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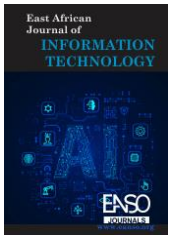

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Original Article

Relation-Theoretical Reflection on Algorithmically Controlled Service Interaction: A Theoretical Analysis

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ABSTRACT

Digital service systems not only change processes but also the symbolic foundations of customer relationships. This work analyses, based on theory, how central relationship categories such as trust, closeness and commitment shift under conditions of algorithmic mediation. At the centre is the thesis that algorithmically mediated interactions do not generate classic relationships, but functional simulations of relational patterns. The analysis is carried out without empirical data collection and is based on system and interaction theory models, particularly those of Luhmann, Coleman, Maslow and Mead. Using the case study of the "cash machine" and supplementary observations in the retail and healthcare sectors, it is shown how technological systems replace social depth with functional reliability. Trust becomes a system expectation, proximity an interface gesture, and relationship a technical configuration. The study concludes with a theoretical condensation and discusses the need for new conceptual approaches beyond classical relationship theories. The work sees itself as a contribution to the conceptual clarification of algorithmically mediated social relationships and argues in favour of a differentiated view of digital service interaction beyond functionalist efficiency rhetoric and anthropomorphic illusions. The conceptual scope and lack of empirical data highlight the theoretical nature of this study and indicate directions for future empirical research.

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INTRODUCTION

The introduction of automated systems in the service sector is not only changing processes, but also the semantic foundations of the relationship between the organisation and the customer. What used to be characterised by interaction between people is increasingly being replaced by technological interfaces. For example, a friendly bank clerk once greeting a customer at the counter is now replaced by an ATM prompt guiding the user through a scripted process—illustrating how communication turns into configuration. This shift is not merely functional, but constitutive for the understanding of trust, closeness and belonging in the digital age. The change affects the symbolic order of the service itself: Communication becomes configuration, relationship becomes function, and trust becomes a calculable system reaction.

This paper analyses this transformation theoretically and reconstructs how customer relationships change under the influence of algorithmic control. The analysis is not empirical, but systematically conceptualised. The approach is theory-based, drawing on Luhmann's concept of trust as a risk relationship (2000), Coleman's theory of social capital (1988) and Maslow's hierarchy of needs (1987). At the centre is the question of whether and how relationships can exist under conditions of technical mediation when closeness is no longer experienced but generated.

A key example serves as a starting point: the automated teller machine (ATM). As an early form of automated service, the ATM fundamentally changed the structure of banking, not only through efficiency gains, but also through the depersonalisation of a previously personal contact. The question of how customer loyalty, trust and interaction density have changed as a result forms the theoretical frame of reference for further analysis. ATM represents a paradigmatic shift: from dialogue-based communication to process-based standardised interaction without a counterpart.

This work aims to provide a theory-based modelling of algorithmically mediated customer relationships. The concepts of relationship, trust and service are not assumed, but are analysed in terms of their validity under digital conditions. The analysis is carried out without data collection, instead by conceptually comparing classical theories with current phenomena of automation. Methodologically, the work is oriented towards an essayistic-analytical form of thinking, which is based on Adorno's understanding of theory, according to which theory does not depict, but rather opens up.

The structure follows a structural logic: first, the theoretical foundation is laid, followed by a methodological localisation. The example of the ATM is then analysed as a paradigmatic case of a relationship transformation. This is followed by in-depth conceptual analyses of other service contexts. Finally, the central results are conceptually summarised.

THEORETICAL FRAMEWORK AND STATE OF RESEARCH

Dealing with customer relationships in the age of automated services requires a theoretical clarification of those terms that were previously based on personal communication. Three concepts in particular come into focus here: trust, relationship and social capital. These are analysed below from a sociological, psychological and economic theory

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perspective in order to make the semantic changes under algorithmic conditions visible.

