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Fortune or Not? How Context Drives Passive Resistance to Pro-Social Innovations in Base-of-the-Pyramid Markets: An Empirical Study and a Research Agenda

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Abstract

Many innovations, including potentially highly beneficial pro-social innovations, fail to diffuse successfully at the base of the pyramid (BoP). Explanations traditionally emphasize shortcomings in the value proposition or, more recently, interpret non-adoption as a consequence of innovation resistance. This study investigates whether passive innovation resistance (PIR) among BoP consumers should be understood not merely as an individual predisposition, but also as a response shaped by characteristics of the social context. Drawing upon a service ecosystem perspective, we develop and empirically test a model linking three contextual antecedents to PIR among BoP consumers: distrust of retail, use of informal consumption practices, and limitations in resources. Survey data from 282 consumers in Zambia were used to test the model for the case of a mobile-money-related innovation. The findings demonstrate that characteristics of the social context strongly influence PIR. Beyond limitations in resources, distrust of retail and use of informal practices emerge as important antecedents, indicating that in this case, resistance to innovation in BoP settings is not solely a psychological disposition but also a context-dependent response to environmental conditions. These findings extend innovation resistance theory beyond affluent market settings by identifying important contextual antecedents of PIR. From a managerial and societal perspective, the results support the development and diffusion of pro-social innovations that are better aligned with the realities of structurally vulnerable populations, thereby contributing to poverty alleviation and sustainable development.

Keywords: innovation adoption; base of the pyramid; barriers; innovation resistance; context

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1. Introduction

Despite the potentially transformative impact of pro-social innovations in base-of-the-pyramid (BoP) markets, many innovations designed to improve health, sustainability, financial inclusion, or quality of life still fail to achieve widespread adoption [1–3]. Products and services such as solar cookers, clean energy technologies, sanitation systems, and mobile financial services are often introduced with the promise of addressing pressing societal challenges while simultaneously creating new market opportunities [1,4].

Yet, in practice, many of these initiatives experience low adoption rates, fail to scale, or disappear altogether.

This persistent difficulty challenges a long-standing assumption in innovation diffusion and marketing theory: that consumers will adopt innovations when the perceived value proposition is sufficiently attractive [5,6]. Particularly in BoP research, firms, development organizations, and non-governmental organizations (NGOs) have traditionally attempted to stimulate adoption by adapting product features, lowering prices, redesigning packaging, or improving distribution channels [4,7,8]. While such adaptations are sometimes successful, many pro-social innovations continue to encounter substantial consumer reluctance despite their apparent benefits.

This raises a fundamental question: why do consumers resist innovations that appear highly beneficial to their own living conditions? This question is academically relevant, because in answering it we will identify the boundary conditions of innovation diffusion theory, allowing us to generalize it to BoP markets, and eventually make the theory more generally applicable. It is societally relevant, because increasing the diffusion of pro-social innovations and technologies, such as the use of an innovative mobile money financial service, may have a substantial impact on the living conditions, health, and welfare of large populations. Ultimately, it is also managerially relevant, because answering it will support managers in successfully developing and introducing innovations to the BoP, and potentially to find the 'fortune at the bottom of the pyramid' [4].

Research on innovation resistance [9] offers an important alternative perspective compared to a traditional perspective, emphasizing that consumers may resist innovations even before actively evaluating them. Echoing the paradigm shift from a product-dominant logic—which considers the perceived benefits of a product as adoption drivers—toward a service-dominant logic (S-D Logic) [10]—which considers the expected value obtained in the experience of using the product as driving or blocking adoption— resistance research considers the lived experience of the consumer and the potential for the creation of value-in-use more influential than the intrinsic qualities of the product itself in the innovation adoption process. Consumers consider how an innovation fits—or does not fit—into established practices, how it mitigates—or increases—perceived risks, and if it supports—or does not support—their goals of value co-creation [11]. From this perspective, resistance is not irrational or obstructive but can be understood as meaningful feedback about misalignment between the innovation and the consumer's value co-creation processes [9].

The concept of passive innovation resistance (PIR) [12] highlights how consumers may display an initial reluctance toward change that inhibits engagement with new technologies, products, or services. Existing research has largely explained such passive resistance in terms of individual-level traits, such as inertia, preference for the status quo, or resistance to change [12,13].

However, existing conceptualizations of PIR are derived from studies conducted in affluent market contexts, characterized by stable institutions, consumer protection mechanisms, predictable income streams, and extensive consumer experience [14,15]. Consequently, PIR is predominantly understood as an individual-level predisposition or psychological trait.

This perspective may be inadequate in BoP contexts, where consumers operate under conditions of chronic resource scarcity, institutional fragility, uncertainty, and heightened vulnerability. Under such circumstances, reluctance toward innovations may not primarily reflect a stable personality trait or generalized resistance to change, but rather a rational and contextually grounded response to precarious living conditions. Consumers who face uncertain income, a limited margin for error, weak institutional support, and significant

risks associated with failed consumption decisions may reasonably prioritize stability, familiarity, and risk minimization over experimentation with novel offerings.

Consequently, in the present study we argue that PIR in BoP settings should not be understood solely as an inherent consumer characteristic, but also as a phenomenon shaped by the social context in which consumers are embedded. From this perspective, what initially may appear as innovation resistance may represent an adaptive response to structural vulnerability.

Although the concept of PIR has received increasing scholarly attention, existing studies have almost exclusively examined consumers in affluent market settings [14–16]. Consequently, current theorizing primarily explains resistance in terms of individual psychological tendencies, such as inertia or resistance to change, and perceived features of the innovation. Far less attention has been devoted to the extent to which PIR may be shaped by contextual conditions surrounding consumers. This limitation is particularly important in BoP settings, where consumers operate under conditions significantly different from those assumed in most innovation resistance research.

In this study, we therefore focus on answering the following research question: "How do antecedents in the social context of a BoP market setting influence levels of PIR to potential adopters of pro-social innovations?" By identifying limitations in resources, distrust of retail, and the use of informal consumption practices as contextual antecedents of PIR in a BoP context, this study extends innovation resistance theory (IRT) beyond affluent consumer environments and develops a more context-sensitive understanding of consumer reluctance toward innovation. This study's central theoretical contribution is therefore to contextualize PIR. The study begins by outlining the theoretical foundations of PIR and the influence of social context on consumer attitudes and practices. Drawing on existing literature, we identify key antecedents in the social context of BoP and link these to consumer behavior. Based upon this conceptualization, we derive our hypotheses. The proposed conceptual model is then subsequently tested using survey data from 282 consumers in a BoP setting in Zambia. The findings are presented and discussed in the final sections, followed by actionable recommendations, a discussion of the limitations of our approach, and a research agenda.

2. Literature Review

2.1. Innovation Resistance Theory

High failure rates of new products and services are to be expected to some degree, because innovation, as an idea that is new to the unit of adoption [17], requires consumers to adopt changes in price, functionality, and design, and to change their habits or even break with entrenched norms [18]. A large body of research on the process of consumer adoption has emerged to support a better understanding of the process of consumer innovation adoption and provide insight into why some innovations fail [17,19]. On the one hand, innovation diffusion theories focus on understanding the reasons why consumers decide to adopt a certain innovation. On the other hand, the more recently emerged innovation resistance perspective [14] sheds light on possible barriers that hinder consumers in their innovation adoption process. Reasons for resisting innovations are considered categorically different from reasons for adopting an innovation, confirming the value of multiple perspectives [15,18].

