Gordon Institute of Business Science
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Research Project

The influence of algorithmic technologies on perceptions of autonomy in consumer decision-making.

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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ABSTRACT

This research emphasises the enhancement of artificial intelligence (AI) technologies, particularly algorithmic technologies, by aligning them with essential human principles and evaluating their effects on perceptions of autonomy in consumer decision-making. The study underscores the importance of managing algorithmic technologies in a manner that honours consumer autonomy. Data was collected from 14 diverse South African online shoppers to investigate purchasing behaviours, focusing on factors such as gender, age, and educational qualifications. Prioritising depth over breadth, the research employed purposive and non-probability sampling techniques to secure rich qualitative insights while safeguarding participant confidentiality and anonymity.

Key themes emerged regarding how AI-targeted marketing shapes consumer decision-making, highlighting the significance of consumer autonomy and transparency in navigating AI recommendations. The results highlighted the pressing necessity for responsible AI practices and improved consumer engagement to enhance the shopping experience and strengthen brand connections. Participants expressed varied perspectives on the influence of algorithms on their decision-making, with some voicing concerns about autonomy while others valued tailored recommendations. This discourse underscored the ethical considerations of algorithmic dependence, stressing that businesses honour consumer autonomy while utilising AI technology for personalised marketing.

The study identified various critical factors affecting consumer behaviour in AI technologies, such as the balance between consumer autonomy and convenience, the need for personalised yet subtle suggestions, and the repercussions of impulsiveness and decision paralysis. Moreover, understanding scepticism towards the accuracy of algorithms and the risks of online manipulation was crucial for addressing consumer needs and shaping effective marketing and policy strategies.

This study encountered several limitations, including inherent researcher bias and restrictions related to sampling, data collection techniques, and participant demographics. The rapid evolution of AI technologies and a narrow theoretical focus may have limited the general applicability and relevance of the findings.

KEYWORDS:

Artificial Intelligence, Algorithmic Technologies, Consumer Autonomy, Consumer Decision-Making, AI Ethics

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Ayanda Dubazana

Date

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CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1. Introduction

This chapter introduces the research theme “The Impact of Algorithmic Technologies on Autonomy Perceptions in Consumer Decision-Making." It delineates the research problem, objectives, and the practical and theoretical significance to be derived from the study.

1.2. Background to the Research

The rapid proliferation of Artificial Intelligence (AI) in marketing is propelled by advancements in machine learning, enhanced computing capabilities, reduced costs, and the accessibility of big data (Husairi & Rossi, 2024). AI is utilised in advertising, logistics, strategy, and enhancing customer experience, presenting substantial opportunities (Campbell et al., 2020). It is crucial to contemplate how AI may impact customer autonomy in decision-making, as recognising it is vital yet frequently disregarded (Wertenbroch et al., 2020). AI-driven targeted marketing can enhance offerings and act as a customer partner, but it may also reduce customer control and influence decisions (Rust, 2020). Further research is needed to grasp the influence of these technologies on customer autonomy and overall customer experience, highlighting the necessity of aligning AI technology with positive human values and attributes (Hoyer et al., 2020; Rust, 2020).

1.3. Research Problem

The significance of AI in marketing is growing due to the progression of machine learning algorithms, growing computing power, reducing computing costs and models and the accessibility of big data. AI is widely applied in various aspects of marketing (Huang et al., 2019), offering significant opportunities for marketers to integrate innovative and humane machine applications in multiple areas (Campbell et al., 2020). For example, AI can offer valuable perspectives on identifying the appropriate customers and evaluating return on investment (Campbell et al., 2020).

Hoyer et al. (2020) asserted that AI-based technologies will significantly impact the pre-transaction stage of the customer journey. Marketers and data scientists are perpetually enhancing algorithms that provide more advanced advice and recommendations on product selection (Hoyer et al., 2020). The suggestions outlined can enhance customer contentment by minimising the effort required to make a decision, assisting customers in select options that meet their needs more closely. However, some recommendations could dampen satisfaction if they result in a loss of control or create unease due to a lack of understanding or alignment with personal preferences. As AI becomes more prevalent in pre-transaction stages, these concerns will be crucial areas for future investigation (Hoyer et al., 2020).

In this context, AI technologies that aid in human decision-making or autonomous decision-making must be held to the same moral standards as humans (Lobschat et al., 2021; Li et al., (2024). Moral norms and ethical considerations should guide individual and collective human behaviour. These principles should appraise any development, implementation, impact assessment, and enhancement of data and digital technology (Lobschat et al., 2021; Li et al., 2024).

1.4. Purpose Statement

This study will underscore the need to steer AI technology, including algorithmic technologies, towards accounting for human values. To do this, it is essential to assess technology's positive, negative, and ambiguous aspects concerning significant customer values (Dogruel et al., 2022). Evaluating autonomy dimensions can help identify ethical and political conflicts. Wertenbroch et al. (2020) emphasized that consumer autonomy is vital for informed consumer choice, raising critical psychological and ethical concerns (Dogruel et al., 2022; Wertenbroch et al., 2020). While autonomy is restrictive, it facilitates the understanding of agency matters in algorithmic technologies (Dogruel et al., 2022). There needs to be a focus on improving algorithmic technologies by ensuring they account for positive human qualities, such as the aspiration for self-determination and meaningful participation (Ryan et al., 2022).

1.5. Business Rationale of the Study

One must acknowledge that these emerging technologies bring new benefits to customers (Rangaswamy et al., 2022), and thriving businesses will boost their worth by continuously and meticulously moulding technology-driven engagements to prioritise said customers (Rangaswamy et al., 2022).

Mariani et al. (2022) assert that AI solutions leverage social media insights to enhance marketers' comprehension of customer sentiment and feedback. Marketers use this data in real time to modify messaging and branding for maximal impact. AI solutions provide deeper insights for optimising digital advertising and account-based marketing (Mariani et al., 2022). However, marketing teams must ensure that businesses use customer data responsibly and comply with regulations. This can be particularly challenging when it comes to AI. Unless the AI technologies are specifically designed to meet legal requirements, they may surpass permissible limits regarding the use of client data for personalisation. Although AI in marketing is expanding, it also presents significant challenges (Mariani et al., 2022).

Wertenbroch et al. (2020) noted that corporate officials are recognising the necessity to implement measures to safeguard consumer privacy and are considering how choice environments can be redesigned to guide consumers toward better decisions (Wertenbroch et al., 2020),. AI technologies significantly influenced the pre-transaction phase. Data scientists and marketers constantly refined algorithms to provide better product recommendations, which enhanced customer satisfaction by simplifying decision-making and aligning choices with individual needs (Hoyer et al., 2020). This improvement occurred when recommendations aligned with personal preferences and prioritised essential features. However, some suggestions decreased satisfaction by making consumers feel a loss of control or confusion, particularly if they did not understand the algorithm (Hoyer et al., 2020). With AI's growing role in pre-transaction processes, these challenges warranted further research (Hoyer et al., 2020). Given these developments, there is a growing need for marketing researchers to systematically study consumer autonomy, particularly perceived autonomy, to understand its role in the ever-changing marketplace (Wertenbroch et al., 2020).

Digitalisation and AI presented ethical dilemmas; integrating human values and morals was crucial (Burr et al., 2020). Numerous initiatives aimed at establishing AI ethics programmes overlook a crucial point of ethical standards that vary across cultural contexts. What is deemed acceptable or immoral in one culture may not be relevant in another distinct context (*How Companies Can Take a Global Approach to AI Ethics*, n.d.). Even when there is some agreement, significant differences in ethical reasoning — influenced by cultural norms, religious traditions, etc. — must be acknowledged. Due to the lack of uniformity in AI and data regulations across various regions, ensuring compliance can be challenging. To address this issue, companies should create a global AI ethics framework that prioritises collaboration with local teams and stakeholders while empowering those local entities with decision-making authority. This approach is especially vital for enterprises operating in multiple regions (*How Companies Can Take a Global Approach to AI Ethics*, n.d.). Researchers have consequently advocated for policies to improve individuals' algorithm literacy and awareness (Gran et al., 2021).

The potential effects of AI adoption also bring up relevant research topics. Customers may experience a diminished sense of control if AI can precisely accurately predict their preferences (Davenport et al., 2020). While AI-driven, targeted marketing should theoretically make offerings more appealing by reducing search costs; it could also dent customers' sense of control, thereby influencing their evaluations and decisions. If customers realise that an algorithmic technology can predict their ideal choices, they might intentionally opt for a non-preferred option to assert their autonomy (Davenport et al., 2020).

Customers' ideal preferences may differ from their previous behaviours, such as when they try to avoid unhealthy foods. In such cases, AI may hinder their ability to identify and pursue their preferred options by only presenting choices based on their past behaviours. A typical example is the widespread 'retargeting' of digital ads. Therefore, AI must be trained to address this issue effectively (Davenport et al., 2020).

Conversely, despite the rapid development and widespread use of these AI technologies in many industries, there needs to be more academic research on how these technologies impact and reshape the customer experience (Hoyer et al., 2020; Rust, 2020) – in as much as AI is no longer a ground breaking idea amongst technology enthusiasts, researchers, and students. Nevertheless, only a minority genuinely grasp AI's potential and advantages (Mariani et al., 2022).

1.6. Theoretical Relevance of the Study

Rust (2020) and Hoyer et al. (2020) argued that adopting AI has downstream consequences and raises research topics. One such topic is the potential loss of autonomy for customers whose preferences can be predicted by AI. While AI can reduce search costs, it may also undermine customers' sense of autonomy, affecting their choices in the decision-making process (Rust, 2020), which encompasses loss of control and privacy concerns (Hoyer et al., 2020).

Wertenbroch et al. (2020) argue that the concept of free will and individual autonomy is fundamental to 'Western Enlightenment' philosophy and underpins the economic theory of customer choice. Consumers assert their independence when choosing from a selection of alternatives, but factors such as information, price, and time overlooked inevitably restrict this independence (Wertenbroch et al., 2020). How customers manoeuvre through these limitations is a critical study area in customer research. Understanding how customers perceive their autonomy when making choices is also important but often overlooked (Wertenbroch et al., 2020).

1.7. Contribution of the Study

Wertenbroch et al. (2020) urge marketing scholars to focus on studying customer perceptions of autonomy in a rapidly-changing marketplace. Puntoni et al. (2021) suggest that future studies should delve into the cognitive processes that lead to the perception of AI's substitution and the resulting implications of such feelings. While products serve as tools, customers can derive intrinsic value from their consumption and the demonstration of skills and knowledge (Puntoni et al., 2021). While developed countries have conducted similar studies, developing countries need to conduct more such research. This study aims to contribute to the e-commerce industry in South Africa.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Consumer autonomy is essential in understanding individual decision-making within the context of economic theory and marketing practices. As consumers navigate increasingly complex choice environments, their perceptions of autonomy can significantly influence their spending behaviours and overall satisfaction. This discussion is further complicated by the advent of artificial intelligence (AI) and algorithmic technologies, which reshape how choices are presented and processed. While these advancements present opportunities for enhanced personalisation and efficiency, they also raise ethical questions regarding privacy, manipulation, and the erosion of genuine autonomy. This study seeks to explore the multifaceted nature of consumer autonomy – analysing the theoretical frameworks surrounding it, the implications of AI on decision-making, and the need for ethical considerations in marketing practices.

2.2. Autonomy as a Theory

The concept of free will and individual autonomy was crucial to the economic theory of consumer choice, as most consumers exercised autonomy when making free choices. Their level of autonomy was impacted by elements such as information, cost and time. Understanding how consumers perceived their autonomy when making choices was an essential but often overlooked area of study (Wertenbroch et al., 2020). Recent technological advancements, such as artificial intelligence and machine learning, have reshaped marketing practices, raising concerns about consumer autonomy. Corporate officials observed the implementation of measures to safeguard consumer privacy and considered the redesign of choice environments to guide consumers in making better decisions. The widespread adoption of AI engendered challenges for consumers, such as privacy issues, potential addictions, and dehumanisation (Lobschat et al., 2021; Puntoni et al., 2021; Li et al., 2024).

2.2.1. Consumer Autonomy

Consumer autonomy encompassed the ability of consumers to make and implement decisions independently, unencumbered by external influences from other agents. Various disciplines have discussed this concept, with philosophy discussing free will and psychology exploring lay conceptions of free will (Wertenbroch et al., 2020; Davenport et al., 2020). Autonomy was a necessary condition for perceived control. However, this was not consistently true for the consumer's autonomy in taking actions irrespective of their capacity to influence the result. This distinction was illustrated by the fact that the desire for consumers to make decisions independently, free from external influence, was a fundamental and distinct motivator of their behaviour, even in the face of unpredictable outcomes beyond their control (Gilal et al., 2019; Li et al., 2024; Wertenbroch et al., 2020).

The marketing literature frequently employed conventional theories of consumer behaviour, such as the consumer decision model, buyer behaviour theory, reasoned action theory, planned behaviour theory, and goal-directed behaviour model (Gilal et al., 2019). The inferences and appraisals stemming from these theories were impacted by their practical applications, diminishing their ability to predict and generalise across diverse cultures. Additionally, these theories had minimal impact on behaviours driven by autonomous motivation (Gilal et al., 2019).

Notwithstanding these constraints, marketing researchers have extensively utilised these theories to forecast consumer intentions and actions (Gilal et al., 2019). Despite this, theories with the potential to elucidate consumer motivations have yet to be considered in marketing literature. For example, 'self-determination theory' (SDT) was a prominent theory of human motivation that effectively identified factors influencing motivation and behaviour (Gilal et al., 2019).

The SDT framework was the primary framework for understanding intrinsic motivation. It elucidated how the surrounding environment fostered intrinsic motivation, indicating that individuals experienced heightened intrinsic motivation in settings where they perceived competence, autonomy and relatedness rather than when motivated by specific external outcomes, such as pressure (Ryan et al., 2022). The desire for control was closely connected to people's need for autonomy (Hu et al., 2021), an inherent psychological need and a fundamental aspect of motivation and human self-awareness. This should have been distinct from a technology's level of autonomy (de Bellis & Venkataramani Johar, 2020), referred to as artificial autonomy – a concept that emerged recently. Unlike human autonomy, engineers integrated artificial autonomy into machines through technological advancements (Hu et al., 2021).

