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Research Article

Contextualising Design: Aligning digital sharing economy platforms with local SMEs' sharing practices in resource-constrained countries

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ABSTRACT
This paper addresses the challenge of designing digital sharing platforms that align with the local sharing practices of SMEs in resource-constrained countries, with a specific focus on Ethiopian SMEs. The research utilises the elaborated action design research (EADR) methodology and begins with the diagnosis stage, employing thematic analysis with activity theory (AT) to gain an understanding of the local sharing practices. Results revealed elements such as activities, stakeholders, motives, resources, goals, actions, rules, and tools that inform the design requirements of the digital sharing platform. Building on the diagnosis stage, the design cycle established key principles and the architecture of 13 local sharing models that form the features of the platform. In the implementation cycle, the paper presented a specific instance of a "property rental package." Results indicated the positive acceptance of the digital platform. Factors such as technological compatibility, perceived direct benefit, ease of use, and perceived indirect benefit contributed to this acceptance. The study contributes to the existing literature by providing valuable insights on how to contextualise the design of digital platforms in the local sharing practice contexts. Additionally, it showcases the effective utilisation of the EADR methodology and activity theory.

Keywords Digital Sharing Platform, Contextualising designs, SMEs, Local Sharing Practices, Information System Design, Digital platform design

Categories • **Information Systems** ∼ **Computing platforms** • *General and reference* ∼ *Cross-computing tools and techniques, Design*

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1 INTRODUCTION

Although digital platforms offer unprecedented opportunities for economic sharing and collaboration, the utilisation of these platforms remains low among SMEs operating in resource-constrained countries (Bardhi & Eckhardt, 2012). Several factors contribute to this low adoption rate, including inadequate technological infrastructure (Myovella et al., 2020), lack of digital literacy and skills (Amornkitvikai et al., 2022), security and trust concerns (Ochinanwata & Ochinanwata, 2023), absence of contextually designed technology (Smidt & Jokonya,

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2021), and a lack of design knowledge (Atinaf et al., 2023). Particularly, studies indicated a significant research gap concerning the contextualisation of digital sharing platform design concerning the local sharing practices of SMEs within a community's local business ecosystem (Pankomera & van Greunen, 2019). While many existing platforms have primarily been designed based on the business models of major tech companies in the Western world (K. S. Rahman & Thelen, 2019), it is important to note that SMEs in resource-constrained economies frequently participate in a range of local sharing practices deeply rooted in the community's culture (DiBella et al., 2022). Hence, it is crucial to examine the design of digital platforms by exploring the local sharing practices of SMEs.

This study specifically investigated the design of a digital sharing economy platform within the context of local sharing practices among SMEs in Ethiopia. The research employed an elaborated action design research (EADR) methodology, chosen for its suitability in studying the designs of socio-technical systems. The study makes a contribution to the discourse on information systems (IS) by exemplifying how the design of digital platforms can be contextualised within the context of local sharing practices. It identifies essential design aspects that need to be taken into consideration when designing digital platforms for specific contexts and showcases the practical application of activity theory (AT) in exploring and analysing activities from local sharing practices and comprehending the design requirements of IS artefacts.

Moving forward, the structure of the remaining paper is as follows: The subsequent section presents a comprehensive review of the existing literature. This is followed by an in-depth explanation of the methodology employed. The later section delves into the discussion of the study's findings. Finally, the paper concludes by highlighting the key contributions of the research and its implications for theory, practice, and policymaking.

2 LITERATURE REVIEW

This section presents a comprehensive literature review covering key areas such as the sharing economy (SE), the design of digital platforms for SMEs, the contextualisation of digital platform design, and activity theory (AT).

2.1 Sharing Economy

There is no universally agreed definition for the SE (Govindan et al., 2020). Studies often describe the SE as an activity synonymous with collaboration consumption (Belk, 2014). It indicates online sharing activities such as bartering, swapping, lending, trading, renting, and donating economic resources (Ranjbari et al., 2018). Many studies also associate the SE with sharing activities in innovation, redistribution, co-finance, and co-creation (Upadhyay et al., 2021). The term has also been used to explain crowd-based networks and the new forms of "gig" work that are encroaching on traditional employment (Chen et al., 2019).

From this study's perspective, the term is used to indicate activities related to collaboration consumption, the circular economy, crowdsourcing, crowdfunding, and open innovation activities. The circular economy refers to an economic model that favours product maintenance, reuse, and recycling. It is an effective way to tackle the scarcity of resources in the value chain and reduces the cost of materials, thereby promoting a sustainable environment (Peng et al.,

2014). Crowdsourcing is a problem-solving model that enables enterprises to outsource jobs and assignments to networked people (Tiberius & Hauptmeijer, 2021). Crowdfunding refers to a model for gathering funds from crowds to connect a particular project and investors (Köhler et al., 2022). Finally, open innovation is a framework that promotes the adoption and generation of new technologies (Achtenhagen et al., 2013).

2.2 Designing digital platforms for SMEs

Despite the pivotal role of digital platforms in enabling SMEs to restructure and enhance their value-creation processes, and the intricate link between SMEs' value-creation processes and social activities, especially in resource-constrained countries (Rumanyika et al., 2021), few studies have recognised the critical importance of addressing the specific challenges associated with designing digital platforms for SMEs in their local practices context.

In this regard, a paper that reported the design of "Machinga" showcased the design process of a mobile application that supports local street traders in their problem of limited market access (Ameller et al., 2015). The study employed a participatory design approach, involving stakeholders in the requirement gathering, design, and evaluation stages. Other studies have also explored the features of digital platform designs within industrial associations, outlining requirements for SMEs' internationalisation and the establishment of a collaboration partner marketplace (Hirota et al., 2022). Similarly, a separate study was conducted focusing on designing platform-based circular economies by exploring the business patterns of a circular economy model (de Reuver et al., 2018). While these studies provide valuable insights into contextualising IS artefacts, it is important to note that designing digital platforms goes beyond individual applications that were primarily taken into account by those studies. Designing digital platforms requires a thorough comprehension of the design aspects involved, as they are complex systems that interact with heterogeneous actors and typically integrate multiple applications.

In this context, a digital actor engagement platform was designed to demonstrate the contextual design of a digital platform that supports local businesses in the high street threads industry (Bartelheimer et al., 2023). Using the action design research (ADR) method, it investigated the engagement of actors in the street markets. This study addressed the local practices and actor networks in the street trade (Bonina et al., 2021). However, it lacks contextual relevance for designing digital sharing platforms in the context of resource-constrained economies. Therefore, further research is necessary to gain a comprehensive understanding of how to contextualise the design of digital platforms based on the local sharing practices of SMEs in resource-constrained economies.

2.3 Design aspects for contextualising the design of digital platforms

Contextualising the design of a digital platform with local practices is crucial for its success. However, to achieve effective contextualisation, it is first essential to have a comprehensive understanding of the core constructs of digital platforms (Wulfert et al., 2022). In this respect, various design aspects come into play, including the purpose (Choudhary et al., 2021; Eisape, 2022), boundaries (Gawer, 2021b), components (Spagnoletti et al., 2015), structures/organisations (Hou & Shi, 2021), and contexts (Janowski, 2015) of these platforms

The purpose of digital platforms plays a crucial role in shaping their design, functionality, and overall direction. By their purpose, digital platforms can be innovation or transaction-oriented (Bonina et al., 2021). Achieving effective contextualisation in the design of digital platforms relies on obtaining a clear understanding of their purpose and its alignment with the motives and goals of the stakeholders. The boundary of platforms defines the scope of functionalities and services to be provided, as well as those that will be excluded (Gawer, 2021b). It is characterised by its scope, sides, and boundary resources (Gawer, 2021b). Defining the scope of the platform is essential for establishing the context of its operations and interactions. It is often defined by activities and resources the platform will manage (Gawer, 2021b). In this regard, it is necessary to examine the activities and resources that the platform will handle. Besides, platforms serve as a nexus that brings together two or more groups of actors and enables the exchange of value between them (Gastaldi et al., 2023). Understanding the characteristics and needs of the stakeholders involved is crucial to defining the boundaries of the platform (Gawer, 2021b). Moreover, contextualising the design of boundary resources is vital for defining the boundary of a digital platform. In this regard, gaining an understanding of the interactions within different activities in local practices can prove to be an effective approach for comprehending the design requirements of digital platforms and their boundary resources. Boundary resources are application interfaces (APIs) that facilitate interactions of several applications within the boundary of digital ecosystems (Gawer, 2021b).

Defining the components and organisation/structure of a digital platform is a also fundamental aspect of its design (Tura et al., 2017). It helps in shaping its architecture, functionalities, and overall user experience. Digital platforms often contain a set of stable cores, evolving peripherals, and interfacing components (de Reuver et al., 2018). While the core components of digital platforms serve as the pillars and provide generic services, the evolving peripheral components cater to the diverse and expanding functional needs of heterogeneous stakeholders (Spagnoletti et al., 2015). In this respect, it is common for digital platforms to have multiple interdependent or third-party components (Bartelheimer et al., 2023; Weiss et al., 2023). These components, closely interconnected with the actions of multiple actors involved in communication, collaboration, and collective action (Hein et al., 2019). Hence, designers need to understand the stakeholders' actions and interactions in creating effective platform experiences that align with objectives of different actors. By its structure, digital platforms are often seen as a digital ecosystem consisting of interconnected and interdependent components (Allen et al., 2021).

