI SÜD identifies three key areas of customer experience that are of particular importance to its customer base: trust, sustainability and simplicity (ALDI SÜD, 2023). ALDI SÜD considers itself to possess a distinctive capacity to fulfil the aforementioned key areas, which also represent sources of competitive pricing advantage. The introduction of an AI-driven, personalised shopping app that addresses all three key areas may result in a distinct competitive advantage in the market.

### 8.1.4 Impact on Employees

The implementation of AI can automate tasks that were previously performed by store staff, leading to fears of job loss or redundancy. Employees may worry that their roles could become obsolete, especially in areas like customer service,

data analysis in stores, or inventory management, where AI could potentially perform tasks more efficiently. It is therefore of significant importance to ensure that existing employees do not perceive the introduction of AI-driven solutions as a threat to their roles and responsibilities. It may be beneficial to emphasise that their input as human beings is still required and also desired. Furthermore, the time that is freed up by not performing repetitive tasks that AI can do more efficiently can be used more effectively on managerial tasks.

Cable (2018) suggests that humans are motivated to find meaning and purpose in their actions, as this is an inherent aspect of our biology. If this is ignored, employees may lose motivation and passion for their work. It is therefore of great importance to allow employees to engage in activities that allow them to explore, experiment and learn. While this may not be easily accomplished in the more straightforward and repetitive retail roles, engaging ALDI SÜD employees in the development and testing of the new app may, as Cable (2018) points out, may activate the employees' biological seeking system and provide a new level of job satisfaction.

## **8.2 Macro-level Impact**

Macro-level impact refers to the broader, systemic effects on the overall economy, society, and large-scale structures. It includes the collective outcomes that influence industries, markets, and national or global trends.

### **8.2.1 Implication for the Economy**

The introduction of an AI-driven shopping app has the potential to employ a considerable influence on economic activity. It may facilitate enhanced operational efficiency and more valuable decision-making processes, which may ultimately result in increased productivity within the German economy. There may be a rising competitive pressure in the economy, which may set a new standard for technological innovation, compelling other retailers to accelerate their own digital transformations. This may potentially lead to market consolidation as smaller retailers struggle to keep pace. Such developments may have side effects on industries and sectors related to retail, marketing, and technology, thereby influencing economic activities and market dynamics.

Additionally, the introduction may draw increased regulatory scrutiny concerning data privacy and security within the German economy. Overall, the introduction may result in cost savings for businesses, enhanced competitiveness and potentially higher economic growth.

### **8.2.2 Implication for Retail**

The influence of consumer behaviour and spending patterns is a significant factor in the retail sector. The introduction of AI-driven shopping apps has the potential to personalise the shopping experience, influence consumer behaviour and impact overall consumer spending patterns.

The use of AI to analyse consumer data and provide personalised shopping experiences could lead to higher customer satisfaction and loyalty in the German retail market. Given the increasing demand for tailored services among German consumers, AI may enable retailers to meet these expectations more effectively, driving sales and market share growth.

An AI-driven shopping app bridges the gap between online and in-store shopping. To ensure that brick-and-mortar stores have a future in an increasingly digitalised world, an app may be the currently missing link between the increased consumer interest for convenient but anonymous online food shopping and traditional in-store shopping with human contacts.

### **8.2.3 Implication for Employment**

In Germany, where the retail sector is a significant employer, the introduction of AI could lead to shifts in the labour market. The adoption of AI-driven technologies may result some job roles being automated or augmented by AI. This transition may necessitate the reskilling and upskilling of the workforce to adapt to evolving roles, which could result in alterations to traditional employment structures. There may be a growing demand for skilled workers in Germany who can manage and maintain AI systems.

#### **8.2.4 Changes in Consumer Behaviour**

The introduction of an AI-driven app by ALDI SÜD could significantly influence consumer behaviour in several ways. First, it could lead to heightened expectations for personalised shopping experiences, as consumers become accustomed to tailored recommendations, offers, and promotions. This personalisation may increase customer loyalty and engagement, as shoppers feel the app better understands and caters to their preferences. Additionally, the convenience and efficiency offered by the AI-driven app could shift consumer behaviour towards more frequent online interactions and purchases, reducing reliance on traditional in-store shopping.

However, some consumers may also continue to have concerns about data privacy and how their personal information is being used, potentially leading to more selective or cautious app usage.

Overall, the app could reshape consumer expectations, loyalty, and shopping habits in the retail sector.