IRT highlights that resistance emerges from consumers lived experiences, leading to a reluctance to change from status quo behavior rather than from a deliberate assessment of the attributes of new products or services [20,21]. PIR forms early in the adoption process and, depending on its strength, can lead to passive rejection even before a consumer consciously evaluates an innovation [20]. This challenges traditional, linear models of

the innovation adoption process [17] that position the act of innovation evaluation before a rejection/adoption decision. As innovation resistance unfolds, resistance may occur as active resistance (AIR), where the likelihood of negative attitudes forming during the evaluation of the innovation increases [21]. Importantly, AIR is influenced by the prior presence and intensity of PIR, meaning that the early, unconscious resistance that is driven by PIR as well as a negative attitude toward the innovation driven by AIR are rooted in the social context in which consumers/potential adopters navigate their everyday constraints. In BoP settings, consumers face resource scarcity and are highly influenced by the absence of efficient formal institutions to regulate market transactions [22], which leads to reliance on their social networks and informal consumption practices. Studying innovation resistance in such contexts is therefore essential for designing sustainable solutions that align with local realities and support inclusive development.

Passive Innovation Resistance

PIR is a two-dimensional construct, conceptualized as emerging before any conscious actions of evaluation and decision-making are activated. It is rooted in a default preference for the status quo and a low motivation toward change [9,23]. While research focused on PIR has increased in recent times [16–24], there is a notable lack of PIR-based research in BoP contexts. A range of empirical studies of PIR in affluent contexts confirm that PIR acts as an inhibitor in the innovation adoption process [12,14,24–26]. Thus, the extant understanding of PIR is an understanding of PIR relating to affluent consumers and how these consumers experience satisfaction with their status quo in an affluent consumption context. Equally, the individual level of resistance to change [23], the second dimension of PIR, in these studies relates to the predisposition of affluent consumers in comfortable, institutionally regulated contexts. Because of the significantly different contexts for BoP consumers and the conditions under which individual decisions toward pro-social innovation are taken, it is both important and potentially highly insightful to investigate and develop new and stronger explanations for non-adoption behavior of BoP consumers [27] that are based on an IRT perspective.

2.2. The Influence of Context on Consumer Attitudes and Practices

Within traditional marketing scholarship, context has generally been considered as an external, situational influence shaping consumer attitudes and practices, often operationalized as cultural dimensions, environmental cues, or decision settings. With the development of the S-D Logic framework, however, context is reframed as a dynamic set of unique situational conditions in which value-in-use is co-created [28,29]. This viewpoint challenges the notion that value is statically embedded in products and services but also raises the question of the nature of context and its interplay with consumer attitudes and behaviors.

Consumers often make sense of value and value co-creation in an individual way because they engage with an offering in their own lived context [11] and consider the value-in-use, rather than the inherent value, of a product. The potential value-in-use of a product or service to one consumer in one situation may be entirely different to another consumer in a different context. Their attitude and practices toward a new offering, an innovation, are influenced not only by 'objective' functional benefits, but also by the wider circumstances and experiences within which value co-creation is embedded [30,31].

Three dimensions of the social context in a service ecosystem are highly influential for value co-creation [31]. These are firstly institutions, as the norms and values that guide behavior and practices [32]; secondly, established behavior routines that are

pervasive and that structure everyday life [33]; and lastly, resources, both tangible and intangible [31].

Institutions are the formal and informal rules that shape local sets of shared norms, values, and interpretative frames through which innovations are perceived and evaluated [34]. From an institutional perspective, individual actors, such as consumers, do not just behave rationally and seek efficiency, but often act in ways that are seen as legitimate, accepted, or expected by society or other relevant reference groups [35]. Although the explicit application of institutional thinking is not widespread in marketing and consumer behavior research, recently, in service research, institutions are acknowledged as central mechanisms that coordinate the actions of individuals as well as groups who share institutional norms in a service ecosystem [36]. Institutions represent the embedded rules of the system that shape and drive the way actors attribute value to resources and how they go about coordinating resource integration [37]. Practices refer to the routinized ways that people coordinate action and stabilize expectations. Practices anchor institutions as actions in everyday life [32,33] and provide a form of stability that helps consumers navigate volatility [38]. Resources refer to the tangible and intangible means that are available or potentially available for integration with other resources for the purpose of value co-creation [10].

These three dimensions of the social context continually and recursively shape one another and create a living environment that steers how consumers think, feel, and ultimately act in their everyday practices [31]. Consumers draw on a broad set of influencing considerations when deciding if a potential purchase is worth it. Taking mobile banking as an example, e.g., a mobile money app, its value to the consumer, i.e., its value-in-use, depends not just on the features of the app or the service itself, but on whether someone has stable financial resources, how they currently manage money and routines, and the norms and values that drive and constrain their practices to manage finances.

2.3. BoP Social Contexts and BoP Consumers

BoP settings are home to approximately four billion people [39], who live mostly in low- to upper middle-income countries [40,41], in contexts that are highly influenced by resource scarcity, fragile institutional arrangements, and high levels of uncertainty. Table 1 provides examples from BoP literature of how antecedents in the social context of BoP settings have been interpreted in relation to consumer attitudes and practices.

It is acknowledged that in BoP contexts, formal institutions are generally weak or absent [42]. Of great relevance for an understanding of BoP consumer behavior is the influence of weak or absent formal institutions that regulate retail markets. Selected studies have uncovered the influence of institutional fragility in BoP contexts on consumer behavior [22,43–45]. A commonality across these studies is that institutional fragility drives consumer distrust of formal institutions, which influences individual-level consumer processes of appraisal and decision-making. For example, weak regulatory systems for retail markets lead to reduced trust in formal market channels and a preference for informal interpersonal transactions within consumers' own social networks. Distrust of retail is a shared norm, which shapes mental models [35] and interpretative frameworks that influence individual and collective thinking and actions.

In BoP contexts, informal or non-market transactions, such as bartering or buying from local informal traders, prevail [46]. BoP consumers consequently rely on informal consumption practices to a greater extent than consumers in non-BoP markets. Such practices are deeply entrenched in local settings and reflect the institutions and locally shared norms, rules, and interpretative frameworks. Because they represent stability

for the consumers involved, they can be a barrier to the necessary change (in practices) attached to the adoption of innovations [22].

Scarcity of resources—both tangible and intangible—as a prevalent characteristic of BoP contexts, plays a central role in shaping consumer behavior. The markedly low purchasing power of BoP consumers and its' implication for the design and promotion of pro-social innovation is widely discussed in BoP literature, leading to an understanding of the importance of making products and services affordable in BoP settings [4,9]. The further implications of individual-level limitations in resources for BoP consumers have received far less research attention [4,47]. Resources only become meaningful when they can be combined and integrated—individual-level limitations in resources can constrain this process. Limitations in tangible resources, particularly limited financial means, restrict consumers' ability to access, interpret and combine additional resources. However, limitations in intangible resources such as low levels of consumer experience and low literacy rates create vulnerability because they reduce consumers' ability to process information and make decisions independently [46].