The context in which digital platforms operate is another aspect of the design of utmost importance when it comes to contextualising the design of their business processes, governance, and interfaces (Allen et al., 2021; Bartelheimer et al., 2023). This context encompasses the social, cultural, economic, and regulatory factors that shape the platform's development, operation and governance. Hence, designers must consider community structures, norms, regulations, cultural practices and tools to design platforms to the specific needs, preferences, and constraints of stakeholders.

In summary, contextualising the design of a digital platform for local practices requires considering various design aspects, including the platform's purpose, boundaries, components, structure/organisation, and contextual factors. To elicit the design requirements associated with these aspects, the design process should involve understanding the motives and goals of

local stakeholders, exploring the activities and resources involved, and analysing the actions and interactions of stakeholders within the local practices. Additionally, considering the social, cultural, linguistic, and regulatory context is crucial for tailoring the design of business processes and interfaces to suit the specific context. To effectively explore the elements, this study employed a structured approach to investigating activities in local sharing practices by utilising activity theory (AT) as a conceptual framework. AT offers a holistic perspective that enables the examination of purposeful human activities and their interactions within the sociocultural context. The following section presents a concise overview and discussion of activity theory (AT).

2.4 Activity Theory

AT is a theoretical framework for studying purposeful human activities (Kaptelinin & Nardi, 2017). AT represents human activities using an activity system diagram that includes a subject, objects, tools, community, norms/rules, and division of labour (DOL) (Engeström, 1993). Figure 1 shows the activity system diagram adopted from Engeström (1993). "Subject" refers to an "actor" who owns the activity. This paper uses the term actor instead of subject since the term actor is more familiar in information systems research. "Object" refers to the state of a thing (abstract, concrete, or people). This paper uses the term "resource" instead of object since resources are the central object of sharing activities. "Tool" is an instrument that mediates the interaction between an actor and resources. "Community" refers to the "stakeholders" in an activity. This paper uses the term stakeholders instead of community due to the familiarity of the term. "Rules/norms" refer to the community laws that govern an activity. Finally, "DOL/roles" refers to the distribution of roles among the stakeholders.

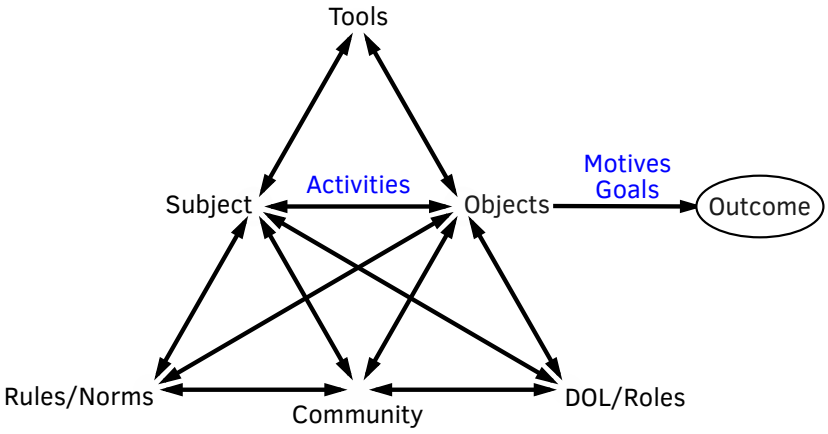

Figure 1: Activity system diagram[a]

[a] adopted from Engeström (1993)

AT has several principles that dictate the study of activities. While these principles generally emphasise the specification, design, and evaluation of technology to be accomplished within the context of an activity (Kaptelinin & Nardi, 2017) the "hierarchical principle" in

particular provides insights to study platform design by breaking down activities to smaller units (Engeström, 1993).

It depicts an activity using a three-level hierarchical abstraction comprising activity, actions, and operations. Activity is an abstraction parallel to motives (Kaptelinin & Nardi, 2017). Actions are abstractions of an activity parallel to the goal of an activity. Operations are actions performed within conditions/contexts. They refer to routines in the lower hierarchy of activities (Kaptelinin & Nardi, 2017).

3 METHODOLOGY

This research used the EADR process model (Mullarkey & Hevner, 2018). EADR is a process model for action design research consisting of diagnosis, design, implementation, and evolution (Mullarkey & Hevner, 2018). Figure 2 shows the EADR processes of the study.

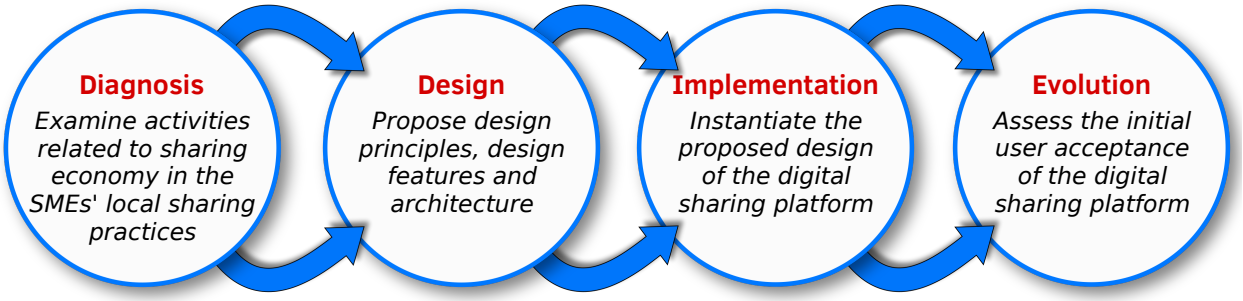

Figure 2: The EADR process and model[a]

[a] adopted from Mullarkey and Hevner (2018)

3.1 Diagnosis Cycle

The diagnosis cycle investigates the problem that needs to be addressed through practical design. In this research perspective, the diagnosis cycle examined SMEs' local sharing practices through thematic analysis. Ethiopian SMEs were used as a case study. Data was collected from 32 SMEs working in four cities in Ethiopia using semi-structured interviews. Interviews were conducted with SME owners or managers in key Ethiopian cities – Addis Ababa, Adama, Bahir Dar, and Gonder. Data collection sites covered a distance exceeding 800 kilometres. Table 1 outlines the diverse range of 18 product types across four sectors offered by these SMEs. The data was analysed in three stages using thematic analysis based on abductive reasoning. AT provided the lens to guide the thematic analysis. The first iteration investigated activities, stakeholders, resources, and motives in the local SMEs' sharing practices related to collaborative consumption, circular economy, crowdfunding, crowdsourcing, and open innovation. Based on the findings in the first iteration, the second iteration examined the goals and actions in the identified activities. In the third iteration, the analysis examined the rules, the DOL, and the tools used in the sharing practices.

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Table 1: Demography of respondents and SMEs

Sector	City	Main product	Enterprise age	Academic status
Manufacturing	Adama	Leather related	5-10 years	Technical School
Manufacturing	Adama	Furniture	1-5 years	Technical School
Manufacturing	Addis Ababa	Weaving	10-15 years	10th grade
Manufacturing	Addis Ababa	Leather	10-15 years	University
Manufacturing	Bahir Dar	Household	5-10 years	Technical School
Manufacturing	Bahir Dar	Garment	5-10 years	Technical School
Manufacturing	Gonder	Garment	5-10 years	Technical School
Manufacturing	Gonder	Furniture	1-5 years	Technical School
Construction	Adama	Mining	1-5 years	10th grade
Construction	Adama	Material production	5-10 years	10th grade
Construction	Addis Ababa	Machine rent	1-5 years	University
Construction	Addis Ababa	Material production	1-5 years	Technical School
Construction	Bahir Dar	Machine rent	5-10 years	University
Construction	Bahir Dar	Material production	5-10 years	Technical School
Construction	Gonder	Material production	1-5 years	10th grade
Construction	Gonder	Machine rent	1-5 years	University
Service	Adama	Hotel	$>$ 15 years	University
Service	Adama	Transport	1-5 years	10th grade
Service	Addis Ababa	Hotel	$>$ 15 years	10th grade
Service	Addis Ababa	Laundry	1-5 years	University
Service	Bahir Dar	Hotel	5-10 years	University
Service	Bahir Dar	Transport	$>$ 15 years	10th grade
Service	Gonder	Car rental	1-5 years	University
Service	Gonder	Freight	5-10 years	10th Grade
Trade	Adama	Electronics	5-10 years	Technical School
Trade	Adama	Stationery	5-10 years	Technical School
Trade	Addis Ababa	Electronics	1-5 years	Technical School
Trade	Addis Ababa	Pharmacy	1-5 years	University
Trade	Bahir Dar	Spice	5-10 years	Technical School
Trade	Bahir Dar	Spare part retails	1-5 years	Technical School
Trade	Gonder	Cleaning material	1-5 years	University
Trade	Gonder	Stationery	1-5 years	Technical School

3.1.1 Activities, Stakeholders, Resources, and Motives

Results of the first iteration show the SMEs' engagement in local sharing practices related to collaborative consumption (CC), circular economy (CE), crowdfunding (CF), and crowdsourcing (CS) activities. The findings did not show the SMEs' engagement in open innovation (OI) activities.

