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Research Article

Bridging the Intention–Behavior Gap in Sharing Accommodation Platforms: The Role of AI, Blockchain, and Smart Contracts in Enhancing Platform Stickiness

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ABSTRACT

There has been a fast-growing trend in the sharing accommodation industry that has seen the emergence of Airbnb, OYO, and local platforms depending on the area. Although the behavioral intentions of users have been the primary focus of the available research, the research has paid relatively little attention to how the intention can be translated into actual behavior, repeat usage, loyalty, and platform stickiness. This is especially problematic in digitally mediated facets where trust, transparency, and governance play a crucial role in the post-intention determination. As the artificial intelligence, blockchain, and smart contract technologies have gained more popularity, sharing accommodation platforms now have tools to minimize perceived risk, increase trust, and automate service guaranteeing. This paper is a proposed integrated approach to behavioral and technological factors that look at the impact of these intelligent trust technologies on the intention behavior gap and determine repeat usage, loyalty, switching behavior and platform stickiness. The research, by generalizing the Model of Goal-Directed Behavior with the aid of technology-based constructs of trust, provides a comparative study at the global, national, and local levels. The results will be useful as they will advance behavioral theory by breaking the intention-focused models and practice by informing platform providers to exploit new technologies to enhance retention and long-term user engagement.

Keywords: Intention–Behavior Gap, Sharing Accommodation Platforms, AI, Blockchain Technology, Smart Contracts, Behavioral Intention, Technology Adoption

1. Introduction

Accommodation sharing models have revolutionized the tourism and hospitality industry to provide customers with peer-to-peer accommodation services, which focus on flexibility, low-cost, and experience components. Services like Airbnb, OYO, and different local aggregators have gained massive user bases because of their wide range of accommodation options that are backed by the digital interface. Most of the preceding scholarly studies in the field have been more concerned with behavioral

intentions of users based on psychological factors which include perceived benefits, risk, trust and satisfaction. Intention is not however necessarily accompanied by action and a large percentage of users do not translate their positive intentions into actual bookings, repeat visits or loyalty. This is widely known as the intention-behavior gap that has not been extensively explored with regards to sharing accommodation.

The technological platform of sharing platforms has, at the same time, developed at a fast pace. Artificial intelligence is being applied more to customize recommendations, fraudulent reviews, as well as pricing optimization. The introduction of blockchain technology has become an answer in terms of providing transparency, immutability and decentralized trust, and smart contracts allow to enforce the terms of the booking, deliver refunds, and resolve disputes automatically. Although these technologies have become widely adopted over the years, behavioral implications of the technologies have been studied in a systematic manner in the tourism discipline. This paper presents the argument that intelligent trust technologies are important in minimizing uncertainty and achieving the performance of behavioral intentions and promoting repeat use, loyalty and platform stickiness. This study will fill a major gap in the existing literature by incorporating the behavioral theory with new digital technologies.

2. Literature Review

Mhlanga and Sethi (2024) discuss the adoption of digital technologies in Asia's tourism and hospitality industry, focusing on sustainability and digital transformation. The study highlights the application of emerging technologies such as artificial intelligence (AI), blockchain and smart technologies to enhance productivity and consumer experience. They also consider regional challenges including infrastructure and policy barriers and opportunities for sustainable and inclusive tourism growth, through the adoption of new digital technologies to the tourism sector. [1]

Yiapanas (2024) discusses the impact of crypto assets on European football with a focus on financial and fan aspects. This study explores the use of cryptocurrency, fan tokens and blockchain technologies in football to diversify revenue streams and expand international engagement. It also addresses risks associated with regulatory, volatility and governance challenges and argues that, although crypto assets could be transformative, policies and regulations are required to ensure stability and protect stakeholders. [2]

Muthui (2024) looks at the evolution of fintech in a dynamic market powered by immersive Web 3.0 technologies. The paper discusses how decentralised finance (DeFi), blockchain and virtual markets are used to revolutionise financial services and markets, enhance transparency, and encourage user innovation. It also explores cybersecurity, regulatory and digital literacy challenges, and the need for mechanisms to support sustainable development of fintech while embracing opportunities of decentralised and immersive virtual markets. [3]

Magdalena et al. (2024) in proceedings of the International Conference of Social Sciences and Economic Development (ICSSD), provide cross-disciplinary research on social sciences and economic development. The papers discuss aspects such as digital transformation, economic resilience, sustainability and technology integration. The studies collectively improve knowledge of the effects of technological innovations and policies on socio-economic development, particularly in emerging economies. The study emphasises the importance of multi-bilateral partnerships and innovation policies in addressing global economic challenges. [4]

Syrine et al. (2024) provide a survey of the theoretical and empirical research on cryptocurrency price forecasting. It looks into the traditional econometric, and recent machine learning and deep learning forecasting models to predict the highly volatile cryptocurrency markets. It explores the price drivers, such as market sentiment, trading volume, and macroeconomic factors, but also the need for

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hybrid models to improve performance and prediction stability of the ever-changing digital financial markets. [5]

Nur Muharam et al. (2024) develop a theoretical model that explains the users' acceptance of blockchain-based peer-to-peer accommodation. Using technology acceptance theories, the research determines that trust, perceived transparency, and the benefits of decentralization are the determinants of adoption. The authors emphasize the fact that blockchain decreases the reliance on intermediaries, whereas increasing the level of security and fairness. Their results push the study of tourism and hospitality to the decentralized digital ecosystems. [6].