Table 1 provides an overview of the definitions and examples of institutions, practices, and resources as dimensions of the social context of BoP settings.

Table 1. Dimensions of the social context and literature-based examples of their influence on BoP consumer behavior.

Dimensions of the Social Context in a Service Ecosystem	Influence of the Social Context on BoP Consumers (from the Literature)
Institutions Institutions, such as norms, are socially constructed (operant) resources in service ecosystems. "The embeddedness of social networks and the influence of multiple institutions such as social structures and national cultures are central drivers of interaction and value co-creation." [30] (p. 11)	BoP consumer distrust of retail channels: Formal institutional voids prevail, leading to a dominance of informal institutions in daily transactions [42]. Norm of trust toward informal institutions, e.g., social network, family [42,47]. Norm of distrust toward formal institutions such as formal retail [1].
Enactment of practices A repertoire of daily or routine actions enacted by actors in a service ecosystem, depending on their social context. They are a central social phenomenon in comparison to other social entities such as actions, institutions, and structures [30].	BoP consumer use of informal consumption practices: Fulfilling needs in social networks [46]. Barter, exchange, or reciprocal offerings [48,49]. Frugal/non-consumption [49]. Meet short-term needs [50].
Diversity of resources "It is the perspective and knowledge of people, such as employees, customers, and other stakeholders, that differentiates resources from resistances and drives value creation in both global and local markets." [30] (p. 11)	Limitations in BoP consumer resources: Low incomes/purchasing power [9]. Low consumer literacy [43]. Low margin for error in purchasing decisions [4].

2.4. Development of Hypotheses

To empirically investigate the influence of factors within a BoP social context on individual levels of PIR, and to examine the impact of PIR on innovation adoption outcomes in terms of attitudes and intentions, we formulate guiding hypotheses for this study and propose a conceptual model in Figure 1.

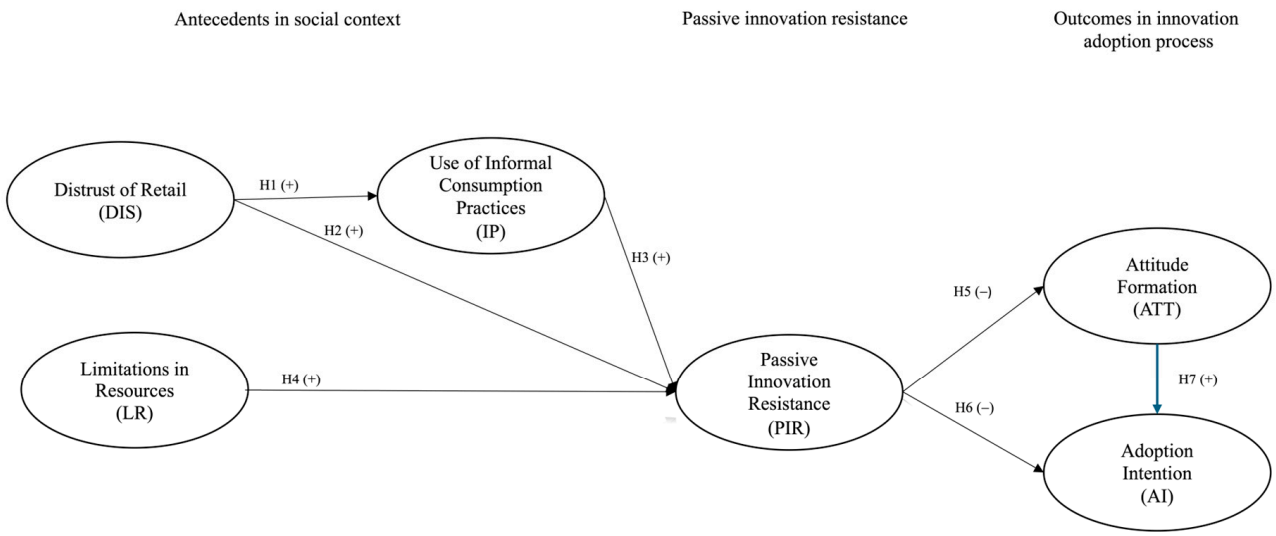

Figure 1. Conceptual model.

2.4.1. Antecedents in the Social Context

In line with the established conceptualization of the social context in the S-D Logic framework [31] and our interpretation of each of the antecedents in BoP settings (Table 1), we investigate the influence of institutionalized norms—BoP consumer distrust of retail (DIS), BoP consumer use of informal consumption practices (IP) and limitations in BoP consumer resources (LR)—as exogenous variables on the individual level of PIR of potential adopters of innovations. We further investigate the influence of PIR on attitude formation (ATT) and adoption intention (AI) as outcomes of the innovation adoption process.

In BoP contexts, weak or absent formal institutions mean that consumers cannot rely on standardized retail structures, regulatory frameworks, or enforcement of formal rules. Under these conditions, distrust of retail becomes a widely shared, institutionalized norm rather than an isolated individual-level attitude [46,50]. This norm is further reinforced through repeated experience with unclear pricing and limited recourse in formal channels—factors that have been shown to erode trust in institutionalized market players [48,51].

In structuration theory, practices are shaped by and reproduce institutions [33]. Thus, as distrust toward formal retail becomes embedded in the local institutional context, individual consumers increasingly rely on informal consumption practices—such as purchasing from local (informal) vendors or sourcing through personal social networks. Informal exchanges offer familiarity, transparency, and social assurance that formal retail is perceived not to offer [46,52]. Consequently, institutionalized distrust of retail, as a shared norm, influences individual-level consumer processes of appraisal and decision-making. It strengthens the perceived value of and preference for informal consumption practices, making them the default mode for fulfilling household needs in many BoP contexts.

H1. *Distrust of retail as an institutionalized norm for BoP consumers is positively associated with the use of informal consumption practices.*

Weak or insufficient formal institutions in BoP contexts create conditions in which distrust of formal institutions becomes an institutionalized norm [49,51]. Distrust triggers a strong emotional response [53,54], leading to an exaggerated expectation of unfavorable outcomes [53]. This occurs even if the intentions of the distrusted institution are positive [55]. Distrust prevents an individual from accepting the uncertainty and vulnerability required to try new solutions and leads to actions that generate a state of self-preservation [55]. This

effect is further strengthened by the prevailing institutional setting in BoP contexts which drives a predisposition, as a habitus, toward stability rather than change [32].

Where BoP consumer distrust is directed toward formal institutions, such as institutionalized commerce in the form of retail, we propose its presence drives a negative emotional response, in the form of PIR, to the change associated with the adoption of innovations that are offered through these channels. We therefore propose a further hypothesis:

H2. *Distrust of retail as an institutionalized norm for BoP consumers is positively associated with PIR.*

From a structuration theory perspective, practices are both shaped by and reproduce institutional environments [33]. In BoP contexts, the absence of strong formal institutions generates "invisible rules" that normalize informal community-based routines [42,56–58], making these practices durable and resistant to change [22]. These informal practices provide stability, predictability, and social support in uncertain environments. Because they are enacted on the basis of shared norms, they become durable routines that structure how consumers evaluate new options. Structuration theory proposes that such deeply embedded practices act as stabilizing structures [33], making changes in behavior appear risky or disruptive. However, the adoption of an innovation requires some degree of modification of existing routines. For BoP consumers, such an anticipated disruption of routines threatens stability, for both the individual and for the community, increasing the likelihood that new offerings will be ignored rather than actively rejected.