#### **8.2.5 Hyperconnectivity**

According to Koulopoulos, there is a vast increase in connections, particular in machine-to-machine connections, also known as 'the internet of things'. AI facilitates enhanced digital connections between retailers, customers, and the broader ecosystem. AI technology facilitates the integration of physical stores and digital platforms, thereby establishing a connected shopping experience that enables customers to transition seamlessly between online browsing and in-store interactions. The hyperconnected environment has the effect of blurring the lines between offline and online retail channels.

#### **8.2.6 Data Protection: "The Transparent Customer"**

Germany's stringent data protection laws mean that AI implementation in retail must carefully navigate privacy concerns. Retailers will need to ensure that their AI systems comply with these regulations to avoid legal repercussions and maintain consumer trust. As the app collects and processes large amounts of personal data to provide personalised shopping experiences, it increases the need for robust data protection measures to safeguard customer information. The use of AI algorithms may necessitate transparency in how customer data is used and how decisions are made, to maintain customer trust and avoid potential legal challenges.

The findings of the survey indicated that customers may be reluctant to utilise an AI-driven application due to concerns about the potential for their activities and interactions to be monitored and analysed by businesses (see 5.3.9). Koulopoulos (2018) speculated that if transparency is employed for beneficial purposes, such as providing tailored offers that align with customers' genuine preferences, rather than solely for the purpose of profit maximisation, it may have a positive impact.

### **8.3 Conclusion**

In conclusion, the introduction of an AI-driven, personalised shopping app at ALDI SÜD has the potential to have a significant impact at both the micro and macro levels. At the micro level, the implementation of the app can facilitate enhanced operational efficiency, increased customer engagement, augmented employee job enrichment, and strategic alignment with the company's vision for a data-driven and customer-centric approach. From a macroeconomic perspective, the potential implications for the wider economy, the retail sector, the employment landscape, consumer behaviour and hyperconnectivity highlight the transformative effects of leveraging AI technology in the retail industry. Moreover, guaranteeing the protection of data and transparency in the utilisation of AI technology can cultivate consumer confidence and facilitate the provision of personalised experiences that align with customer preferences, thereby enabling ALDI SÜD to attain sustainable competitive advantages.

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## 9. Stakeholder Considerations

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When introducing a significant new initiative like an AI-driven, personalised shopping app at ALDI SÜD, it is crucial to anticipate and manage potential reactions from all points of the business effectively.

The following points merit particular attention:

1. Internal Communication:

It is essential to ensure clear and transparent communication with all stakeholders, including employees, managers, and executives, regarding the rationale behind the implementation of the AI-driven app, its benefits, and its alignment with the company's objectives and strategy. It is essential to address any concerns or questions proactively to foster understanding and buy-in across the organisation.

2. Employee Involvement:

The involvement of employees in the planning and implementation process can help to mitigate resistance and empower them to adapt to new roles or responsibilities effectively.

3. Customer Education and Engagement:

It is recommended that customers be proactively engaged with to educate them about the benefits of the AI-driven app, address any concerns they may have regarding privacy or data security, and gather feedback for the purpose of facilitating continuous improvement. It would be beneficial to offer incentives or exclusive promotions to encourage the adoption of the new technology and to create a positive customer experience.

4. Feedback Mechanisms:

A feedback mechanism shall be implemented that facilitates the sharing of thoughts, suggestions, and concerns by both internal and external stakeholders regarding the AI-driven app. It is essential to conduct regular assessments of feedback, analyse the data obtained, and implement incremental improvements based on the insights gathered to enhance the user experience and address any emerging issues in an effective manner.

By considering and effectively managing potential reactions from all points of the business, ALDI SÜD can navigate the introduction of the AI-driven shopping app smoothly, foster organisational alignment, and maximise the benefits of this innovative initiative.

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## 10. Technical Feasibility

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Integrating AI into existing legacy systems presents significant challenges, particularly within the context of ALDI SÜD's ongoing digital transformation project, //AHEAD (Siebert, 2023a). This initiative aims to modernise and future-proof the company's IT infrastructure. Ensuring interoperability and facilitating potential upgrades to the IT landscape will be crucial when implementing AI-driven solutions, such as a personalised shopping app.

While AI technology offers substantial benefits, particularly in gathering personalised customer information, it also imposes significant responsibilities concerning the protection of this highly sensitive data. The deployment of AI-driven solutions must occur within a highly secure environment that adheres to the highest standards of data security. A data breach could severely undermine the trust that customers place in ALDI SÜD (see 8.1.2).