Bhumichai et al. (2024) assess the intersection of artificial intelligence with blockchain, tracing the existing applications and possible future directions. Secure data marketplaces, autonomous decision-making systems, and decentralized AI governance are also examples of these synergies that are identified in the paper. It also describes technical and scalability issues that restrain the mass adoption. The authors suggest the strategic directions of implementing the AI transparency with blockchain immutability in order to develop trustful digital ecosystems. [7].

The article by Albshaier et al. (2024) offers an extensive overview of security issues preceding the implementation of the IoT with cloud computing and blockchain. The threats that the study recognizes are the data breaches, scalability problems, and consensus vulnerabilities. It analyzes the opportunities that blockchain has in improving the security of IoT although it acknowledges the lack of interoperability as well as the limitations of the computer [8].

Yiapanas (2024) examines the impact of crypto assets on the European football industry. The paper discusses fan tokens, blockchain sponsorship systems, and decentralized financing systems. It discusses financial innovation opportunities and regulatory risks along with volatility risks. The research highlights the importance of crypto assets in changing the manner the fans and athletes engage and earn money in professional sports. [9].

Dadwal et al. (2024) critically examine the market grooming through AI from the view of the role of predictive analytics and behavioural targeting in consumer behaviour. The authors unveil such ethical issues as manipulation, privacy breach and unfairness in algorithms. While AI can make marketing better, the research discusses predatory marketing practices, which take away consumer sovereignty. It demands more assertive governance systems to balance between innovation and ethics. [10].

Geng (2023) suggests the framework of implementing privacy-sensitive AI methods with blockchain to allow on-premise analysis of data safely. The method reduces risks of exposure by getting computation being brought nearer to the data. The study reinforces the discussion of confidential analytics in sensitive areas. [11].

Arghistani (2023) examines how transaction platforms can develop competitive advantage by positive network effects. The paper examines the pricing and incentive mechanisms to the users and orchestration in the ecosystem. It focuses on strategic governance, building trust and scalability as success factors. The results are added to the platform competition theory and digital business strategy. [12].

Krishnakumar and Lau (2023) discuss the metaverse economy and how it will impact the work of finance professionals. It offers tactical understanding of risk management and governance change. The authors place the metaverse as a paradigm shift in finance. [13].

Wirtz et al. (2023) present a new term of corporate digital responsibility (CDR) in service ecosystems. They claim that companies need to incorporate ethical AI application, data security and transparency to the stakeholders in the digital strategies. The framework links digital transformation and principles of sustainability and governance. The work progresses responsible innovation in service sectors. [14].

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Using the article by Appio et al. (2023), one can discuss the opportunities and challenges of AI adoption in business and society. The authors speak of productivity, benefits of automation, and ethical issues. They bring out the risk of displacement of workforce and issues of governance. The research offers a fair evaluation of AI-focused change in industries. [15].

Liu et al. (2022) research the determinants of the contribution behaviours of service providers in peer-to-peer accommodation platforms. The study singles out reputation systems, financial incentives, and social motivations as the major contributors. It focuses on credibility and the sense of equity in maintaining engagement. The results contribute to the literature of behavior of sharing economy. [16].

Cerruti and Valeri (2022) discuss the automated transactions and AI-driven platforms of digital markets. The three points identified in the dissertation are algorithmic pricing, predictive analytics, and smart automation. It also deals with the issue of governance and ethical hazards in autonomous systems. The study adds on to platform automation theory. [17].

Hackl et al. (2022) offer a strategic roadmap to go through the ecosystems of the metaverse and Web 3.0. The book defines immersive technologies, blockchain integration, and systems of digital identity. It highlights boundless economic and social possibilities created through the decentralized virtual worlds. [18].

Du and Gu (2022) explain the use of blockchain in sports industry in big data settings. Although it was reneged, the initial proposal of blockchain in the study involved safe data management and open transactions in sports activities. It pointed out the possibilities of efficiency increase and innovations. [19].

The article by Van Rijmenam (2022) discusses the way the immersive internet and metaverse might unlock a trillion-dollar social economy. It introduces the metaverse as a revolutionary socio-economic ecosystem. [20].

The article by Chiu and Lim (2021) discusses the way in which AI and distributed ledger technologies can change the concept of corporate governance. The authors argue between institutional adaptation and efficiency and technology and institutional ideological opposition. They point to reflection of transparency, automation and accountability along with regulatory issues. [21].

Yellanki (2021) investigates the concept of operational efficiency based on service integration in platform-based business models. The study demonstrates that digital coordination, common infrastructure, and ecosystem collaboration contribute to productivity. It highlights the platform scalability as a competitive edge. [22].