Private and public resources were the main drivers that attracted SMEs to the sharing activities. instance, the SMEs' major sharing activities were related to accessing private resources such as equipment, services, raw materials, and consumer products. Government support was also one aspect of the SMEs' sharing. Sharing practices were mainly done to ensure profitable businesses, minimise costs, obtain alternative finances, obtain access to raw materials, start

businesses, share investment costs, and access government support. Suppliers, consumers, complementary asset providers (CAPs), and regulators were the main stakeholders in the sharing activities. Figure 3 shows the SMEs' activities, actors, stakeholders, resources, and motives in their local sharing practices.

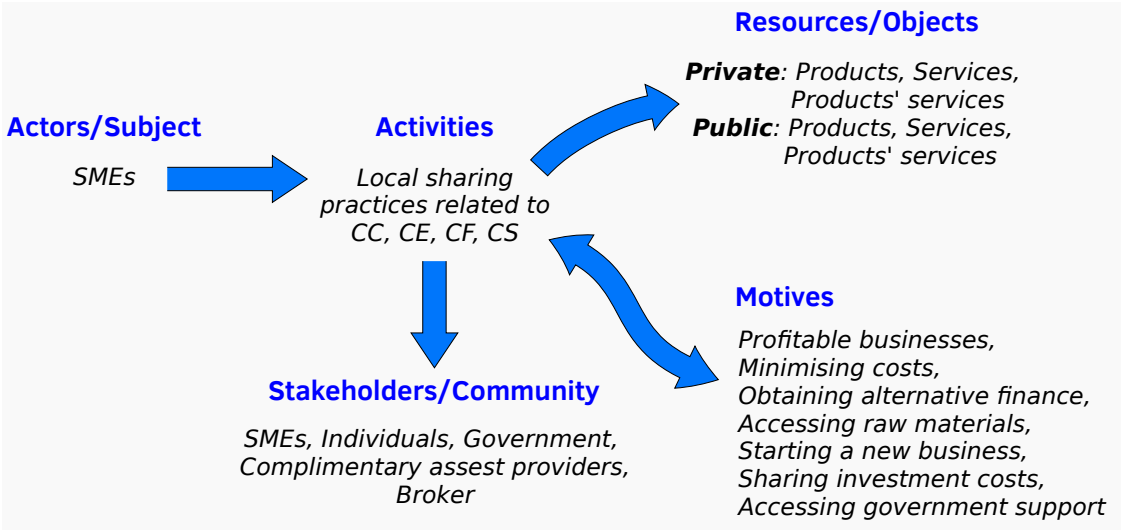

Figure 3: Activities, actors, stakeholders, resources and motives in SME's local sharing practices

3.1.2 Goals and Actions in the SMEs' Sharing Practices

Actions are sequences of tasks (goal-oriented activities) taken to achieve a higher-level motive-oriented activity (Kaptelinin & Nardi, 2017). In the second iteration of the thematic analysis, the study explored the goals of SMEs in their sharing practices and the corresponding actions taken by these SMEs to achieve those goals. Results show fourteen major goals that encompassed diverse areas such as purchasing services, products, and product services; selling services, products, and product services; accessing government support; engaging in equipment swapping with private owners; finance collaborations (peer-to-peer); joint purchasing initiatives; participating in joint investments; participating in savings and credit unions; buying used and leftover products; selling second-hand items; hiring permanent workers; hiring temporary workers per time; hiring workers on a result-based basis; and engaging in subcontract work.

Furthermore, the thematic analysis has revealed a variety of actions related to the identified goals in the context of SMEs' local sharing practices. For goals related to purchasing, major actions were preparing specifications, searching for resources, negotiating, providing price quotations, placing orders, validating deliveries, and settling payments. On the other hand, for goals related to selling, actions were preparing and promoting a catalogue, managing customer orders, delivering products/services, collecting payments, and handling feedback. Engaging in financial collaborations entails initiating and promoting collaborations, registering members, collecting and disbursing funds, auditing collaborations, and completing the process. Saving and credit activities encompass promoting services, registering members, collecting savings, managing loans and payments, auditing collaborations, and maintaining membership.

Joint investment activities involve initiating collaborations, registering collaborators, selling shares, facilitating share exchanges, settling payments, auditing collaborations, and managing dividends. Joint lease and procurement activities consist of initiating collaborations, registering collaborators, collecting funds, purchasing products, settling payments, distributing products, and auditing collaborations. Crowdsourcing activities revolve around hiring workers and subcontracting work. Actions in hiring workers include identifying human resource needs, selecting workers, negotiating terms, assigning jobs, validating completed work, settling payments, and managing employee information. Subcontracting work involves searching for providers, negotiating terms, accepting work orders, handing over assignments, and settling payments. Lastly, circular economy practices encompass buying and selling second-hand products. Buying actions involve identifying needs, finding products, settling payments, and maintaining relationships. Goals related to selling second-hand products include specifying and promoting products, managing customer orders, delivering products/services, collecting payments, and handling feedback. These actions provide a comprehensive overview of the steps involved in achieving the identified goals within SMEs' local sharing practices concerning the SE.

3.1.3 Rules, DOL, and Tools

According to AT, rules, DOL, and tools are the three elements that determine contexts in an activity (Engeström, 1993). Findings in the third iteration of the thematic analysis showed the existence of several rules/norms associated with:

i. trustful transactions and collaboration;

ii. payment accuracy, appropriateness, and timeliness;

iii. deliveries' quality, timeliness and appropriateness;

iv. participants' duties;

v. refunding for undelivered services/products; and

vi. many other business domain-specific rules concerning SMEs' sharing practices.

Findings have also shown the distribution of tasks among stakeholders in their local sharing practices. The result shows the role of SMEs as consumers, providers, collaborators, brokers, and employers. It also shows the government's role as a provider, consumer, and regulator. In addition, they show the non-governmental institutions' roles as providers and consumers. The financial institutions have a role in facilitating payments among the sharing actors.

Tools mediate human activities. AT classifies tools into technical (physical) and psychological (Kaptelinin & Nardi, 1997). Psychological tools are instruments such as languages and signs. Physical tools are external tools such as technological artefacts (Kaptelinin & Nardi, 1997). Results show the frequent utilisation of local languages and technical devices such as mobile phones in the SMEs' sharing practices.

3.2 Design Cycle

The design cycle was the second stage of the EADR. It examines the design principles, design features, and implementation methods (Mullarkey & Hevner, 2018). The major design activities concerning the design of the digital sharing economy platform were eliciting contextual design principles and proposing design features, and implementation methods.

3.2.1 Contextual Design Principles

The contextual design principles are formulated by taking into account two crucial factors: first, the objective of customising the design of a digital platform to suit the specific context of SMEs local sharing practices, and second, designing based on a comprehensive understanding of design aspects and core constructs that are inherent to digital platforms. The contextual design principles are:

Designing for a purpose Designing for specific purposes has been emphasised in multiple studies (Bonina et al., 2021). In this aspect, it is crucial to contextualise the purpose of the digital platform in the SMEs' motives and goals for their local sharing activities.

Design with boundary Designing with defined boundaries and interfaces is one aspect of designing digital platforms (Daradkeh, 2023; Gawer, 2021a). It is important to establish clear boundaries by investigating activities, resources, and stakeholders of the design of digital platforms.

Designing the components The studies emphasise the need to design both the core functionalities and peripheral components of a digital platform through the analysis of the actions of stakeholders (Bonina et al., 2021).

Designing for the context Context forms a critical facet in the design of various technologies. Its essence lies in ensuring that new designs seamlessly integrate into their context by consolidating data about social structure, cultural norms and environmental contexts (Murer et al., 2015; Stamps, 2014).

Design as an ecosystem IT emphasises the interconnectedness and interdependencies of various components of a platform (Engert et al., 2023).

Design for modularity and reusing This principle advocates for the design of modular components that facilitate the reuse of functionalities (Dai, 2023; Naik et al., 2020). Reusability enhances efficiency, reduces development time, and enables the adaptation of the platform to evolving needs.

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3.2.2 Features of the Digital Sharing Economy Platform

The proposed design described the features of the digital sharing economy platform by its purpose, boundaries, components, structure/organisation, and context.

Purpose The outcomes of the diagnosis cycle have revealed the motives driving local sharing activities among SMEs. Furthermore, the results have identified 14 specific goals that SMEs strive to accomplish through their local sharing practices. Building upon these findings, the purpose of the digital sharing economy platform has been defined in its design. Consequently, the platform's design was customised to meet the unique needs of SMEs, including initiating new businesses, streamlining transactions, enhancing access to raw materials, providing alternative finance options like peer-to-peer lending, promoting cost reduction through shared resources and bulk purchasing, facilitating collaborative investment opportunities, and connecting SMEs with valuable government support programs and resources.

Boundaries The digital sharing economy platform's boundary was set by defining its scope, sides, and boundary resources. The platform's scope was determined based on the knowledge acquired from the diagnosis cycle, which examined the goal-oriented activities and resources of SMEs involved in local sharing activities. Results in the diagnosis cycle showed 14 goal-oriented activities of the SMEs' local sharing activities. Moreover, they revealed varied types of products and services as primary resources of the SMEs' local sharing practices. Based on the information, initially, the design mapped the goal-oriented activities with six packages. Figure 4 shows platform packages mapped from the SMEs' goal-oriented activities.