This pattern aligns with PIR, where consumers resist the change in routinized behavior that is potentially associated with the adoption of an innovation. Thus, the stronger the prevalence of informal consumption practices, the more likely individuals are to exhibit PIR.

H3. *The use of informal consumption practices for BoP consumers is positively associated with PIR.*

Limitations in resources are a defining feature of BoP consumer contexts and fundamentally shape how individuals engage with innovation. Pervasive resource scarcity severely restricts consumers' ability to integrate new solutions into their daily lives. Limited financial means constrain access to additional resources and force households to prioritize basic needs such as food and housing [4,46]. With household budgets leaving almost no margin for error, even small financial losses can threaten stability [4]. This heightens loss aversion and reinforces reliance on familiar, low-risk consumption practices [59]. This structural scarcity, embedded in the broader social context, not only constrains resource integration but also shapes consumer attitudes toward innovation, not least because of the lack of consumer literacy, often resulting in resistance to new solutions because the perceived risks outweigh the potential benefits.

At the same time, the absence of complementary resources, such as connectivity or basic infrastructure, further limits the feasibility of adopting innovations. When BoP consumers recognize the lack of necessary conditions by which to use a new product or service, they are unlikely to be motivated to invest time or attention in evaluating it. These material and cognitive constraints reduce engagement with unfamiliar offerings and the perceived viability of the innovation, because the perceived risks outweigh the perceived benefits under scarcity. As a result, innovations are overlooked rather than actively rejected, reflecting a form of PIR driven by structural scarcity rather than attitudinal opposition. Therefore, limitations in resources are expected to positively influence PIR.

H4. *Limitations in resources experienced by BoP consumers are positively associated with PIR.*

2.4.2. PIR and Innovation Adoption Outcomes

Consumers who display PIR strive to maintain a status quo and thus develop a negative bias toward new products and services [60–62], leading to unconscious passive, or, later in the innovation adoption process, active rejection. The immediate outcome of PIR is an unconscious perceptual and cognitive mechanism that disrupts the processing of innovation information [15,21,63] just before, or at the stage of, awareness of an innovation [16]. This disposition reduces the probability of developing a positive attitude towards the innovation (ATT), which reduces adoption intention (AI), and thus the likelihood of adoption [19]. We formulate the following hypotheses regarding the effect of PIR on innovation adoption outcomes:

H5. *PIR is negatively associated with BoP consumers' attitude formation toward adopting the innovation.*

H6. *PIR is negatively associated with BoP consumers' intentions to adopt the innovation.*

H7. *The formation of a positive attitude toward an innovation is positively associated with BoP consumers' intentions to adopt the innovation.*

3. Research Methodology

3.1. Empirical Research Context

Data were collected in 2022 in Zambia, an example of a BoP context, where 71.8% of the population experience, or are at risk of, multidimensional poverty [64]. Respondents were asked about an innovative mobile money service, understood as an agent-assisted, mobile-phone-based, person-to-person payment and money transfer system [65]. Such services have been developed to enable access to financial services, particularly for low-income individuals, because they provide a way for anybody with a mobile phone to send, receive, and store money easily without a bank account and at a very low transaction cost [66,67]. These services help individuals to build financial stability and improve their livelihoods, and for this reason in this research they are considered an adequate example of a pro-social innovation.

3.2. Sampling and Data Gathering

A total of 436 paper-based, interviewer-administered questionnaires were completed by locally trained interviewers under the supervision of Northrise University. Survey participants were selected, in their everyday settings, through convenience sampling guided by predefined criteria: (1) adults, (2) involved in household spending decisions, (3) from "moderately poor" or "very poor" households, and (4) from both urban and rural areas. Convenience sampling is suitable in BoP settings where reliable population data are unavailable, and communication infrastructure is limited [68,69].

Local interviewers facilitated trust, consent, and survey comprehension [69,70], in line with best practices for empirical research within BoP settings, especially regarding low levels of literacy in respondents and a lack of experience with surveys.

Respondents were informed about the purpose of the study and could ask questions before agreeing to participate. No incentives were offered. Interviewers were trained to use the questionnaire and instructed on study objectives, anonymity, consent, and how to identify response patterns [69,71]. After removing ineligible (e.g., from non-poor households) and incomplete responses, 402 potentially valid observations remained and

were coded for analysis. Following data cleaning as described in Section 3.5, 282 datasets were finally analyzed.

3.3. Sample Demographics

Information about the respondents' gender, economic welfare, urban/rural living status, household size, and level of education were gathered. Measures were based on the standards used in the Zambian census. For example, regarding categories for household size and self-reported household welfare status, the latter included "non-poor", "moderately poor", and "very poor". Interviewers received a full explanation of each category and advice on how to support respondents in answering this question.

For an overview of the demographics, please refer to Table 2. The sample comprised adults in the moderately poor (51.1%) and very poor (48.9) categories. A total of 61.8% of the respondents belonged to households with more than five people, with a slightly higher proportion of male respondents (55.3%) and a slightly higher proportion of rural dwellers (56.4%). In the sample, 37.2% of respondents had no or primary-level education only, while 41.5% had achieved secondary-level education.

Table 2. Sample demographics.

Household (People)	%	Welfare	%	Education Status	%	Age (Years)	%	Gender	%	Location	%
1–2	7.1	Mod. poor	51.1	No/primary	37.2	18–24	20.6	Male	55.3	Urban	43.6
3–4	31.2	Very poor	48.9	Secondary	41.5	25–34	28.0	Female	44.7	Rural	56.4
5–6	33.0			Tertiary	21.3	35–44	27.7				
7+	28.8					45+	23.7				

3.4. Measures

3.4.1. Antecedents in the Social Context

As outlined in Table 1, we propose that three antecedents in the social context in BoP settings influence consumers' attitudes and practices. However, these constructs were not previously operationalized. To operationalize the constructs, items needed to be generated. In this item-generation process, we followed an emically informed, multi-source, triangulation approach. Specifically, insights from the broader BoP literature, published case studies, and interviews with subject-matter experts were integrated to identify contextually meaningful behaviors, experiences, and constraints. Drawing on Berry's (1989, 1999) [72,73] emic perspective, this approach sought to ground the constructs and their indicators in the lived realities of the focal population rather than impose measures developed in markedly different contexts. The convergence of evidence across these sources strengthened the content validity of the proposed items, which were subsequently assessed by experts for their representativeness, relevance, and clarity. A detailed overview of the scale development procedure can be found in Appendix A. A total of 33 new items were developed and reviewed by two panels in a first round for context validity—for example, wording and interpretation (Zambian expert panel)—and in a second round regarding the validity and reliability of the measures (academic panel). Five ambiguous or inappropriate items were eliminated, leaving 28 items. Examples of the newly developed items include: "I generally don't trust information that comes from the commercial provider of financial services" (DIS), "I always ask my family first when I need financial help" (IP), and "I never try out new things because I can't risk the budget" (LR). Items were measured on five-point Likert scales, and their wording was varied to reduce respondent fatigue and common method variance [74].

