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Designing an Empathetic and Inclusive Digital Animal Adoption Marketplace: A Conceptual Framework for Malaysia

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Abstract

Digital platforms are increasingly used to facilitate animal adoption, yet many existing systems remain transactional, fragmented, and emotionally disconnected from the ethical and social nature of adoption decisions. In multicultural contexts such as Malaysia, these limitations are compounded by issues of accessibility, trust, and uneven digital literacy. This study proposes a conceptual framework for designing an empathetic and inclusive digital animal adoption marketplace that integrates functional usability with emotional and ethical considerations. Drawing on theories from user experience (UX), customer experience (CX), technology acceptance (TAM and UTAUT), service-dominant logic, inclusive design, and emotional design, the framework explains how digital empathy, accessibility, and trust interact to shape users' perceived ease of use, perceived usefulness, adoption intention, satisfaction, and long-term platform sustainability. Using a systematic review of prior literature, the study develops a set of theoretically grounded propositions linking emotional, cognitive, and behavioral constructs within a unified adoption ecosystem. The framework conceptualizes animal adoption platforms as value co-creation environments in which adopters, shelters, and digital systems collectively contribute to humane and sustainable outcomes. The study contributes theoretically by extending technology acceptance models to socially oriented digital services through the integration of empathy and inclusivity. Practically, it offers design-oriented insights for developers, non-governmental organizations, and policymakers seeking to improve animal welfare outcomes through compassionate, accessible, and trustworthy digital adoption systems in Malaysia.

Keywords: Digital Animal Adoption, Digital Empathy, Inclusive Design, Trust And Transparency, User Experience

Introduction

Animal welfare and adoption have emerged as critical social issues because people now expect higher ethical standards and better understanding of animals that include cats, dogs,

rabbits, birds, and occasionally farm animals like goats and ducks (Horecka & Neal, 2022). For instance, Non-profit organization (NGOs) play a wide role in offering sustainable care to surrendered and abandoned animals (Haddy et al., 2023). In this view, Wolf et al. (2022) highlighted that the modern animal shelters offer various public awareness programs include public education, rehabilitation and community involvement and permanent adoption placement for animals. Recently, the animal welfare and adoption have become pressing concerns in society, reflecting higher ethical expectations and growing awareness of humane treatment. NGOs shelters are playing an important role in leading these efforts by caring for stray, abandoned, and surrendered animals including cats, dogs, rabbits, birds, and sometimes farm animals such as goats and ducks. NGOs offer veterinary care, training to correct behavior issues, and advice to help new pet owners succeed (Wang, et al., 2023). This shift reflects a broader understanding that finding a forever home depends both on meeting an animal's needs and on preparing people for responsible pet care.

However, worldwide animal welfare organizations have made significant advances driven by public concern for animal rights. For example, United States, Australia, and European countries, launched strong welfare laws and extensive education campaigns have reshaped shelter operations (Matheny & Leahy, 2007; Cao & White, 2016). Thereby, "No Kill" movement in the United State seeks to reduce euthanasia through increased adoptions, spay and neuter programs, and community involvement (Rodriguez, et al., 2022; Houser, 2018). In the Asian countries, Malaysia is among the first country shelters in urban areas such as the Klang Valley which includes Kuala Lumpur and Petaling Jaya, regularly admit more animals than they can house (Rani et al., 2020). NGOs such as SPCA Selangor, PAWS Animal Welfare Society, and several independent rescues face critical overcrowding that forces them to ration food, delay medical care, and sometimes humanely euthanize healthy animals because of space constraints (Ismail, 2017). In this view Mellor et al. (2008) stated that in Malaysia, animal adoption is increasingly recognized as both a social responsibility and an emotional commitment. Yet, despite rising public awareness of animal welfare and the growing number of digital platforms intended to connect adopters with shelters, the adoption experience remains fragmented, inconsistent, and often impersonal (Powell et al., 2024).

Prior existing empirical studies highlighted that systems operate in isolation, focusing on transactional efficiency rather than cultivating meaningful user engagement. As a result, Thielke & Udell, (2019) pointed out that the potential adopters encounter usability issues, outdated information, and limited emotional connection with animals, while shelters struggle with poor visibility, incomplete data, and minimal post-adoption follow-up. Another study by Fuentes et al. (2022) suggested that the broader context of Malaysia's digital transformation further complicates this challenge. The government's initiatives under the Malaysia Digital Economy Blueprint and MyDigital strategy emphasize inclusivity, accessibility, and equitable participation in digital services.