Moreover, the development of a robust AI algorithm that delivers genuine value to customers is paramount when creating a personalised shopping app for ALDI SÜD. The design of the app must prioritise the scalability of the AI system and ensure that it remains adaptable to future changes.

ALDI SÜD's national IT department is well-positioned to develop such an algorithm and manage the large datasets that these systems may generate. However, additional staff training will be necessary to address the complexities of AI and the management of extensive data sets.

Finally, the technical infrastructure required to build, operate, and maintain such an ambitious project must be carefully considered. Essential components, including high-performance computing resources, cloud-based services, and robust networking capabilities, are critical for the successful implementation of AI at ALDI SÜD.

## 11. Business Opportunity Evaluation

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Andrew (2017) suggests evaluating any new business opportunity by ranking the idea according to five critical factors on a scale from -1 to +5:

1. Ability  
This factor assesses whether the opportunity uses the individual's unique talents and abilities: Does it highlight its greatest differentiation to customers?  
Rankings should be higher if the opportunity aligns well with the company's strengths.
2. Reward  
This factor evaluates both the monetary and impact rewards. In some instances, the impact of the opportunity may outweigh the financial compensation. It is important to consider the broader effects of the decision, such as influencing key prospects over a larger audience.  
High-impact opportunities should be ranked higher.
3. Enhancement  
It is important to consider whether the opportunity in question requires one to push oneself out of one's comfort zone, thereby promoting growth.  
Opportunities that necessitate the expansion of one's knowledge and skills should be accorded a higher ranking, as growth occurs outside the comfort zone.
4. Appreciation  
It is necessary to determine the potential increase in value for the audience or customer base.  
Opportunities that significantly boost engagement, loyalty, or future business potential should be rated higher.
5. Referral  
It is necessary to evaluate the potential for the opportunity to lead to additional referrals or future opportunities. Opportunities that can yield new customers or marketing avenues should be ranked higher.

Considering these five critical factors, the idea to introduce an AI-driven, personalised shopping app at ALDI SÜD, may be assessed as follows:

1. Ability:  
The opportunity to implement an AI-driven shopping app aligns well with ALDI SÜD's focus on innovation and customer-centric solutions. By leveraging technology and personalization, the app can highlight the company's differentiation and strengths. (Rating: +4)
2. Reward:  
The potential rewards of introducing an AI-driven app include enhanced customer engagement, loyalty, and operational efficiency. While the financial benefits are important, the broader impact on customer experience and market positioning could be significant. (Rating: +5)
3. Enhancement:  
Implementing an AI-driven app requires ALDI SÜD to embrace technological advancements and expand its capabilities in data analytics and personalised marketing. This opportunity promotes growth and development beyond the company's current practices. (Rating: +4)
4. Appreciation:  
The introduction of a personalised shopping app has the potential to increase the value proposition for ALDI SÜD's customers by offering tailored experiences and promotions. This can enhance customer engagement, loyalty, and overall business potential. (Rating: +5)
5. Referral:  
An AI-driven app can create opportunities for increased referrals through personalised recommendations, efficient shopping experiences, and enhanced customer satisfaction. It has the potential to attract new customers and serve as a marketing avenue for future growth. (Rating: +4)

Overall, considering these critical factors, the idea to introduce an AI-driven, personalised shopping app at ALDI SÜD receives a positive evaluation, indicating that it is a highly promising business opportunity that aligns well with the company's strengths and growth objectives.