3.4.2. PIR

An existing, validated, 18-item measurement scale for PIR [14] was contextualized for "mobile money services" and, following recommendations of the Zambian expert panel, some wording adjustments were made to fit local use of language.

3.4.3. Adoption Outcomes

We measured two sets of relevant adoption outcomes, attitude formation and adoption intention, using existing measurement scales [15,63]. These were adapted to the object and context of this study.

3.5. Data Cleaning

Because the data were collected among low-income, low-literacy consumers in a BoP context, careful data cleaning and screening were considered particularly important. Prior survey research shows that response quality is affected by the cognitive demands imposed by survey questions, as well as by respondents' familiarity with standardized response formats and their motivation and ability to provide accurate answers [75,76]. These concerns are especially relevant in subsistence-marketplace and low-literacy research settings, where conventional survey instruments may not always align well with respondents' literacy levels, everyday experiences, or familiarity with abstract rating scales [68,71]. In such contexts, data may be more vulnerable to misunderstanding, inconsistent responses, acquiescence, extreme responses, missing values, or interviewer-related effects [77,78]. Therefore, systematic screening for problematic response patterns is warranted to enhance the credibility of the analyses.

In identifying problematic response patterns, it is important to distinguish between formative and reflective measurement models. For reflective measurement models, it is expected that the items of a scale are highly correlated. Put differently, data is expected to significantly deviate from a random pattern. This is assessed using the procedure outlined by Marjanovic et al. (2015) [79]. In contrast, for formative measurement models, there are no requirements in terms of expected data patterns. Therefore, an appropriate way to screen data from formative scales is via the use of Mahalanobis' distance to see whether observations are indeed multivariate outliers [80]. Overall, this led to the deletion of n = 120 respondents for which the data quality was insufficient. The relatively high exclusion rate should be interpreted in light of the methodological challenges associated with collecting standardized survey data in low-literacy subsistence-market contexts [71]. Although no formal guidelines exist regarding acceptable data-exclusion rates in BoP research, studies conducted in predominantly Western settings suggest that approximately 10–15% of respondents may produce response patterns that do not satisfy commonly used data-quality criteria [81].

3.6. Modeling Approach

Partial least squares structural equation modeling (PLS-SEM) with SmartPLS [74] is used to estimate the model parameters. In line with Streukens and Leroi-Werelds (2016) [82], J = 10,000 bootstrap runs are performed to assess the statistical significance of the model parameters. Unless mentioned otherwise, 95% bias-corrected and accelerated bootstrap confidence intervals are used. In line with Sarstedt et al. (2021) [83], a two-stage approach is used to model the hierarchical construct (PIR) as this allows us to accurately estimate the effect of the antecedents of PIR.

4. Analytical Results

4.1. Descriptive Statistics

Table 3 summarizes inter-construct correlations. The item level means and standard deviations are presented in Table 4.

Table 3. Latent variable correlations and confidence intervals.

		1	2	3	4	5	6	7	8	9	10	11
1	LR	1	[0.54; 0.73]	[0.60; 0.76]	[0.42; 0.62]	[0.29; 0.51]	[0.36; 0.58]	[0.25; 0.51]	[0.09; 0.35]	[−0.20; 0.06]	[−0.43; −0.19]	[−0.27; −0.14]
2	DIS	0.64	1	[0.68; 0.79]	[0.45; 0.64]	[0.28; 0.51]	[0.33; 0.56]	[0.11; 0.37]	[0.08; 0.31]	[−0.15; 0.11]	[−0.34; −0.14]	[−0.26; −0.03]
3	IP	0.68	0.75	1	[0.48; 66]	[0.26; 0.46]	[0.37; 0.58]	[0.17; 0.45]	[0.21; 0.43]	[−0.08; 0.18]	[−0.35; −0.14]	[−0.27; −0.04]
4	RS	0.59	0.56	0.59	1	[0.42; 0.60]	[0.40; 0.62]	[0.25; 0.47]	[0.07; 0.30]	[−0.12; 0.11]	[−0.33; 0.09]	[−0.36; −0.12]
5	ER	0.42	0.41	0.38	0.52	1	[0.37; 0.52]	[0.13; 0.37]	[−0.07; 0.18]	[−0.16; 0.10]	[−0.14; 0.11]	[−0.19; 0.06]
6	STF	0.49	0.46	0.49	0.52	0.43	1	[0.28; 0.51]	[0.03; 0.26]	[−0.10; 0.15]	[−0.34; −0.13]	[−0.27; −0.04]
7	CR	0.40	0.26	0.34	0.38	0.27	0.41	1	[0.04; 0.28]	[−0.10; 0.14]	[−0.24; 0.05]	[−0.29; −0.01]
8	SQSP	0.24	0.21	0.33	0.19	−0.01	0.15	0.16	1	[−0.15; 0.10]	[−0.31; −0.10]	[−0.26; −0.05]
9	SQSI	−0.07	−0.02	0.06	−0.01	−0.01	0.03	0.02	0.05	1	[−0.15; 0.10]	[−0.10; 11]
10	ATT	−0.31	−0.24	−0.25	−0.31	−0.02	−0.25	−0.11	−0.21	−0.03	1	[0.50; 0.71]
11	INT	−0.27	−0.15	−0.16	−0.27	−0.07	−0.17	−0.16	−0.16	0.00	0.62	1

Table 4. Item-level statistics and psychometric properties.

Item	M	SD	Loading/Weight	CI
Attitude Formation (ATT) (λ_1 = 4.82; λ_2 = 0.39; IC = 0.96; AVE = 0.80)				
ATT01	4.42	0.75	0.91	[0.88; 0.94]
ATT02	4.36	0.72	0.93	[0.91; 0.95]
ATT03	4.35	0.74	0.95	[0.93; 0.96]
ATT04	4.26	0.78	0.86	[0.80; 0.91]
ATT05	4.12	0.94	0.83	[0.78; 0.87]
ATT06	4.34	0.74	0.89	[0.85; 0.92]
Adoption Intention (AI) (λ_1 = 2.13; λ_2 = 0.80; IC = 0.87; AVE = 0.80)				
INT01	4.43	0.72	0.96	[0.94; 0.98]
INT02	4.42	0.72	0.96	[0.94; 0.98]
INT03	3.94	0.91	0.53	[0.37; 0.66]
Distrust of Retail (DIS) (VIF_{max} outer model = 1.80)				