However, animal adoption platforms often fail to reflect these priorities, lacking features that address linguistic diversity, accessibility for users with low digital literacy, or functionality suited to low-bandwidth rural settings (Lyu et al., 2025). The current systems lack built-in emotional design and trust-building features which play a crucial role in user experience (UX) and customer experience (CX) for socially oriented services. The absence of emotional design and trust-building mechanisms in animal welfare services creates trust issues and emotional

disconnection which results in lower adoption rates and shorter user engagement periods (Fuentes et al., 2022). On the one hand, Benis et al. (2023) recommended that the core issue requires a fundamental inquiry about how to create a digital animal adoption platform which delivers operational effectiveness and emotional value. The adoption process requires more than browsing or transactions because it demonstrates both care and compassion and ethical decision-making (Mandviwalla & Flanagan, 2021). Thus, the adoption process needs an integrated framework which understands it as a human-based experience that combines emotional elements with social aspects. The model needs to unite operational design principles with psychological and ethical aspects to create technology that enables empathy instead of eliminating it.

Digital platforms are becoming essential for connecting animal adopters with shelters, but many of these systems remain transactional and fail to address the deeper emotional and social aspects of adoption. This gap is particularly apparent in Malaysia, where adoption processes are often fragmented and impersonal (Benis et al., 2023). Despite the growing awareness of animal welfare, the use of digital tools in the adoption process does not reflect the multicultural needs or emotional engagement that are critical in such decisions. Accessibility and trust issues further complicate user interactions, particularly in a country with diverse linguistic, digital literacy, and accessibility levels (Lyu et al., 2025). The absence of empathy in existing platforms leads to lower user satisfaction and reduced adoption rates, highlighting the need for a more inclusive, emotionally resonant system. Drawing on theories from user experience (UX), customer experience (CX), technology acceptance, and emotional design, this study seeks to propose a conceptual framework that integrates digital empathy, accessibility, and trust to foster a more humane adoption experience. This approach extends traditional technology acceptance models by incorporating emotional and ethical dimensions, making it more suited to socially driven digital services like animal adoption (Jamil et al., 2025). The aim is to provide a framework that supports both functional usability and emotional connection, improving user engagement, satisfaction, and long-term platform sustainability.

The present study aims to propose an integrated framework that explore how digital empathy, accessibility, and trust interact to shape users' perceptions of ease of use, usefulness, and satisfaction within a Malaysian animal adoption marketplace. By synthesizing theories from UX, CX, service-dominant logic, inclusive design, and emotional design, the paper advances a holistic understanding of how digital interactions can foster not just usability but also empathy, inclusivity, and sustainability. The framework views adoption platforms as ecosystems where adopters, shelters, and the system itself co-create value through trust and shared responsibility, rather than operating as isolated users and service providers. Therefore, the present study in the proposed framework addresses three research questions (RQ1) "What is the current user experience of animal adoption platforms in Malaysia? (RQ2) "How can a digital solution be designed to make adoption more inclusive and emotionally engaging?" And (RQ3) "How can the effectiveness and sustainability of such a marketplace be evaluated?" By addressing these questions, this study seeks to contribute both theoretically and practically. Theoretically, it extends technology acceptance and UX frameworks by embedding emotional and ethical dimensions. Practically, it provides actionable design insights for developers, NGOs, and policymakers working to improve Malaysia's animal welfare ecosystem. In doing so, it positions digital adoption platforms as

more than tools—they become enablers of compassion, inclusion, and sustainable change in how humans and animals connect in the digital age.

The topic of digital adoption platforms for animal shelters is crucial due to its potential to transform the animal adoption process into a more empathetic and inclusive experience. Existing platforms often lack the emotional and social engagement necessary for users to form a meaningful connection with the adoption process, leading to low satisfaction and adoption rates. Recent studies have shown that many platforms focus on efficiency but fail to incorporate key elements such as trust and emotional design, which are essential for enhancing user experience and adoption success (Benis et al., 2023; Fuentes et al., 2022). These gaps are particularly pronounced in multicultural contexts like Malaysia, where issues of accessibility, digital literacy, and trust must be addressed to create inclusive systems that appeal to a broad user base (Lyu et al., 2025). Furthermore, frameworks such as the Technology Acceptance Model (TAM) have demonstrated that emotional and ethical factors, like empathy and inclusivity, can significantly enhance user adoption and platform sustainability, especially in socially oriented digital services (Jamil, 2025). This study aims to fill this gap by proposing a framework that integrates functional usability with emotional design, offering a holistic approach to animal adoption systems.

Method

The present study uses conceptual methods to propose a theoretical framework which describe user experience in digital animal adoption platforms mainly in Malaysia. Thereby, the present study examines digital empathy and trust and inclusivity and adoption intention theories to develop an extensive conceptual framework. Moreover, a qualitative method was applied to develop a conceptual framework because it focuses on developing theoretical frameworks instead of gathering empirical evidence.