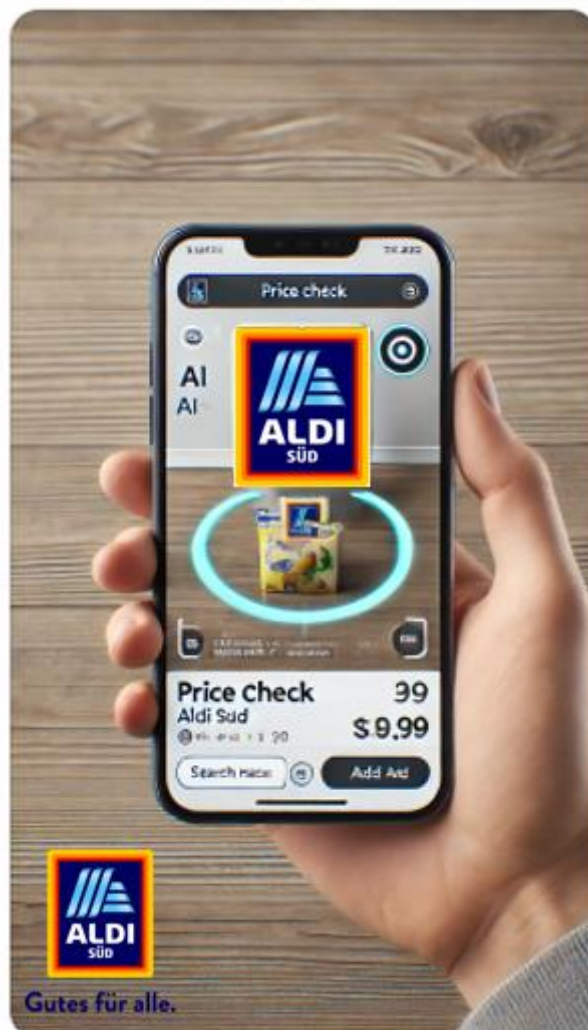
## 12. Conclusion

Introducing an AI-driven, personalised shopping app at ALDI SÜD presents a transformative opportunity with a multitude of benefits across various facets of the business.

By leveraging AI technology to provide a personalised shopping experience, ALDI SÜD can enhance customer engagement, drive sales through targeted promotions, optimize inventory management, and foster loyalty among consumers. Moreover, the implementation of an AI-driven app aligns with the company's strategic focus on innovation, customer-centricity, and operational efficiency, positioning ALDI SÜD as a frontrunner in the evolving retail landscape.

Through effective management of potential reactions, proactive stakeholder communication, and continuous improvement based on feedback, ALDI SÜD can harness the full potential of technology to drive growth, enhance customer experience, and stay competitive in the dynamic retail industry.

Introducing an AI-driven, personalised shopping app at ALDI SÜD is considered innovative and disruptive because it fundamentally shifts the retail experience by leveraging cutting-edge technology to deliver highly tailored customer interactions - something traditionally seen in e-commerce, now integrated into physical retail. This approach not only enhances operational efficiency and customer loyalty but also positions ALDI SÜD at the forefront of the retail industry's digital transformation, setting a new standard for how technology can bridge the gap between in-store and online shopping, making it a game-changer in the market.



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Appendix 1: ALDI SÜD company presentation (German)

JULI 2024

# ALDI SÜD GRUPPE

## DATEN UND FAKTEN.



Rund **2.000** Filialen

Mehr als **50.000** Mitarbeiter:innen (inkl. 2.800 Auszubildende)



ALDI SÜD ist in Deutschland als **GLEICHORDNUNGSKONZERN** organisiert; bestehend aus eigenständig operierenden Regionalgesellschaften.

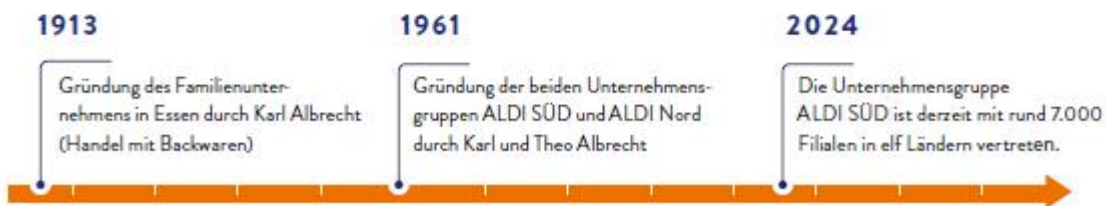
**NATIONALE SERVICEGESELLSCHAFT** mit Sitz in Mülheim a. d. Ruhr.

Familiär mit Unternehmensgruppe **ALDI Nord** verbunden.

**DIE 24 REGIONALGESELLSCHAFTEN** sind in einem geografisch klar definierten Gebiet für jeweils ca. 50 bis 100 Filialen verantwortlich.

ALDI SÜD ist derzeit mit rund **7.000** Filialen in elf Ländern vertreten.

ALDI SÜD international	
LAND	FILIALEN
Deutschland	>2.000
Österreich	540
Schweiz	220
Slowenien	90
Ungarn	150
USA	2.150
UK	960
Irland	150
Australien	580
Italien	140
China	22



JULI 2024

## UNSERE ALDI EIGENMARKEN

MACHEN 90 % UNSERES SORTIMENTS AUS.