Trust as a Risk Relationship (Luhmann)

Trust is not a stable state, but a mechanism for reducing social complexity. Luhmann (2000) describes trust as a risky advance that makes it possible to act under uncertainty. This advanced performance presupposes that the addressee is understood as a responsible subject. However, if the interaction is replaced by technical systems, this subject position no longer applies. The relationship of trust is depersonalised and transformed into an expectation of technical functionality.

Automated systems such as chatbots or algorithmic recommendation units do not generate intentionality. Nevertheless, they do not generate trust in the Luhmannian sense as a social expectation, but as functional reliability. This shifts the meaning of the term: trust becomes the operational readiness of technical systems. The semantics remain, but their social depth structure disappears.

Social Capital and Relationship Experience (Coleman)

Coleman (1988) sees social capital as a resource that lies in social structures themselves, particularly in repeated interaction, reciprocity and normative reliability. In the classic customer relationship, this means Loyalty and commitment are not based solely on economic transaction, but on experiential knowledge, cultural imprinting and implicit patterns of understanding.

The introduction of automated systems interrupts this flow of experience. Contact is no longer structured by personal contact, but by interfaces. The relationship flattens out, social capital is not reproduced but functionalised. Relationships are simulated but not lived. This puts pressure on a central element of long-term customer loyalty: trust in the recognisability of social roles.

Maslow's notion of belonging and recognition directly resonates with Coleman's understanding of social capital as relational resources embedded in repeated interaction. Where these psychosocial needs are satisfied through personal ties, social capital accumulates—yet under algorithmic mediation, both become structurally eroded.

Psychosocial Needs in Interaction (Maslow)

Maslow (1987) positions trust, belonging and recognition as the central needs of human motivation immediately after physical security. These psychosocial needs arise in relationships that are based on reciprocity, resonance and situational embedding. Digital systems, on the other hand, replace these social ties with designed interaction patterns.

An interface that uses personalised language suggests closeness. However, this closeness is not experienced, but generated. In Maslow's conceptualisation, the need remains, but its satisfaction is shifted to the sphere of simulation. This results in a structural tension: the appearance of social bonding remains, but its intersubjective basis no longer exists.

State of Research on the Automation of Relationships

Empirical studies on human-machine interaction show that users often interpret algorithmic systems in an anthropomorphic way (Wirtz et al., 2018). This attribution occurs not despite, but because of uncertainty: systems that communicate in a personalised way are experienced as social even though they do not carry any intention. In this context, Zuboff (2019) points to the profound shifts created by "behaviour-based targeting" in digital capitalism. Trust is not earned here, but calculated.

At the same time, economic models of relationship marketing show that trust and commitment in technologically mediated relationships only have a lasting effect if interaction is experienced as authentic (Morgan & Hunt, 1994). The interface

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design, therefore, not only assumes a functional role but also a symbolic role with a direct impact on the experience of the relationship.

METHODOLOGY AND RESEARCH DESIGN

The present work follows a theory-based cognitive interest. The aim is to visualise conceptual transformations that arise in the course of automated service interaction. Rather than drawing on empirical data, it uses a modelling, reflexive-analytical approach that reconstructs semantic shifts in key concepts, in particular trust, relationship and proximity. The approach is heuristic, not hypothesis-testing, and is oriented towards an epistemologically critical form of theory building.

Research Design

The work operates within the framework of an individual conceptual analysis. It combines theoretical systematisation with a reflexive sharpening of concepts. The central concepts are not operationalised, but examined in terms of their cultural, social and semantic structure. The methodological aim is to develop an analytical framework of interpretation that is suitable for understanding algorithmically mediated customer relationships beyond functionalist model logic. The basis is the understanding that theory is not a representation, but an interpretative approach to phenomena (Adorno, 1958).

Methodological Approach

The analysis follows an essayistic-analytical approach that aims at discursive contrast and conceptual clarification. This does not exclude contradiction, ambivalence and conceptual ambiguity, but utilises them productively to clarify complex social interdependencies. The theories of Luhmann (2000), Maslow (1987) and Coleman (1988) do not serve as models for empirical testing, but as instruments for semantic in-depth exploration. While this conceptual approach enables an in-depth semantic exploration, it inevitably leaves out the lived experiences and perspectives of actual users interacting with algorithmic systems. This omission represents a methodological limitation that future empirical research could address to complement and test the theoretical insights presented here.