First, the research contains a comprehensive systematic literature review (SLR) to examine existing research on relevant topics. This includes reviewing empirical studies discussing UX, CX, emotional engagement, and usability in digital platforms. Second, Technology Acceptance Models (TAM) Unified Theory of Acceptance and Use of Technology (UTAUT) applied to validate how perceived usefulness and ease of use affect user adoption behavior. Third, the present study excluded the empirical studies examining how design features that accommodate various user needs (e.g., language, disability) influence user interaction and platform usage. Therefore, the theoretical background is discussed in the following section.

Theoretical Development

Designing an inclusive and sustainable animal adoption marketplace requires a foundation built on multiple theoretical perspectives that explain how people perceive, interact with, and emotionally respond to technology. In this study, the conceptual framework integrates five complementary perspectives (UX, CX, service-dominant logic, technology acceptance, inclusive design, and emotional design) to construct a model that captures both the functional and affective dimensions of digital adoption systems. These theoretical perspectives together provide the conceptual grounding for understanding how empathy, accessibility, and trust influence users' adoption intentions and long-term satisfaction. However, TAM and UTAUT theories provide the core of the proposed framework. Thus, the user experience mainly considers on the user's perceptions, emotions, and behaviors resulting from interaction with

a system, while customer experience expands this view to encompass the entire journey of engagement with a service, from discovery to post-adoption support. In animal adoption journey, includes searching for pets, evaluating information, communicating with shelters, and building emotional connections. Several existing empirical studies on digital adoption platforms have shown that intuitive interfaces, clear information architecture, and emotionally engaging content enhance satisfaction and intention to adopt. However, in Malaysia and much of Southeast Asia, many platforms still lack localized design, accessible interfaces, and emotional resonance, resulting in fragmented and disengaging experiences. Therefore, combining UX and CX theories allows for a more comprehensive understanding of both the functional ease and emotional quality of the adoption process.

Service-dominant logic provides essential philosophical foundations for studying digital adoption ecosystems. Service-dominant logic transforms the platform's role from service delivery to collaborative value creation between adopters and shelters and all other system participants. The adopters play an active role in the system by creating feedback and sharing their experiences which helps maintain trust within the community. The shelters establish their credibility through animal history verification and profile authentication. A service-dominant logic-based marketplace operates as a collaborative space where members share empathy and take the platform enables these exchanges between users which supports the concept that technology connects people instead of eliminating personal contact responsibility for each other instead of functioning as a basic transactional platform.

The TAM and its extensions for example UTAUT support to explain how users form behavioral intentions through their perceptions of usefulness and ease of use and trust. Users tend to adopt technology when they find it easy to operate and understand its value for their goal achievement. Users access system usefulness through their belief that the platform improves adoption success rates and they evaluate interface usability based on how simple and user-friendly it is. The rational constructs need expansion for emotionally charged and socially driven contexts because they require affective and ethical factors including empathy and credibility and inclusivity. The model explains Malaysian adoption behavior better when digital empathy and accessibility features are added to TAM because Malaysia has a multicultural society that reacts emotionally to technology.

The social aspect of inclusive design theory extends the framework by requiring products and services to serve users who have different abilities and speak different languages and bring diverse life experiences. The design principle of inclusivity becomes fundamental for Malaysia because its population speaks different languages and has different digital access levels and reading abilities. The platform's support for multiple languages and low-bandwidth operation and simple visual communication enhances user experience while creating social equality. The system gains user trust through inclusivity because users who experience representation and accommodation tend to view the system as fair and reliable and worth their time.

The model receives its emotional foundation from emotional design. The theory of emotional design by Norman serves as the foundation for digital empathy research which explains how visual elements and tone and interaction style create emotional responses that influence trust and behavioral intentions. The combination of warm visual elements and empathetic language and immediate system responses enable users to experience a deep connection

during their animal adoption process. The system's ability to show care and understanding through digital empathy determines how users will feel about the platform. Users will adopt the platform and promote it to others when they experience genuine compassion and authenticity through the interface.

Bringing these perspectives together results in a holistic understanding of digital adoption ecosystems. UX and CX theories explain the quality of experience, service-dominant logic situates adoption as co-created value, TAM provides behavioral predictability, inclusive design ensures equitable access, and emotional design infuses the process with empathy. Collectively, these foundations support a framework in which digital empathy, accessibility, and trust act as key antecedents of perceived usefulness, ease of use, and satisfaction, ultimately driving adoption intention and platform sustainability. This integration moves beyond conventional technology acceptance models to reflect the complex emotional, social, and ethical realities of animal adoption in Malaysia.