ALDI SÜD DEUTSCHLAND

2/4

JULI 2024

## DAS SORTIMENT VON ALDI SÜD



Das Sortiment von ALDI SÜD umfasst aktuell etwa 1.800 STANDARDARTIKEL.



Dazu kommen im Jahr 2024 insgesamt etwa 700 SAISONARTIKEL.



Und das alles in GUTER QUALITÄT zum BESTEN ALDI SÜD Preis.



ALDI SÜD ist BIO-HÄNDLER NUMMER EINS in unserem Vertriebsgebiet.\*

\*Quelle: NielsenIQ Homescan, Food Bio mit Tracko Bio ÖBGM, MAI September 2023, Absatz Pack, LEH+OM im ALDI SÜD Vertriebsgebiet Deutschland

## NUR NUR NATUR

Mit **NUR NUR NATUR** bieten wir das Beste, was die Natur zu bieten hat – und das trotzdem zum

GEWOHNT GÜNSTIGEN ORIGINAL ALDI PREIS.



Nur Nur  
**NATUR**

Seit Juni 2023 haben wir eine neue Bio-Eigenmarke im Sortiment: **NUR NUR NATUR.**

**NUR NUR NATUR** ist die neue ALDI SÜD Eigenmarke, die auf höchste Bio-Standards und maximalen Geschmack setzt.

- NUR NUR Meer- und Steinsalz
- NIE NIE Nitritpökelsalz in Wurst
- NUR NUR nicht-raffinierte Öle
- NUR NUR nicht homogenisierte Milch

JULI 2024

# NACHHALTIGKEIT BEI ALDI SÜD.



Reduzierung unserer **betriebsbedingten Treibhausgasemissionen\*** um **-50%\*\***

\* Scope 1, Scope 2 und annualisiert Scope 3, nach dem Greenhouse Gas Protocol.  
\*\* Stand 2022. Im Vgl. zum Baselinejahr 2016.

Seit 2017 nutzen wir nur **Grünstrom** für unsere Filialen und Logistikzentren

Ausgenommen sind Standorte, bei denen wir keinen Einfluss auf den Strombezug haben.

Erhalt des Gütesiegels **„Green Brands“**

Für Engagement zu **Klima, Umwelt, Natur, Artenvielfalt und Ressourcen**

Mehr als 1.360 ALDI SÜD Filialen mit eigener **Fotovoltaikanlage**

Spendenaktion „Gut für hier. Gut fürs Wir“: Über **4,5 Mio. EUR** für lokale Vereine

**Unbefristete Verträge** für ca. 97 % der Mitarbeiter:innen (Mai 2023)

**Lebensmittelspenden** an lokale Tafeln durch nahezu alle Filialen

**50 % Frischfleisch** aus HF 3 & 4\*

\* Bezogen auf den Umsatz bei ALDI SÜD in Deutschland mit: a) Frischfleisch der größten Nutzergruppen Rind, Schwein, Hähnchen und Pute; ausgenommen (internationale) Spezialitäten und Tiefkühlartikel; mit b) Trinkmilch der Eigenmarken; ausgenommen sind Markenartikel bzw. mit c) unseren Eigenmarken aus den Bereichen gekühltes Fleisch-, Wurst- und Schinkenwaren sowie Frischkäse der größten Nutzergruppen Rind, Schwein, Hähnchen und Pute; ausgenommen sind internationale Spezialitäten sowie Convenience- und Fertiggerichte.

**100 % der Trinkmilch** aus HF 3 & 4\* & aus dt. Herkunft\*\*

\* Bezogen auf Umsatz (Durchschnitts ALDI Nord & ALDI SÜD) in Deutschland mit Trinkmilch der Eigenmarken; ausgenommen sind Markenartikel.  
\*\* Bezieht sich auf Trinkmilch der Eigenmarken; ausgenommen sind Markenartikel und internationale Spezialitäten.

## Appendix 2: Consumer Survey

### 1. Call to participate in the survey

#### 1.1 Access to the survey

The survey could be accessed either via Link

<https://datatab.de/survey/5a4f9e14-f78f-4d36-b836-9aa417dfcc95>

or a QR-Code



#### 1.2 LinkedIn

**Anja Siebert** • Sie  
Store Operations Director bei ALDI SÜD & geprüfte systemische Coachin  
1 Woche • Bearbeitet •

Ich brauche Dich! 🙏📱

Im Rahmen meiner aktuellen Weiterbildung habe ich eine Umfrage zum Thema "Trends im Lebensmitteleinzelhandel" erstellt. Ich würde mich sehr freuen, wenn auch Du mich bei meiner Studienarbeit unterstützen würdest und an der kurzen Befragung teilnimmst- es dauert nur 5-10 Minuten!