Case-based Reference

A historical example is used to illustrate and structure the semantic change: the cash machine (ATM). This is regarded as a paradigmatic forerunner of technological decoupling in the service sector. Its introduction marked a shift from dialogue-based customer interaction to process-based automation with far-reaching implications for trust, proximity and customer loyalty. ATM is therefore not analysed empirically, but rather conceptually elaborated as an analytically reconstructive case study.

Epistemological Reflection

The choice of a theory-based, non-empirical approach is not a methodological shortcoming, but an epistemological decision. Concepts such as trust or relationships cannot be transferred seamlessly into standardised measurement procedures. Their significance lies in their cultural content, not in their countability. The essayistic form of thought makes it possible to keep these meanings in motion and to question them critically with regard to social transformation processes.

ANALYSIS: AUTOMATED CUSTOMER RELATIONSHIP IN CASE COMPARISON

The introduction of the Automated Teller Machine (ATM) represents an early turning point in the history of the technological automation of services. Since the 1970s, the ATM has fundamentally changed the structure of banking communication: it shifted interaction from the space of interpersonal contact to a technical infrastructure. This transformation was not just procedural, but semantic. The customer no longer had a relationship with a person, but with a system. An interaction became a process.

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Technological Context and Institutional Change

The ATM fulfilled a clearly defined function: cash dispensing without counter staff. This not only rationalised the service but also recorded the location of the relationship. The physical presence of a bank employee, combined with a personal approach, advice and trust, was replaced by an interface. The bank branch lost its function as a place of social bonding and became a logistical unit. The relationship between the bank and the customer was depersonalised without being formally terminated.

In this respect, the ATM is paradigmatic of an infrastructural shift in customer communication. From an economic perspective, efficiency increased (Morgan & Hunt, 1994). From a sociological perspective, however, the symbolic quality of the service came under pressure. From then on, trust had to be replaced by system reliability, not by intersubjective experience, but by standardised response.

Social Capital and Relationship Erosion

Following Coleman (1988), it can be argued that the ATM fundamentally changed the conditions of social capital in the banking relationship. Previously, loyalty was based on personal stability, recognisability and social ties. The switch to ATM interaction interrupted this dimension of experience. Reciprocity gave way to functionality. Trust was shifted to technology and thus transferred from the realm of normative commitment to the sphere of system logic.

The result was a relationship without a relationship: functionally effective, but socially empty. The structural bond remained in place, for example, through account management or contractual relationships, but the symbolic elements that fuelled belonging and recognition receded. In Maslow's terminology (1987), the need for security was technically fulfilled, but the need for belonging remained unanswered.

Table 1 illustrates the shift in relationship dynamics before and after the introduction of ATMs as a paradigmatic case of algorithmically mediated service interaction.

Table 1: Pre- and Post-ATM Customer Relationship Dynamics.

Aspect	Pre-ATM	Post-ATM
Interaction	Personal dialogue with bank staff	Automated process via machine interface
Trust	Built through human contact and risk-taking	Based on technical system reliability
Social Capital	Reinforced through familiarity and repeated encounters	Eroded; no repetition or personal recognition
Closeness	Physical presence and situational interaction	Simulated through interface prompts
Relationship	Deepened by normative expectations and loyalty	Functional, process-based; no intersubjective depth

Source*: Own conceptual compilation based on Luhmann (2000), Coleman (1988) and Maslow (1987).*