Conceptual Framework and Proportions Development

The proposed conceptual framework integrates emotional, functional, and ethical elements to explain how users experience and engage with digital animal adoption platforms in Malaysia. It positions the adoption marketplace not simply as a digital tool but as an interactive ecosystem where technology, empathy, and inclusivity converge to facilitate meaningful human–animal connections. The model emphasizes that adoption is not a purely transactional activity but a socially embedded process driven by trust, compassion, and usability. It extends conventional technology acceptance models by incorporating constructs from emotional design, inclusive design, and service-dominant logic to capture both the psychological and behavioral dimensions of user experience.

The model bases its foundation on digital empathy which enables systems to create understanding and compassion through their interface design and tone and visual elements. Digital empathy enables the adoption process to become more humanized because it establishes emotional connections between adopters and shelters and animals. Users who experience empathy in digital communication through emotional language and humanizing stories and comforting visual effects will develop trust and feelings of belonging. Users develop trust through two aspects of system security and affective belief that the platform demonstrates ethical values and care. Users develop better trust and transparency perceptions because of digital empathy.

The platform requires accessibility and inclusivity features which determine its ability to support users who have different needs based on their language skills and cultural background and technical abilities. The multicultural environment of Malaysia requires the platform to provide multilingual support and simple navigation and low-bandwidth compatibility and clear iconography. The adoption process becomes accessible to all users regardless of their ability or literacy level through inclusivity features. Users experience the system as easy to use when accessibility features are properly integrated which leads to higher perceived ease of use. The system's user-friendly design enables users to access it easily which follows established technology acceptance principles.

The connection between emotional and functional experiences depends on Trust and transparency which serve as central supporting elements. Users develop confidence in the platform through its verified shelter profiles and public reviews and straightforward adoption procedures. Users develop trust in the system after finding it easy to use which leads them to believe the platform delivers actual benefits for successful and responsible animal adoptions. The two factors of perceived usefulness and trust determine how users will behave regarding platform adoption for animal welfare support.

The technology adoption process shows that users will adopt the platform based on their perception of its value and their trust in the system which leads to better overall satisfaction. The platform generates user satisfaction through its combination of operational efficiency and design excellence and emotional benefits that create a sense of accomplishment from adoption. Users who achieve satisfaction with the platform will stay active on the platform while they share their positive experiences with others and suggest the system to their network. The platform achieves sustainability through two elements: users and shelters and communities maintain continuous involvement which supports both technological operations and social achievements.

Notably, the digital empathy fosters trust and transparency, creating a sense of safety and emotional connection. Accessibility and inclusivity enhance perceived ease of use by lowering barriers to participation. Trust and ease of use together increase perceived usefulness, which drives adoption intention. Adoption intention positively influences satisfaction, and satisfaction sustains long-term engagement and platform viability. These interconnections reflect a cyclical process of value co-creation, where emotional, functional, and ethical factors reinforce each other to sustain the adoption ecosystem. Therefore, based on the above reasoning and arguments, the following propositions were proposed

P1: Digital empathy has a positive effect on users' perceptions of trust and transparency in the animal adoption marketplace.
P2: Accessibility and inclusivity positively influence users' perceived ease of use.
P3: Trust and transparency positively affect perceived usefulness of the platform.
P4: Perceived ease of use positively influences perceived usefulness.
P5: Perceived usefulness and trust jointly enhance users' intention to adopt through the platform.
P6: Adoption intention positively affects user satisfaction.
P7: User satisfaction positively influences platform sustainability.

These propositions form a coherent framework that connects emotional and cognitive responses with behavioral outcomes. The model contributes to both theoretical and practical understanding by positioning empathy, inclusivity, and trust as core design determinants of successful digital adoption systems. In the Malaysian context, where emotional values, linguistic diversity, and social connection play significant roles in decision-making, this framework provides a structured path for developing adoption platforms that are not only efficient but also humane, inclusive, and sustainable.

Table 1
Constructs, concise definitions, and rationale

Construct	Concise Definition	Rationale in Adoption Context	Expected Direction
Digital Empathy (DE)	The interface's ability to convey care, warmth, and emotional understanding via tone, visuals, and feedback	Adoption is emotionally charged; empathy reduces anxiety and humanizes the process	↑ Trust & Transparency
Accessibility & Inclusivity (A&I)	Degree to which diverse users (language, literacy, ability, bandwidth) can effectively use the platform	Malaysia's linguistic/capability diversity requires equitable access	↑ Perceived Ease of Use
Trust & Transparency (TT)	Belief that the platform/shelters are reliable, verified, and ethically aligned	Reduces perceived risk (animal health, shelter credibility)	↑ Perceived Usefulness; ↑ Adoption Intention
Perceived Ease of Use (PEOU)	Belief that using the platform requires minimal effort	Low friction increases task completion	↑ Perceived Usefulness
Perceived Usefulness (PU)	Belief that the platform improves adoption outcomes	Drives intention when users see practical value	↑ Adoption Intention
Adoption Intention (AI)	Willingness to use the platform to adopt/support	Proximal predictor of behavior	↑ User Satisfaction
User Satisfaction (US)	Affective evaluation after using the platform	Satisfaction fuels advocacy and return use	↑ Platform Sustainability
Platform Sustainability (PS)	Long-term viability via repeat use, stakeholder retention, and social impact	Sustains welfare outcomes and marketplace health	Outcome