The current structure of SDT revolves around six interconnected mini-theories. These mini-theories comprise a set of formal hypotheses presented as propositions linked to various hypotheses (Ryan et al., 2022). The propositions of SDT had traditionally been formulated after gathering converging evidence to avoid making errors in formal theory construction. The mini-theories developed individually in response to an expanding evidence base (Ryan et al., 2022).

1. Cognitive evaluation theory (CET) explores how social and intrapersonal factors influence intrinsic motivation, particularly autonomy and competence.

2. Organismic integration theory (OIT) delves into extrinsically motivated behaviours and their internalisation, outlining various motives and their impact on motivation, performance, and well-being.

3. Causality orientation theory (COT) addresses individual differences in motivational orientations and their connections.

4. Basic psychological needs theory (BPNT) underscores the universal significance of autonomy, competence, and relatedness satisfaction for human flourishing.

5. Goal contents theory (GCT) specifies the effects of intrinsic and extrinsic aspirations on individuals' well-being through their influence on fundamental psychological needs.

6. Relationship motivation theory (RMT) concentrates on the motivational foundations of close social relationships and attachments, particularly the satisfaction of essential psychological needs within relationships.

This study focused on the BPNT theory, as numerous studies have shown that fulfilling one's competence and autonomy requirements enhanced one's intrinsic motivation (Ryan et al., 2022). From the perspective of SDT, algorithmic technologies have the potential to help or hinder customers in satisfying their basic psychological needs of competence, autonomy, and relatedness (Ryan et al., 2022). The connection between these needs and intrinsic motivation could be summarised as follows, while also unpacking the SDT framework:

1. Competence entails conquering a challenge and prospering with constructive, informative feedback. A feeling of independence strengthens its positive influence on innate motivation (Ryan et al., 2022).
2. Autonomy pertains to psychological freedom and the choice to carry out tasks. The ability to make decisions driven by personal interests manifests psychological freedom, while volition involves acting without external influence or compulsion. When individuals perceive autonomy, they demonstrate greater enthusiasm in an activity and increased confidence in participating, resulting in improved performance and more remarkable persistence (Ryan et al., 2022).
3. Relatedness refers to the feeling of connection and belonging. It reflects an individual's inner longing to be part of the social environment. When people develop intimate relationships and feel a sense of unity with others, they experience higher levels of relatedness. Intrinsic motivation is more likely to flourish in environments characterised by a sense of relatedness (Ryan et al., 2022).

Given these developments, there is a growing need for marketing researchers to systematically study consumer autonomy, particularly perceived autonomy, to understand its role in the changing marketplace (Wertenbroch et al., 2020).

2.3. The Importance of Autonomy

As per Beer (2017), examining how algorithms influenced decisions or provided information that guided and shaped choices was essential. It is crucial to evaluate technology's beneficial, harmful, and unclear implications concerning fundamental customer values (Dogruel et al., 2022).

2.2.2. The Influence of Autonomy

A study conducted by Wertenbroch et al. (2020) revealed that consumers exercised their autonomy when choosing from a set of options subject to certain limitations. However, the perception of autonomy amongst consumers in such situations has yet to be fully understood, and this area of research has yet to be studied in depth. The research investigated how consumers perceived their value when making autonomous choices under constraints (Wertenbroch et al., 2020). Additionally, the researchers aimed to overcome the substantial reliance on studies done in developed countries, and they explored potential differences in developing countries (Dash et al., 2021).

They argued that consumer autonomy was crucial to consumer choice and raised important psychological and ethical questions (Wertenbroch et al., 2020). It questioned whether consumer choice could ever be fully autonomous, and it explored the idea of conceptualising autonomy by degree without a defined limit. It also considered how consumers might have voluntarily relinquished a certain amount of autonomy in exchange for other rewards. These questions had significant implications for marketing practice and theory. Weber-Lewerenz (2021) stated that AI had to uphold human autonomy, avert societal harm, function equitably, and be comprehensible. The analysis concluded that transparency, increased awareness, and public education were imperative for AI. However, the existing literature suggests that these concerns remain inadequately addressed, demanding urgent scholarly attention.

2.4. Artificial Intelligence (AI) Technologies

Husairi and Rossi (2024) stated that Artificial Intelligence (AI) includes software, machines, systems, and algorithmic technologies that simulate human intelligence in learning, planning, and problem-solving activities through advanced independent knowledge generation. These capabilities were made possible through technologies like machine learning, deep learning, rule-based expert systems, neural networks, and automation (Husairi & Rossi, 2024). Other emerging technologies, such as Augmented Reality (AR), the Internet of Things (IoT), virtual assistants, Mixed Reality (MR), Virtual Reality (VR), robots, and chat-bots – all powered by AI – significantly revolutionised the customer experience (Hoyer et al., 2020).

2.3.1. Impact of AI Technologies

Hoyer et al. (2020) state that AI can execute cognitive processes similar to those performed by humans, such as learning, decision-making, and problem-solving. The

AI ecosystem comprises data collection and storage devices, output systems, and computational and statistical techniques. These elements aid products and services to perform tasks traditionally associated with intelligence and autonomous decision-making for customers. AI employs algorithms, enabling machines to learn from experience, understand and develop natural language, and express emotions. Currently, algorithms can surpass expert humans in many tasks, from driving cars and diagnosing complex diseases to providing legal advice. Additionally, algorithms can handle subjective tasks, such as tone of voice and recognising facial expressions and emotions (Hoyer et al., 2020).

De Bellis and Venkataramani Johar (2020) stated that technology has evolved to be more autonomous, allowing machines to make decisions and complete tasks on behalf of consumers. Policymakers need to ensure that future human-machine interactions focus on fulfilling the needs and preferences of consumers, thereby maintaining and increasing their well-being (Burr et al., 2020; de Bellis & Venkataramani Johar, 2020). Each category of AI intelligence provided distinct advantages: mechanical AI was optimal for standardisation, thinking AI was well-suited for personalisation, and emotional AI was ideal for fostering relationships (Huang & Rust, 2020).

2.3.2. Algorithmic Technologies

Wertenbroch et al. (2020) detailed that AI assisted marketers in predicting customer intent and segmenting them into more distinguished groups. AI-enabled marketers can tailor promotions and ads, making better product and brand recommendations (Wertenbroch et al., 2020; Campbell et al., 2020). Such AI technologies used by marketers were algorithmic systems that fell within ‘thinking AI’; they delivered personalised advantages by identifying data patterns, such as text mining, facial recognition, and speech recognition. Marketing operations that sought customised outcomes continually explored the potential of AI. The most prevalent marketing applications included AI algorithm systems, exemplified by Netflix's movie suggestions and Amazon's cross-selling recommendations (Huang & Rust, 2020).

First-generation AI algorithms, which mainly provided recommendations about products, services, and actions for users to choose from, presented challenges to independent decision-making (Dogruel et al., 2022). For instance, one could perceive personalisation algorithms as both supportive and controlling. This occurred when an algorithmic decision did not align with users' preferences but instead represented the interests of third parties (Dogruel et al., 2022). Amongst users, the feeling of losing control was the most noticeable and well-documented obstacle to embracing autonomous technologies. Numerous studies showed this effect in different situations (de Bellis & Venkataramani Johar, 2020). The feeling of losing control amongst consumers was the most noticeable and well-documented obstacle to embracing autonomous technologies. Numerous studies demonstrated this effect in various contexts (de Bellis & Venkataramani Johar, 2020). Although autonomy was a more restricted concept than agency, it allowed for precisely identifying what aspects of algorithmic technologies posed challenges to agency. By doing so, this perspective helped in navigating tensions with significant ethical and political implications, as autonomy was not just a theoretical issue but also a societal value (Savolainen & Ruckenstein, 2022).

2.3.3. AI Ethics

As Wertenbroch et al. (2020) questioned ethics regarding consumer autonomy against marketing practices, there was a need to explore AI ethics. The advent of digital technology and artificial intelligence posed ethical challenges; it was essential to incorporate human values and ethical principles (Burr et al., 2020). These principles assisted in addressing whether and how these technologies and methodologies could align with ethical standards – identifying perceived concerns and determining which technological opportunities and benefits should be embraced from an ethical standpoint for the greater good (Burr et al., 2020).

Like any revolution, the “big data revolution” brought challenges concerning data security (Grewal et al., 2020). Rather than solely accumulating more data, the aim was to achieve higher-quality data. The scientific principles of robotics, machine learning, AI, and the creative aspects of marketing guided this approach. These technologies offered significant advantages, such as access to vast amounts of information and better management of customer interactions (Grewal et al., 2020). Nevertheless, they raised important issues regarding data security and privacy risks.

Whilst these emerging technologies offer new customer advantages (Rangaswamy et al., 2022), marketing teams must ensure the responsible use of customer data and regulatory compliance. This becomes challenging with AI technologies that often exceed limits on client data used for personalisation unless specifically designed to comply. While AI in marketing is expanding, it also brings significant challenges (Mariani et al., 2022).

2.5. Consumer Decision-Making

With algorithmic decision-making, choices were predicted and intertwined with the actions of other agents, machine learning models, extensive data sets, and their interactions: the line between self and others, on which traditional concepts of autonomy depended, became increasingly blurrier (Savolainen & Ruckenstein, 2022). Defining autonomy too rigidly may lead to overlooking the demonstration of autonomous agency by individuals under infrastructural constraints and design-based control, as well as prematurely dismissing discussions on the potential value of preserving human-machine interdependencies (Savolainen & Ruckenstein, 2022). Studies on choice overload were also crucial for enhancing the comprehension of decision-making processes (McShane & Böckenholt, 2018). Therefore, this study proposes a multidimensional perspective of autonomy as an actively developed and negotiated element of relationships, drawing from earlier research findings. By defining it in this manner, the significance of autonomy can be maintained, while acknowledging the situational and contextual nature of agentic interactions with algorithmic systems (Savolainen & Ruckenstein, 2022).

2.6. Consumer Experience

AI was utilised in marketing, supply chain management, planning, and enhancing customer satisfaction, presenting significant opportunities (Campbell et al., 2020). However, despite the rapid advancement and widespread use of these AI innovations across various industries, there remained a noticeable gap in academic research exploring how these technologies influenced and reshaped the customer experience (Hoyer et al., 2020; Rust, 2020). Customers engage with companies across various contact points during different stages of their decision-making process—before, during, and after consumption (Flavián et al., 2019). These sensory, emotional, behavioural, and cognitive experiences formed the foundation of the customer shopping journey (Flavián et al., 2019). Effectively managing this journey was essential for businesses, and it encompassed several marketing functions, such as brand management, market research, promotion, and advertising. The application of technologies was especially critical, as it allowed companies to improve their value propositions, creating superior customer experiences by merging virtual and physical contact points (Flavián et al., 2019).

2.7. Personalisation Benefits and Risks

AI technology enhanced firms' ability to anticipate customer purchases, significantly improving their predictive capability (Davenport et al., 2020). Depending on the precision of these predictions, businesses even overhauled their models, offering products and services continuously based on insights derived from customer needs data. Accordingly, numerous research opportunities presented themselves, focusing on varying customer purchasing behaviours and marketing strategies. One essential research area investigated how effectively AI-driven predictive algorithms forecasted demand for genuinely new products. AI algorithms were likely adept at predicting demand for incrementally new products (Davenport et al., 2020).

Nevertheless, these technologies also had frequent personalisation failures and presented significant concerns, especially regarding data security and privacy risks (Savolainen & Ruckenstein, 2022; Grewal et al., 2020), reminding users that, although algorithmic processes might have appeared to offer intimate understanding and support, technology could never honestly 'know' or care for an individual in their unique singularity but only as a distinct amalgamation of correlational attributes (Savolainen & Ruckenstein, 2022). This limitation suggests that technology can misinterpret individual needs, leaving consumers powerless to amend these errors. Ultimately, the ripple effects of these technologies impacted customer satisfaction and employee well-being, loyalty, company profitability, and the overall ecosystem in which a business executes its marketing strategies (Grewal et al., 2020).

2.8. Online Manipulation

“Online manipulation" referred to manipulation enabled by technology, often called "digital manipulation” or “automated manipulation." As offline spaces have become increasingly digitised through smartphones and connected sensors, it was expected to see online manipulation in these environments as well (Susser et al., 2019). The notion that technological progress introduced new power dynamics was, of course, not a novel one. In one sense, the risk that online manipulation could prioritise the interests of data collectors and their clients over those of individuals was a well-known (yet still unsettling) issue (Davenport et al., 2020a; Dogruel et al., 2022; Susser et al., 2019).

The aim, however, was to illustrate that the danger posed by online manipulation was more profound and insidious than it appeared. Being influenced or controlled without conscious realisation infringes upon autonomy and the ability to comprehend and direct one’s life (Susser et al., 2019). Should the mechanisms that enabled such control remain unmonitored, it could lead to harm to both individuals and the collective. Although information technology was highly suited for these forms of control, they were still possible. Combatting online manipulation necessitated restricting its access to personal data—the lifeblood that sustained it—and empowering individuals with awareness, comprehension, and skills to recognise the forces seeking to sway them (Susser et al., 2019).

2.9. Conclusion

In today's digital landscape, the intricate relationship between technology and consumer behaviour demanded a critical examination of consumer autonomy. It was no longer sufficient to acknowledge the role of AI and algorithmic systems; it became necessary to confront the reality that these tools both provided opportunities and posed serious threats to maintaining true consumer autonomy. The SDT framework revealed vital insights into how consumer motivation was shaped, underscoring the necessity of autonomy, competence, and relatedness. However, as online manipulation and aggressive data-driven marketing tactics proliferated, it became imperative to scrutinise how these technologies could, and often did, erode individual agency.

It was not enough for marketers, policymakers, and researchers to merely call for improvements; they had to actively foster genuine consumer autonomy by insisting that technological advancements adhered to ethical standards. Failure to do so not only jeopardised consumer well-being but also threatened to undermine the very foundations of choice and freedom that were critical in a healthy marketplace. As navigation of the complex interplay of human-machine interactions continued, ongoing, rigorous research into consumer autonomy was not just beneficial—it was essential to uphold the principles that protected consumers in an increasingly automated world.

CHAPTER 3: RESEARCH QUESTIONS

This research study aimed to comprehend the influence of algorithmic technologies on perceptions of autonomy in consumer decision-making by addressing four specific research questions. These questions were developed and derived from the reviewed literature.

RQ1: What impact do AI-based technologies, specifically algorithmic technologies, have on customer decision-making processes before making a purchase (Hoyer et al., 2020)?