Table 4. *Cont.*

Item	M	SD	Loading/Weight	CI
DIS01	2.85	1.31	0.44	[0.29; 0.60]
DIS02	2.98	1.26	0.47	[0.34; 0.61]
DIS03	3.47	1.17	−0.13	[−0.28; 0.01]
DIS04	2.77	1.30	0.09	[−0.08; 0.25]
DIS05	3.33	1.25	0.04	[−0.10; 0.20]
DIS06	3.19	1.29	0.20	[0.05; 0.33]
DIS07	3.21	1.17	0.16	[0.02; 0.32]
Use of Informal Consumption Practices (IP) (VIF_{max} outer model = 1.62)				
IP01	3.52	1.25	0.30	[0.17; 0.43]
IP02	3.59	1.16	0.05	[−0.08; 0.18]
IP03	3.19	1.31	0.12	[−0.04; 0.26]
IP04	2.31	1.17	0.26	[0.13; 0.38]
IP05	3.27	1.27	−0.06	[−0.20; 0.08]
IP06	3.49	1.20	0.19	[0.07; 0.32]
IP07	2.55	1.44	0.56	[0.44; 0.70]
Limitations in Resources (LR) (VIF_{max} outer model = 2.88)				
LR01	3.37	1.34	−0.05	[−0.26; 0.14]
LR02	3.66	1.23	0.17	[−0.04; 0.38]
LR03	3.84	1.12	0.08	[−0.13; 0.31]
LR04	3.48	1.21	0.03	[−0.17; 0.24]
LR05	3.44	1.30	−0.04	[−0.26; 0.17]
LR06	2.60	1.37	0.24	[0.04; 0.45]
LR07	2.66	1.24	0.42	[0.24; 0.62]
LR08	3.14	1.38	−0.05	[−0.29; 0.18]
LR09	2.15	1.13	0.30	[0.13; 0.50]
LR10	3.54	1.23	0.18	[−0.02; 0.38]
LR11	3.50	1.17	−0.14	[−0.33; 0.03]
LR12	1.58	1.09	0.15	[−0.16; 0.45]
LR13	1.78	1.17	0.01	[−0.32; 0.34]
LR14	3.17	1.71	0.06	[−0.23; 0.11]
Satisfaction with Existing Product (SQSP) (λ_1 = 2.87; λ_2 = 0.08; IC = 0.99; AVE = 0.96)				
SQSP1	2.78	1.19	0.97	[0.96; 0.98]
SQSP2	2.73	1.17	0.98	[0.97; 0.99]
SQSP3	2.75	1.21	0.98	[0.97; 0.99]
Satisfaction with Extent of Innovation (SQSI) (λ_1 = n.a.; λ_2 = n.a.; IC = n.a.; AVE = n.a.)				
SQSI1	2.89	1.10	1	n.a.
Routine-Seeking (RS) (λ_1 = 2.24; λ_2 = 0.48; IC = 0.90; AVE = 0.75)				

Table 4. *Cont.*

Item	M	SD	Loading/Weight	CI
RS1	3.00	1.22	0.82	[0.77; 0.86]
RS2	2.90	1.18	0.88	[0.83; 0.91]
RS3	2.88	1.17	0.89	[0.86; 0.92]
Emotional Reaction to Imposed Change (ER) (λ_1 = 1.97; λ_2 = 0.69; IC = 0.84; AVE = 0.65)				
ER1	3.38	1.21	0.89	[0.86; 0.92]
ER2	3.55	1.17	0.89	[0.85; 0.92]
ER3	4.04	0.95	0.60	[0.40; 0.73]
Short-Term Focus (STF) (λ_1 = 1.96; λ_2 = 0.55; IC = 0.87; AVE = 0.80)				
STF1	2.86	1.25	0.81	[0.75; 0.85]
STF2	2.87	1.23	0.78	[0.67; 0.84]
STF3	2.94	1.19	0.84	[0.79; 0.87]
Cognitive Rigidity (CR) (λ_1 = 1.43; λ_2 = 0.97; IC = 0.63; AVE = 0.37)				
CR1	2.76	1.10	0.56	[0.15; 0.84]
CR2	3.27	1.14	0.69	[0.33; 0.85]
CR3	3.55	1.02	0.56	[0.14; 0.76]

Notes: λ_1: First eigenvalue; λ_2: Second eigenvalue; IC: Internal consistency reliability; AVE: Average variance extracted. Loadings are presented for reflective measurement models. Weights are presented for formative models. VIFmax is the maximum VIF value for a set of items pertaining to a formative construct.

4.2. Measurement Model Evaluation

In evaluating the scales' psychometric properties, it is vital to distinguish between reflective and formative scales [84]. In our study, reflective scales include attitude to innovation and intention to adopt, whereas the newly developed scales (i.e., distrust of retail, informal practices, and limitations in resources) are formative scales. The PIR construct [14] is a so-called hierarchical construct that is reflective in the first-order constructs and formative in the second- and third-order constructs.

For reflective scales, unidimensionality, internal consistency reliability, content validity, item validity, within-method convergent validity, and discriminant validity represent essential psychometric properties. Note that the evaluation of a reflective scale is not a one-shot procedure, but an iterative process in which indicator-level and construct-level evidence are considered jointly. Because removing an indicator changes the empirical composition of the scale, the psychometric properties of the revised measure must be reassessed after each theoretically justified modification [85]. Overall, this led to the deletion of one response from the satisfaction with extent of innovation (SQSI) item, which was highly non-significant. Below, the psychometric properties of the final scales are reported.

Unidimensionality is evidenced, as for all reflective constructs, the first two eigenvalues (i.e., λ_1 and λ_2 in Table 3) meet the criterion outlined by Sahmer et al. (2006) [86]. Internal consistency (i.e., IC in Table 3) reliability—assessed by means of composite reliability—is met, as for all reflective constructs, the value exceeds the recommended cut-off level of 0.60 [87]. Item validity is demonstrated by the magnitude (i.e., >0.50, but preferably > 0.70) and statistical significance of all item loadings [88]. The average variance extracted (i.e., AVE in Table 3) is used as a measure to assess within-method convergent validity, and for all constructs except cognitive rigidity (CR), this measure well exceeds

the 0.50 threshold [88]. Following MacKenzie et al. (2005) [84], discriminant validity is evidenced by the fact that none of the latent variable correlations' bootstrap confidence intervals included the (absolute) value of 1 (see also Table 3). Content validity cannot be tested statistically; however, as we used scientifically validated scales without substantively altering their content, their established content validity can reasonably be assumed to carry over to the present study.

For formative scales, content validity, item validity, and discriminant validity are relevant [87,88]. We developed formative measurement instruments for the constructs distrust of retail, limitations in resources, and informal practices. As outlined above, content validity was optimized through the deployment of a multi-source triangulation approach. Item validity for formative scales is assessed by means of the item weights. In this regard, the weights' magnitude is irrelevant. Rather, the statistical significance matters. Although several weights are not statistically significant, we refrained from deleting these items to preserve content validity [87,89]. It should be noted that all VIF values for the formative scales are below the recommended cut-off level of 3 [88]. The data in Table 3 confirm the existence of discriminant validity. For the formative measurement model, properties pertaining to the second- and third-order constructs of PIR, as in Heidenreich and Handrich (2015) [14], the following results apply. The relationships between the first-order PIR constructs and the second-order PIR constructs are all statistically significant, except for the relationship between SQSI and status quo satisfaction (SQS).