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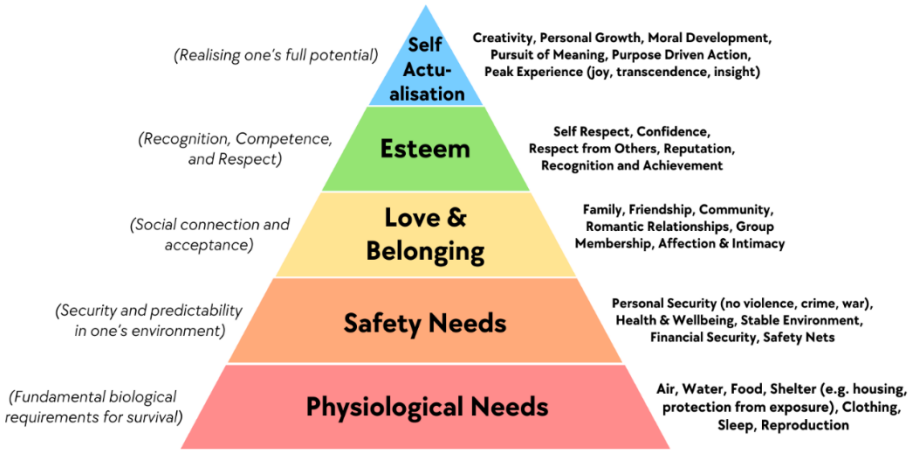
Figure 1: Hierarchy of Needs According to Maslow.



Source: *Own Illustration Based on Maslow (1987).*

Figure 1: Maslow's hierarchy of needs as a model for human motivation. The lower tiers represent physiological and safety needs, which are primarily addressed by automation. Social belonging, esteem, and self-actualisation remain structurally underrepresented in algorithmic service systems. Source: Own illustration based on Maslow (1987).

Anthropomorphic Attribution and Trust Substitution

Although the ATM is a mechanical system, its design has always generated anthropomorphic expectations. User interfaces, voice input, feedback - all this simulates a kind of dialogue without a subject responding. This phenomenon was intensified in later systems, for example, in chatbots or voice interfaces, but ATM was a forerunner. This already shows that systems can suggest trust without anchoring it relationally.

Luhmann's theory (2000) allows this relationship to be interpreted as a shift from trust to reliability. The ATM does not generate trust in the sense of a risky advanced performance, but rather a statistical expectation of functionality. The semantic framework remains relational, but the structure no longer is.

ATM as a Model for Digital Relationships

The analysis of the ATM opens up a conceptually connectable model case for later forms of algorithmic service. Its significance lies not in its technological complexity, but in its social impact: it exemplifies how relationships are transformed when communication is replaced by systems. The resulting erosion of social depth is not limited to the banking industry. It is transferable to other sectors such as retail or healthcare, which are also considered in the following chapters.

ALGORITHMIC SERVICE RELATIONSHIPS IN RETAIL AND HEALTHCARE

The semantic transformation of customer relationships through technological systems is not only evident in the banking sector. Automation is also intervening in symbolic interaction patterns in the retail and healthcare sectors. These fields are particularly revealing as they were traditionally characterised by personal communication, for example through consultations, reception contacts or care interactions. The introduction of digital systems is fundamentally changing these constellations and giving rise to new types of relationships: functionally efficient, but relationally

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unstable. These patterns mirror the ATM case in that they replace interpersonal trust and proximity with what can be described as ‘functional closeness’, a technically simulated but socially shallow substitute for relational depth.

Self-Service Checkouts in Retail

The introduction of automated checkout systems in retail not only replaces human labour, but also removes a central function from the interaction: the mutual recognition between sales assistant and customer. Where eye contact, greetings, queries or casual conversation used to take place, a technical interface now takes over. This does not create a social space, but a process.

Following Maslow (1987), it can be said that the fulfilment of needs is limited to the physical dimension (product purchase). The psychosocial components, such as belonging, recognition or affirmation, are omitted. Relationships are no longer lived, but skipped. Coleman's approach (1988) also makes this shift visible: the self-service checkout does not generate repeated interaction, no reciprocal expectation and therefore no social capital.

The illusion of social proximity often remains, for example, through personalised touchscreens or "friendly" voice prompts. Ekbia and Nardi (2017) refer to such processes as "heteromation", a form of division of labour in which social signals are simulated by technical systems, while essential interactions remain shifted to the customer. The customer becomes both user and interaction partner and implicitly part of the system. This heteromatised relationship feigns closeness, but does not create a bond. But this closeness is simulated. The interaction takes place without memory, without recognition, without history. It fulfils functions, but not a relationship. The result is a silent alienation: The relationship is not ended, but functionalised.