Research Question One aimed to delve deeply into the intricate ways that AI-based technologies shape and influence customer decision-making processes prior to making purchases. To achieve this, the research explored various aspects, including users' internet usage patterns, their specific interests, and the degree to which they are exposed to different product suggestions made by AI algorithms. Furthermore, the study aimed to assess the impact of these suggestions on consumers' eventual buying decisions, thereby gaining an understanding of the broader implications of AI technology in the realm of consumer behaviour.

RQ2: How vital is perceived autonomy for customers when making decisions within algorithmic technologies in AI-driven targeted marketing (Rust, 2020; Wertenbroch et al., 2020)?

Research Question Two aimed to understand how users perceived technology's use in providing personalised recommendations. It sought to explore deeper understandings of privacy concerns, trust, and the influence of accuracy on user perceptions. This research shed light on individuals' feelings about privacy when their personal information was used to suggest products or services, as well as the level of trust users placed in these recommendations and how the accuracy of such suggestions affected their perceptions. Additionally, gaining insights into users' preferences regarding unsolicited recommendations was crucial for creating a positive online shopping experience in the age of technology. By understanding these preferences, businesses and technology developers can tailor approaches to align with user expectations and enhance the overall online shopping experience.

RQ3: How do AI recommendations within algorithmic technologies influence the ease or complexity of customer decision-making (Puntoni et al., 2021; Rust, 2020; Davenport et al., 2020)?

Research Question Three sought to investigate consumers'' experiences and perspectives regarding the influence of algorithms on their decision-making processes. The study explored how individuals perceive the role of algorithms in shaping their choices, emphasising the importance of independence in decision-making. By examining various user interactions with algorithm-driven systems, the research highlighted the complexities surrounding user autonomy when users are faced with algorithmic suggestions and choices. This exploration contributes to the ongoing philosophical and ethical discussion about the implications of algorithmic decision-making, particularly concerning personal freedom and the broader societal impact of these technologies. Understanding these nuances is crucial as society navigates the integration of algorithms into everyday life, making it essential to consider how these systems may continue to evolve and influence human behaviour in the future.

RQ4: How can advancements in algorithmic technologies be tailored to align with consumer preferences (Hoyer et al., 2020; Wertenbroch et al., 2020)?

Research Question Four aimed to gather input on optimising online recommendations to enhance the online shopping experience. This inquiry emphasised the importance of customising algorithmic technologies to match consumer preferences and the potential to enhance online shopping experiences through optimised recommendation systems. Addressing this question explored how algorithmic technologies could be utilised to better meet individual consumer tastes and preferences, ultimately seeking to enhance the overall online shopping experience. Additionally, understanding user feedback is crucial in refining these algorithms, as it aligns recommendations with evolving consumer needs. By fostering a data-driven approach, businesses can significantly boost customer satisfaction and loyalty.

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

4.1. Purpose of Research Design

Saunders et al. (2017) stated that an exploratory research approach, which this study used, was a method of gathering information on a topic that still required full understanding (Wertenbroch et al., 2020). This research design approach investigated new phenomena where gaining insights could inform future research. An exploratory study generated tentative answers to initial questions, which needed confirmation through more detailed research to provide reliable answers. Saunders et al. (2017) further asserted that exploratory research methods offered a high degree of flexibility, but that did not imply a lack of direction in the investigation. Instead, the research initially encompassed a broad scope and progressively narrowed in specificity as the study advanced (Saunders et al., 2017).

4.2. Philosophy

This study used the interpretivism philosophy, and Saunders et al. (2017)stated that interpretivism studied social phenomena in the natural setting. It was essential to understand the research subjects' social world from their perspective (Saunders et al., 2017). The interpretivist perspective was highly significant in management and business research. Business scenarios were not just intricate but were also exceptional, signifying a precise set of conditions and people uniting to create a distinct social phenomenon in the context of AI, specifically for this study (Saunders et al., 2017). This study applied the interpretivist perspective in the context of AI research.

4.3. Approach Selected

This study applied inductive logic, as per McCracken (1988), where themes surfaced from the gathered information, endeavouring that this approach valued the perspectives and experiences of the participants and sought to give "voice" to them through its research techniques, which aligned with the topic of understanding consumer perceptions (McCracken, 1988). Instead of focusing on trends, it sought to comprehend the phenomenon's particular, individual, and unique aspects.

Conducting research in several regions was essential to generalise a theory across different areas. An inductive perspective required a comprehensive understanding of the experience when exploring regions with distinct environmental characteristics (McCracken, 1988). A similar study had been done in Europe, making it intriguing to undertake a similar research study in Africa for a more informed generalisation.

4.4. Methodological Choices

Due to time and resource constraints, the study was conducted using a mono-method approach, utilising a singular research method or technique for data collection (McCracken, 1988).

4.5. Strategy

The study used the phenomenology strategy where Käufer & Chemero (2015) argued that phenomenology helped to capture the essence of an experience from those who have lived it (Käufer & Chemero, 2015). This approach lead to a more comprehensive understanding of the phenomenon. It proved beneficial in describing the nature of the lived experience of a particular phenomenon, such as perceived autonomy regarding algorithmic technologies.

4.6. Time Horizon

This study employed a cross-sectional research approach. Saunders et al. (2017) stated that this type of research entailed gathering data from participants at a specific time, often referred to as a 'snapshot'. The data was collected from a heterogeneous sample of individuals, representing various age groups, genders, and educational backgrounds. The cross-sectional study also included a qualitative method, specifically semi-structured interviews. As per Saunders et al. (2017), this methodology was appropriate for collecting data in this study.

4.7. Proposed Research Methodology

4.7.1. Population

Saunders et al. (2017) claimed that a population referred to the list of all the individuals who were part of a specific group. It was important to note that this group did not necessarily consist of people or employees. Therefore, data was collected from a smaller subset of the population, known as a "sample", to make the study more practical (Saunders et al., 2017). This study focused on recruiting diverse South African participants, regular e-commerce users. The aim was to ensure a wide range of opinions by setting quotas for gender, age, profession, educational background, and place of residence. Fourteen (14) interviews were conducted, ensuring a balance between male and female participants with ages ranging from 18 to 65. This sample allowed for socio-demographic variation (Dogruel et al., 2022).

4.7.2. Unit of Analysis

This research centered on individual participants as the unit of observation. The analysis was conducted personally, taking into account each participant's responses and characteristics. To ensure diversity, the sampling criteria for selecting the 14 participants considered gender, age, profession, educational background, and place of residence (province). This approach aimed to provide a comprehensive representation of South African e-commerce users. The qualitative research methodology deemed a sample of 14 participants as sufficient, prioritising depth over breadth.

The data collection instrument, the interview guide found in Appendix 1, had been developed based on the research objectives and underwent validation through expert review and potential pilot testing. The pilot testing involved administering the instrument to two individuals similar to the study's target population. The objective of this approach was to uncover problems related to the instrument's clarity, comprehensibility, or relevance, which can be rectified prior to its full-scale implementation (Saunders et al., 2017).

4.7.3. Sampling Method and Size

A sampling frame referred to the comprehensive list of all individuals that comprised a particular population (Saunders et al., 2017). For this study, a sample was chosen from this list using non-probability sampling. The selected participants were those who had personally experienced the same or similar phenomenon, as stated by Lohr (2021). As per Saunders et al. (2017), since the selected population did not have a complete list of all the participants, it was impossible to determine the probability of each participant being chosen for the sample. In such cases, they used a non-probability sampling technique, as they did not need a complete list of the entire population (Saunders et al., 2017).

Sampling techniques that fell under the category of non-probability did not allow for statistical representation of the population, according to Saunders et al. (2017). Therefore, the data gathered through this type of sampling did not allow for statistical inferences. Instead, the study relied on judgement to select a sample that effectively answered the research question based on the criteria of educational background, geographical location, and e-commerce experience. Lohr (2021) explained that researchers typically used non-probability samples in conjunction with qualitative data collection methods, such as semi-structured interviews and unstructured observation. This study determined that a sample size of fourteen participants was sufficient.

This study used purposive sampling as a non-probability sampling technique. Saunders et al. (2017) asserted that this was a standard method of gathering qualitative data from a small sample. In purposive sampling, researchers used the judgement to select participants who could contribute the most towards answering the research question and accomplishing the objectives. Lohr (2021) noted that the selection process was not random, and the researcher actively chose the most suitable participants based on specific criteria such as their knowledge, experience, and relevant characteristics related to the studied topic.

This study aimed to investigate the e-commerce usage patterns of individuals from diverse educational and geographical backgrounds. It used a homogeneous sampling strategy to select participants with similar attributes and characteristics, ensuring comprehensive information (Lohr, 2021). Therefore, it focused on a specific group of participants who met the predetermined criteria. All information gathered during the study will be shared without personal details to protect participant confidentiality (Gordon Institute of Business Science, 2024). To guarantee anonymity, each participant was allocated a distinct identifier, such as "Participant

1", "Participant 2", and so forth. These unique identifiers were employed during the data analysis and reporting processes. The data was securely stored in an encrypted format, separate from personal details, in accordance with ethical guidelines and the POPI Act (Gordon Institute of Business Science, 2024). Snowball sampling was utilised, where initial respondents recruited participants through referrals. This approach enabled the sample to expand as participants suggested others who met the criteria (Fogelman & Comber (2007).

4.7.4. Measurement Instrument

The in-depth interviews lasted approximately one hour, varying from 45 to 60 minutes. With consent from the participants, the interviews were recorded and transcribed using Microsoft Teams. The data was stored electronically—a combination of standardised and open-ended questions for the semi-structured interviews, including several sorting tasks (Lohr, 2021). The semi-structured interview guide found in Appendix 1 was employed as a practical tool for measurement. The research questions in the guide were developed from the literature in response to the identified research problem. To ensure the quality of the collected data, the interview questions were aligned with each research question, creating consistency between the research questions, the literature, and the interview questions presented in the guide. These interview questions were crucial in guiding the interviews with e-commerce users.

4.7.5. Data Gathering Process

This study employed the phenomenological approach to gain insight into the fundamental nature of a specific experience and to articulate the core of the lived experience of a phenomenon (Käufer & Chemero, 2015). Individuals who had experienced the same or a similar phenomenon were selected directly, and in-depth interviews were conducted with the identified selected sample (Käufer & Chemero, 2015). The approach also included observing and documenting the interviewees' experiences and perspectives. This approach aimed to gain a deep understanding of the phenomenon being studied from the perspective of those who had experienced it. Käufer and Chemero (2015) stated that this approach helped gain insights into the subjective experiences of individuals.

One of the main qualitative data collection methods for this research project was conducting primary data interviews (Lohr, 2021). These interviews were semi-structured and took place remotely, via a phone or video-conferencing platform using Microsoft Teams. The process involved asking a predetermined list of questions or topics, which could be expanded upon with additional ones. The interviews were recorded using digital audio and video and then transcribed electronically. The relationship between the interviewer and the interviewee was one of co-creators, with the latter having a more prominent position. The data collected was complex and reactive, and it included input from the interviewer (Lohr, 2021).

The method for storing recordings and transcriptions involved using a trusted cloud service provider to ensure the secure storage of the information (Gordon Institute of Business Science, 2024). Initially, consent was obtained before processing and storing participants' information, and the intended use of the information was communicated (Gordon Institute of Business Science, 2024). Only necessary data pertinent to the research was collected. Additionally, personal and confidential information was stored for a specific duration, with a clear understanding of when the data would become obsolete. Secure deletion techniques were applied to remove the information when it was no longer required, carefully managing any associated risks (Gordon Institute of Business Science, 2024).

4.7.6. Analysis Approach

This study used inductive or conventional analysis, as the main aim was to define a phenomenon and create a concept (McCracken, 1988). The existing research had to be revised and characterised by relatively unstructured interviewing techniques. Avoiding preconceived categories or codes allowed the data to flow naturally from the data and immersion in data-enabled insights to emerge (McCracken, 1988). Within the inductive category, the study specifically used conventional content analysis. Hsieh & Shannon (2005) discovered that researchers used this method when there was limited existing research literature or theory on a topic. Researchers often used inductive category development to gain new understandings of their data. This involved engaging in the data and allowing categories and names to emerge rather than using preconceived ones (Hsieh & Shannon, 2005). One standard qualitative research method that used this approach was conventional content analysis, specifically Atlas. The study employed this software to analyse the data (Myres, 2024). This method involved analysing language to identify patterns or themes that represented similar meanings and then subjectively interpreting the content of the data in the text. Text data could come from various sources, such as print, verbal, or electronic (Hsieh & Shannon, 2005). When it was time for reporting, it involved illustrating the phenomenon with impactful statements and delving into its significance (Myres, 2024).

4.7.7. Quality Controls

Myres (2024) stated that qualitative research required a distinct evaluation process. The evaluation process in this study ensured that the data was documented and interpreted correctly, the findings could be applied to other settings and groups, the study's conclusions could be replicated, and the findings accurately depicted the respondents' views. These four criteria were Credibility, Transferability, Dependability, and Confirmability.

Additionally, Myres (2024) stated that, to ensure validity in qualitative research, it was essential to focus on descriptive accuracy, interpretive accuracy, theoretical accuracy, and generalisability. Descriptive accuracy involves factual accuracy, while interpretive accuracy focuses on participants' language. Theoretical accuracy consists of checking if the theory fits the data, and generalisability refers to the ability to generalise findings beyond the study.

This study used triangulation to guarantee the accuracy and credibility of the findings (Saunders et al., 2017). Triangulation was a research technique that provided credibility and accuracy for the study's findings. Essentially, it involved using multiple impartial sources of data within one study. This approach improved the results' reliability because it helped identify inconsistencies and refined initial conclusions (Saunders et al., 2017).

This study refined findings using different data collection methods and varying aspects of a single method. For example, the study on consumer autonomy perceptions across different regions revealed differences that allowed researchers to refine their conclusions. This triangulation process was a valuable method researchers used to ensure the reliability and validity of the study results (Saunders et al., 2017).

4.7.8. Limitations

Saunders et al. (2017) pointed out the drawbacks of qualitative research regarding reliability and validity. Since this qualitative research happened naturally, replicating studies took too much work. In specific methodologies and designs, such as phenomenology, inherent limitations could not be controlled.

The approach taken when conducting this analysis had limitations. Hsieh and Shannon (2005) found that the analysis could be challenging because it needed to consider the context of the data, which could lead to inaccurate findings and harm the study's credibility. Researchers used insistent observation, member checks, negative case analysis, triangulation, and referential competence to ensure credibility.