Hier der Link direkt zur Umfrage:  
<https://lnkd.in/eGpNM3Ts>



**BITTE UNTERSTÜTZE MEINE STUDIENARBEIT UND NIMME AN DIESER KURZEN UMFRAGE ZUM THEMA "TRENDS IM LEBENSMITTELEINZELHANDEL!"**

EINFACH DEN QR-CODE (RECHTS) SCANNEN ODER AUF DEN LINK (UNTEN) KLIKEN:  
[HTTPS://DATATAB.DE/SURVEY/5A4F9E14-F78F-4D36-B836-9AA417DFCC95](https://datatab.de/survey/5a4f9e14-f78f-4d36-b836-9aa417dfcc95)

👤 Greta Petersen und 39 weitere Personen • 5 Kommentare • 6 direkt geteilte Beiträge

Reaktionen

👍 Gefällt mir • 💬 Kommentar • 🔄 Teilen • ➦ Senden

📊 2.051 Impressions • [Analysen anzeigen](#)

### 1.3 WhatsApp Status, Facebook & Instagram

**BITTE UNTERSTÜTZE MEINE STUDIENARBEIT UND NEHME AN DIESER KURZEN UMFRAGE ZUM THEMA "TRENDS IM LEBENSMITTEL-EINZELHANDEL"**



EINFACH DEN QR-CODE (RECHTS) SCANNEN ODER AUF DEN LINK (UNTEN) KLICKEN:



[HTTPS://DATATAB.DE/SURVEY/5A4F9E14-F78F-4D36-B836-9AA417DFCC95](https://datatab.de/survey/5A4F9E14-F78F-4D36-B836-9AA417DFCC95)

**BITTE UNTERSTÜTZE MEINE STUDIENARBEIT UND NEHME AN DER KURZEN UMFRAGE ZUM THEMA "TRENDS IM LEBENSMITTEL-EINZELHANDEL"**

**TEIL!**



EINFACH DEN QR-CODE (RECHTS) SCANNEN ODER AUF DEN LINK (UNTEN) KLICKEN:



[HTTPS://DATATAB.DE/SURVEY/5A4F9E14-F78F-4D36-B836-9AA417DFCC95](https://datatab.de/survey/5A4F9E14-F78F-4D36-B836-9AA417DFCC95)

## 2. Survey Questions

Frage:

Studienprojekt zum Thema "Trends im Lebensmittel-Einzelhandel"

Beschreibung:

Vielen Dank, dass Sie sich kurz Zeit nehmen, an dieser allgemeinen Umfrage teilzunehmen! Das Beantworten der insgesamt 15 Fragen wird etwa 5-10 Minuten Ihrer Zeit in Anspruch nehmen.

Am Ende der Befragung können Sie, wenn Sie dies möchten, Ihre eMail-Adresse eingeben. Somit nehmen Sie automatisch an der Verlosung von 2x€10-ALDI SÜD Einkaufsgutscheinen teil.

Um das Ergebnis der Umfrage besser einordnen zu können, bitten wir sie zunächst, Ihre Altersgruppe anzugeben: \*

- unter 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 und älter
- keine Angabe gewünscht

**Los geht's!**

Es folgen ein paar Fragen zu Ihren aktuellen Einkaufspräferenzen.

**Welche dieser Einkaufsmöglichkeiten nutzen Sie regelmäßig für Ihren Lebensmitteleinkauf? \***

*(Mehrfachauswahl möglich)*

- Traditioneller Ladenbesuch beim Discounter (z.B. ALDI, LIDL, Netto, Norma, Penny)
- Traditioneller Ladenbesuch im Supermarkt (z.B. Rewe, Edeka, Kaufland, Real)
- Besuch eines Fachgeschäft (z.B. Bäckerei, Metzger, Obst- und Gemüseladen)
- Ladenbesuch mit Nutzung von "Scan-as-you-go": Handscanner oder Scanfunktion in der App (z.B. REWE Scan&Go)
- Online-Shopping mit Abholung im Geschäft "Click & Collect" (z.B. REWE Abholservice)
- Online-Shopping mit Hauslieferung (z.B. Amazon Fresh, REWE Lieferservice, Flink)
- Virtuelle Einkaufsumgebung (z.B. durch VR)
- Sonstiges:

**Bei welchen Lebensmittelhändler kaufen Sie regelmäßig ein? \***



*(Mehrfachauswahl möglich)*

- ALDI
- LIDL
- Norma
- Netto
- Penny
- REWE
- EDEKA
- Kaufland

Sonstiges:

**Nun folgen noch einige wenige Fragen zur Nutzung von Shopping-Apps...**

**Nutzen Sie die Shopping-App Ihres Lebensmittelhändlers regelmäßig?** \*

- Ja, regelmäßig
- Gelegentlich
- Selten
- Nein, ich nutze keine App

**Wie wichtig wäre es Ihnen, dass auch ALDI eine Shopping-App mit personalisierten Angeboten für seine Kundschaft anbietet?** \*

0 1 2 3 4 5 6 7 8 9 10  
 egal             sehr wichtig

**Wie wichtig sind Ihnen die nachfolgenden Funktionen einer personalisierten Shopping-App beim Lebensmitteleinkauf?** \*

	sehr wichtig	wichtig	neutral	unwichtig	völlig egal
Digitale Einkaufslisten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digitaler Kassenbon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Echtzeit-Benachrichtigungen über Sonderangebote und Aktionen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	sehr wichtig	wichtig	neutral	unwichtig	völlig egal
Zusätzliche Produktinformationen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bewertungen zum Produkt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Möglichkeit, frühere Einkäufe zu überprüfen und zu wiederholen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personalisierte Empfehlungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selbstscannen und kontaktloses Bezahlen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bequeme Online-Bestellung und Lieferung	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sonderangebote und exklusive Rabatte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treuepunkte und Belohnungsprogramme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bezahlungsfunktion in der App	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preisinformation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutzung der "Click & Collect" Funktion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aktuellen Werbeprospekt einsehen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Welche dieser App-Funktionen können Sie sich vorstellen, in der Zukunft zu nutzen, da sie Ihnen einen Mehrwert bringen würden? \***

*(Mehrfachauswahl möglich)*

- Produktempfehlungen (mit Blick auf Vorlieben wie z.B. Bio/Vegan/gesund, aber auch bei Unverträglichkeiten)
- Smarte Einkaufsliste: Erstellung einer automatischen Einkaufsliste durch Analyse der häufig gekauften Artikel und des bisherigen Einkaufsverhaltens
- Wegbeschreibung zu bestimmten Produkten in der Filiale ("Wo finde ich was?")

- Verfügbarkeitscheck im Online Shop, wenn das Produkt nicht mehr vor Ort vorhanden ist
- Check-out ohne an der Kassen anzustehen
- "Scan as you go" mit direkt angezeigter Gesamtsumme
- Hinweise zu Allergenen (wenn z.B. Unverträglichkeit vorhanden sind)
- Rezeptempfehlung (aufgrund der getätigten Einkäufe)
- Informationen über die Umweltauswirkungen bestimmter Produktkaufentscheidungen
- Integrierte Spendenmöglichkeit von Produkten (z.B. an Tierheime, Tafel, etc.)
- Sprachwahl
- Spielerische Elemente / Quizfragen / Gewinnspiel während des Einkaufs vor Ort
- Feedback-Funktion zu Produkten und zur Filiale (Frische, Sauberkeit, Verfügbarkeit)
- Virtuelles Anprobieren
- Sonstiges:

Falls Sie Newsletter von Lebensmittelhändlern per eMail erhalten: Wie wahrscheinlich ist es, dass Sie diesen lesen und die genannten Angebote gezielt bei Ihrem nächsten Einkauf kaufen?

0 1 2 3 4 5 6 7 8 9 10

sehr unwahrscheinlich             sehr wahrsch

◀  ▶

Zuletzt noch zwei Fragen zu Künstlicher Intelligenz (KI).

**Wie vertraut sind Sie mit dem Konzept von KI (Künstlicher Intelligenz)? \***

- Sehr vertraut
- Etwas vertraut
- Neutral
- Wenig vertraut
- Überhaupt nicht vertraut