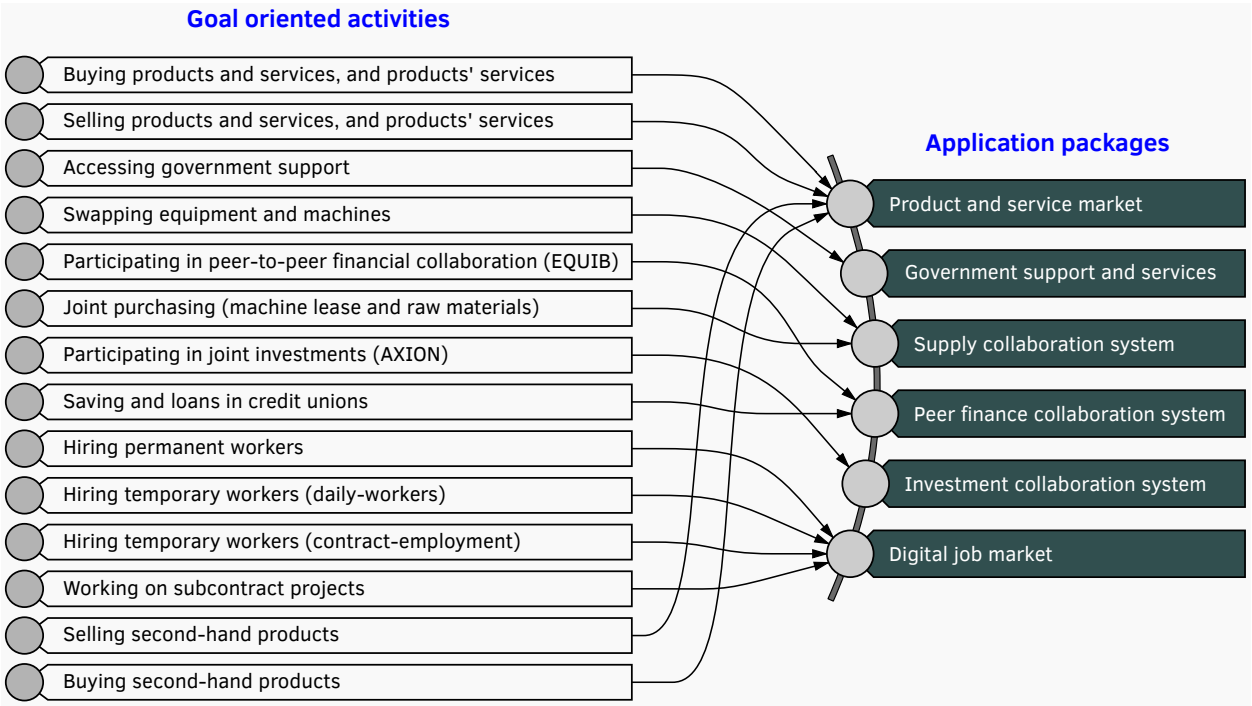

Figure 4: Sharing economy platform packages elicited from the SME's activities

Next, the design used knowledge about resources to define additional compartments of the packages. Accordingly, 13 sub-packages are proposed within the six main packages. The sides are modelled by analysing the DOL mong stakeholders. Results in the diagnosis cycle showed that SMEs, government, individuals, non-governmental organisations (NGOs), complementary asset providers (CAPs), and Brokers were the main stakeholders of the SMEs' local sharing practices. Figure 5 shows the boundary of the digital platform in terms of the activities, resources, and sides.

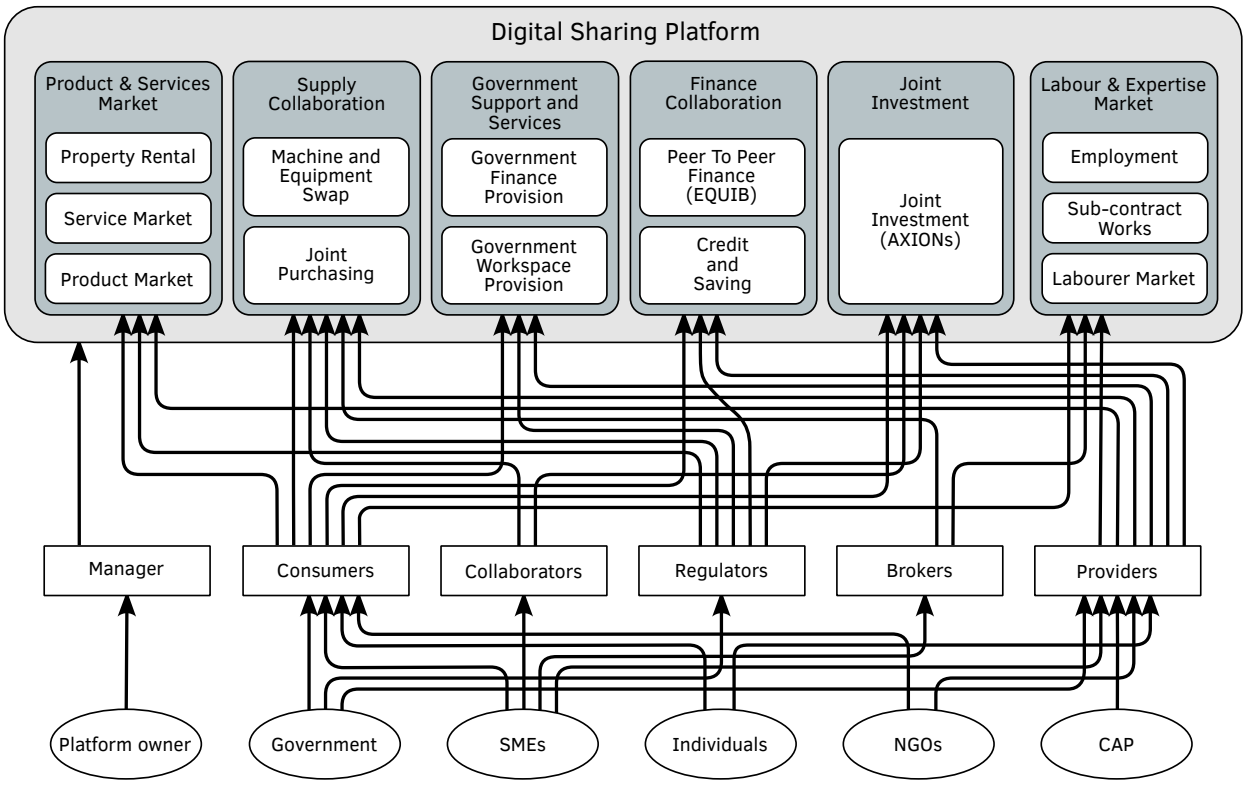

Figure 5: The boundary of the digital platform

The boundary resources are modelled by assessing the interaction and interdependence of various activities and actions. However, these resources are further refined during the component modelling stage by analysing the relationships and dependencies among different actions.

Components and Modules The design of components is influenced by goals and actions associated with local sharing practices. Findings on goals and actions have played a crucial role in determining the requirements for the platform's components. By understanding the actions undertaken by SMEs to achieve their key objectives, components were tailored to enable stakeholders to perform those actions. Furthermore, a modular design approach is recommended by several researchers (Dai, 2023). However, there is a lack of specific guidance on how to break down packages into modular components. This study addressed this gap by defining modules through the analysis of interrelated actions among actors involved in collaboration

processes. Collaboration is a dynamic process that encompasses various phases, including initiation, formation, collaboration, and finalisation (Twinomurinzi & Ayalew, 2022).

To design modules within each solution package, the study examines the actions performed by actors in each stage of the collaboration process. By analysing the interdependencies and relationships between these actions, the design of modular components within the packages is determined. For instance, in the PROPERTY-RENTAL activity, creating a rental property, listening to rental requests, agreeing on terms, receiving payments, managing property delivery, managing the return of the property, and viewing feedback are actions of the providers. In the other dimension, searching for rental property, creating rental requests, agreeing on terms, settling payments, validating and accepting properties, returning properties, and rating or complaining about the service delivered are actions of the consumers. Thus, the design process first organised the providers' and consumers' actions in the collaboration lifecycles diagram. Next, potential modules are abstracted by assessing related actions in each phase.

Figure 6 shows the analysis of modules based on actors' related actions in the collaboration stages. Table 2 shows a list of modules under the packages of the digital sharing economy platform.