Additionally, Hsieh and Shannon (2005) stated that the approach had limitations regarding theory expansion and describing lived experiences. The sampling and analysis procedures made inferring the theoretical relationship between concepts from the findings difficult. Conventional content analysis could, at best, help with concept development or model building (Hsieh & Shannon, 2005).

CHAPTER 5: RESULTS

5.1. Introduction

Chapter Five delved into the insights derived from the interview data analysis. It began by defining the sample to provide context for the findings and validate its appropriateness. Subsequently, the primary themes identified in the qualitative analysis were examined in connection with the research questions highlighted in Chapter Three.

Table 1 details the fourteen participants who participated in the study. Each participant was allocated a unique code to protect their identities, and pseudonyms were used to substitute the names of individuals mentioned in the responses. This study aimed to explore diverse perspectives to thoroughly understand the phenomenon and ensure the credibility of the conclusions. Interview participants were identified using snowball sampling based on specific criteria, focusing on their e-commerce usage habits across various educational and geographical backgrounds. Notably, all fourteen interviews were conducted via videoconferencing on Microsoft Teams.

5.2. Background of Participants

Table 1 below shows the list of participants, including their age, gender, location of residence (province), profession, and educational qualifications.

Participant Code	Age	Gender	Province	Profession	Educational Background
P1	37	Female	Gauteng	Marketing Specialist	Undergraduate
P2	35	Female	Gauteng	Finance Specialist	Postgraduate
P3	25	Female	Kwa-Zulu Natal	Hospitality	Diploma

P4	20	Female	Kwa-Zulu Natal	IT Student	Student
P5	31	Male	Kwa-Zulu Natal	Trader	Matriculant
P6	27	Male	Kwa-Zulu Natal	ECD Supervisor	Diploma
P7	65	Female	Kwa-Zulu Natal	Retired Teacher	Diploma
P8	40	Female	Gauteng	Housewife	Diploma
P9	30	Female	Gauteng	NGO Founder	Undergraduate
P10	30	Female	Western Cape	Investment Analyst	Postgraduate
P11	34	Male	Western Cape	Fashion Designer	Diploma
P12	38	Male	Gauteng	Financial Advisor	Undergraduate
P13	30	Male	Western Cape	Data Analyst	Postgraduate
P14	32	Female	Gauteng	Accountant	Undergraduate

Saunders et al. (2017) identified the most effective approach in qualitative research as focusing on participants' relevance. While significant efforts were made to ensure the sample was diverse for data variation, the primary emphasis was placed on the participant's ability to provide insightful contributions pertinent to the research topic.

5.3. Data Saturation

Figure 1: Codes

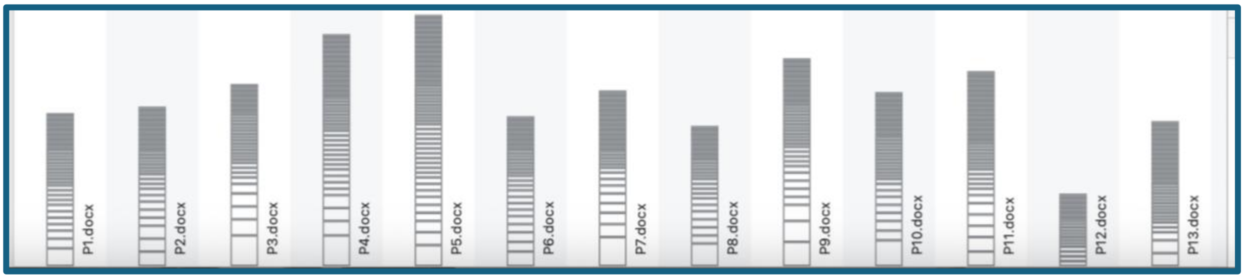

Figure 2: Code Group Distribution by Participant

Fusch and Ness (2015) suggested that, as a general principle, data collection should continue until no additional themes arise, indicating that data saturation has occurred and that further collection would be of minimal benefit. Accordingly, data gathering was halted after the fourteenth interview. Initially, there was variability in data saturation, and it began to wane toward the end in comparison to the first five participants. This pattern is depicted in Figure 2 above.

5.4. Results

Several emerging themes have been identified through an inductive approach. A thematic deep dive has been conducted to gain deeper insights. Specifically, the inductive category of the study will utilise conventional content analysis, as Hsieh and Shannon (2005) outlined.

The analysis of the interviews revealed a complex and multifaceted relationship between users and online recommendation systems. The overarching themes highlighted the benefits and drawbacks of these systems and the underlying tensions between complexity in decision-making, perceptions of autonomy, the impact of technology, and customer preference.

Below is the breakdown of each theme that emerged from the study:

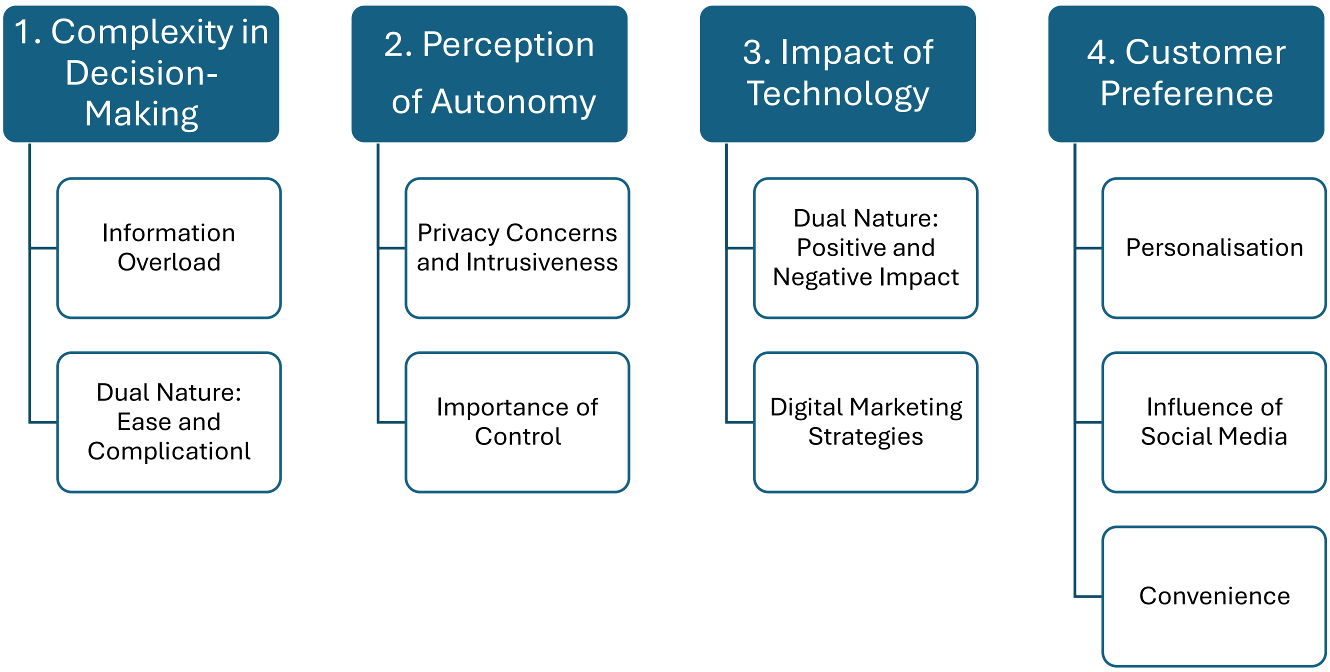

Figure 3: Categories to Theme Mapping

<u>Theme 1: Perceived Autonomy</u>

Participants valued having control over their decision-making process and wanted to feel empowered in their choices. Autonomy in decision-making translated to a sense of ownership and satisfaction with final choices. Perceived autonomy played a crucial role in understanding how participants made decisions. The study highlighted the necessity of consumers feeling in control of their choices despite external pressures. One participant (P1) underscored the relevance of this idea in consumer behaviour: "The constant bombarding of, you know, with ads or suggestions, subconsciously they created, you know, this artificial need. Like, so it's easy to follow to buy something or to do something that, because you've been seeing it so often, you tend to think it's a part of your life. But ordinarily, it's something that you would not choose."

When participants believed they could choose based on genuine preferences, they were more inclined to interact positively with brands and proceed with purchases. Yet, the role of algorithms and targeted advertising could evoke feelings of manipulation. This prompted participants to doubt the authenticity of their choices, leading them to question whether decisions were genuinely theirs or driven by external influences.

Category 1.1: Privacy Concerns and Intrusiveness

Participants expressed concerns about the scope of data collection and the potential misuse of personal information. The constant tracking and monitoring of online activities felt invasive and unsettling. There was a desire for greater control over data, transparency, and use. Concerns were raised about the intrusive nature of data collection and the potential erosion of privacy.

However, there was a dual experience among participants. Some experienced a sense of safety online, while others experienced a mix of feelings, with the majority expressing feelings of unsafety and compromised privacy.

P1: "*I feel sometimes like it's a bit too big brotherish because these things get fed to you constantly. If you go off of one page and onto another page, it just feels like it's constantly in your space. And bear in mind, sometimes when you're searching on the Internet, you're not necessarily looking to make a purchase, you're just browsing.*"

P5: "*I would say no, I don't feel threatened because they don't suggest anything that's harmful to me.*"

P10: "*I would say no, I don't feel threatened because they don't suggest anything that's harmful to me.*"

P13: "*The suggestions online are quite intrusive in the sense that they can get very specific and very particular too quickly."*

P5: "*Sometimes you feel safe; sometimes you feel unsafe."*

P7: "*People who actually do that, honestly speaking. So they must just stop. Stop suggesting; stop popping up things. If I need something, I'll let you know. Yeah. It is artificial intelligence. But they should just switch it off. No, it's machine learning."*

P3: "*The suggestions, I partly trust them, you know, 50 (percent). Let's say 50. And how accurate are they? I'd say 80 out of 20. 80% out of 100 accurate? Yes. Yes."*

Category 1.2: The Importance of Control

Participants consistently emphasised the importance of having control over their decision-making process and expressed a strong desire to feel empowered in their choices. They reported that an overabundance of recommendations often led to decision paralysis, thereby complicating the selection process. One participant articulated this sentiment, saying, "I want to keep my autonomy of making my decisions and, you know, looking for things that I want." (P13). This desire for autonomy highlights the need for a balanced approach that provides helpful suggestions without overwhelming consumers, ensuring retention of the freedom to make independent choices. Further reinforcing this point, another participant (P6) stated, "I researched, and watched YouTube videos, and then I bought it." This direct and independent method of navigating choices underscores the value participants place on streamlined and user-controlled decision-making processes.

P9: "*I'm happy with it. And I was already, like, planning different outfits with this, like, a pair of shoes or whatever. And that's, I think, because I was in control of that decision."*

P10: *"If I know exactly what I want, then I can appreciate the availability of having many options... I'm able to eliminate everything else that does not fit that criteria."*

P7: "*Stop suggesting; stop popping up things. If I need something, I'll let you know. Yeah. It is artificial intelligence. But they should just switch it off."*

P5: "*When I buy something, I also look at the comments; I look at the ratings."*

Theme 2: Complexity in Decision-Making

This theme investigated how online recommendations influence consumer choices. While such recommendations can effectively guide decisions, they also resulted in impulsive purchases, decision paralysis, and a diminished sense of autonomy.

The theme encapsulated the conflicting feelings participants had towards online recommendations. On the one hand, participants appreciated the convenience and efficiency these systems offered, helping them discover new products, compare options, and make informed decisions. On the other hand, the complexity in decision-making stemmed from the effects of information overload and decision fatigue. An overabundance of recommendations, however, led to decision paralysis, making it harder for participants to settle on a choice. This phenomenon of decision fatigue complicated the selection process and detracted from the intended convenience of online recommendations.

Participants articulated varying opinions regarding how algorithms shaped their choices, with some expressing concerns about the erosion of autonomy. Contrarily, others acknowledged the convenience offered by tailored recommendations. These findings contributed significantly to the ongoing discourse surrounding the ethical implications of algorithmic decision-making.

Category 2.1: Information Overload

Participants highlighted that information overload in the digital age often intensifies decision-making complexity. They faced an overwhelming number of choices and data points, making it difficult to navigate the vast array of options available. One participant (P13) aptly summarised this struggle by stating, "*They complicate things where you spend much time trying to sift between the noise to find the signal, so to speak.*" This observation underscored the intricate nature of consumer decision-making, where individuals had to filter through excessive information to reach a conclusion. The challenge was not only to find the right product but also to determine which information sources were credible and relevant. Consequently, participants experienced frustration and confusion, ultimately leading to decision fatigue.

P3: "*When you eventually don't get, I just get irritated... these things keep popping up and I can't finish this."*

P13: "*I think my problem is that you, I get bombarded with whoever, then the ads keep on showing up, so. Oh, you're looking for a smart TV or you're looking for… you know what I mean? I'm like, just leave me alone."*

P4: "*If there's going to be a pop-up every few minutes, then I'm logging off. I'm done."*

P10: "*It can sway me from important things... it steals my attention and my concentration span."*

Category 2.2: Dual Nature: Ease and Complication

The study explored the complexities and uncertainties surrounding online recommendations and advertisements, shedding light on the dual nature of technology in consumer decision-making. Participants expressed a mix of trust and scepticism towards these suggestions, often feeling overwhelmed by the sheer volume of options available. This "catch-22" scenario illustrated the tension between the convenience of tailored recommendations and the potential invasion of privacy, leading to decision fatigue and confusion. As one participant (P13) noted, "You find yourself in a catch-22: you rely on technology for convenience, yet it complicates your decisions."

Understanding consumer behaviour necessitates an appreciation for the emotional aspects of decision-making. Many individuals acknowledged that, while some purchasing suggestions could be helpful, they often complicated the buying process. This complexity hindered consumers' ability to discern the quality and authenticity in the products they were considering. One participant (P6) encapsulated the positive sentiment related to recommendations, stating, "It reminds you of something that you need". This statement emphasizes the important link between how consumers develop needs during their decision-making process and the overall quality of their shopping experience. Indeed, recommendations can serve as helpful reminders, enhancing the decision-making process by reinforcing needs and preferences.