Specifically, the coefficients are as follows: $\beta_{SQSP} = 0.99([0.98; 1.00])$; $\beta_{SQSI} = 0.03([-0.03; 0.09])$; $\beta_{RS} = 0.47([0.41; 0.52])$; $\beta_{ER} = 0.28([0.25; 0.32])$; $\beta_{STF} = 0.37([0.34; 0.42])$; and $\beta_{CR} = 0.14([0.10; 0.18])$. The maximum VIF here was 1.72. The second-order constructs (i.e., status quo satisfaction (SQS) and individual resistance to change (IRC)) both have a significant effect on the formation of PIR. That is, $\beta_{SQS} = 0.33([0.20; 0.44])$ and $\beta_{IRC} = 0.89([0.80; 0.97])$, with a maximum VIF value of 1.98. Again, non-significant relationships in formative measurement models were retained to preserve content validity. For all the higher-order constructs, discriminant validity was evidenced (not reported in Table 3).

4.3. Overall Model Performance

Prior to testing the individual hypotheses put forward, the overall model performance per endogenous construct needs to be assessed by inspecting each endogenous construct's coefficient of determination (R^2) and its accompanying confidence interval. The results show an acceptable level of model performance as all R^2 confidence intervals do not include a value of zero. More specifically, the results are as follows: 56% of the variance in use of informal consumption practices is explained (R^2 = 0.56; $CI_{.95}$: [0.46; 0.62]), and 41% of the variance in PIR is explained (R^2 = 0.41; $CI_{0.95}$: [0.28; 0.48]). Furthermore, and turning to the righthand side of the model, it can be concluded that a significant amount of variance is also explained in attitude formation (R^2 = 0.09; $CI_{0.95}$: [0.04; 0.16]) and adoption intention (R^2 = 0.40; $CI_{0.95}$: [0.26; 0.51]). Note that multicollinearity is unlikely to have a distorting effect as the maximum VIF value of the inner value was 2.45.

4.4. Hypothesis Testing

Against this background, we proceeded by inspecting the individual parameter estimates in the structural model. These are summarized in Table 5.

Starting at the lefthand side of the model, the results reveal that distrust of retail significantly and positively impacts use of informal practices (β = 0.75; $CI_{0.95}$ [0.68; 0.79]), thereby providing support for H1. Turning to the PIR antecedents, the data provide evidence for a significant and positive impact of both use of informal practices (β = 0.28; $CI_{0.95}$ [0.13; 0.44]) and limitations in resources (β = 0.39; $CI_{0.95}$ [0.21; 0.46]). In contrast,

the direct relationship between distrust of retail and PIR is not supported (β = 0.04; $CI_{0.95}$ [−0.10; 0.19]). Thus, H2 is not supported whereas H3 and H4 are supported. In terms of the consequences, the results show a significant negative effect on attitude formation (β = −0.31; $CI_{0.95}$ [−0.39; −0.21]), which in turn translates into adoption intention (β = 0.60; $CI_{0.95}$ [0.46; 0.70]). This is in support of hypotheses H5 and H7. Finally, the direct effect of PIR on adoption intention as proposed in H6 is only marginally significant at the 10% level (β = −0.09; $CI_{0.90}$ [−0.17; −0.01]).

Table 5. Parameter estimates of structural model relationships.

H	Relationship	β	CI	Conclusion
H1	DIS → IP	0.75	[0.68; 0.79]	H1 supported
H2	DIS → PIR	0.04	[−0.10; 0.19]	H2 not supported
H3	IP → PIR	0.28	[0.13; 0.44]	H3 supported
H4	LR → PIR	0.39	[0.21; 0.46]	H4 supported
H5	PIR → ATT	−0.31	[−0.39; −0.21]	H5 supported
H6	PIR → INT	−0.09	[−0.17; −0.01] **	H6 supported at the 10% level
H7	ATT → INT	0.60	[0.46; 0.70)	H7 supported

** 90% confidence level.

5. Discussion and Conclusions

5.1. Main Conclusions

The study identified significant relationships between antecedents in the BoP social context and PIR, as well as between PIR and innovation-adoption outcomes. The findings therefore provide evidence that: (1) distrust of retail has an indirect relationship with PIR through the use of informal consumption practices; (2) the use of informal consumption practices is positively associated with PIR; (3) PIR is significantly related to attitude formation regarding innovation and adoption intention; and (4) attitude formation concerning innovation is positively related to adoption intention. These findings are broadly in line with the hypotheses. However, the hypothesized direct relationship between distrust of retail and PIR could not be confirmed. The findings therefore provide empirical support for the central premise of the study: that what appears to be BoP consumer "resistance" to innovation may, at least partly, reflect an adaptive and contextually rational response to structural vulnerability, uncertainty, and institutional fragility. Given the observational nature of the study, these findings should be interpreted as being consistent with this explanation rather than as definitive confirmation of the underlying causal mechanisms. In doing so, this study contributes to theories of innovation adoption and innovation resistance, as well as to understanding the role of social context in consumer behavior, specifically within BoP settings.

5.2. Theoretical Implications

Innovation resistance is traditionally conceptualized as a stable, individual-level tendency rooted in a preference for the status quo and inertia. The findings of this study challenge this assumption because they indicate that, in BoP settings, individual-level PIR is systematically associated with resource scarcity, institutional conditions, and deeply entrenched informal consumption practices. This is consistent with the proposition that PIR may emerge early in the innovation-adoption process as a structurally informed survival response rather than solely as a personality trait. Because the relationships between PIR, attitude formation toward an innovation, and adoption intention were supported in this study, the findings suggest that PIR occupies an important position in the innovation-adoption process among BoP consumers. These insights extend innovation-adoption

theory by showing that PIR is strongly related to adoption-relevant outcomes while also suggesting that its meaning and antecedents are context-dependent. In this way, the study identifies contextual conditions that may shape the applicability of diffusion theory in BoP settings.

This study also advances a more valid and comprehensive conceptualization of social context at the BoP. While established research focuses predominantly on resource scarcity, the findings show that institutions and practices are also systematically related to consumer responses to innovation. By showing significant associations between distrust of retail, use of informal consumption practices, and PIR, the study indicates that a BoP social context comprises idiosyncratic institutional and behavioral factors alongside the more widely recognized scarcity of resources. Furthermore, the findings suggest that resource limitations are not only associated with reduced purchasing power but may also be related to PIR and, consequently, to how BoP consumers respond to innovations. This broader perspective aligns with S-D Logic and provides a more comprehensive understanding of how BoP consumers navigate innovation, moving beyond deficit-based explanations toward a more holistic view of market dynamics. This is an important addition to the BoP literature and responds to ongoing calls for empirical theoretical development in BoP scholarship and deeper exploration of the relationship between business and society [39,47,90–93].

Furthermore, the study shows that distrust of retail, understood as an institutionalized norm in many BoP markets, is positively associated with PIR and that this relationship operates indirectly through its association with informal consumption practices. This finding is consistent with prior work suggesting that institutional voids diminish trust in formal market actors and shift loyalty toward informal consumption practices. The results are therefore consistent with the proposed mediating role of informal consumption practices and suggest that distrust of retail is related to how BoP consumers respond to innovations. This empirical finding adds to existing literature [34,94] by linking institutional theory with consumer innovation behavior and extending this connection to innovation resistance.