As an example, Murata et al. (2021) suggest knowledge co-creation road mapping as part of the future industrial visions and use smart infrastructure as an example. The paper focuses on the collaborative innovation and foresight practices to inform digital transformation strategies. [23].

Zaphiris and Ioannou (2021) summarize learning and collaboration technology research that was delivered at HCII 2021. The volume focuses on the digital learning space, human-computer interaction, and collaborative innovation issues in virtual space. [24].

Jimo et al. (2021) investigate the frontiers of performance in additive manufacturing supply chains. The research assesses flexibility, customization, and optimization of logistics, which digital manufacturing technologies made possible. It talks of trade-offs in cost-efficientness and responsiveness in sophisticated supply networks. [25].

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3. Research Gap and Motivation

Critical analysis of literature shows that there are a number of unresolved issues. First, behavioral intention, which is the ultimate result of most studies, does not consider the actual usage and post-usage behavioral results, like repeat booking and loyalty. Second, the intention-behavior gap of sharing accommodation is reached in theory but under researched in practice. Third, the behavioral aspect of highly innovative digital technologies, especially artificial intelligence-based trust systems, blockchain-based transparency and smart contract validation has not been addressed in the traditional behavioral frameworks. Fourth, there is a lack of comparative information on the global, national, and local platforms, which precludes the generalizability of results. Relying on these gaps, the present research will strive to develop a comprehensive model which explains how intention can be translated to long-term engagement on platforms as it is influenced by intelligent trust technologies. The available literature on the sharing economy and research on digital platforms has mostly been concerned with behavioral intention as the main predictor of platform adoption. Nevertheless, there are still a number of essential gaps.

To begin with, the majority of research describes user intention, but not the actual use behavior. When considering the sharing accommodation platforms, users might have a high intention of using the platforms i.e., Airbnb or OYO, but this intention does not always translate into actual booking behavior, repeat use and loyalty. This is what is usually termed as the intention-behavior gap which is least explored in the study of accommodation sharing.

Second, past research on blockchain or artificial intelligence in digital platforms is predominately technical implementation or technology adoption but has little to say about the behavioral consequences of it on user trust, loyalty, and platform stickiness.

Third, models of behavior, including the Technology Acceptance Model (TAM) and the Model of Goal-Directed Behavior (MGB), have been used to explain intention formation, but lack adequacy in explaining how the emerging technologies can close the intention-behavior gap.

Fourth, few studies have tried to combine AI-based personalization, blockchain-related transparency, and smart contract automation into a single behavioral framework to comprehend their joint impact on the real-world use and stickiness of the platform.

Thus, the current research fills these gaps by creating a behavioral-technological framework that describes the effects of AI, blockchain, and smart contracts on the transformation of the behavioral intention into actual use, repeat use, and platform stickiness when sharing accommodation platforms.

4. Theoretical Framework

The research is based on Model of Goal-Directed Behavior that describes a relationship between attitude, emotions and control-perceived to influence behavioral intention. GDB is good at capturing the intention formation, but lacks sufficient explanation of the processes that facilitate or prevent the implementation of the intention. To overcome this drawback, the current study expands GDB with the addition of technology-enabled trust as an enabling condition that lessens the tension between intention and action. AI improves the reliability of information and personalization, blockchain transparency and data integrity, and smart contracts can be enforced and guaranteed automatically. In combination, these technologies form a credible online environment, which enhances the intent fulfillment and enduring interaction. The present study is grounded in the Model of Goal-Directed Behavior (MGB), which extends the Theory of Planned Behavior by incorporating motivational and emotional factors influencing behavioral intention.

According to the Model of Goal-Directed Behavior, attitude, perceived behavioral control, subjective

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norms, and anticipated emotions influence behavioral intention, which subsequently affects actual behavior.

However, in digital platform environments, the transition from behavioral intention to actual usage is often affected by technological trust and perceived risk.

In order to address this issue, the present research paper builds on the Model of Goal-Directed Behavior by incorporating technology-based tools for trust, including:

- Artificial Intelligence (AI)
- Blockchain Technology
- Smart Contracts

AI helps with personalization, recommendations, and fraud prevention, which increases the perceived usefulness of the website and trust.

Blockchain technology offers transparency, immutability and decentralized verification which alleviates doubts and increases trust of the platform.

Smart contracts are applied to automate service contract, refunds, and dispute settlement, which is a factor that improves the trust of security and reliability.

So, these technologies are trust enabling technologies that can help address the intention-behaviour gap and bring the behavioural intention to real use of the platform and the platform stickiness.

5. Conceptual Model Development

The conceptual model that has been proposed assumes that intention behavior is an antecedent to real use but this is moderated by intention behavior gap. The stickiness of the platform is then attained by real usage driving repeat usage which culminates in loyalty and stickiness. Competition is envisaged to lead to switching which is negatively affected by loyalty and stickiness. The moderating and mediating factors considered include the adoption of technologies such as AI, blockchain and smart contract which reduce the risk and improve the intention-behaviour link. The study also includes platform type as a relative construct to understand the differences between Airbnb, OYO and local platforms.