Conversely, negative sentiments also surfaced. One participant (P1) expressed frustration, saying, "The repetition, yes. The repetition, like, okay, suggest, yes. Give me space to breathe." This indicates that, while suggestions can be beneficial, an overload of repetitive information can lead to feelings of overwhelm, detracting from the overall shopping experience.

Overall, participants cared deeply not only about the results of their choices but also about the process through which they arrived at those decisions. A positive experience during this decision-making process significantly enhanced satisfaction and increased the likelihood of repeat purchases.

P4: "*Definitely, because I also struggle with making one specific decision. So less choices. Very easy."*

P3: "*When you eventually don't get… I just get irritated. These things keep popping up and I can't finish this."*

P4: "*It's a catch 22 situation; you want to trust the technology, but you also worry about being manipulated."*

P1: "*Yeah, no, definitely. I think, from my side, I, I can envision a world without the sort of recommendations. And for me, the reasoning is because I, I always, I know what I want. I think the recommendations… the people can't see world without recommendations is the ones that are actually not sure of what they want. And they need a lot more convincing because, remember, there's different customers. So I'm, for me, I can see a world without it because I know exactly what I want. If I go in, this is what I want. This is what I'm looking for. If not and not, I don't, and I don't find it, I move on and that's it."*

Theme 3: The Impact of Technology

When managed properly, recommendations exposed consumers to new products and services that might have yet to be discovered independently. These suggestions broadened their perspective, opened them up to new possibilities, and enhanced their overall shopping experience. While tailored recommendations can assist in decision-making by aligning with participants' needs and preferences, they may inadvertently decrease their sense of autonomy. One participant (P9) expressed this sentiment, stating, "You might find yourself buying things you didn't even know you wanted, but it was helpful in that moment." This statement highlights the tension between the desire for assistance and the need for personal decision-making.

Participants often appreciated recommendations that streamlined their options, saving them time and effort. However, they also expressed concerns about losing control over choices, especially when they felt that external influences significantly shaped their decisions or when recommendations seemed more like impositions than helpful suggestions.

Category 3.1: Dual Nature: Positive and Negative Impact

Recommendations significantly influenced purchasing decisions, particularly when they were personalised and timely. Participants were more inclined to buy products that were recommended to them, even if they had not initially considered those items. Constant exposure to targeted advertising cultivated a sense of artificial need and led to impulsive buying behaviour. The impact of technology, especially through algorithms, notably shaped consumer behaviour. One participant (P7) noted: “You might find yourself buying things you didn't even know you wanted." This exemplified technology’s dual role as both a source of convenience and a potential manipulator of consumer decisions.

Algorithms analysed vast datasets to predict consumer preferences and behaviours, often resulting in highly-tailored shopping experiences. However, this reliance on algorithms raised concerns about consumers’ autonomy in decision-making. Another participant, P13, shared a similar sentiment: “Main concern is (that) people might not have autonomy and choice in their decision making on buying things or interacting with things. Are you a product of the recommendations you've seen in the last while, or are you a product of your own development as a person?" Thus, the study revealed notions of impulsivity and decision paralysis.

P9: "*It feels like, oh, great, I don't have to do that whole ‘slippy’ process of looking around because here it is."*

P2: *“And when I saw the promotion, That also made me want to buy it. So, yeah, I didn't know of it when I clicked on it, but then when I saw that the store was actually running that discount or that promotion, I was like, it's not so bad.”*

P13: “*If the information that is fed into the algorithms is, you know, metadata and informational, it's helpful."*

P14: “*Either be on Google while I'm searching for whatever topic I'm interested in and also whatever that I was searching for, I would eventually see it in all my social media platforms.”*

P4: "*I mean, sometimes I might be intrigued, and I want to find out more information, but I never go to the extent of, you know, wanting to purchase it or wanting that thing. Yes, I might want to find out, like, more information about it, but I never actually go with actually wanting it and being like, okay, I need to purchase this.*"

P11: "*A lot of the suggestions that they get might be sort of continuing this kind of consumerism and materialism that I may be seeing in their purchasing choices or whatever the case may be.*"

P11: "*I think maybe it is part of this idea of like nudge marketing or sort of like a nudge, the nudge theory of marketing.*

P7: "*Even with all the suggestions. No, I'm looking for a specific type, and this is not it. Yes, I can see this is suggested, but no, it's not what I'm looking for, though. Yeah.*"

Category 3.2: Digital Marketing Strategies

Participants had both positive and negative experiences with the accuracy of online recommendations. While some recommendations were spot-on and aligned with their interests, others were irrelevant or even misleading. The accuracy of these recommendations was crucial in building participant trust and ensuring a positive shopping experience.

Technology significantly influenced digital marketing, transforming targeted advertising into a powerful means of swaying consumer choices. One participant (P1) noted, "So again, it just speaks to accuracy. Understand me; know me. You know, feed me the things that I want, but also don't bombard me." This highlights how these strategies leverage consumer data to present personalised ads. This targeted approach boosted the relevance of marketing messages, increasing the chances of engagement and conversions. When participants felt supported and empowered throughout their journey—able to explore options freely, receive helpful yet unobtrusive recommendations, and ultimately make decisions with confidence—they were more likely to develop a stronger affinity for the brand.

P7: "It's not, but because it's the nature of the business, you tend to get used to these marketing strategies that happen on the online when you are trying to purchase something. And then you have this 101 pops up thinking that you might like it just *because another person bought it together with what you bought. And they kinda, like, think that you're gonna like also the same thing. No, they're not nice.”*

P5: "When they're advertising a day, because they have a limited time, sometimes it's like 30 seconds. They try to include as much similar product that you were searching."

P1: "Each medium needs to have its own sort of strategy or plan, but it can't be the same because there are nuances amongst the two."

P2: “I think sometimes maybe that's the frustrating thing, is that we've got this thing with my friends and I that these phones are listening to us. You'll be thinking, I'll be speaking about something, and then before you know it, you pop onto your Instagram, for example, and there it is, you know, they're trying to push it to you and sell it to you. So, yeah, we do get that time and again, if I was speaking about the one, someone speaking about a blender, I need. I needed a blender. And then before I know it, next thing I know it, on my Instagram, I'm seeing blenders pop up.”

Theme 4: Consumer Preferences

Consumer preferences highlighted the significant role that online recommendations played in modern shopping. Participants increasingly relied on these recommendations to streamline their purchasing decisions, effectively saving both time and effort. By presenting tailored suggestions, these recommendations not only simplified the shopping process but also exposed participants to a wider array of products and services they might not have encountered otherwise. Moreover, personalised recommendations enhanced the relevance and accuracy of the suggestions offered, resulting in a more satisfying customer experience. This personalisation ensured that participants received options that were closely aligned with their tastes and needs, ultimately fostering a sense of connection between participants and the marketplace.

Category 4.1: Personalisation

Personalisation has become essential to contemporary consumer preferences, significantly impacting how participants interacted with brands and made purchases. These results highlighted the significance of tailored recommendations, which could enhance the shopping experience. Participant P5 articulated this idea succinctly, remarking, “Like the example of me buying that two-piece, I never thought like a two-piece. I know it's not for me, but then how it's recommended to me, and I'm actually liking the colour. I'm actually liking the two-piece, how it fit, how it looks.” This comment highlighted the impulsive nature of consumer behaviour when offered personalised suggestions that aligned with their interests. The ability of algorithms to analyse consumer data and forecast preferences enabled retailers to create experiences that appeared distinctly tailored for each participant. Participants indicated that this increased the chances of purchase and cultivated a deeper connection between consumers and brands.

P11: “They're helpful. These recommendations are helpful and they don't really complicate your life."

P9: “It was a great event, you know, and that's something I probably would not have known about had Meta not pushed it to me, which is like, oh, great, thank you.”

P4: “It depends on the type of content that is being shown to me. Because, as I was explaining, like, sometimes it could be something that I've been looking for, and sometimes it's generally a thing of, I am not interested in what you're trying to sell to me.”

P12: “Rather not receive them at all.”

P5: “So for me, I feel like it's good that they recommend things, different things, because, you know, when you always searching for something, you always search for that specific brand, that one brand that you know. But when they recommend things, they can recommend something even better."

Category 4.2: Influence of Social Proof

The impact of social proof on participants was significant. In today’s digital world, where online reviews and peer advice are easily accessible, consumers often rely on others’ experiences to inform their buying decisions. Participant P14 highlighted, “Lately, I make use of what other people are saying about the products, people's reviews on the product.” This emphasised that participants were swayed not only by the products but also by the surrounding social context. When potential buyers observed that others had favourable experiences with a product, their confidence in their own purchasing decisions increased. This effect was especially pronounced in online settings, where the presence of ratings and reviews could greatly influence consumer behaviour.

P13: "Yes. So, I mean, generally as a human being I have an autonomy, or I want to keep my autonomy of making my decisions and, you know, looking for things that I want. The constant bombarding of, you know, with ads or suggestions, subconsciously they create, you know, this artificial need. So it's easy to follow to buy something or to do something that because you've been seeing it so often, you tend to think it's part of your life. But ordinarily it's something that you would not choose."

P5: "I also look at the comments, I look at the ratings. And with social media, some people, or people are venting. If your company sells them a bad product or the service was bad, people will talk about it."

P11: "And algorithms are part of a machine and machines are operated by people. So it is this thing of like to be. This idea of being mindful and being able to curate a world that we want to see on our social media spaces, on our Internet and stuff like that. And also. Yeah. Like, not being obsessed with the next big thing helps you look for certain things less, if that makes sense."

P5: "A preferred experience is the brand. You know, if it's appliances, it's, you know, checking the warranty. It's also like looking at reviews, looking at ratings. And then if all of those things check for you, then you make your purchase."

P11: "You see what other people are busy buying"

Category 4.3: Convenience

In today's fast-moving society, convenience became a key factor in participants' choices. This idea was illustrated by a participant (P11): "You want the payment process to be very simple and easy and, you know, straightforward. I press the link, I do this, I secure payment, I secure my money, I pay, and I know where the delivery time is." Shoppers increasingly prefer quick and seamless purchasing experiences rather than taking their time to browse. This shift reflects a trend of limited decision-making. The rise of e-commerce has facilitated this change, allowing consumers to make purchases from home with just a few clicks.

P7: “Nothing beats convenience. You click, it's done.”

P2: "It makes it a little bit easier, whereas you can compare that entire assessment, you know, within a few minutes versus walking around an entire store looking for one item."

P5: “The Internet is very easy, and Google has made it pretty much the easiest to find information and navigate the system, as it is very user-friendly.”

5.5. Conclusion

The key themes expressed above are associated with the Research Questions in Table 2 below to confirm that all are addressed. To summarise the findings per Research Question, the breakdown is as follows:

For research question one: Digital suggestions influence consumer decisions, creating a dichotomy by either enhancing the shopping experience or inciting challenges like impulsivity and a lack of control. While algorithmic recommendations help consumers find relevant products and save time, they can also lead to decision paralysis, risking consumer autonomy.

For research question two: Consumers face a conflict between the desire for autonomy and the influence of targeted marketing. Participants express a need for control, citing privacy concerns and intrusive surveillance as barriers. Trust in algorithmic recommendations is fragile and hinges on perceived intrusiveness, highlighting the need for transparency to foster trust.

For research question three: AI recommendations impact decision-making by simplifying choices through personalisation but they can also induce decision fatigue. Emotional factors during interactions with AI may hinder decision-making, emphasising the need for responsible AI practices.

For research question four: Consumer engagement at touchpoints is essential for enhancing brand connection. Personalised recommendations improve consumer experience, while social proof influences online decisions. Convenience is crucial, necessitating improvements to streamline purchasing processes and enhance satisfaction.

The following chapter examines the results from this chapter in depth, connecting them to the literature.

Table 2: Summary of Findings on Research Questions

Themes	**Categories**	***Codes (Frequency)***	***Research Question Association***
1. Perceived Autonomy	Privacy Concerns and Intrusiveness	Privacy Concerns codes (245)	Research Question Two: How important is perceived autonomy for customers when making decisions within algorithmic technologies in AI-driven targeted marketing?
	Importance of Control	Importance of Control codes (53)	
2. Complexity in Decision-Making	Dual Nature: Ease and Complexity	Uncertainty (139) Confusion (33) Scepticism (13)	Research Question Three: How do AI recommendations within algorithmic technologies influence the ease or complexity of customer decision-making?
	Information Overload	Clarity (11) Indecisiveness (15) Misunderstanding (6 Ambiguity (4) Complexity (3)	

Themes	Categories	*Codes (Frequency)*	*Research Question Association*
		Ageism (2) Attention (1)	
3. Impact of Technology	Dual Nature: Positive and Negative Impact	Curiosity (67) Influence (42) Satisfaction (23) Gratitude (21) Curiosity (16) Appreciation (15) Ambivalence (12) Positive feedback (5) More codes (6)	Research Question One: What impact do AI-based technologies, specifically algorithmic technologies, have on customer decision-making processes before making a purchase?
	Digital Marketing Strategies	Digital Communication (71) Advertising (30) Marketing strategies (12) Brand loyalty (3)	
4. Customer Preference	Personalisation	Personalisation (43) Preferences (10) Accuracy (7) Human Experience (7)	Research Question Four: How can advancements in algorithmic technologies be

Themes	Categories	*Codes* *(Frequency)*	*Research Question Association*
		Customer experience (6) Attention to detail (4) Simplicity (4)	tailored to align with consumer preferences?
	Influence of social media	Social media (40) Influences (9) Consumerism (8)	
	Convenience	Efficiency (28) Convenience (22) Technology use (20) Ease of use (9) Artificial Intelligence (6) Advancement (1) Productivity (1)	

CHAPTER 6: DISCUSSION OF RESULTS

The findings of this study, detailed in Chapter 5, were gathered through the research methodology outlined in Chapter 4. This chapter will now discuss the results, providing insights by comparing them to existing literature from Chapter 2. This comparative analysis aims to conclude the results related to the research questions introduced in Chapter 3 of this study.

Theme one answered two research questions and unpacked them in this manner, finding these insights on perceived autonomy to be crucial for customers when making decisions regarding algorithmic technologies in AI-driven targeted marketing. In the age of algorithmic technologies, consumers faced a paradox: their desire for control over their choices clashed with the pervasive influence of targeted marketing. As consumers increasingly engaged with digital platforms, their quest for independence in decision-making became paramount. This tension raises critical questions about autonomy, privacy, and the psychological underpinnings of consumer behaviour. This study uncovered the challenges and opportunities within modern consumer landscapes by examining the intricate relationship between perceived autonomy and algorithm-driven suggestions..