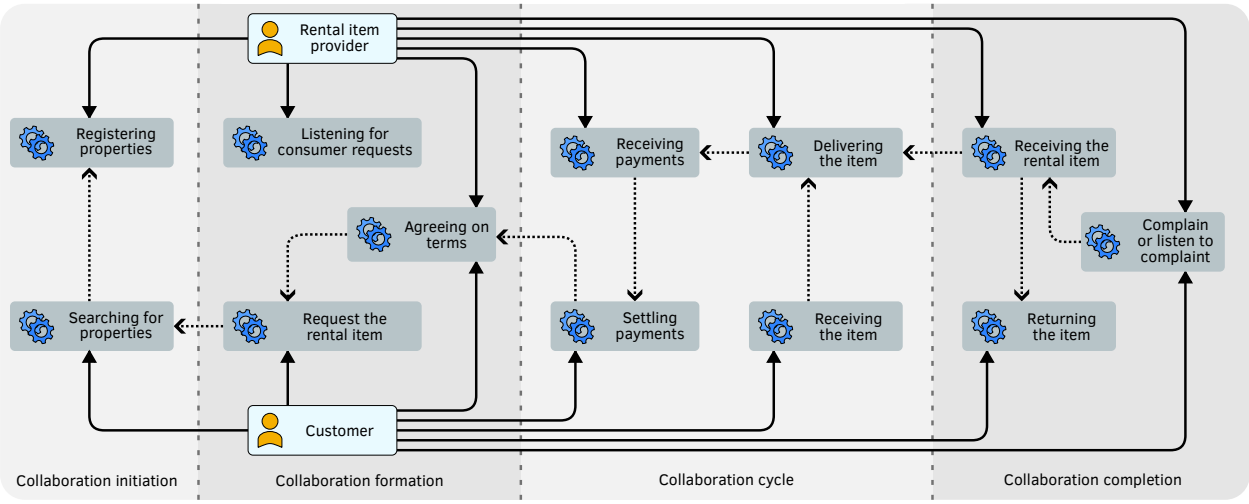

Figure 6: Example of module definition from property rental activity

Contexts Contextualising the digital platform largely depends on the extent in which designs incorporats local rules (norms), processes, structures, and interaction tools (such as languages and cultural tools). In this design context, each module is crafted with careful attention to integrating local business processes, community power structures, norms, and rules identified during the diagnosis stage that are prominent in local sharing practices. For instance, in property rental activities, local rules require the tenant to pay a certain amount of down-payments, known locally as 'qabd', after both parties have reached an agreement on the rental terms. This payment is typically considered a guarantee to uphold the agreement. Therefore, the "Agreement Management Module" should be designed to incorporate this and other similar rule. In general, designing the digital platform modules requires consideration of and incorporation of such local rules, which is an essential aspect of contextual design. Moreover, the

Table 2: List of Packages, Sub-Packages, and Modules

Package	Sub-Package	Modules
Product Service Market	Product Market	Product Registration, Search, Negotiation and Chatting, Order Management, Agreement Management, Payment Management, Sales Management, Delivery Management, Feedback and Compliant Management
	Service Market	Service Registration, Search, Negotiation Management, Booking, Agreement Management, Payment Management, Service Delivery Management, Feedback and Compliant Management
	Property Rental	Asset Registration, Rental Asset Search, Rental Request, Agreement Management, Rental Management, Payment Management, Feedback and Compliant Management
Government Support	Government's Finance Provision	Announcement Management, Application and Selection Management, Financial Provision Management, Payment Management, Follow-up Management
	Government's Workspaces Provision	Announcement Management, Application and Selection Management, Financial provision Management, Payment Management, Follow-up Management
Supply Collaboration	Machine and Equipment Swap	Equipment Registration, Search Management, Agreement Management, Swapping Management, Equipment Returning Management, Follow-up Management
	Joint Purchasing	Create Activity, Activity Announcement, Create Group, Payment Management, Purchasing Management, Distribution Management, Follow-up Management
Financial Collaboration	Peer-to-Peer Finance (EQUIB)	Initiate and Announce EQUIB, Application and Selection, Role Assignment, Collect Contribution, Identify Fund Recipients, Reimburse Funds, Payment, Audit EQUIB, Claim Settlement, Settle Dividend
	Saving and Credit Services	Initiate and Promote the Credit Union, Membership application and selection, Periodic saving management, Credit processes Management, Audit the credit unions, Resignation Management, Report Management
Investment Collaboration	Joint Investment (AXIONs)	Investment Initiation and Promotion Management, Shareholders Registration, Shareholders Assembly and Signature, Share Exchanges, Payments, Audit Management, Dividends Management, Report Management
	Employment	CV Management, Application Management, Talent Selection Management, Recruitment and Contract Management, Job Assignment Management, Payment Management
	Sub-Contract Work	Contract Work Registration Management, Application and Selection, Job Assignment Management, Contract Management, Payment Management

design took into account the importance of user interface (UI) design by considering the physical tools, such as users' experience with digital devices, as well as the psychological tools, such as language usage in local sharing practices.

Structures and Organisation The proposed design suggested a platform architecture that emphasises interoperability between the core components and the identified packages. Figure 7 shows the proposed architecture of the digital sharing platform. The core components were modelled by including user management, activity tracking and log management, secure authentication and authorisation mechanisms, communication and messaging features, and administrative tools.

The design organised each package as an independent layered collection of components containing data storage, business, and presentation logic. Separated databases are proposed for the platform core as well as for each solution package. Separating databases allows each package to perform autonomous operations with distinct data (Deryabin et al., 2023; Laigner

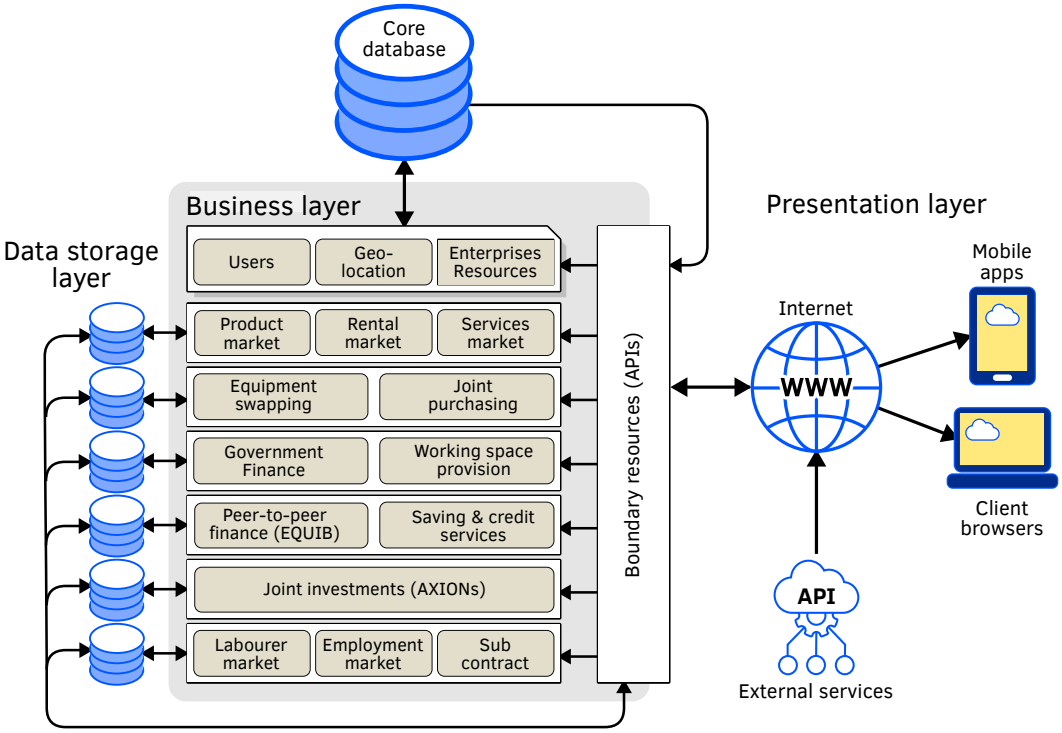

Figure 7: Architecture of the digital sharing platform

et al., 2021). Moreover, the design emphasised the inclusion of boundary resources (APIs) within both the core of the platform and each package. These boundary resources serve as interfaces that allow the core and packages to expose their functionalities to other components within the platform ecosystem. APIs may be internal or external to the platform. Internal APIs facilitate the interfacing between modular components or application packages in the platform core and other internally developed solution packages. External APIs often interface the platform with external applications. The presentation layers contain the user interfaces.

3.3 Implementation Cycle

In the implementation cycle of the EADR process, the emphasis is on instantiating artefacts. In this research, an incremental approach was adopted for the implementation process, allowing for ongoing improvement and refinement.

During the first iteration, the platform core modules were implemented. To accomplish this, the research utilised an open-source platform framework called DNN_Platform_9.12.1 Community Edition. This framework was selected for its inclusion of essential platform core modules that handle crucial tasks such as log management, message management, user account management, role management, and security. Furthermore, it provided the flexibility to develop modules as independent projects using Entity Framework 6.02 and MSSQL Express 8th edition or above. In addition to these basic modules, the implementation stage incorporated geographic locations, enterprises, activities, and resource modules as the core components of the digital platform.

Moving to the second iteration, the focus shifted to implementing the APIs for the platform

core. For the sake of simplicity, APIs are implemented as RESTful services. In the third iteration, this study focused on implementing modules that facilitate actions within SMEs' local sharing practices. Due to limitations in time and funding, it was not feasible to implement all of the solution packages. Consequently, the study prioritised the implementation of the 'property rental' package, as it is closely associated with SE and collaborative consumption activities. Figure 8 shows a snapshot of the home page for rental management packages.