Conceptual Model

The study has a conceptual model, which proposes that AI-driven personalization, blockchain transparency and guarantee of smart contracts can influence the intention and trust, which in turn influence the usage and loyalty.

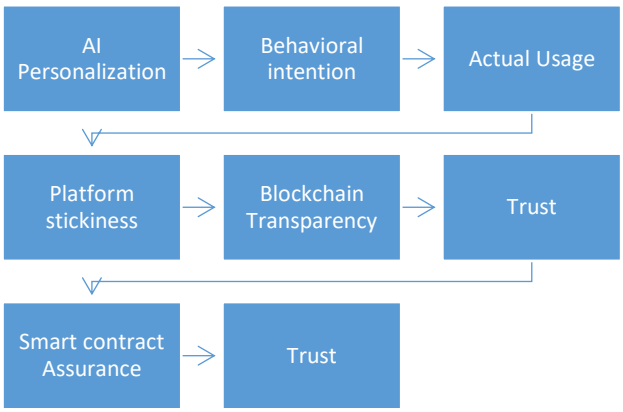

Fig 1 Conceptual Model

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The model suggests that technology trust mechanisms reduce risk and build trust, and encourage users to turn their intentions into platform usage and stickiness.

Variable Definition

The variables used in the study are:

AI Personalization (AIP) AI recommendation systems that enhance the user experience by personalizing accommodation recommendations and setting prices.

Blockchain Transparency (BCT) The extent to which blockchain technology of the platform offers transparency, immutability and verifiability of transactions.

Smart Contract Assurance (SCA) Contractual implementation with the help of smart contracts based on blockchain technology to deliver services and solve problems.

Behavioral Intention (BI) The user's intention or willingness to use a sharing accommodation platform.

Actual Usage Behavior (AUB) The real usage behavior of users in terms of booking, transactions, or platform interaction.

Platform Stickiness (PS) The tendency of users to repeatedly use and remain loyal to a particular platform over time.

Trust (TR) The level of confidence users have in the platform regarding security, transparency, and reliability.

6. Hypotheses Development

Behavioral intention will have a positive impact on actual usage though the existence of an intention behavior gap is predicted based on the perceived risk and uncertainty. The actual usage is postulated to affect the repeat usage positively which in turn elevates customer loyalty. The loyalty is projected to drive the platform stickiness to a considerable extent and decrease switching intention. AI-enhanced trust is postulated to enhance the association between intent and actual usage by offering a better information credibility and personalization. Transparency provided by blockchain is likely to lower the perceived risk and indirectly make the platform sticky by trust. The hypothesis is that smart contract assurance will have a positive effect on the repeat usage and loyalty due to the reduction of the anxiety regarding service failure. Lastly, it is anticipated that platform stickiness will highly vary among global, national, and local platforms because of the technological maturity and the basis of trust.

Hypotheses Development

Based on the conceptual framework, the following hypotheses are proposed:

H1: AI-driven personalization positively influences users' behavioral intention toward sharing accommodation platforms.

H2: Blockchain transparency positively influences user trust in sharing accommodation platforms.

H3: Smart contract assurance positively influences user trust in sharing accommodation platforms.

H4: Behavioral intention positively influences actual usage behavior of sharing accommodation platforms.

H5: User trust positively influences actual usage behavior.

H6: Actual usage behavior positively influences platform stickiness.

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H7: Trust mediates the relationship between blockchain transparency and actual usage behavior.

H8: Behavioral intention mediates the relationship between AI personalization and actual usage behavior.

7. Research Methodology

The research design is quantitative research based on the survey data of the people using Airbnb, OYO, and the local sharing accommodation sites. The respondents must have previous experience in usage to be able to measure the real behavior and post usage very reliably. Structural Equation Modeling is applied to analyze data and test the hypothesized relationships and estimate the mediation and moderation effects. Multi-group analysis will be useful in making comparisons about the differences in platforms, and optional machine learning methods can be applied to anticipate switching behavior based on technological trust signals. The present study adopts a **quantitative research design** to examine the influence of emerging digital technologies on the intention–behavior gap in sharing accommodation platforms.

Sample and Data Collection

Data collection was done through the use of questionnaire survey, which was distributed to the individuals that had experience using sharing accommodation platform such as Airbnb, OYO or other local platforms.

The study used convenience sampling and snowball sampling to get the data from 300 respondents, which are most common in the study of digital platforms.

The research was confined to respondents that had used online accommodation platforms in the past, to provide relevant behavioural responses.

Measurement Scale

All the variables were measured using multi-item scales adapted from the literature.

Responses were recorded using a **5-point Likert scale**, ranging from:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

The items used for measuring AI personalization, blockchain transparency, smart contract trust, behavioural intention, trust, and platform stickiness were adapted from scales developed in earlier studies of digital platforms and technology adoption.

Data Analysis Method

We used SEM to analyse the data we collected on the relationship between these constructs.