<u>Lack of Control: A Hurdle to Consumer Independence</u>

The results from participants' experiences with algorithmic technologies reveal a significant tension between the desire for control and the widespread implementation of targeted marketing strategies. Many participants expressed a strong wish to be independent in their decision-making, relating this to a sense of fulfilment and ownership over their choices. This viewpoint resonates with the results of Rust (2020), Hu et al. (2021), and Puntoni et al. (2021), who emphasised the psychological significance of perceived independence in shaping consumer behaviour. When individuals feel they are making choices based on genuine preferences, free from external pressures, they tend to engage more positively with brands and are more likely to make purchases.

Conversely, numerous participants voiced concerns regarding the invasive nature of targeted advertising and data tracking, indicating their independence was threatened. The considerable influence of algorithmic recommendations often eroded their sense of autonomy, raising doubts about the authenticity of their personal decisions.

The research uncovered a distinctive "catch-22" situation that was not highlighted in the literature, in which participants acknowledged the convenience of AI suggestions but felt that their independence was undermined. Although existing literature addresses the balance between convenience and control, this study examines how users manage these opposing emotions as they occur, highlighting a fluid interplay between reliance on technology and the quest for personal autonomy.

Privacy Concerns and Intrusiveness

Privacy concerns prominently surfaced as participants expressed unease about the extent of data monitoring and the potential exploitation of their personal information. The results of Lobschat et al. (2021), Puntoni et al. (2021), and Li et al. (2024) also supported this observation, arguing that privacy dilemmas significantly impact consumer trust and their willingness to engage with targeted advertising. The feeling of being constantly observed led many to question the authenticity of their decision-making.

While some participants conveyed a degree of trust in the accuracy of the recommendations, this confidence appeared tenuous, primarily influenced by their perceptions of the intrusiveness of data collection methods. The conflicting emotions of feeling both "secure" and "insecure" underscore consumers’ intricate relationship with algorithm-driven recommendations, spotlighting the pressing need for transparency in personal data management.

The Importance of Control

Participants emphasised the need for control, indicating a significant obstacle in algorithmic structures. The overwhelming nature of suggestions led to decision fatigue, with many expressing a desire for a more straightforward method to make autonomous choices. This yearning aligned with the Self-Determination Theory (Ryan et al., 2022), which posited that perceived autonomy could enhance intrinsic motivation and engagement. The desire among participants to manage their options highlighted the need for a balanced approach in digital marketing: offering support without overwhelming consumers.

For instance, a participant's wish to “go directly to the website” illustrated the value of user-controlled decision-making. This sentiment was also highlighted in Wertenbroch et al.'s (2020) perspective, who found that understanding perceived independence in consumer choices was vital for developing effective marketing strategies that respected individual preferences and for improved overall satisfaction.

In summary, these findings indicated that perceived autonomy was vital for consumers navigating AI-targeted marketing. Factors such as privacy concerns, the emphasis on control, and the psychological necessity for autonomy influenced consumer experiences and decisions. Aligning with existing literature, this study highlighted the imperative for marketers to create conditions that boost consumer autonomy, thereby building trust and satisfaction in an era increasingly governed by algorithmic systems.

The Self-Determination Theory (SDT) Framework in Relation to Study Results

This research examined the BPNT theory (Basic Psychological Need Theory) within SDT, which posited that individuals had three core psychological needs: autonomy, competence, and connection (Ryan et al., 2022). These needs influenced motivation and behaviour, mainly as consumers interacted with personalised marketing strategies.

1. Autonomy:

Autonomy was the most significant element of SDT in terms of the study findings. Participants conveyed a strong wish for authority over their decision-making processes. This necessity for independence was evident in their inclination towards manual searches instead of depending on algorithmic suggestions, emphasising a core aspect of consumer behaviour: the desire to feel empowered in their selections.

When consumers felt they had the liberty to make their own choices, they found more fulfilment in their purchases. Participants expressed concerns regarding the invasive nature of targeted advertising, which they believed could foster a false sense of necessity. This sentiment compromised their autonomy, making them question whether their decisions were theirs or influenced by outside factors. As illustrated by one participant's remark, "The constant bombardment of... recommendations... created, you know, this artificial need," it was clear that a lack of perceived autonomy had hindered engagement and trust in brands.

Research indicates that, when an individual feels a sense of autonomy, they demonstrate greater enthusiasm for an activity and an enhanced self-assurance in engaging, resulting in better performance and increased perseverance (Ryan et al., 2022). However, in contrast, the artificial intelligence identified in the study revealed that there was some sort of heightened interest in shopping, but it resulted in a phenomenon of impulsivity where consumers were purchasing impulsively. Impulsivity did not increase their confidence in participating, nor did it encourage their self-assurance. Instead, the recommendations fostered feelings of artificial necessity and urgency, which consumers perceived negatively, invoking thoughts of feeling manipulated.

2. Competence:

The need for skill is related to a person's desire to feel capable and proficient in their actions (Ryan et al., 2022). Participants in the study indicated that an overwhelming number of recommendations often led to decision-making paralysis, undermining their confidence in handling their choices. One participant noted, “When faced with many options and advice, I felt completely inundated.” This emphasised the importance of balancing valuable guidance with the ability to make independent choices. “When confronted with excessive alternatives and recommendations, I found it extremely daunting.” This highlighted the necessity for harmony between constructive suggestions and the power to make personal decisions.

The study found that consumers encountered unmanageable amounts of alternatives that made them feel unskilled and unsure in their selections. This sense of incompetence promoted a negative purchasing experience, inconsistent with SDT. The consumer was left feeling incompetent and therefore lacked any intrinsic motivation. This study powerfully argues that users experience significant emotional reactions—such as annoyance and frustration—stemming from an overload of recommendations. Previous research had touched on choice overload; however, participants in this study conveyed that decision paralysis manifests as both a mental challenge and an emotional burden, hindering their decision-making.

Furthermore, decision paralysis highlights the psychological dimensions of competence, which have not been thoroughly addressed in the literature. This illustrates the profound psychological challenges that arise when perceived competence is lacking, which influences behaviour and motivation (Ryan et al., 2022).

3. Relatedness

Although the research predominantly concentrated on perceived autonomy within consumer decision-making, the significance of connection also plays an important part. Connection involves belonging with others, which can be nurtured through positive engagements with brands and communities. Participants expressed a desire for businesses to be open and ethical, indicating that they value relationships built on trust and reciprocal respect.

The notion of connection is pivotal in understanding consumer engagement with brands that honour their autonomy while providing valuable, personalised recommendations. When consumers feel acknowledged and appreciated, their inclination to connect with a brand intensifies, enriching their overall experience (Ryan et al., 2022). This study reveals that many participants preferred recommendations that were not only specifically tailored to their needs but also subtly integrated, avoiding intrusiveness. This preference stands in stark contrast to prevailing research (Grewal et al., 2020; Savolainen & Ruckenstein, 2022), which tends to focus on the efficacy of personalised suggestions, assuming that when consumers engaged with algorithmic technologies, they ultimately developed a bond of increasing intimacy (Savolainen & Ruckenstein, 2022). Furthermore, the essential aspect of consumer comfort did not simply occur, which was only partially true. These findings indicated a consumer demand for a harmonious balance: sufficient guidance to be beneficial, yet not to the extent that it becomes overwhelming or intrusive.

In conclusion, this research argues that the SDT framework provides vital insights into consumer behaviour and motivation rather than prescriptively dictating how these elements should be handled. The study emphasises the significance of three core psychological needs: autonomy, competence, and relatedness. Participants articulated a strong desire for autonomy, noting that feeling empowered through individual decision-making significantly influenced their interaction with AI-targeted marketing. The concept of competence faced challenges due to an overwhelming array of choices, which led to decision paralysis and diminished confidence in consumer choices. Lastly, the need for relatedness underscores the critical role of trust and connection, rather than intrusiveness, between consumers and brands. Overall, the study posits that maintaining a delicate balance between personalised recommendations and the respect for consumer autonomy is crucial for fostering positive consumer experiences.

Theme two answered the third research question and unpacked in this manner, thereby establishing a successful connection with the research inquiry. In what ways do AI recommendations in algorithmic systems affect the ease or complexity of customer decision-making, concerning the literature review? Several vital themes and discoveries from previous research clarify this connection.

<u>1. Dual Nature: Ease and Complexity</u>

The literature emphasised that algorithmic systems increasingly shaped consumer choices, raising concerns about autonomy and decision-making quality (Hoyer et al. (2020); Rust (2020)). Traditional concepts of autonomy became blurred as algorithmic technologies predicted and influenced consumer behaviour, necessitating a multidimensional understanding of agency in digital contexts. This directly related to the research question, as it highlights how AI recommendations complicated decision-making, potentially undermining consumer autonomy.

<u>2. Information Overload</u>

Earlier research observed the issue of choice overload, where too many options resulted in confusion and hesitation (McShane & Böckenholt, 2018). Study participants shared this perception, expressing annoyance and decision fatigue due to excessive suggestions. This highlighted the intricacies brought about by AI recommendations, implying that although they strived to make choices easier, they could unintentionally establish obstacles to successful decision-making.

3. Psychological and Emotional Aspects

In a study conducted in 2021, Puntoni et al. explored how consumers interacted with AI technologies through emotional and experiential lenses, without dictating how these technologies should be utilised. Understanding the impact of these interactions on user perceptions of simplicity and complexity was crucial for addressing the research question. The prevalent emotional burden of feeling watched obstructed the decision-making process, even when recommendations were tailored.

By weaving these themes from existing literature into our research question, it became apparent that AI recommendations played a dual role in consumer decision-making. While they simplified choices by offering personalised suggestions, they simultaneously introduced complexities that diminished autonomy and led to decision fatigue. This layered understanding was vital for fostering responsible AI practices that respect consumer needs while enhancing the decision-making experience.

Theme three addressed the first research question by exploring insights that successfully link to the research inquiry about the significant impact of AI-based technologies, particularly algorithmic technologies, on customer decision-making processes before purchasing. Investigating how digital suggestions influenced consumer decisions uncovered a complicated relationship between guidance and independence. Although tailored suggestions improved the shopping experience by presenting consumers with items they may not have encountered otherwise, they also raised issues related to impulsive purchasing, indecisiveness, and a reduced feeling of control.

Dual Nature: Positive and Negative Impact of Algorithmic Influence

This discussion examines two facets of algorithmic influence on consumer behaviour: positive and negative impacts. On the positive side, research participants noted that algorithmic technologies significantly influenced their purchasing decisions by presenting targeted recommendations that helped them discover products they might have overlooked. This supports the viewpoint of Hoyer et al. (2020), who argued that AI can enhance the shopping experience by performing cognitive tasks such as decision-making processes and learning patterns. By analysing user data, algorithms can generate personalised options that align with individual preferences, which may ultimately improve the product search experience.

Participants reported that these tailored recommendations not only saved time but also alleviated the stress associated with making choices. Accurate and relevant online recommendations often directed them to products they genuinely wanted, enhancing their overall satisfaction with the shopping experience. As consumers navigated through a myriad of options, algorithms played a crucial role in filtering out irrelevant choices, thus simplifying their shopping journey. Husairi and Rossi (2024) reinforced this by asserting that AI tools can expand consumer perspectives by highlighting new possibilities, thereby enriching their purchasing experiences.

Conversely, the negative aspects of algorithmic influence are noteworthy. Davenport et al. (2020) emphasised the dual-edged nature of AI’s impact on consumer behaviour, pinpointing concerns regarding its potential for manipulation and the erosion of personal freedom. It was observed that, when consumers become aware of algorithmic predictions regarding their preferences, they may deliberately choose less favourable alternatives to assert their autonomy (Davenport et al., 2020). Some participants even reported abandoning purchases when algorithmic recommendations exerted excessive pressure, indicating a desire to reclaim their decision-making power.

This tension between perceived external influence and individual autonomy suggests that, while algorithmic technologies offer convenience, they also risk infringing on personal boundaries. These findings align with prior studies on the role of AI in advertising; Hoyer et al. (2020) noted that AI enables marketers to effectively segment customers and customise promotions. However, a fine line exists between personalisation and manipulation, as algorithms can compromise consumer agency if their goals align more with corporate profits than consumer interests (Dogruel et al., 2022).

An evaluation of relevant literature supports these insights, illustrating how AI innovations, particularly algorithmic technologies, utilise predictive analytics for tailored marketing strategies (Wertenbroch et al., 2020). Nevertheless, de Bellis and Venkataramani Johar (2020) cautioned that the increasing autonomy of AI necessitates careful consideration of ethical implications and consumer welfare. Feedback from consumers highlighted their openness to algorithmic assistance, specifically when technology accurately reflected their needs based on online behaviour. This underscores the idea that algorithmic suggestions can guide consumers towards previously unconsidered options, enhancing their decision-making processes.

However, this beneficial influence comes with drawbacks. Dogruel et al. (2022) noted that while these recommendations can streamline shopping experiences, they might also contribute to feelings of diminished autonomy. Participants expressed concerns about being subtly nudged towards specific purchases, raising doubts about whether their choices were genuinely theirs or merely dictated by algorithms. Overall, although AI can enhance personalised shopping experiences, it may also lead to a sense of reduced agency—a concern echoed in consumer feedback.

The findings portray a complex landscape where technology both facilitates and complicates consumer decision-making. In leveraging AI and algorithms for marketing purposes, businesses need to find a balance between providing valuable recommendations and protecting consumer autonomy.

Theme four addressed research question four and explored it in this way, discovering insights that indicate advancements in algorithmic technologies can be customised to meet consumer preferences. Consumer engagement at different contact points is essential. Existing literature emphasises that customer participation during various stages of the shopping experience is critical (Flavián et al., 2019). The results support this view, showing how participants engaged with personalised suggestions to aid their purchasing decisions. This implies that enhancing recommendations based on consumer interactions at different touchpoints can elevate the shopping experience, reinforcing the literature's emphasis on managing customer journeys effectively.

Personalisation

The literature explored the dimensions of personalisation, highlighting its advantages (Grewal et al., 2020; Savolainen & Ruckenstein, 2022). Findings show that participants re-acknowledged that personalisation with AI-targeted marketing improved their shopping experience and deepened their connection to the brand. Nevertheless, consumers exhibited scepticism about the accuracy of algorithms. While literature often assumes a certain level of trust in algorithmic accuracy, this study confirmed considerable scepticism amongst participants. Many expressed doubts regarding the relevance of the recommendations, revealing a gap in the existing literature concerning consumers' trust in AI systems. This scepticism impaired decision-making, causing users to question the recommendations rather than confidently depend on them.