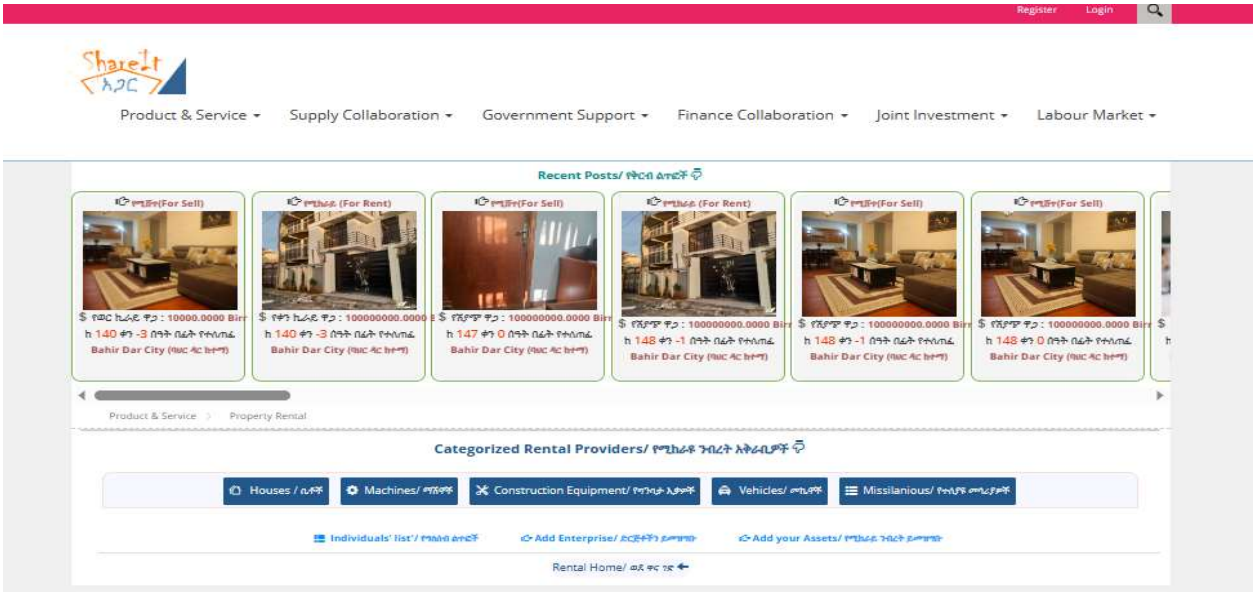

Figure 8: Property rental home page

The rental market solution contains 'asset registration', 'rental-asset-search', 'rental-requests', 'rental-agreement', 'rent-registration', payment, 'reminder', and 'feedbacks' modules. The 'asset registration' module allows providers (individuals or enterprises) to post, view, edit, and delete rental assets. 'Rental asset search' modules allow consumers to view details, search, and, 'create cart lists'. The module allows consumers to see the posted item based on the enterprise. The 'rental request' module allows consumers to create, view, modify, and delete rental requests. It additionally allows providers to approve or reject consumers' requests. The 'rental agreement' module permits providers to create, modify, delete, view, and print agreements. It also allows consumers to view, sign, and reject agreements. The 'payment' module allows consumers and providers to create, transfer, and view payments. The 'rent registration' module allows the provider to create, delete, modify, or view rental transaction information. The 'reminders' module allows providers to post, modify, or delete different reminders to consumers. It also allows the consumer to read the reminders. The 'feedback' module allows the consumer to create, delete, modify, and delete feedback. It also allows providers to view the feedback of the consumer.

3.4 Evolution Cycle

The final stage of the EADR focuses on analysing the evolution of the artefact over time, considering changes in the problem environment and the iterative development of the artefact

solution (Mullarkey & Hevner, 2018). Typically, this stage of the process spans a long-term project. However, in this study, the initial acceptance of the digital sharing platform was included as part of the evolution cycle.

The initial acceptance of the designed digital sharing economy platform is evaluated based on users' intention to use the services running on the digital sharing platforms.

Researchers have so far utilised theories such as the Technology Acceptance Model (TAM) (Kamal et al., 2020), the Theory of Planned Behaviour (TPB) (Shneor & Munim, 2019), the Unified Theory of Acceptance and Use of Technology (UTAUT) (S. A. Rahman et al., 2019), Diffusion of Innovation (DOI) (Attié & Meyer-Waarden, 2022), and the Technology, Organisation, and Environment (TOE) frameworks (Kouhizadeh et al., 2021) to evaluate technology acceptance related research. This research selected the TOE framework since it is suitable for evaluating technology acceptance in organisations including SMEs and allows us to see environmental as well as technological factors (Ghobakhloo & Ching, 2019).

3.4.1 Conceptual Model and Hypothesis

The TOE is a technology acceptance assessment framework that is based on organisational-level theory (Bokolo & Petersen, 2022). It incorporates technological, organisational, and environmental contexts as factors to evaluate the acceptance of technology in organisations. This study applied the TOE framework to test nine different factors under three separate contexts (technological, organisational, and environmental) in terms of their direct effect on SMEs' intention to use the designed digital sharing economy platform for their sharing activities. Figure 9 shows the property rental system's initial acceptance evaluation model.

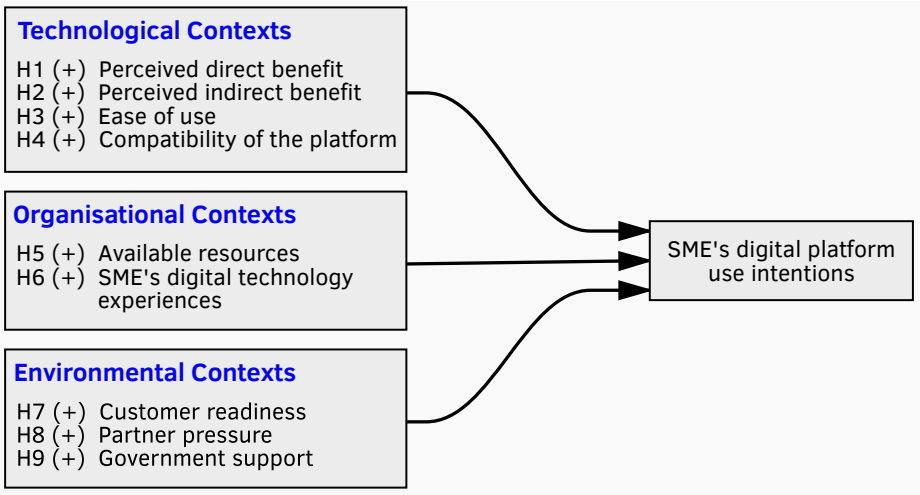

Figure 9: The 'property rental system's' initial acceptance evaluation model

The technological context indicates factors concerning the features of technologies that affect technology acceptance (Bokolo & Petersen, 2022). The complexity, compatibility, perceived direct benefit, and perceived indirect benefit are factors that affect technology acceptance (Abed, 2020). The perceived direct benefit indicates the potential of the platform to enhance operational efficiency and reduce operational costs. The perceived indirect benefits

indicate the anticipated improvements by the user in expanding relations and customer bases. Ease of use refers to the degree to which the user estimates being able to use the technology without much effort (Abed, 2020). Compatibility indicates the degree to which the technology is aligned with the values, rules, processes, cultures, and languages (Abed, 2020).

In the context of technological factors, four hypotheses were formulated regarding the designed digital sharing economy platform. The assumptions were as follows:

H1 The perceived direct benefits observed from the newly designed digital sharing platform have positively influenced individuals to use the technology for their local sharing activities.

H2 The perceived indirect benefits observed from the digital platform have positively influenced individuals to use the technology for their local sharing activities.

H3 The ease of use of the digital platform has positively influenced individuals to use the technology for their local sharing activities.

H4 The compatibility of the digital platform has positively influenced individuals to use the technology for their local sharing activities.

The organisational context indicates multiple institutional factors that affect the users' technology use intention (Abed, 2020). This study considered organisational factors that affect the use intentions of the designed digital sharing economy platform. In terms of this, the study produced two hypotheses as follows:

H5 The resources available in the SMEs have positively influenced the users' use intention of the designed sharing platform.

H6 The SMEs' previous digital technology experience has positively influenced the users' use intention of the designed sharing platform.

Lastly, the environmental context indicates factors such as consumer readiness, competitor pressure, and government support that can affect users' intention to use the designed digital sharing economy platform. In this respect, the study produced three hypotheses:

H7 The rent consumers' readiness and experiences on digital platforms have positively influenced the users' use intention of the designed sharing platform.

H8 The competition from other SMEs' digital platforms has positively influenced the users' use intention of the designed sharing platform.

H9 Government pressure has positively influenced the users' use intention of the designed sharing platform.

3.4.2 Sampling and Data Collection

Data was collected from a sample of 123 individuals, including SME owners or employees and rental consumers who had experience in providing or consuming rental properties. The participants were conveniently selected from the town of Bahir Dar, considering its proximity to the researchers and the ease of introducing them to the digital sharing economy platform. To gather the necessary information, standardised questionnaires comprising demographic questions and 28 5-Likert scale questions were prepared. Before completing the questionnaires, participants were given 20 days to explore and utilise the rental market application that operates on the digital sharing economy platform.

3.4.3 Participants

The results indicate that the majority of participants were male, aged between 22 and 30 years, with technical education backgrounds and business experience ranging from one to five years. The respondents were equally distributed across various sectors including trade, construction, manufacturing, and services. For further details, please refer to Figure 10, which presents the demographic characteristics of the participants.