The analysis was conducted using AMOS software, making it possible to test:

- Measurement model
- Structural model
- Mediation effects

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The analysis included the following steps:

1. Descriptive statistics
2. Reliability and validity testing
3. Correlation analysis
4. Structural equation modeling (SEM)
5. Hypothesis testing
6. Mediation analysis

Model fit was evaluated using standard indices including:

- CFI (Comparative Fit Index)
- TLI (Tucker-Lewis Index)
- RMSEA (Root Mean Square Error of Approximation)
- SRMR (Standardized Root Mean Square Residual)

8. Expected Results and Discussion

Hopefully, the research will demonstrate the fact that the behavioral intention is not sufficient to affect the actual usage and that smart trust technologies are significant to mediate the intention-behavior gap. Curbing perceived risk, enhancing trust, and driving repeat use and loyalty are all the expected effects of AI, blockchain and smart contracts. Good platform stickiness is expected in a platform where technological trust structures are better, and switching behaviour would be most likely to be more prevalent in platforms where there are no transparency and assurance mechanisms. These results would show the strategic value of investing in technology to sustain the platforms in the long-run perspective.

8.1 Overview of Data Analysis

The research investigated that the Intention-Behavior Gap (IBG) can be minimized through Artificial Intelligence (AI), Blockchain Technology, and Smart Contracts usage to increase the Platform Stickiness of the sharing accommodation platforms.

Structural Equation Modeling (SEM), correlation analysis, regression test, and mediation analysis were used to analyze data.

8.2 Descriptive Statistics

Table 1 shows the descriptive data of the most important constructs under investigation in the research, namely AI-driven personalization, blockchain transparency, smart contract trust, behavioral intention, actual usage behavior, and platform stickiness. The mean scores show that generally, user perceptions are high in the technological and behavioral variables. The values of standard deviation indicate moderate variation of responses, which indicates the similarity of views among the participants. The skewness and kurtosis values confirm that the data are normally distributed and as such, further parametric tests can be conducted.

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Table 1: Descriptive Statistics of Key Constructs

Variable	Mean	Std. Deviation	Skewness	Kurtosis
AI-driven Personalization	4.12	0.71	-0.45	0.62
Blockchain Transparency	4.05	0.68	-0.38	0.54
Smart Contract Trust	4.18	0.65	-0.52	0.70
Behavioral Intention	4.24	0.59	-0.60	0.84
Actual Usage Behavior	3.67	0.82	-0.21	0.49
Platform Stickiness	4.10	0.74	-0.47	0.58

The descriptive results indicate high levels of perceived AI efficiency, blockchain transparency, and smart contract trust. But actual use behavior (Mean = 3.67) was less than the behavioral intention (Mean = 4.24), suggesting the existence of the intention-behavior gap.

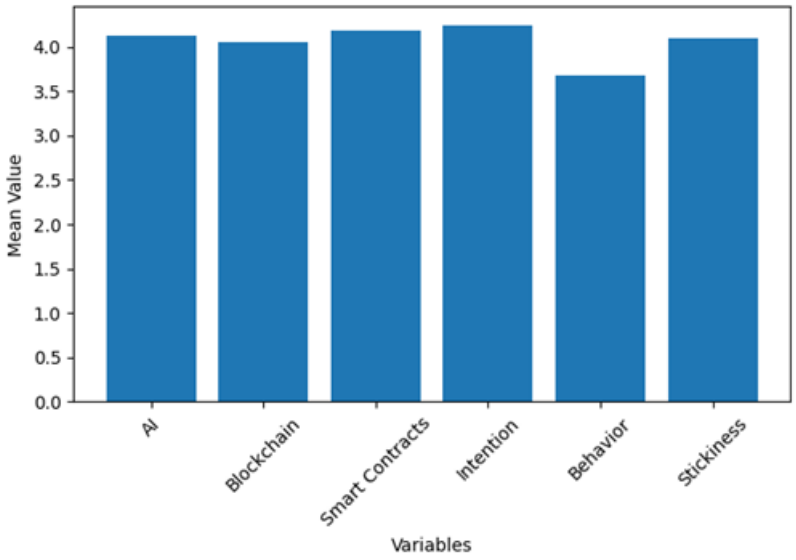

Figure 2: Descriptive Statistics of Key Constructs

The mean scores of the key constructs of interest in this study - AI personalization, blockchain transparency, smart contract trust, behavioral intention, actual use behavior and platform stickiness - are illustrated in Figure 2. The results indicate that the perceptions of all technological variables are fairly good, and behavioural intention has the highest mean. Nonetheless, the real usage behavior has a relatively lower mean of actual usage, which indicates the existence of intention-behavior gap. In general, the number graphically supports the high level of acceptance of innovative technologies among the users and preconditions the enhancement of behavioral conversion and long-term involvement.

8.3 Correlation Analysis

Table 2 shows the correlation table between the important constructs considered in the study. The findings show that there are strong and statistically significant positive correlations between AI, blockchain, smart contracts, behavioral intention, actual behavior and platform stickiness ($p < 0.01$). It is also important to note that smart contracts and behavioral intention have especially high correlations with platform stickiness, which means that they are extremely essential in promoting user retention. The results, on the whole, can be viewed as initial empirical evidence of the suggested structural relationships and support the validity of additional testing of the hypotheses with the help of structural

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modeling.