Influence of Social Proof

Research has highlighted the influence of social proof on consumer behaviour, particularly within online contexts (Davenport et al., 2020). The findings indicated that individuals relied heavily on peer reviews and online feedback when making purchasing decisions. This observation raised the possibility that integrating social proof elements could have augmented algorithmic recommendations, creating a better alignment with consumer preferences.

Convenience as a Key Factor

Research indicates a growing preference for convenience in consumer decisions (Flavián et al., n.d.; Davenport et al., 2020). Findings show that respondents valued straightforward and efficient purchasing methods, aligning with previous studies. This underscores the necessity for algorithmic technological advancements to simplify the user experience, ultimately enhancing general satisfaction.

The findings highlighted the significance of user experience during the decision-making process. Respondents indicated that a favourable shopping experience could significantly improve their satisfaction and affect their willingness to interact with a brand. This points to companies' need to prioritise the results of decisions and the journey itself (Hoyer et al., 2020), which has received less attention in earlier studies.

A Summary of New Phenomenon Not Identified In Literature

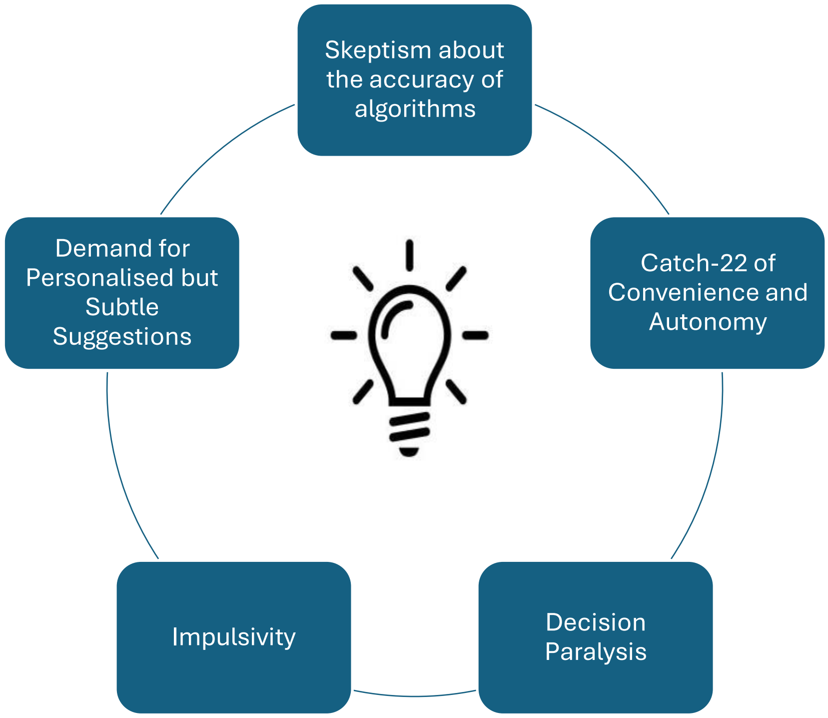

Figure 4: New Phenomenon

The findings of the study revealed several new insights that require thorough exploration in the existing literature. These concepts were previously mentioned in this chapter. Below are some key findings that enhance our current understanding:

The insights from this research offer critical new viewpoints on how AI recommendations influence consumer decision-making and contribute to academic and business knowledge. Emphasising the importance of delving deeper into psychological and emotional reactions, user inclinations for subtle suggestions, and finding a balance between ease and independence enriches the current body of literature and points to potential directions for future studies.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1. Introduction

The rising significance of AI in marketing can be attributed to advancements in machine learning algorithms, enhanced computing power, decreased costs, and the abundance of big data. AI's applications spanned many facets of marketing (Huang et al., 2019). Nevertheless, it was vital to examine the impact of AI on customer decision-making autonomy, a crucial aspect that was often neglected (Wertenbroch et al., 2020a). This research underscored the importance of navigating AI technologies, particularly algorithmic technologies, in a way that respected human values. This required a thorough evaluation of both the positive and negative implications, as well as the uncertainties surrounding technology in relation to core customer values (Dogruel et al., 2022).

Hoyer et al. (2020) posited that AI technologies had a notable impact during the pre-transaction phase of the customer journey. Marketing teams were to ensure that businesses responsibly handled customer data while adhering to regulatory standards. This task could be incredibly daunting for AI (Mariani et al., 2022). Without explicit legal framework compliance, AI technologies ran the risk of exceeding permissible limits in the use of customer data for personalisation. Despite the growth of AI in marketing, substantial challenges persisted (Mariani et al., 2022). Many efforts to implement AI ethics programmes failed to recognise a pivotal aspect: that ethical standards differed across cultural contexts. What was deemed ethical in one culture might not hold in another (How Companies Can Take a Global Approach to AI Ethics, n.d.). As a result, researchers called for better policies to enhance individuals' algorithmic literacy and awareness (Gran et al., 2021).

Wertenbroch et al. (2020) encouraged marketing academics to investigate how customer perceptions of autonomy were affected in an ever-evolving market. There was a notable lack of scholarly work on how these technologies influenced and transformed customer experiences (Hoyer et al., 2020; Rust, 2020), particularly as AI became a familiar concept among tech enthusiasts, researchers, and students. The emphasis had to shift towards refining algorithmic technologies to incorporate essential human traits, such as the pursuit of self-determination and meaningful involvement (Ryan et al., 2022).

7.2. Address to Primary Research Questions

7.2.1. Importance of Perceived Autonomy for Customers when Engaging with Algorithmic Technologies in AI-Driven Targeted Marketing

The study revealed that consumers experienced a paradox wherein their desire for control over their choices clashed with the invasive influence of AI-targeted marketing. Consumers articulated a need for autonomy in their decision-making. However, they expressed concerns over a perceived lack of control, raising critical questions regarding privacy and data collection, the psychological underpinnings of consumer behaviour, and autonomy. The conflicting feelings of being both "secure" and "insecure" illustrated consumers' complex relationship with AI recommendations, emphasising an urgent need for transparency and agency in managing personal data.

The research examined the Basic Psychological Needs Theory (BPNT) within Self-Determination Theory (SDT), which posits that individuals possess three fundamental psychological needs: autonomy, competence, and connection. Findings indicated a significant lack of autonomy, accentuating consumers' need to experience independence in their decision-making. The competence aspect was diminished when recommendations were overwhelming, making consumers unsure about their choices.

Lastly, regarding the connection element, the study revealed that consumers had negative experiences with brands and businesses that failed to uphold trust and ethical standards, damaging relationships.

7.2.2. Influence of AI Recommendations within Algorithmic Technologies on Customer Decision-Making Ease and Complexity

The study identified a dual nature wherein recommendations enhanced convenience while simultaneously introducing complexity, ultimately undermining consumer independence. Algorithmic technologies blurred the lines of autonomy in their intrinsic nature and, as such, required careful consideration in the digital landscape. Information overload emerged as a concern, with excessive options leading to frustration, confusion, and hesitation regarding purchase decisions. Additionally, psychological and emotional challenges, such as the stress of feeling observed, further hindered the decision-making process, even when recommendations were tailored. There was a pronounced need to honour consumer needs while enhancing the decision-making experience.

7.2.3. Impact of AI-based Technologies on Customer Decision-Making Processes before Purchasing

The impact of algorithmic technologies was found to have enhanced the shopping experience of participants by guiding their decision-making processes. However, the study also identified some issues related to impulsive shopping, diminished control, and indecisiveness. Therefore, the study revealed a dual dichotomy regarding these technologies.

The positive effects included participants perceiving the technologies as helpful, leading them to express gratitude for the accurate recommendations that assisted in locating products and services that they might have otherwise overlooked. These recommendations saved time and alleviated pressure during the decision-making process. By removing irrelevant options and highlighting those relevant to consumers, the algorithms significantly improved the overall shopping experience.

Conversely, the study identified impulsive buying as a negative impact. The recommendations fostered feelings of necessity and urgency, which were perceived negatively, invoking thoughts of manipulation. Despite their intention to facilitate convenience, the recommendations overstepped consumer boundaries, leading to decision paralysis. Participants began to question whether their decision-making was genuinely autonomous or merely a consequence of the recommendations provided. This dynamic sparked feelings of a loss of control, with some consumers opting out of decisions altogether due to feeling overwhelmed. The study’s findings indicated that, while AI offerings presented substantial advantages, it was equally crucial to safeguard consumer autonomy.

7.2.4. Tailoring Advancements in Algorithmic Technologies to Align with Consumer Preferences

Most consumers engage with algorithmic technologies during their purchasing decisions. There is considerable potential to enhance these recommendations at various touchpoints throughout the shopping experience to improve customer journeys. The study indicated that, while consumers value personalised recommendations, it is essential to address privacy concerns simultaneously with prioritising effective AI-targeted marketing.

Feedback from consumers suggested the inclusion of social proof elements in algorithmic technologies, ensuring that recommendations align with consumer reviews and desires. Furthermore, participants preferred to be consulted before receiving recommendations. Additionally, convenience surfaced as an essential factor in the shopping journey, where consumers appreciated straightforward and efficient purchasing methods.

7.3. The Study's Contribution to Academic Knowledge

Wertenbroch et al. (2020) urged marketing scholars to focus on studying customer perceptions of autonomy in a rapidly changing marketplace. Puntoni et al. (2021) suggested that future studies should have investigated the mental processes that caused the feeling of being substituted by AI, along with the implications of such feelings. While products often serve as means to an end—along with the demonstration of skills and knowledge—can hold intrinsic value for customers (Puntoni et al., 2021). Although similar studies have been conducted in developed countries, there is a notable lack of research in developing countries. This study aimed to contribute to the studies on perceptions of autonomy while also providing insights to the e-commerce industry in South Africa.

There were a few contributions to the academic field, particularly in the understanding of autonomy, and Wertenbroch et al. (2020) had urged marketing scholars to focus on studying customer perceptions of autonomy in a rapidly changing marketplace. The study answered by exploring perceived autonomy through a nuanced examination of how it was experienced in AI-targeted marketing strategies. It emphasised the tension between the desire for control and the intrusive nature of these strategies, thus contributing to the ongoing discourse on autonomy in consumer decision-making.

Puntoni et al. (2021) had encouraged future studies to investigate the mental processes that caused the feeling of being substituted by AI and the implications of such feelings. This study covered that by applying the psychological theoretical framework which was BPNT with SDT, enriching the theoretical framework surrounding autonomy. It underscored the significance of autonomy, competence, and relatedness, which structured the understanding of psychological needs affecting consumer interactions with algorithmic technologies.

Additionally, the study summarised several new phenomena that shed light on autonomy in consumer decision-making, including decision paralysis and the catch-22 of autonomy versus convenience. The findings highlighted that these phenomena warranted further exploration in future research.

With interdisciplinary insights spanning marketing, psychology, and AI technology, the study encouraged scholars to broaden their understanding of the implications of algorithmic technologies on consumer experiences and societal norms.

An examination of ethical concerns was also included, where the study raised significant questions about consumer trust and privacy in AI-targeted marketing. This contribution enriches the ethical discourse in consumer research and marketing, urging scholars to reflect on the moral implications of AI technologies on consumer autonomy.

In conclusion, the study added to the body of knowledge by exploring consumer autonomy in decision-making within AI-targeted marketing. It utilises psychological theories, identifies new phenomena, and advocates for further research in this evolving field.

7.4. Recommendations for Businesses

Participants shared a variety of perspectives on how algorithms impacted their decision-making. Some expressed concerns about decreased autonomy, while others recognised the benefits of personalised recommendations. These observations contributed to the broader discussion about the ethical implications of algorithmic decision-making. As society increasingly relied on technology for everyday choices, understanding how individuals perceived and reacted to these algorithmic technologies became essential. This understanding was vital for businesses when developing responsible AI technologies and AI-targeted marketing strategies that respected individual autonomy.

The ethical considerations regarding consumer data usage and the need for transparency in the recommendation processes were substantial. The insights gathered reflected a growing awareness of the trade-offs individuals faced when adopting AI innovations as they navigated the convenience of technology versus their desire to maintain control over personal data. Businesses leveraged technology to offer tailored recommendations, showcase trending products, and provide expert insights that assisted consumers in their decisions. By positioning themselves as reliable advisors, businesses fostered customer confidence and satisfaction, thus encouraging loyalty and repeat business.

Striving for a balanced approach was crucial. Businesses aimed to offer recommendations that enhanced decision-making without compromising consumer independence. By framing recommendations as helpful tools rather than mandates, brands empowered consumers to make informed choices while benefiting from personalised insights. Achieving this required a thoughtful selection of the type and frequency of recommendations, ensuring they were seen as beneficial enhancements rather than replacements for personal judgment. Offering personalised recommendations increased the likelihood of purchases and strengthened the emotional connection between consumers and brands. As customers increasingly sought customised experiences, businesses that effectively used data to provide relevant suggestions were more likely to experience heightened engagement and loyalty. The influence of social proof was significant in online environments, as the visibility of customer ratings and reviews could significantly affect shopping behaviour. Therefore, businesses needed to know how social validation impacted consumer perceptions and managed their online reputations accordingly to build trust and promote positive interactions.

Additionally, businesses worked towards streamlining their online platforms. To assist customers facing decision fatigue, brands adopted strategies that simplified their choices. This could have included curating selections, offering straightforward product comparisons, or employing algorithms that recommended options based on individual preferences and prioritising algorithms that had good reviews. By alleviating the burden of decision-making, companies enriched the overall shopping experience, creating an environment where consumers felt more confident in their choices. Technology also facilitated tailored recommendations and highlighted trending items, guiding consumers through their decision processes. By acting as knowledgeable advisors, businesses cultivated trust and satisfaction, ultimately boosting loyalty and encouraging repeat purchases.

The influence of technology was evident as algorithms analysed vast amounts of data to predict consumer preferences and behaviours, leading to highly personalised recommendations. Nevertheless, this reliance on algorithms prompted questions regarding consumer autonomy in decision-making. As businesses utilised data-driven strategies to shape purchasing actions, it became crucial to find a balance between personalisation and consumer autonomy. Businesses remained transparent about data usage and empowered customers to make choices aligned with their values and preferences. As consumer awareness regarding data collection grew, brands navigated the delicate boundary between effective marketing and respecting consumer autonomy. By prioritising transparency and ethical considerations, businesses cultivated trust and nurtured enduring relationships with their audience.