Proposition matrix

No.	Proposition	From → To	Expected Effect
P1	Digital empathy increases trust & transparency	DE → TT	Positive
P2	Accessibility & inclusivity increase perceived ease of use	A&I → PEOU	Positive
P3	Trust & transparency increase perceived usefulness	TT → PU	Positive
P4	Perceived ease of use increases perceived usefulness	PEOU → PU	Positive
P5	Perceived usefulness and trust increase adoption intention	PU + TT → AI	Positive
P6	Adoption intention increases user satisfaction	AI → US	Positive
P7	User satisfaction increases platform sustainability	US → PS	Positive

Table 3
Suggested operationalization (example items & sources)

Construct	Example Item Wording (survey)	Method Hint
DE	"The platform's wording and visuals made me feel understood and cared for."	5–7 pt Likert; adapt from perceived empathy scales
A&I	"I could easily switch language/understand icons even without long text."	Task-based checks + self-report; WCAG heuristics
TT	"I trust the listed shelters and information because verification is clear."	Trust scale items + display of badges/logs
PEOU	"Learning to use this platform was easy for me."	TAM PEOU items
PU	"Using this platform would improve my chances of a successful adoption."	TAM PU items
AI	"I intend to use this platform to adopt or support adoption."	Intention/behavioral likelihood
US	"Overall, I am satisfied with my experience on this platform."	UEQ-S/SUS satisfaction item(s)
PS (composite)	"I would return/recommend" + behavioral logs (retention, repeat use)	Mix: survey + analytics KPIs

Discussion

The proposed conceptual framework illustrates how emotional, functional, and ethical factors jointly influence users' experience within a digital animal adoption marketplace. It extends traditional technology acceptance approaches by incorporating constructs that account for the emotional depth, social inclusivity, and ethical sensitivity inherent in adoption decisions. Unlike conventional e-commerce systems, animal adoption involves trust, empathy, and moral responsibility toward another living being. Therefore, understanding the dynamics between digital empathy, accessibility, trust, and perceived usefulness provides critical insight into how to design a marketplace that is not only efficient but also humane and socially sustainable.

In this model, digital empathy functions as the emotional engine of the adoption experience. The ability of a system to communicate warmth, compassion, and understanding through visuals, tone, and interaction style significantly shapes user perception. When users feel emotionally acknowledged, their sense of trust in the platform strengthens. This is consistent with emotional design theories, which suggest that human-centered digital interactions generate positive affect, leading to deeper engagement and loyalty (Jamil, 2025). In the Malaysian context, where cultural values such as care, kindness, and collective harmony are integral to decision-making, empathy-driven design can transform adoption platforms from transactional tools into compassionate environments that reflect national values of community and responsibility.

User participation becomes equitable through the combination of accessibility and inclusivity principles. The diverse linguistic and cultural makeup of Malaysia along with different digital skills levels demands platforms to develop interfaces that accommodate various user needs. The design of an inclusive system enables users from diverse backgrounds to access adoption services through interfaces that eliminate language barriers and technical obstacles and social

discrimination. The direct link between accessibility and user experience demonstrates that inclusive design represents a strategic decision which improves system usability and user adoption numbers. Users develop increased system trust when they experience platforms that offer simple navigation and clear understanding and personalized features which match their requirements.

The framework bases its operation on trust and transparency which act as connectors between emotional user involvement and system performance. Users who want to adopt animals must deal with multiple unknown factors which include animal health status and shelter listing authenticity and post-adoption assistance availability (Almaslukh & Khalid, 2022). Platforms that verify information and enable user feedback and provide clear access to details reduce user concerns about potential risks. The service-dominant logic enables value co-creation through verification systems which help adopters and shelters and administrators establish a trustworthy ecosystem based on mutual accountability. Users amy maintain their platform engagement when they trust the system because they see it as useful (Saleem et al., 2022).

The adoption intention which drives behavioral engagement in digital systems depends on the combination of perceived usefulness and perceived ease of use. Users will use the system more frequently when they understand how the platform makes adoption simple and provides access to dependable shelters. The model differs from traditional acceptance frameworks because it incorporates emotional and ethical elements which affect user behavior. Users need to share emotional values with the platform when they adopt animals because rational benefits alone do not suffice to trigger action. The combination of empathy and transparency functions as emotional triggers which enable users to transform system usability into purposeful actions.