**Wie sehr stimmen Sie der folgenden Aussage zu: \***

	Ich stimme überhaupt nicht zu	Ich stimme eher nicht zu	Neutral	Ich stimme eher zu	Ich stimme voll und ganz zu
"Ich bin offen für die Nutzung von Künstlicher Intelligenz, wenn sie mir deutliche Vorteile bietet."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Eine KI-gesteuerte Shopping-App könnte mein Einkaufserlebnis beim Kauf von Lebensmitteln verbessern."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Ich bin offen für die Nutzung einer Shopping-App, wenn sie mir personalisierte Angebote und Empfehlungen bietet."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Eine App, die mein Einkaufsverhalten analysiert und darauf basierend Vorschläge macht, würde ich als hilfreich empfinden."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Ich stimme überhaupt nicht zu	Ich stimme eher nicht zu	Neutral	Ich stimme eher zu	Ich stimme voll und ganz zu
"Datenschutz und Sicherheit meiner Daten sind mir sehr wichtig, wenn ich eine KI-gesteuerte Shopping-App nutze."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Ich würde eine App begrüßen, die mich über neue Produkte informiert, die zu meinen bisherigen Einkäufen passen."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Fast geschafft!**

Die nachfolgenden Fragen sind optional. Natürlich würden wir uns sehr freuen, wenn Sie sich die Zeit nehmen würden, die folgenden fünf Fragen ebenfalls zu beantworten!

Falls Sie diese nicht beantworten wollen, gehen Sie einfach zum Ende des Fragebogens, um diesen abzusenden!

**Welche Gründe sprechen für Sie für den Einkauf in einer Filiale (statt dem Online-Einkauf?)**

*(Mehrfachauswahl möglich)*

- Ich möchte die Produkte selbst sehen und auswählen.
- Ich bevorzuge es, frische Lebensmittel wie Obst und Gemüse persönlich auszuwählen.
- Ich genieße die Möglichkeit, spontan zu kaufen.
- Ich finde die Lieferung zu umständlich oder unzuverlässig.
- Ich habe Bedenken bezüglich der Umweltbelastung durch Lieferungen.
- Ich habe keinen Zugang zu zuverlässigen Online-Lieferdiensten.

- Ich möchte lokale Geschäfte unterstützen.
- Ich bevorzuge die sofortige Verfügbarkeit der Produkte.
- Ich mag den persönlichen Austausch mit Menschen vor Ort in der Filiale.
- Sonstiges:

### Was stört Sie am meisten bei Ihrem Einkauf vor Ort in einer Filiale?

*(Mehrfachauswahl möglich)*

- Warten an der Kasse
- Unzureichende Produktauswahl
- Einkaufswagensituation (nicht ausreichend vorhanden, schmutzig, defekt)
- Lange Anfahrtswege
- Suchen nach meinen gewünschten Artikeln
- Zu wenig Inspiration (z.B. Rezepte, neue Produkte)
- Kontakt mit Menschen (Mitarbeitenden, anderen Einkaufenden)
- Sonstiges:

### Welche Gründe sprechen für Sie für den Online-Einkauf (statt dem Einkauf vor Ort in einer Filiale)?

*(Mehrfachauswahl möglich)*

- Bequemes Einkaufen von zu Hause aus
- Zeitersparnis durch das Vermeiden von Fahrten zur Filiale
- Zeitersparnis durch das Vermeiden von Warteschlangen an der Kasse
- Zeitersparnis durch Lieferung nach Hause

- Einfachere Preisvergleiche
- Reduzierung von Impulskäufen
- Möglichkeit, Bestellungen zu planen und zu wiederholen
- Größere Produktauswahl und Verfügbarkeit von Produkten
- Sonstiges:

Falls Sie ein eAuto fahren: Wie wichtig ist es Ihnen, Ihr eAuto während des Einkaufs in der Filiale (kostenpflichtig) zu laden?

0 1 2 3 4 5 6 7 8 9 10  
unwichtig ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ sehr wichtig

Haben Sie weitere Anmerkungen oder Vorschläge, wie eine KI-gesteuerte Shopping-App Ihr Einkaufserlebnis verbessern könnte?

*(optional)*

**Geschafft!**

Möchten Sie als kleines Dankeschön für Ihre Zeit an unserer Verlosung teilnehmen? Unter allen Teilnehmenden werden zwei €10-Einkaufsgutscheine von ALDI SÜD verlost!

*Falls ja, geben Sie hier bitte Ihre eMail-Adresse ein:*

Herzlichen Dank für Ihre Teilnahme und die Unterstützung dieses Studienprojekts!

### Appendix 3: Consumer Survey Results

Due to the large volume of the survey Excel data (225 pages), the dataset is not physically included in this paper, but can be requested from [anja.siebert@ssbr-edu.ch](mailto:anja.siebert@ssbr-edu.ch). For evaluation of this paper, the Excel data has been uploaded as a PDF file to SSBR.