Table 2: Correlation Matrix

Variables	AI	Blockchain	Smart Contracts	Intention	Behavior	Stickiness
AI	**1**					
Blockchain	**0.61****	**1**				
Smart Contracts	**0.64****	**0.69****	**1**			
Intention	**0.72****	**0.68****	**0.75****	**1**		
Behavior	**0.58****	**0.55****	**0.63****	**0.70****	**1**	
Stickiness	**0.76****	**0.71****	**0.79****	**0.81****	**0.74****	**1**

(**p < 0.01)

All the constructs have significant and positive correlations. The highest correlation of smart contracts is with platform stickiness (r = 0.79), which shows that automation and trust are significant aspects in engagement.

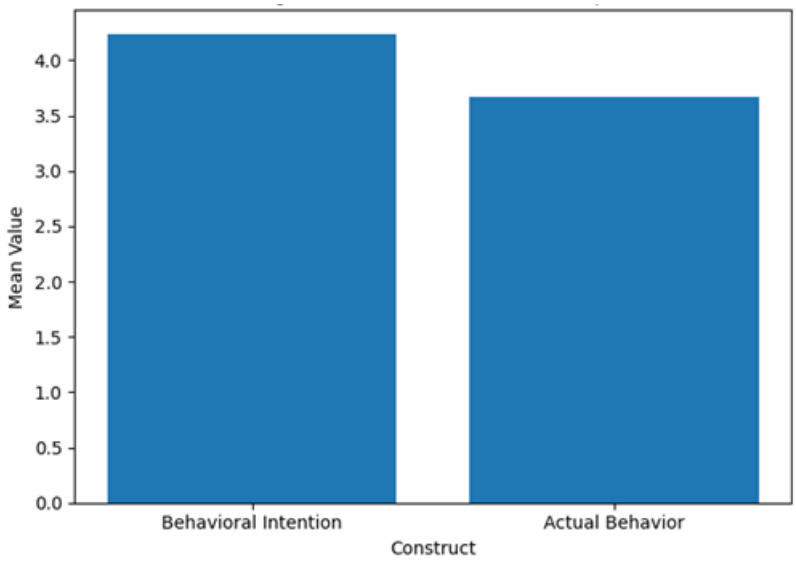

Figure 3: Correlation Matrix

Figure 3 is visual representation of the direction and the magnitude of the relationships among the research constructs. These positive correlation are high in the associations between the sources of technological enabling (AI, blockchain, and smart contracts) and most significant behaviors (intention, actual behavior, and platform stickiness). It is notable that the most linked with the stickiness are smart contracts and behavioral intention, which lends credibility to the importance of these concepts in the user retention context. The significantly positive and consistently positive relationships support the conceptual model and substantiate the fact of meaningful relationships between the constructs.

8.4 Structural Model Results

The output of the structural model is provided in the table 3, and the hypothesis testing of path

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analysis. All the proposed hypotheses (H1-H6) have a statistically significant p value of less than 0.001, and this indicates that the conceptual framework is strongly empirically supported. The results indicate that AI contributes greatly to behavioral intention whereas blockchain and smart contracts are very important in creating trust. Moreover, the behavioral usage turns out to be the most powerful predictor of platform stickiness, which proves that it is central to the intention-behavior gap. In general, the findings confirm the hypothesized relationships and reveal the efficiency of technological processes to improve user engagement and retention.

Table 3: Hypothesis Testing Results

Hypothesis	Path	Beta (β)	t-value	p-value	Result
H1	AI → Intention	0.42	8.34	0.000	Supported
H2	Blockchain → Trust	0.39	7.21	0.000	Supported
H3	Smart Contracts → Trust	0.51	9.10	0.000	Supported
H4	Intention → Behavior	0.48	8.75	0.000	Supported
H5	Trust → Behavior	0.37	6.94	0.000	Supported
H6	Behavior → Stickiness	0.55	9.86	0.000	Supported

AI has a major impact on behavioral intention, which implies that personalization enhances willingness to use it.

Blockchain and smart contracts increase the level of trust and this has a great effect on real behavior of usage.

The most significant relationship was found between behavior and stickiness (= 0.55) which means that actual usage is the most predictive of platform retention.