The platform's adoption intention results in user satisfaction which consists of functional achievements and emotional contentment. The platform achieves satisfaction through its ability to fulfill practical needs and create feelings of purpose and social connection and moral contentment. Users develop positive system attitudes because they experience emotional satisfaction from helping animals find their forever homes. Users who achieve satisfaction through the platform will promote it to others while sharing their experiences and joining community activities which drives network expansion and maintains long-term operational stability.

The platform's sustainability requires more than technical durability because it needs to maintain social and ethical operations. A sustainable adoption marketplace maintains stakeholder involvement through open information sharing and active welfare impact development. The initiative supports Malaysia's MyDigital Blueprint digital transformation strategy which focuses on developing responsible technological solutions for all citizens (Saleem et a., 2025a). Malaysia can improve digital inclusion and increase public involvement in animal welfare through the implementation of empathetic and inclusive digital adoption platforms.

The proposed model contributes to theoretical advancement by merging three traditionally separate domains—technology acceptance, emotional design, and service co-creation—into

a single integrated framework. It demonstrates that in socially significant digital services, emotional and ethical considerations are as influential as usability and perceived usefulness. Empirically, the model provides testable relationships that can guide future quantitative research using structural equation modeling or mixed-method approaches (Saleem et al., 2023; Shoaib & Saleem, 2023). Practically, it offers a design philosophy that can help developers and policymakers create adoption platforms that balance efficiency with empathy and ethics.

In summary, the discussion highlights that the effectiveness of an animal adoption marketplace depends on its ability to humanize technology. Digital empathy establishes trust, accessibility ensures inclusion, and transparency secures credibility. Together, these constructs drive user intention, satisfaction, and sustained engagement (Kamarudin et al., 2023). For Malaysia, this framework offers a pathway to reimagine animal adoption through a digital lens that is both compassionate and inclusive—one where every click toward adoption reflects not just a functional act but a shared expression of care and social responsibility.

Implementation of the Conceptual Framework

The proposed conceptual framework provides essential knowledge for designing digital animal adoption systems which operate effectively in Malaysia's multicultural digital environment. The framework builds upon existing UX and CX and TAM models through its addition of emotional and ethical components which typical usability research tends to ignore. The framework enhances user behavior studies through its combination of digital empathy and inclusivity and trust with the Technology Acceptance Model (TAM) to create a complete understanding of socially significant digital interactions (Saleem et al., 2025b). The research shows that emotional involvement and ethical disclosure serve as essential factors which determine users' perceptions of system usability and usefulness and their decision to adopt the system. The adoption platform now operates as an affective ecosystem which unites human empathy with digital interfaces to develop enduring behavioral patterns.

From a theoretical standpoint, the framework also bridges three distinct scholarly domains: (1) emotional design, which explains affective responses to digital systems; (2) service-dominant logic, which conceptualizes value as co-created among adopters, shelters, and developers; and (3) inclusive design, which ensures equitable access across linguistic and cultural boundaries. By uniting these perspectives, the model contributes to the literature on human-centered technology design and proposes an integrative view of digital adoption as both a psychological and social process. It expands the boundaries of digital empathy research by demonstrating its potential as a measurable construct influencing trust, usability, and satisfaction in non-commercial, welfare-driven contexts.

Practically, the framework provides actionable guidance for developers, NGOs, and policymakers seeking to build or enhance animal adoption platforms. It identifies design elements—such as empathetic language, verified shelter profiles, multilingual interfaces, and simplified user flows—as critical to increasing adoption success rates and user engagement. These design implications align with Malaysia’s MyDigital Blueprint and MADANI values, supporting national goals of digital inclusion, social responsibility, and sustainable innovation. Moreover, the framework offers a strategic roadmap for evaluating system performance

beyond conventional metrics like downloads or click rates, suggesting broader indicators such as user trust, satisfaction, post-adoption retention, and welfare outcomes.

The model provides policymakers and welfare organizations with a governance framework. The model promotes responsible digital systems through its focus on transparent verification and ethical standards which safeguard both human users and animal welfare. The model helps build trust in adoption services while creating common standards for animal welfare regulations through technology integration. The model serves as a guide for shelter and community organization capacity development to use technology responsibly while upholding their commitment to humane treatment.

Finally, the framework contributes to the global discourse on digital transformation in social services, positioning Malaysia as a potential leader in compassionate technology design. It demonstrates how emerging economies can integrate empathy, inclusivity, and sustainability into digital innovation, offering a replicable model for other sectors such as healthcare, education, and community engagement. In essence, this conceptual framework transforms the understanding of digital adoption from a technical interaction into a moral and emotional journey, where technology serves not only as an enabler of efficiency but as a facilitator of trust, empathy, and long-term societal well-being.