When consumers perceived that they genuinely had the freedom to make choices, they were more inclined to engage with brands and make purchases. However, the impact of algorithms and AI-targeted marketing may have fostered feelings of online manipulation, leading individuals to question the authenticity of their choices. As such, businesses empowered consumers by providing clear information, practicing transparency, and offering options that resonated with their values. By promoting a sense of autonomy, businesses bolstered customer satisfaction and loyalty. Many consumers valued simplified recommendations but may have also experienced a sense of lost control if they felt overly influenced by external forces in their choices. To navigate this intricate dynamic, businesses emphasised recommendations that enhanced decision-making without undermining consumer autonomy. By presenting recommendations as beneficial tools rather than commands, brands enabled consumers to make informed decisions while appreciating personalised recommendations.

In summary, consumers were concerned not only with the outcomes of their decision-making but also with their desire for autonomy. Prioritising a positive customer experience enhanced satisfaction levels and increased the likelihood of repeat business. Businesses aimed to cultivate a pleasant and fulfilling consumer journey where consumers felt supported and empowered throughout their shopping experience.

7.5. Limitations

Alongside the inherent researcher bias found in qualitative research (Saunders et al. (2017); Hsieh & Shannon (2005), additional limitations of the research involve:

1. Sampling constraints – the diversity and size of the sample population may limit the research. The study involved participants from only Gauteng, KwaZulu-Natal, and the Western Cape, excluding other regions of South Africa. Additionally, the sample demographics were not diverse, which affects generalisability. This study utilised snowball sampling, which also presents challenges for generalisation. However, this is acceptable, as it is a qualitative study that does not need to be generalisable but aims to provide transferable findings (Fogelman & Comber (2007).

2. The research adopted a mono-method approach, focusing on one specific research method for gathering data. This limitation could constrain insights from the findings, as it does not include various perspectives or data sources that might offer more thorough insights (McCracken, 1988).

3. Data from individuals – Participants reported their experiences and views on autonomy in relation to algorithmic technologies. However, there may be biases, as they might not accurately recall their feelings or may respond in a way they believe is socially acceptable.

4. Due to the time limitations of the research, its cross-sectional design prevented the establishment of credibility through methods such as prolonged engagement, ongoing observation, and triangulation (Hsieh & Shannon, 2005).

5. Interviewer inexperienced – The quality of the collected data might have been affected by the inexperienced interviewer. Consequently, the pilot test was conducted involved administering the instrument to two individuals who resembled the target population of the study (Saunders et al., 2017).

6. AI technology evolving – AI is continuously evolving. Algorithmic technologies are in a constant state of change, with new advancements emerging regularly (Hoyer et al., 2020b). Consequently, these findings may quickly become outdated as consumer and technology interactions change.

7. Ethical considerations – While the study touches on ethical issues related to consumer autonomy and AI, it may be somewhat limited. Additionally, the issues of data security, privacy, and online manipulation in marketing strategies deserve more thorough exploration.

8. Specific psychological theories – The research examined autonomy solely through the framework of BPNT within SDT (Ryan et al., 2022). While this theoretical approach offered valuable insights, it also restricted the exploration of other pertinent psychological theories that might provide additional perspectives.

7.6. Areas for Future Research

In order to gain a clearer insight into the consequences of the results presented in this research, practitioners ought to take into account:

- Catch 22 of Convenience and Autonomy – Further research is necessary to understand how consumers value the convenience offered by AI while also seeking autonomy in their decision-making processes.

- Demand for personalised but subtle suggestions: There should be an investigation into consumer preferences regarding personalised recommendations. They need to feel relevant without being overwhelming or intrusive.

- Impulsivity and Decision paralysis: These phenomena require further exploration, particularly in relation to consumer impulsive buying behaviours and decision fatigue.

- Scepticism about the accuracy of algorithms: It is essential to grasp consumer trust in algorithmic technologies and the precision of their recommendations.

- Convenience versus online manipulation: Online manipulation typically benefits data collectors and their clients, compromising individual rights, highlighting a serious concern (Susser et al., 2019; Dogruel et al., 2022; Davenport et al., 2020). Further exploration is necessary to find ways to restrict access to personal data, which fuels this manipulation. Moreover, it is vital to promote awareness and critical thinking among individuals regarding those who shape their choices.

These aspects are essential for comprehending the psychological and emotional requirements of customers in AI technologies, offering valuable insights to marketers, policymakers, and academics.

7.7. Conclusion

The findings of this study heavily emphasise the importance of perceived autonomy in algorithm-driven technologies within AI-targeted marketing. The research indicates that autonomy is not merely a theoretical concept but it significantly influences consumer decision-making throughout their shopping experiences.

A central discovery of the study is that autonomy is crucial for consumers when engaging with AI-driven recommendations. People have a strong need for control in making their own autonomous choices without undue influence. This need is essential for psychological well-being, providing a sense of control and satisfaction in their customer experience.

However, duality exists, and while AI targeted marketing can enrich the shopping experience through accurate and personalised recommendations, they also pose a risk to consumer autonomy. The research reveals that, even though these suggestions aim to streamline decision-making, they often lead to decision fatigue and a diminished sense of agency. Therefore, a balance is essential where AI-targeted marketing honours and supports consumer autonomy. This study advocates for a marketing approach that is transparent and ethically sound, ensuring consumers feel in control of their decisions rather than being subtly steered towards outcomes that benefit businesses.

To achieve this, it is essential to provide customers with relevant recommendations while also equipping them with the necessary information and tools to make informed choices. A shift towards customer-centric practices prioritising autonomy is essential in designing and implementing AI technologies.

This study adds to the expanding knowledge of consumer behaviour in the digital age, emphasising consumer autonomy as a vital aspect of decision-making. Prioritising autonomy in marketing strategies fosters satisfying and meaningful relationships with customers, ultimately leading to trust and repeat business.

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APPENDIX 1: CONSENT FORM

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on the impact of algorithmic technologies on perceptions of autonomy in consumer decision-making and trying to find insights into consumer behaviour in relation to algorithms.

This interview is expected to last about an hour and will help us understand how algorithmic technologies influence the decision-making processes of South African internet users.

Your participation is voluntary, and you can withdraw at any time without penalty. All data will be reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name	Ayanda Nolwazi Dubazana	Research Supervisor Name	Prof Kerry Chipp
Email	23984602@mygibs.co.za	Email	chippk@gibs.co.za
Phone No.	0837265026	Phone No.	082 330 8759

Signature of participant

Date: ________________

Signature of researcher

Date: ________________

APPENDIX 2: SEMI-STRUCTURED INTERVIEW GUIDE

RESEARCH QUESTIONS	INTERVIEW QUESTIONS
1. What impact do AI-based technologies, specifically algorithmic technologies, have on customer decision-making processes before making a purchase? (Hoyer et al., 2020)	1. How do you find using the internet in general, and what interests you the most when you're online? 2. Do you often come across suggestions for products or services while you're browsing the web? 3. If so, where do you usually see these suggestions and what do they look like? 4. Have these suggestions ever influenced your decision to buy something? If so, can you tell me more about your experiences?
2. How important is perceived autonomy for customers when making decisions within algorithmic technologies in AI-driven targeted marketing? (Rust, 2020; Wertenbroch et al., 2020)	5. Do you feel like your privacy is being respected with these suggestion features online? 6. How do you feel about technology using your information to recommend products or services based on your browsing history,

	social media activity, and past purchases? 7. Do you trust these suggestions, and have they been accurate in the times you've used them? 8. Do you appreciate the recommendations that technology gives you without asking, or would you rather not receive them? 9. What is your preferred online shopping experience for making the best decision on what to buy in the age of technology?
3. How do AI recommendations within algorithmic technologies influence the ease or complexity of customer decision-making? (Puntoni et al., 2021; Rust, 2020; Davenport et al., 2020)	10. Do you generally find online recommendations helpful, or do they complicate which product to choose? Can you provide examples and elaborate? 11. Additionally, what factors make you stick with a particular online store or website as a satisfied customer?
4. How can advancements in algorithmic technologies be	12. Do you have any ideas on how online recommendations could be

tailored to align with consumer preferences? (Hoyer et al., 2020; Wertenbroch et al., 2020)	improved for a better online shopping experience?

APPENDIX 3: LIST OF CODES CREATED FOR DATA ANALYSIS

Code No.	Code	Frequency	Groups
1	○ Acceptance	1	Algorithmic Influence
2	○ Accessibility	4	Customer Preference
3	○ Accuracy	7	Personalisation
4	○ Acknowledgement	1	Customer Preference
5	○ Adaptability	2	Customer Preference
6	○ Adaptation	1	Algorithmic Influence
7	○ Advancement	1	Convenience
8	○ Advertisement	5	Digital Marketing Strategies
9	○ Advertising	23	Digital Marketing Strategies
10	○ Ageism	2	Complexity in decision-making
11	○ Algorithm	1	Algorithmic Influence
12	○ Algorithms	1	Algorithmic Influence
13	○ Ambiguity	4	Complexity in decision-making
14	○ Ambivalence	12	Algorithmic Influence
15	○ Analytical	1	Importance of Control
16	○ Annoyance	6	Information Overload
17	○ Anxiety	2	Privacy Concerns and Trust
18	○ Apathy	1	Information Overload
19	○ Appreciation	15	Algorithmic Influence
20	○ Approval	2	Privacy Concerns and Trust
21	○ Artificial Intelligence	6	Convenience
22	○ Assertion	1	Importance of Control
23	○ Assistance	1	Algorithmic Influence
24	○ Assurance	2	Importance of Control
25	○ Attention	1	Complexity in decision-making
26	○ Attention to detail	4	Personalisation
27	○ Autonomy	12	Perceived Autonomy
28	○ Boundaries	1	Privacy Concerns and Trust
29	○ Brand loyalty	5	Customer Preference
30	○ Brand loyalty (2)	3	Digital Marketing Strategies
31	○ Cautious	2	Privacy Concerns and Trust
32	○ Clarity	11	Complexity in decision-making
33	○ Communication	45	Digital Marketing Strategies
34	○ Comparison	9	Importance of Control
35	○ Complexity	3	Complexity in decision-making
36	○ Confirmation bias	2	Importance of Control
37	○ Confusion	33	Complexity in decision-making
38	○ Consumer Preferences	24	Customer Preference
39	○ Consumerism	8	Influence of social proof

40	○ Control	5	Importance of Control
41	○ Convenience	22	Convenience
42	○ Curiosity	67	Algorithmic Influence
43	○ Curiosity (2)	16	Algorithmic Influence
44	○ Customer experience	6	Personalisation
45	○ Cybersecurity	1	Privacy Concerns and Trust
46	○ Data privacy	6	Privacy Concerns and Trust
47	○ Data security	2	Privacy Concerns and Trust
48	○ Digital Communication	26	Digital Marketing Strategies
49	○ Distraction	5	Information Overload
50	○ Distrust	6	Privacy Concerns and Trust
51	○ Ease of use	9	Convenience
52	○ Efficiency	28	Convenience
53	○ Ethical concerns	2	Privacy Concerns and Trust
54	○ Ethics	6	Privacy Concerns and Trust
55	○ Fear of technology	1	Privacy Concerns and Trust
56	○ Feedback	11	Customer Preference
57	○ Financial security	1	Privacy Concerns and Trust
58	○ Frustration	29	Information Overload
59	○ Gratitude	21	Algorithmic Influence
60	○ Human Experience	7	Personalisation
61	○ Indecision	5	Complexity in decision-making
62	○ Indecisiveness	10	Complexity in decision-making
63	○ Independence	9	Importance of Control
64	○ Influence	42	Algorithmic Influence
65	○ Influences	9	Influence of social proof
66	○ Information overload	6	Information Overload
67	○ Inquiry	11	Customer Preference
68	○ Insecurity	4	Privacy Concerns and Trust
69	○ Intrusive	1	Privacy Concerns and Trust
70	○ Lack of control	2	Importance of Control
71	○ Marketing	7	Digital Marketing Strategies
72	○ Marketing strategies	4	Digital Marketing Strategies
73	○ Mistrust	1	Privacy Concerns and Trust
74	○ Misunderstanding	6	Complexity in decision-making
75	○ Negative emotions	11	Privacy Concerns and Trust
76	○ Online security	1	Privacy Concerns and Trust
77	○ Paranoia	4	Privacy Concerns and Trust
78	○ Personalisation	24	Personalisation
79	○ Personalization	19	Personalisation
80	○ Positive feedback	5	Algorithmic Influence
81	○ Precision	1	Algorithmic Influence
82	○ Preference	46	Customer Preference

83	○ Preferences	10	Personalisation
84	○ Privacy	20	Privacy Concerns and Trust
85	○ Privacy (2)	9	Privacy Concerns and Trust
86	○ Privacy concerns	79	Privacy Concerns and Trust
87	○ Productivity	1	Convenience
88	○ Decision-making Dichotomy	99	Complexity in decision-making
89	○ Regret	4	Privacy Concerns and Trust
90	○ Research	13	Importance of Control
91	○ Safety	4	Privacy Concerns and Trust
92	○ Satisfaction	23	Algorithmic Influence
93	○ Scamming	1	Privacy Concerns and Trust
94	○ Security	7	Privacy Concerns and Trust
95	○ Security breach	1	Privacy Concerns and Trust
96	○ Security concerns	2	Privacy Concerns and Trust
97	○ Seeking information	4	Importance of Control
98	○ Self-empowerment	5	Importance of Control
99	○ Sense of security	1	Privacy Concerns and Trust
100	○ Simplicity	4	Personalisation
101	○ Skepticism	13	Complexity in decision-making
102	○ Social influence	5	Influence of social proof
103	○ Social media	31	Influence of social proof
104	○ Social media influence	4	Influence of social proof
105	○ Strategy	1	Digital Marketing Strategies
106	○ Technology use	20	Convenience
107	○ Transparency	4	Privacy Concerns and Trust
108	○ Trust	34	Privacy Concerns and Trust
109	○ Trust (2)	8	Privacy Concerns and Trust
110	○ Trust issues	3	Customer Preference
111	○ Trustworthiness	5	Privacy Concerns and Trust
112	○ Uncertainty	139	Complexity in decision-making
		1324	