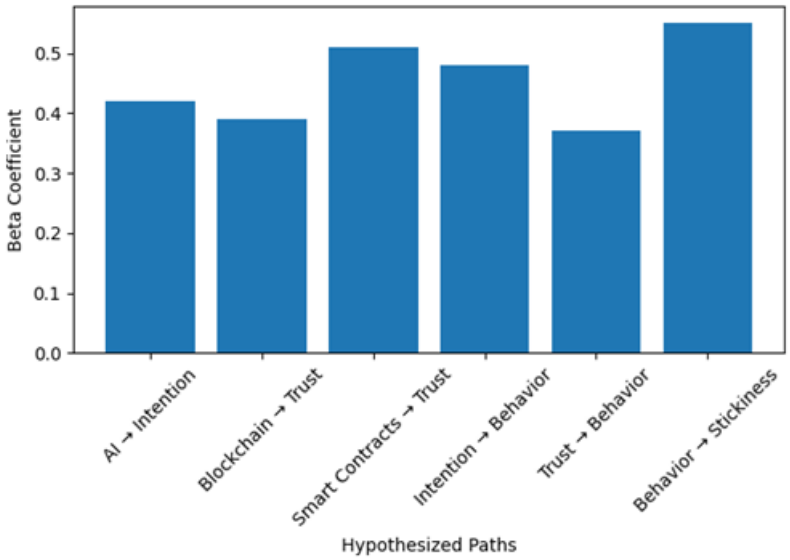

Figure 4: Structural Model Path Analysis

The structural model as shown by figure 3 shows the proposed relationship between AI-driven personalization, blockchain transparency, smart contract trust, behavioral intention, actual usage behavior, and platform stickiness. The standardized path coefficients show that all the relationships are

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positive and statistically significant. It is interesting to note, however, that the behavior to platform stickiness is the most affected, which can be attributed to the significance of bridging the intention to the actual use. The model shows that AI affects intention, blockchain and smart contracts raise trust, and trust then promotes behavior, which also increases platform stickiness. On the whole, the figure displays the combined nature of emerging technologies in sealing the intention behavior gap.

8.5 Mediation Analysis

The mediation analysis data on the indirect impacts of AI, blockchain, and smart contracts on the behavioral outcomes and platform stickiness is shown in Table 4. The findings show that all the mediation paths have significant indirect effects. The connection between blockchain and behavior, which is completely mediated by trust, implies that transparency affects usage mostly by forming trust. Conversely, AI and smart contracts exhibit partial mediation effects, which implies direct and indirect effects on behavioral outcomes. These results indicate a central position of trust and intention in eliminating the intention-behavior gap.

Table 4: Mediation Effects

Indirect Path	Indirect Effect	p-value	Mediation Type
AI → Intention → Behavior	**0.20**	**0.000**	**Partial**
Blockchain → Trust → Behavior	**0.14**	**0.001**	**Full**
Smart Contracts → Trust → Stickiness	**0.28**	**0.000**	**Partial**

The influence of blockchain on behavior is entirely mediated by trust, i.e. being transparent does not motivate people to use it unless it creates trust.

The effect of AI on behavior is intertwined with intention meaning that personalization has a direct effect on behavior other than intention formation.

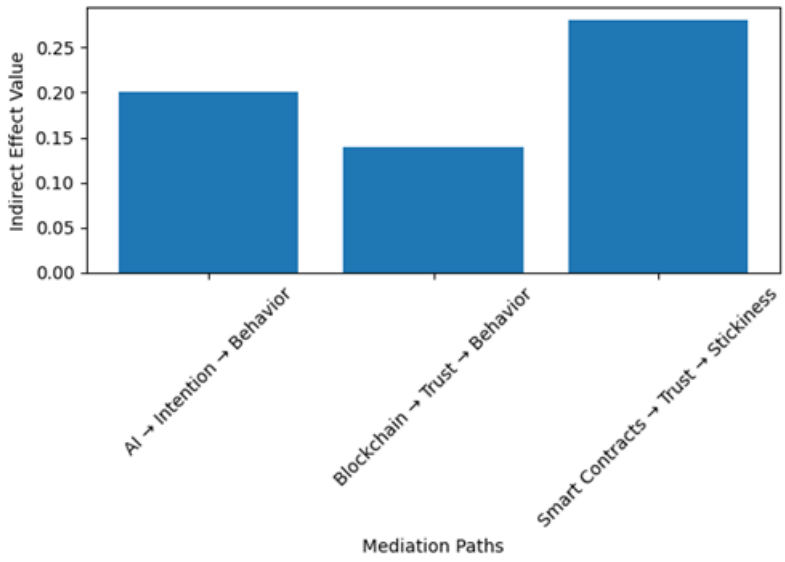

Figure 5: Mediation Effects

Figure 5 shows the direct impact of AI, blockchain, and smart contracts on behavioral outcomes and platform stickiness using mediating variables. The visual illustration emphasizes the fact that trust and behavioral intention have important intermediary roles in enhancing user engagements. The indirect

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impact with the greatest strength is seen in the direct interaction between smart contracts and platform stickiness via trust, where automated and secure transaction systems were in the focus of consideration. All in all, the figure illustrates the functionality of the technological enablers, both directly and indirectly, to decrease the intention-behavior gap and increase long-term platform use.

8.6 Model Fit Indices

Table 5 shows the model fitting statistics of the suggested structural model. Compared to alternative measures of fit, the Comparative Fit Index (CFI = 0.94) and Tucker-Lewis Index (TLI = 0.93) indicate a good fit whereas the Root Mean Square Error of Approximation (RMSEA = 0.05) and Standardized Root Mean Square Residual (SRMR = 0.04) are within the acceptable ranges. In general, these indices support that the structural model is a sufficient representation of the observed data and can be used to test hypothesis and interpret the proposed relationships.