Digital Appointment Allocation and Care Portals in the Healthcare Sector

Automated systems are also having a profound impact on the structure of interaction in the healthcare sector. Appointment allocation via apps, digital consultation hours and robotised care technologies are reducing contact between patients and medical staff. What used to be characterised by familiarity, recognition, and human empathy is increasingly being replaced by platform logic.

This development is ambivalent. On the one hand, it increases accessibility to services, especially in underserved regions. On the other hand, it changes the relationship of trust. In Luhmann's terminology (2000), trust is no longer generated by personal willingness to take risks, but by algorithmically structured expectations. The medical relationship of trust, traditionally characterised by authority and empathy, is losing its depth and is being transformed into interface relationships.

Here, too, social capital is dwindling. Recognisability, informal communication, and emotional ties are all giving way to communication structured by system logic. This applies not only to doctors' surgeries but also to care facilities where automated support systems are used. The boundary between technical assistance and interpersonal care is becoming blurred, and with it the semantic distinction between service and relationship.

Between Conclusion and Deepening

Both sectors exemplify the fact that algorithmic systems not only replace relationships functionally, but also reconfigure them semantically. The terms "trust", "closeness", and "bond" continue to be used, but lose their intersubjective foundation. What remains is a formal continuity without social depth.

TRUST AND PROXIMITY UNDER ALGORITHMIC CONDITIONS

The term "trust" is omnipresent in the digital service economy, but its use often remains unreflected.

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Technological systems are labelled as "trustworthy" even though they have no subject, no history and no accountability. This points to a semantic transformation: trust is no longer understood as a social advance, but as a functional expectation of system behaviour. The interactive quality of the trust relationship, as described by Luhmann (2000), is replaced by technical repeatability. The examples from the banking, retail and healthcare sectors point to a structural pattern. Algorithmic systems not only generate new processes but also reshape the symbolic grammar of relationships.

From Trust to Reliability

In traditional customer relationships, trust is created through experience, risk and social bonding. The customer anticipates the behaviour of their counterpart, not based on statistical certainty, but on personal encounters. Digital systems, on the other hand, are based on the logic of repeatability. Faultlessness, consistency and user-friendliness take the place of relational uncertainty.

This shifts the concept of trust: a social risk becomes a technical expectation. A symbolic credit becomes a functional standard. However, this functional expectation is not based on moral attribution, but on syntactic reliability. Floridi (2013) argues that algorithmic systems are not moral actors because they lack intentionality. Trust placed in such systems is therefore not relational, but epistemically an attribution to processes, not to persons. Coeckelbergh (2020) also emphasises that algorithmic systems merely "perform trustworthiness" without themselves being bearers of responsibility or moral reciprocity. They appear reliable because they react consistently, not because they enter into social obligations. The trust placed in them is therefore structurally asymmetrical: it simulates relationships without establishing them.

The customer does not trust, but relies on a semantic but decisive difference. Trust thus loses its dialogue-based structure and becomes a property of a system.

Closeness without a Relationship

The term "proximity" is also subject to this shift. Systems create closeness through design, through personalised forms of address, through algorithmically generated contact. But this closeness remains superficial. It is not experienced, but generated. It does not bind, but simulates. In Maslow's (1987) terminology, the need for belonging is addressed but not fulfilled.

This decoupling is particularly evident in the language of automated systems: they use personalised terms that refer to reciprocity, even though they have no counterpart. The result is a semantic vacuum: the terms remain relational, but their foundation has been lost. Closeness becomes an illusion, functionally generated but socially empty.

Relationship as a Structured Space of Expectation

Following Coleman (1988) and Mead (1934), relationships can be described as a network of mutual expectations that is stabilised through repeated interaction. Algorithmic systems interrupt this cycle of expectations. They store but do not remember. They react, but do not understand. This eliminates the symbolic connection that is necessary to maintain a relationship as a social structure.