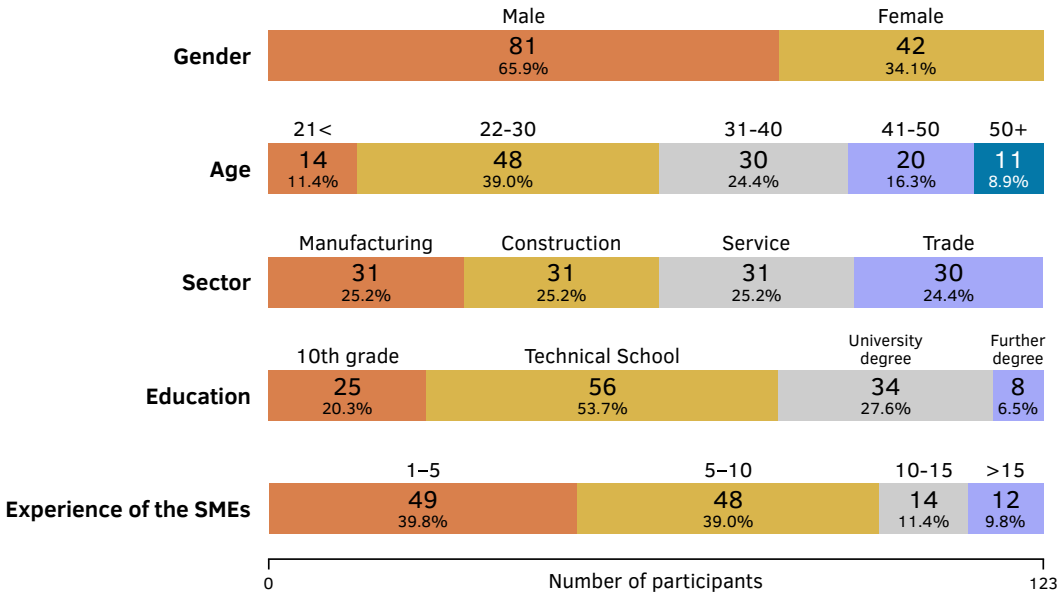

Figure 10: Demographic characteristics of the participants

3.4.4 Data Analysis

The study used a structural equation modelling (SEM) technique (Gupta & Shankar, 2022). The study specifically applied the partial least squares SEM (PLS-SEM) technique since it is suitable for research with a small sample size (Dash & Paul, 2021). It is suggested that the minimum number of participants in the study should be ten times the number of indicators associated with the most complex constructs or the number of antecedent constructs linked to an endogenous construct (Kock & Hadaya, 2016). In this study, the number of indicators

for the complex constructs and the number of antecedent constructs linking to an endogenous construct was six and nine respectively. Hence, the sample size of 123 was acceptable in terms of using the PLS-SEM technique (Hair et al., 2020). Analysis in PLS-SEM consists of measurement and structural modelling tasks (Hair et al., 2020).

3.4.5 Measurement Model

The measurement model examins the relationship between variables and their measures (Hair et al., 2020). It assesses the reliability and validity of instruments (Legate et al., 2021). Reliability indicates the consistency of the interpretation of the instrument's questions. The study assessed the internal consistency of the measurement using Cronbach-α and Composite Reliability (CR) scores (Legate et al., 2021). The minimum Cronbach-α score found in the study was 0.799, which is above the accepted value (0.5) (Vaske et al., 2016). CR measures the internal consistency of indicator loading on the latent variable (Vaske et al., 2016). The result showed a minimum CR (ρ-a) value of 0.800, which is also above the accepted value (0.7) (Vaske et al., 2016).

Convergent validity measures the closeness of the new scale with other variables and other measures of the same variable. Convergent validity is often measured by its factor loading and average variance extracted (AVE) score. The results show a minimum of 0.783 AVE score for a construct, that is above the threshold of the accepted score (0.5). The results also show that all outer factor loading scores are greater than 0.823 which is above the minimum accepted value of 0.7. The discriminant validity indicates the degree to which items differentiate a construct from other constructs and measure distinct concepts (Hwang et al., 2023). This research used the Hetrotrait–Monotrait ratio (HTM) matrix score to assess the discriminant values. The results show the maximum HTMT score value of 0.844, which is valid and less than the maximum threshold value of 0.85 (Hwang et al., 2023). Table 3 shows the reliability measures of Cronbach-α, CR, and AVE.

Table 3: Reliability measures according to Cronbach's α, CR, AVE

Contexts Type	Variables	Code	Items	Cronbach's α	CR	AVE
Technological	Perceived Direct Benefit	PDBft	5	0.938	0.949	0.787
Technological	Perceived Indirect Benefit	PIBft	2	0.874	0.940	0.887
Technological	Ease of Use	EseUs	5	0.933	0.948	0.783
Technological	Compatibility	Cmpty	4	0.912	0.938	0.791
Organisational	Enterprise Resources	ErRsrs	2	0.923	0.942	0.844
Organisational	Enterprise Experiences	ErExps	3	0.880	0.942	0.891
Environmental	Consumer Readiness	CmRds	2	0.800	0.909	0.833
Environmental	Competitor Pressure	CptPrss	2	0.904	0.952	0.908
Environmental	Government Pressure	GvPrss	2	0.921	0.962	0.926
Dependent Variable	Use Intentions	UseInt	2	0.914	0.958	0.919

3.4.6 Structural model

The structural model indicates the relationship between the independent and dependent variables. In this regard, the study first conducted hypothesis testing. The hypothesis testing estimated the significance of the relationships between the independent variables and dependent variables in each assumption using a critical t-value from the first-round bootstrap. Table 4 shows the first round of bootstrap results. The results show unacceptable relationships (>0.05) for two assumptions (A8 (0.173) and A9 (0.138) in H8 and H9). The structure was then remodelled by removing the two assumptions. The second-round bootstrap result shows significant relationships between the independent and the dependent variables in the remaining assumptions. Validity and reliability measures were again done for the new model and were found to be acceptable. An analysis of the remodelled structure was then done.

Table 4: First round bootstrap results

Paths	**T statistics** $\lvert O/\text{STDEV}\rvert$	**P Values**	**Status**
CmRds→UseInt	2.879	0.004	Accepted
Cmpty→UseInt	3.443	0.001	Accepted
ErExps→UseInt	2.950	0.003	Accepted
ErRsrs→UseInt	2.262	0.024	Accepted
EseUse→UseInt	3.353	0.001	Accepted
PDBft→UseInt	2.218	0.027	Accepted
PIBft→UseInt	2.442	0.015	Accepted
CptPrss→UseInt	1.485	0.138	**Rejected**
GvPrss→UseInt	1.361	0.173	**Rejected**

The coefficient of the determinant R^2 indicates the amount of variance in a dependent variable explained by the independent variable. The closer the R^2 value to one, the better the model's ability to predict the dependent variable. The findings show R^2 values of 0.879 for the dependent variable related to variables in the remaining assumptions. Similarly, the results of the path coefficient (β) values of each construct show the positive relationship between the independent and dependent variables. Table 5 shows the results of the structural model analysis. Figure 11 shows the structural model of the study with its R^2 and path coefficient (β) values.

3.4.7 Initial User Acceptance Assessment Results

Results show a positive association between the selected factors and the users' digital platform use intentions. Comparatively, technological factors influenced users to develop intentions to use the designed digital sharing economy platform for their rental activities. In particular, the compatibility of the digital platform ($\beta = 0.225$, $f^2 = 205$), the perceived direct benefit observed from the digital platform ($\beta = 0.207$, $f^2 = 132$), and the ease of use of the platform ($\beta = 0.186$, $f^2 = 109$) significantly influenced users to develop an intention to use the designed

Table 5: T Statistics, P Values, Path Coefficients (β)

Paths	**Sample Mean** M	**Standard Deviation** STDEV	**T statistics** |O/STDEV|	**P**	**Path coefficient** β	f^2	**Correlation**
CmrRds → UseInt	0.119	0.044	2.766	0.006	0.121	0.084	0.581
Cmpty → UseInt	0.225	0.069	3.279	0.001	0.225	0.205	0.770
ErExps → UseInt	0.155	0.061	2.535	0.011	0.154	0.107	0.717
ErRsrs → UseInt	0.183	0.061	2.996	0.003	0.184	0.153	0.706
EseUs → UseInt	0.191	0.058	3.184	0.001	0.186	0.109	0.782
PDBft → UseInt	0.208	0.079	2.614	0.009	0.207	0.132	0.790
PIBft → UseInt	0.148	0.042	3.634	0.000	0.152	0.140	0.565

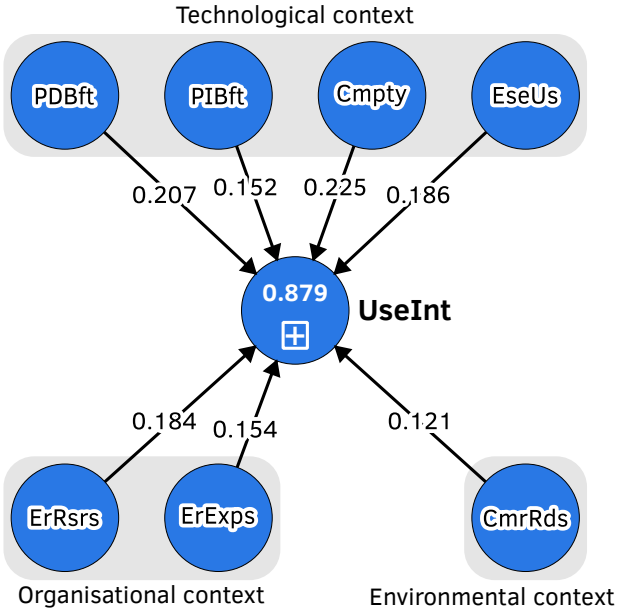

Figure 11: Structural model of the study with its R^2 and path coefficient variables, β.

digital sharing economy platform. Moreover, the indirect perceived benefit observed from the platform positively influenced (β = 0.152, $f^2 = 140$) the users' use intentions. Results also show the positive influence of organisational contexts. Enterprise resources (β = 0.184, $f^2 = 153$) and the users' previous experience (β = 0.154, $f^2 = 107$) show a positive association with the users' digital platform use intentions. Environmental contexts, however, showed little influence on the users' digital platform use intentions.