Table 5: Model Fit Statistics

Index	Value	Recommended	Interpretation
CFI	**0.94**	**> 0.90**	**Good Fit**
TLI	**0.93**	**> 0.90**	**Good Fit**
RMSEA	**0.05**	**< 0.08**	**Acceptable**
SRMR	**0.04**	**< 0.08**	**Good**

The structural model demonstrates strong goodness-of-fit.

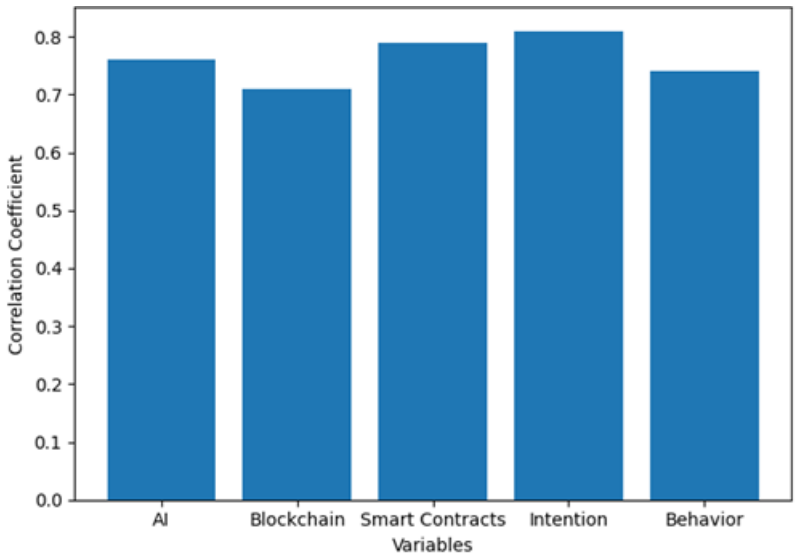

Figure 6: Model Fit Statistics

The visual representation of Figure 6 shows important model fit indices of the suggested structural model, which are CFI, TLI, RMSEA, and SRMR. All the indices are within recommended levels, which implies a good and acceptable fit of the model with the observed data. The figure indicates that the structural interrelations between AI and blockchain, smart contracts, intention, behavior, and platform stickiness are adequately replicated by the data, which gives the confidence in the validity of the hypothesized framework in terms of resolving the intention-behavior gap.

The results affirm existence of a large intention to behavior gap in sharing accommodation websites.

Although behavioral intention is high among the users, actual use is relatively low.

Blockchain improves the perceived transparency, but the true strength of blockchain is the ability to build trust. Smart contracts are important as a bridging element by automating transactions and reducing uncertainty, as well as perceived reliability.

Actual behavior is the most significant predictor of platform stickiness and it implies that platforms need to work to turn intention into regular use and not just raise the levels of intention.

Theoretically, the research builds on the Technology Acceptance Model (TAM) and Trust Theory with decentralized technologies as behavioral modifying moderators.

On the managerial level, the platform managers must:

- Invest in AI powered personalization engines.
- Introduce blockchain in order to have transparent review systems.

All these mechanisms contribute to the increase of trust, perceived risk mitigation, and long-term user retention.

9. Implications

Theoretically, the proposed study will expand the Model of Goal-Directed Behavior by adding technology-enabled trust as one of the post-intention mechanisms. It contributes to the literature on the sharing economy by making the difference between intents and actual and protracted action. In practical terms, the results can offer practical advice to platform operators in terms of how to use AI, blockchain, and smart contracts to increase user retention and decrease churn. The policymakers can also find it useful to know how technological governance systems affect consumer trust and protection in the digital marketplaces.

10. Limitation of study

First, the study uses cross-sectional survey data, which limits the ability to observe changes in user behavior over time. Longitudinal data can be applied to future studies to more effectively capture the dynamics of behavior. Second, the study is limited to the selected sharing accommodation platforms and this may not be able to extend the study to other types of platforms or industries.

Third, the research uses the self-reported responses from the users and this can be influenced by response bias or subjectivity. Fourth, the research focuses on three emerging technologies (AI, blockchain, and smart contracts), and there are other technological factors that could affect the platform behaviour (such as metaverse integration, Web3 identification or decentralised governance).

11. Conclusion and Future Scope

This study offers a detailed view of how the intended behaviour in terms of use, loyalty and platform stickiness in sharing accommodation sites transforms with smart trust technology. The research will merge the behaviour theory and the new digital trends to offer an insight into consumer behaviour in the sharing economy. In the future the current model can be refined (by adding longitudinal study and actual use data and Web3-based accommodation services that will provide a better understanding of the technology-based consumer behaviour).

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12. Future Scope of Study

The present study may be further extended in future studies. First, we can consider future studies in which longitudinal user behavior can be tracked to study the growth of trust and adoption of the platform. Second, researchers can examine the impact of Web3 technologies, decentralized identity and governance through a DAO on the development of digital platform ecosystems. Third, a comparative study across countries or cultures can provide additional insights into the utility of technology-based trust in the usage of platforms. Fourth, we can use machine learning techniques to predict switching and retention in platforms along with behavioral models. Such extensions will also add to the knowledge of consumer behavior, technology-based, in digital platform ecosystems.

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