Limitations and Future Research

While this conceptual study provides a comprehensive framework for understanding user experience, empathy, and inclusivity in digital animal adoption systems, it remains theoretical and has not yet undergone empirical validation. The proposed relationships between constructs such as digital empathy, accessibility, trust, and user satisfaction are based on established theories but require quantitative and qualitative testing in real adoption environments to confirm their strength and direction. Future research should therefore employ mixed-method approaches—including user interviews, usability testing, and structural equation modeling (SEM)—to empirically validate these propositions within the Malaysian context. Another limitation is the potential variability in cultural interpretation of empathy and trust. Malaysia's multicultural landscape means that emotional cues, interface design, and language tone may be perceived differently across ethnic groups and linguistic backgrounds. Future studies could explore cultural moderation effects, examining how cultural identity, religiosity, and language preference influence the perception of digital empathy and accessibility. Such analysis would refine the framework's generalizability across diverse user segments. The study also does not capture temporal dynamics—how users' trust, satisfaction, and adoption intentions evolve over time as they repeatedly interact with the platform. Longitudinal research could track these constructs to understand retention behavior and sustained engagement, which are critical indicators of platform sustainability. Similarly, experimental studies or A/B testing could measure how incremental design interventions (such as empathy-based messaging or accessibility enhancements) impact conversion and satisfaction rates.

Moreover, this paper focuses primarily on adopters' perspectives, whereas shelters, NGOs, and regulators also play vital roles in shaping the ecosystem. Future research should adopt a multi-stakeholder lens, exploring co-creation and service-dominant logic in practice by analyzing how trust, empathy, and shared governance operate among all participants.

Including these perspectives would strengthen the theoretical integration of emotional design with service co-creation and digital inclusion. Finally, while this framework is situated in Malaysia, comparative research across Southeast Asian nations could reveal regional differences in digital inclusion and emotional engagement in adoption platforms. Cross-country analyses would not only validate the universality of the proposed model but also help identify localized design principles for multicultural and multilingual societies.

In summary, future studies should move from conceptualization to empirical validation, cultural adaptation, and longitudinal exploration. By systematically addressing these limitations, researchers can transform this conceptual framework into an evidence-based model capable of guiding real-world implementation, ensuring that digital adoption platforms in Malaysia and beyond become not only technologically sound but also empathetic, inclusive, and socially sustainable.

References

Almaslukh, F. M. O., & Khalid, H. (2022). The Influence of Internal Marketing Practices in the Banking Sector: A Systematic Review Approach. *International Journal of Academic Research in Business and Social Sciences*, *12*(8), 1951-1964.

Benis, A., Haghi, M., Deserno, T. M., & Tamburis, O. (2023). One digital health intervention for monitoring human and animal welfare in smart cities: Viewpoint and use case. *JMIR medical informatics*, *11*, e43871.

Beyer, K. (2023). Customer experiences drive the need of innovation in veterinary practices. *Procedia Computer Science*, *225*, 3094-3103.

Cao, D., & White, S. (Eds.). (2016). *Animal law and welfare-international perspectives* (Vol. 53). Switzerland: Springer.

Fuentes, S., Viejo, C. G., Tongson, E., & Dunshea, F. R. (2022). The livestock farming digital transformation: implementation of new and emerging technologies using artificial intelligence. *Animal health research reviews*, *23*(1), 59-71.

Fuentes, S., Viejo, C. G., Tongson, E., & Dunshea, F. R. (2022). The livestock farming digital transformation: Implementation of new and emerging technologies using artificial intelligence. Animal health research reviews, 23(1), 59-71. https://doi.org/10.1017/S1466252322000142

Haddy, E., Brown, J., Burden, F., Raw, Z., Kaminski, J., & Proops, L. (2023). Sustainability in NGO programming: A case study of working equid welfare organizations. *SAGE Open*, *13*(4), 21582440231218523.

Horecka, K., & Neal, S. (2022). Critical problems for research in animal sheltering, a conceptual analysis. *Frontiers in veterinary science*, *9*, 804154.

Ismail, S. N. (2017). *Understanding the Emergence, Development and Trajectories of New Social Movements (NSMs) in Industrial Countries & Non-Post-Materialist Societies: The Case of Animal Protection Movement in Malaysia* (Doctoral dissertation, University of Sheffield).