The relationship remains formal, functional, and transactional. But it loses its depth. What appears as a "connection" in the interface is not a relationship in the sociological sense. These are functionally formatted processes without reciprocity. Seaver (2019) describes this constellation as a "trap of expectations", an asymmetrical form of interaction in which systems generate expectations without being capable of reciprocity. Algorithmic relationship thus appears as an answer without a question, as a process without an address. What appears to be customer loyalty is a usage path optimised by prediction without a relational echo.

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The result is an erosion of social capital: the customer is not addressed, but processed.

Conceptual Interim Balance Sheet

The analysis shows that algorithmically mediated service relationships create new semantic fields. Trust becomes a calculated function, proximity a programmed gesture, and relationship a digital process structure. The terms retain their surface, but lose their depth. This not only creates a misunderstanding about the quality of the relationship, but it also changes the expectations associated with service.

The semantic shift is not complete, but it is effective. It does not affect all fields equally, but it follows a structural logic. Systems not only generate processes, they generate interpretation. Those who do not critically scrutinise this interpretation reproduce an idea of a relationship that functions technically but is socially impoverished.

DISCUSSION

The previous chapters have shown that algorithmically mediated services lead to profound semantic transformations. Key terms such as trust, proximity and relationship continue to be used, but in a different context. This change is not merely terminological; it fundamentally affects the understanding of social interaction in organisations. Communication between customers and organisations is not only carried out differently, but also interpreted differently.

The Loss of Depth in Dialogue

At the heart of the transformation is the loss of a deep dialogue structure. While traditional customer relationships were characterised by personal presence, eye contact, situational irritation and linguistic synchronisation, the digital service relationship is based on technical response logic. The relationship becomes a serial sequence of technically orchestrated contact points. This does not correspond to the complete dissolution of closeness, but to its functional emptying. This emptying is not immediately visible because it is masked by linguistic continuities. Systems speak in a "friendly" manner, use personalised forms of address and suggest support. However, these are interface gestures, not social relationships in the sense of Coleman (1988) or Mead (1934). The social semantics are retained, although the structural basis has been changed. This leads to a discrepancy between language and structure.

Technological Rationality and Relationship Simulation

The technological rationality of algorithmic systems produces a new form of relationship simulation. This is not only technically efficient, but also semantically effective. It creates expectation structures that are intended to generate trust without allowing for social uncertainty. In Luhmann's (2000) terminology, the risk of interaction is replaced by repeatability - a form of trust that recognises no responsibility. This development is particularly problematic because it relieves the burden on the customer while at the same time devaluing their interpretative competence. Trust is no longer built up, but assumed as a system quality. The relationship is no longer negotiated, but organised without a subject, without history, without reciprocity. The social function remains, but its interpretability changes fundamentally.

Conceptual Exhaustion and Conceptual Necessity

The previous concepts of "trust", "proximity", and "relationship" are only viable to a limited extent under algorithmic conditions. Couldry and Mejias (2019) describe this shift as "data colonialism", a new form of appropriation in which social actions are no longer aimed at reciprocity but at extractive exploitability. In this understanding, the relationship is no longer seen as a social interaction, but as an exploitable connection opportunity. The resulting semantic void is not a side effect, but a structural principle of data-driven systems. They

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suggest reciprocity where none exists and create expectations that cannot be met. There is, therefore, a conceptual need to make a clearer distinction between functional interaction and social relationships.

The work shows that new concepts need to be developed that take the technical structure seriously without faking social quality. This includes differentiations such as "reliability" instead of "trust", "interface coherence" instead of "proximity", "user relationship" instead of "customer loyalty". This clarification of terms is not only scientifically necessary, but also essential for any ethical, political or normative debate on digital services.