4 DISCUSSION

The goal of this study was to explore the design of a digital sharing economy platform for SMEs in resource-constrained countries. It specifically examined how these platforms can be tailored to meet the needs of SMEs based on their local sharing practices. While previous

research has highlighted the importance of the sharing economy and associated digital platforms in promoting collaboration and resource optimisation (Belk, 2014), this study addressed a significant gap: the need to adapt the sharing economy concept to the unique cultural and economic conditions of SMEs in developing countries. By analysing local sharing practices, this research connected these practices with the design of digital sharing platforms, offering new insights from Ethiopian SMEs to the literature on the sharing economy.

The study employed the Elaborated Action Design Research (EADR) methodology, which is effective for technology design (Mullarkey & Hevner, 2018). In the diagnosis phase of EADR, the research examined the activities involved in local sharing practices among SMEs, using Activity Theory (AT) as a guiding framework. Although AT is recognised for understanding social and technical systems (Kaptelinin & Nardi, 2017), this study uniquely utilised it to explore local sharing practices within Ethiopian SMEs. This approach can enrich existing literature by demonstrating how established theories like AT can enhance our understanding of activities in specific contexts, ultimately aiding in the design of digital platforms that fit local needs. This approach could enhance conventional participatory design methods, which often rely on inductive idea gathering through brainstorming without a solid theoretical foundation. By incorporating proven theories such as Activity Theory (AT) to guide the process, it becomes a more effective and structured approach.

Applying AT had several benefits. Firstly, it facilitated the identification of sharing practices unique to the local community, such as EQUIB (a traditional peer-to-peer collaboration practice), AXION (a local practice of joint investments), second-hand product exchanges, rental activities, labor market interactions, and savings and credit activities. Secondly, the theory provided valuable insights into the structural elements of these local practices, encompassing activities, actors, stakeholders, motives, resources, goals, actions, rules, and tools. Thirdly, AT emphasises that the specification, design, and evaluation of technology should occur within the context of an activity (Kaptelinin & Nardi, 2017), allowing for the direct elicitation of design requirements from the results of the activity analysis.

In the design cycle, the researchers elicited contextual design principles and defined the features of the proposed digital sharing economy platform. These principles were based on the local sharing practices of SMEs and the unique aspects of designing digital platforms. This approach allows the design process to consider both the users' context and the specific attributes of the technology. Assessing these contextual design principles helped to identify SMEs' requirements, which can then be translated into automated solutions within the digital platform. Investigating key design aspects – such as purpose, boundaries, components, and context – was also essential for understanding the constructs of the technology concerning the unique nature of digital platforms. While contextual design is typically viewed as user-centered, focusing on user interests, needs, and scenarios, this study expands the concept by incorporating the specific nature of technology and best practices in its design. These considerations align with existing literature that conceptualises digital platform technology in terms of its purpose, boundaries, components, and modularity (de Reuver et al., 2018).

Beyond the design principles, the characterisation of the digital platform was developed to support local sharing activities. Results from the diagnosis cycle informed the design requirements, including the platform's purpose, boundaries, components, structures, and contexts. Understanding the motives and goals of local sharing practices was crucial for aligning the

platform's purposes with these factors (Bonina et al., 2021). Knowledge about the types of sharing activities, resources, and stakeholders helped define the platform's scope and boundaries, contextualising its design (Gawer, 2021b). The findings regarding goals and actions were instrumental in eliciting requirements for the components, which are essential for facilitating collaboration and communication among stakeholders (Spagnoletti et al., 2015). In this context, the identification of 13 local sharing models provides a practical framework that has been largely absent in prior research, which often presents theoretical constructs without actionable insights. Additionally, the analysis of rules, tools, and norms was significant in contextualising the design of components that provide functionalities aligned with each stakeholder's actions.

Beyond the design principles, the characterisation of the digital platform's design was done in a way that supports the local sharing activities. Results obtained from the diagnosis cycle were utilised to inform the design requirements of the digital sharing economy platform, including its purpose, boundaries, components, structures, and contexts. Understanding the motives and goals in the local sharing practices was crucial for making informed decisions on the purposes of the digital sharing economy platform by aligning with these motives and goals. The knowledge about the type of sharing activities, resources, and stakeholders was crucial in defining the scope and sides of the platform, which helped to contextualise the boundary of the digital platform. The findings from the diagnosis cycle regarding goals and actions were instrumental in eliciting requirements for the components, as these components are crucial in offering functionalities closely linked to stakeholders' actions, facilitating collaboration, communication, and collective actions. In this aspect, the identification of 13 local sharing models offers a practical framework that has been largely absent in prior research, which often presents theoretical constructs. Furthermore, the analysis of rules, DOL, and tools played a significant role in contextualising the design of components that provide functionalities aligned with each stakeholder's actions.

During the implementation cycle, an incremental approach was adopted. The core modules of the platform were implemented in the first iteration, followed by the implementation of APIs in the second iteration. In the third and final iteration, modular components and APIs responsible for specific tasks related to SMEs' sharing practices were implemented.

The evolution cycle of the study focused on empirically assessing the initial acceptance of the designed digital sharing economy platform. This assessment was based on individuals' intentions to use the platform, specifically targeting the rental activity management solution integrated within its services. At this stage, the study adopted a Technology, Organisational, and Environmental (TOE) framework, which is typically used to assess technology acceptance within organisations. While the TOE framework is appropriate for evaluating technology acceptance, this study offers new insights by embedding it within the EADR process model to empirically assess the adoption of new designs. The results indicated that both the technological and organisational contexts positively influenced SMEs' willingness to use the digital platform.

In summary, the study's findings provided valuable insights into contextualising the design of digital sharing economy platforms through the EADR process model. This process model proved instrumental in conducting comprehensive investigations and incorporating diverse ideas, theories, and practices that were relevant to the research problem at hand.

5 LIMITATIONS

The study does have certain limitations that should be acknowledged. Firstly, the focus on understanding design requirements solely based on existing SMEs' sharing practices may have restricted the exploration of potential new sharing models derived from international best practices. This limitation suggests that there could be missed opportunities to introduce innovative sharing approaches that could benefit SMEs in resource-constrained countries.

Additionally, it is important to recognise the limitations of solely assessing the acceptance of the designed digital platform based on users' use intention. By solely relying on this measure, the study overlooks the indirect network effects that are often associated with digital platforms. These effects, such as the number of users on the platform, play a crucial role in shaping its overall quality and success. Therefore, it is essential to consider these indirect network effects when evaluating the acceptance and effectiveness of the designed digital platform. By incorporating a holistic assessment approach, researchers can gain a more comprehensive understanding of the platform's impact and potential for success.

Based on the limitations identified, the study recommends expanding future research to explore innovative sharing models from international best practices that could benefit SMEs in resource-constrained countries. It also highlights the importance of incorporating indirect network effects when assessing digital platform acceptance, advocating for a holistic evaluation that includes both qualitative and quantitative measures. Finally, engaging diverse stakeholders in the design process is recommended, as this can enhance the platform's relevance and usability, ultimately improving its effectiveness for SMEs.

6 CONCLUSION

This study explored the design of a digital sharing economy platform tailored for SMEs in resource-constrained countries, specifically focusing on Ethiopian local sharing practices. Employing the Elaborated Action Design Research (EADR) methodology, the research encompassed diagnosis, design, implementation, and evolution cycles. The findings revealed critical activities and goals in local sharing, leading to the development of a platform architecture that incorporates 13 innovative sharing models. The implementation phase demonstrated practical realisations of the platform, while the evolution phase indicated positive initial acceptance driven by technological and organisational factors. Overall, this study contributes a replicable methodology for designing context-specific digital sharing platforms and highlights policy implications that can guide interventions to support the digital transformation of SMEs, ultimately enhancing their competitiveness in the digital economy.

7 CONTRIBUTIONS

In practical terms, this study presents a replicable methodology for designing digital sharing platforms that can be tailored to specific local contexts. A key focus is placed on identifying core design aspects such as purpose, boundaries, components, structure/organisation, and contexts, which can be adapted to fit local requirements. By utilising Activity Theory (AT),

the study effectively investigates and understands local sharing practices, providing valuable insights to inform the design requirements of digital sharing economy platforms.

In terms of policy implications, the study identifies key areas where policymakers can intervene to facilitate the digital transformation of SMEs. By understanding the essential sharing areas highlighted in the study, policymakers can focus their efforts on supporting and promoting the development of digital sharing economy platforms within these specific domains. This insight can help policymakers shape policies and initiatives that foster the adoption and utilisation of digital platforms, ultimately empowering SMEs in their digital journey.

In summary, the study's contributions to the practice of IS and policy of digital transformation. The methodology it offers for investigating local sharing activities and designing digital platforms can guide practitioners in the field. Policymakers can leverage the study's insights to identify areas for intervention and support in the digital transformation of SMEs.

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