Jamil, M. H. M. (2025). Congruence effects in social media influencer marketing in online impulse buying intentions of digital immigrants: The mediating role of descriptive and injunctive norms. Journal of Marketing Communications, 1-24. https://doi.org/10.1080/13527266.2025.1897358

Kamarudin, S., Shoaib, H. M., Jamjoom, Y., Saleem, M., & Mohammadi, P. (2023). Students' behavioural intention towards e-learning practices through augmented reality app

during COVID-19 pandemic in Saudi Arabia. *Interactive Learning Environments*, *31*(9), 5715-5731.

Li, Y. H., & Tang, H. H. (2024). How to use service prototypes to reduce the complexity of social problems: A Case Study of Adoption Services of Public Animal Shelter.

Liu, J., & Wu, Y. (2023, July). Research on the Strategy of Digital Services in the Adoption Scene of Pet Shelters. In *International Conference on Human-Computer Interaction* (pp. 189-201). Cham: Springer Nature Switzerland.

Lyu, Q., Dai, X., Ni, J. Q., Wang, F., Xi, L., An, X., & Wang, K. (2025). Embracing digital transformation in animal science education: Exploring students' digital self-efficacy, technological literacy, and perspectives of curriculum updates. Education and Information Technologies, 30(8), 10443-10462. https://doi.org/10.1007/s10639-022-10849-4

Mandviwalla, M., & Flanagan, R. (2021). Small business digital transformation in the context of the pandemic. *European Journal of Information Systems*, *30*(4), 359-375.

Matheny, G., & Leahy, C. (2007). Farm-animal welfare, legislation, and trade. *Law & Contemp. Probs.*, *70*, 325.

Mellor, D., Yeow, J., Mamat, N. H. B., & Hapidzal, N. F. B. M. (2008). The relationship between childhood cruelty to animals and psychological adjustment: A Malaysian study. *Anthrozoös*, *21*(4), 363-374.

Powell, L., Ackerman, R., Reinhard, C. L., Serpell, J., & Watson, B. (2024). A prospective study of mental wellbeing, quality of life, human-animal attachment, and grief among foster caregivers at animal shelters. *Plos one*, *19*(5), e0301661.

RANI, M. A., GOH, S. H., RAHMAN, M. S. A., & ROSLAN, M. A. (2020). Serological detection of anti-Leptospira antibodies among animal caretakers, dogs and cats housed in animal shelters in Peninsular Malaysia. *Sains Malaysiana*, *49*(5), 1121-1128.

Saleem, M., Kamarudin, S., Shoaib, H. M., & Nasar, A. (2022). Retail consumers' behavioral intention to use augmented reality mobile apps in Pakistan. *Journal of Internet Commerce*, *21*(4), 497-525.

Saleem, M., Kamarudin, S., Shoaib, H. M., & Nasar, A. (2023). Influence of augmented reality app on intention towards e-learning amidst COVID-19 pandemic. *Interactive Learning Environments*, *31*(5), 3083-3097.

Saleem, M., Khalid, H., Shoaib, H. M., Almaslukh, F. M., Wijenayake, A., & Nasar, A. (2025b). Behavioral intention to adopt FinTech services: A comparative study between digital immigrants and digital natives in Pakistan. Pakistan Journal of Commerce and Social Sciences (ISSN 1997-8553), 19(2), 279-306.

Saleem, M., Khalid, H., Wijenayake, A., Gaete-Sepulveda, M. A., Almaslukh, F. M., & Mahroof, K. (2025a). The impact of supply chain management 4.0 on the performance of the tea manufacturing firms: mediating role of market and entrepreneurial orientation. *Journal of Enterprise Information Management*.

Shoaib, H. M., & Saleem, M. (2023). An online market in your pocket: how does an augmented reality application influence consumer purchase decision. In *Technological sustainability and business competitive advantage* (pp. 307-313). Cham: Springer International Publishing.

Tan, K. L., Wang, P., Sun, R., Wong, C. Y., Wood, J., Agarwal, M., ... & Eijdenberg, E. L. (2025). Enhancing animal care through digital tools: a challenge and hindrance perspective of technology adoption in a zoological institution. *Behaviour & Information Technology*, 1-20.

Thielke, L. E., & Udell, M. A. (2019). Characterizing human–dog attachment relationships in foster and shelter environments as a potential mechanism for achieving mutual wellbeing and success. *Animals*, *10*(1), 67.

Wang, H., Qi, J. F., Qin, R., Ding, K., Graham, D. W., & Zhu, Y. G. (2023). Intensified livestock farming increases antibiotic resistance genotypes and phenotypes in animal feces. *Communications Earth & Environment*, *4*(1), 123.

Wolf, P. J., Levy, J., Amirian, E. S., & Horecka, K. (2022). Reimagining animal sheltering: Support services and community-driven sheltering methods. *Frontiers in Veterinary Science*, *9*, 1011202.