The Scope of the Results

The discussion of algorithmic services is not merely a question of technology assessment. It touches the foundations of how modern organisations shape relationships with individuals. The shift from relationship to structure, from trust to functionality, marks a broader paradigm change in the mediation between institution and person. This perspective contributes to a critique of simulated relationships and invites a careful reconsideration of the language used to describe trust and closeness. It should also be noted that algorithmic mediation does not affect all sectors in the same way. In healthcare, where trust involves vulnerability and empathy, the transition to system-based interaction may erode relational depth more strongly than in retail, where transactions are generally less intimate. This sectoral difference underlines the need for context-sensitive analysis of how ‘functional closeness’ reshapes trust.

CONCLUSION

This study has shown that automated services not only rationalise processes but also fundamentally change the symbolic structure of customer relationships. What used to be characterised by personal communication is increasingly being replaced by technical interfaces with far-reaching consequences for the semantic quality of central relationship categories. Trust is no longer constituted by social experience, but by system logic. Closeness is no longer experienced, but generated. Relationships remain formal, but lose their intersubjective deep structure.

Using the case study of the ATM and other sectors such as retail and healthcare, it became clear that algorithmic systems do not end relationships, but transform them. This transformation is structural, not episodic; it does not affect individual sectors, but the relationship between organisation and customer as such. The theories used, particularly those of Luhmann (2000), Coleman (1988) and Maslow (1987), made it possible to recognise this shift as a loss of relational depth with simultaneous linguistic continuity.

The central result is that under the conditions of automated services, relationships are no longer understood as a social process, but as a technical expectation. This leads to a simulation of a relationship that is structurally effective but semantically fragile. The customer no longer enters into a relationship, but into a sequence of reactions. Trust is operationalised, not earned. Proximity is coded, not shared. The concept of customer loyalty thus loses its historical content.

These results make it clear that new concepts are needed to adequately describe the quality of current service relationships. It is not enough to transfer existing concepts to digital contexts. Rather, a critical revision of the semantic fields that have structured interpersonal relationships to date is required. The digital service relationship is not a continuation of the analogue with other means - it is a different phenomenon. If you want to understand it, you have to be prepared to re-read familiar words. Terms such as ‘interface coherence’ for designed but shallow proximity, ‘system reliability’ instead of traditional trust, and ‘functional bond’ in place of customer loyalty may better capture the structural

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logic of algorithmically mediated service interaction. Such conceptual refinements can help avoid anthropomorphic illusions and align our understanding with the technical reality behind these processes.

LIMITATIONS OF THE WORK

This work is a theory-based reconstruction of a complex process of change. Its strength lies in the analytical sharpening of central concepts under digital conditions. However, the chosen methodology results in necessary limitations, which are not to be understood as weaknesses, but as constitutive framework conditions.

Firstly, the study deliberately refrains from conducting an empirical survey. The analysis is based on theoretical modelling, not on data collection. This enables depth of focus, but limits the generalisability of the statements. The exemplary case references, in particular to ATMs, retail and healthcare, serve as conceptual illustrations, not as empirical evidence.

Secondly, the argumentation operates with classical theories that emerged in historical-analogue contexts. The application of Luhmann's, Coleman's and Maslow's models to digital forms of interaction promotes knowledge, but is not without preconditions. The transfer presupposes a conceptual analogy, which is always accompanied by the risk of semantic truncation.

Thirdly, the essayistic form of presentation is epistemologically chosen, but its openness makes it susceptible to the accusation of lacking systematics. The focus here is on the movement of thought, not on a commitment to unambiguous models. This can be perceived as uncertainty by empirically oriented research approaches.

Finally, the focus of this work remains on the perspective of the organisation and its symbolic communication. The user side - their perception, interpretation and appropriation of algorithmic systems - was not systematically considered. A future study would have to supplement this perspective in order to capture the relationship between the experienced relationship and systemic design more completely.

Despite these limitations, the work opens up a theoretical space of possibility in which relationships, trust and closeness can be rethought under algorithmic conditions. Its limitations are also an expression of its epistemologically critical stance: digitalisation not only changes what is done, it changes how it is thought. Future research could build on this conceptual groundwork by combining it with empirical methods, for example, through mixed-methods studies that capture how users actually experience ‘functional closeness’ and trust in everyday interactions with automated systems.

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