Drawing on structuration theory, the study conceptualizes informal consumption practices as deeply embedded routines that provide stability. The positive association between these practices and PIR is consistent with the argument that innovations perceived as disrupting established routines may encounter greater resistance. The findings therefore support, but do not definitively establish, the proposition that resistance may be stronger when innovations require changes to familiar and stabilizing patterns of behavior.

Consumer limitations in resources were also positively associated with PIR. This finding is consistent with the argument that scarcity may increase the perceived risks associated with unsuccessful experimentation and reduce consumers' willingness to engage with unfamiliar innovations. Resource scarcity should therefore not be understood solely as an economic constraint, but also as a contextual condition that may be related to cognitive and emotional responses to innovation.

5.3. Managerial Implications

This study offers several managerial insights. First, it provides evidence of individual-level PIR in BoP contexts and thereby offers additional explanations for low adoption rates of pro-social innovations. Second, it shows that not only resource limitations, which have long been recognized in the BoP literature, but also distrust of retail and deeply embedded informal consumption practices are associated with PIR.

This reframing has important managerial implications because it suggests that what may appear as resistance may partly reflect a contextual response to structural vulnerability, uncertainty, and institutional fragility. Managers should therefore be cautious about inter-

preting resistance solely as a lack of interest, conservatism, or an unfavorable evaluation of the innovation itself.

Because distrust of retail may function as an institutionalized norm, companies offering pro-social innovations should incorporate trust-building mechanisms within locally trusted social structures, rather than relying solely on branding and communication to generate demand.

The finding that informal consumption practices are positively associated with PIR and may function as stabilizing structures suggests that introduction strategies should be designed to align with existing routines rather than requiring immediate behavioral changes that may be perceived as risky. This creates a paradox for pro-social innovations, which are often explicitly intended to disrupt entrenched habits for the better: firms must introduce change while simultaneously respecting the routines they seek to transform.

Recommendations in the established BoP marketing literature frequently emphasize affordability as a central success factor for pro-social innovations. The findings of this study, however, suggest that resource scarcity may be associated not only with affordability constraints but also with heightened perceptions of vulnerability and risk. It is therefore important to develop ways to facilitate trialability [17] for BoP consumers; for example, through small-scale, reversible, and noncommittal testing opportunities [95].

Taken together, these insights provide impetus for a shift in managerial action away from persuading consumers to adopt pro-social innovations primarily through modifications to price, product, and promotion, and toward designing introduction strategies that better fit the institutional, behavioral, and vulnerability-related context of BoP markets.

5.4. Societal Implications

This study contributes to sustainability scholarship by suggesting that the failure of pro-social innovations in BoP markets may not necessarily result from a negative evaluation of their benefits or from an inadequate value proposition. Instead, low adoption may, at least partly, reflect contextually rational strategies aimed at minimizing risk and maintaining stability in daily life.

Understanding PIR as a phenomenon that is systematically related to structural and contextual conditions may help explain why many sustainability-oriented innovations fail to scale despite their potential benefits for BoP consumers and communities. The findings therefore provide a basis for developing introduction strategies for sustainable innovations that are better aligned with the lived realities of BoP consumers; for example, by allowing consumers to experience the benefits of an innovation in a trusted and low-risk environment, such as a school or local market.

5.5. Limitations and Research Agenda

This study contributes to the growing literature on PIR by demonstrating that resistance to innovation in BoP contexts is not, solely, an individual predisposition, but is significantly affected by characteristics of the surrounding social context. The shift from a product logic towards a service ecosystem perspective has facilitated understanding regarding what occurs at the BoP. At the same time, several limitations offer opportunities for future research.

First, the findings raise a more fundamental conceptual question concerning the appropriateness of the term "innovation resistance" itself in vulnerable consumer contexts. Existing innovation resistance literature largely originates from affluent market settings and implicitly frames resistance as a deviation from an otherwise desirable tendency toward innovation adoption. However, under conditions of resource scarcity, institutional fragility, and limited margins for error, reluctance toward innovation may represent a

rational and adaptive response to uncertainty rather than an inherent resistance to change. Future research should therefore critically examine whether concepts such as resilience, risk management, or adaptive conservatism may provide more accurate descriptions of consumer behavior in vulnerable settings.

Second, although the proposed model explains a substantial proportion of variance in PIR, the social complexity of innovation adoption decisions in BoP settings suggests that additional contextual mechanisms remain to be uncovered. Future research should investigate more nuanced causal pathways, including the potential role of social capital, trust formation, perceived vulnerability, prior experiences with failed innovations, and informal learning mechanisms. Different theoretical and epistemological perspectives may also further enrich research into innovations failing to diffuse. Such insights are necessary to support the design of effective interventions aimed at increasing the adoption of pro-social innovations.

Third, the present study was conducted in a single national context. While Zambia provides an appropriate setting for studying innovation resistance in BoP environments, substantial differences exist between countries and regions in terms of institutional arrangements, informal market structures, and cultural practices, as well as the role of gender differences in the adoption of innovative products and services. Comparative studies across multiple countries and contexts would contribute to identifying both universal and context-specific drivers of PIR. A sample research question could be: "In what way and to what extent does the cultural context play a role in inhibiting or facilitating diffusion of pro-social innovations, and what moderating factors can be identified?".

Fourth, the empirical focus on mobile money services does not warrant generalization to all categories of pro-social innovation. Although mobile money represents a clear and relevant example of a pro-social innovation in the BoP context, innovations in areas such as energy, sanitation, and healthcare may involve different adoption barriers and contextual dynamics. This implies that further research is needed to investigate effects of features of the innovation, or the innovation type. A suggestion for a research question could be: how does the type of innovation influence the role of contextual dimensions in developing PIR? Here, it would be particularly interesting to investigate the role of the way adoption of the innovation would assume or require adaptations in the social context.

Fifth, in our approach to operationalize institutions as an individual attitudinal construct, we follow the discussion put forward by Denzau and North (1994) [35], establishing a connection between institutions as the mechanisms external to the mind "that individuals create to structure and order their environment" [35] (p. 2), and mental models as "internal representation that individual cognitive systems create in order to interpret the environment" [35] (p. 2). Future research can go further to validate this relationship by comparing shared institutions with individual-level attitudes.

Furthermore, the model explains only a limited proportion of the variance in attitude toward the innovation ($R^2 = 0.09$), while the effect of PIR on attitude is weak and only marginally significant. This finding should therefore be interpreted cautiously. It indicates that PIR may contribute to attitude formation but is unlikely to be a dominant determinant. Attitudes toward innovations are probably shaped by a broader set of innovation-, consumer-, and socially embedded factors, including perceived usefulness, ease of use, perceived value, trust, social influence, prior experience, familiarity, and perceived product–context fit. Because the present study primarily sought to explain the contextual antecedents of PIR rather than to provide a comprehensive model of attitude formation, these factors were outside its scope. Future research should incorporate them to assess the incremental explanatory value of PIR and identify the conditions under which PIR meaningfully influences downstream evaluations.

Finally, the findings invite broader reflection on the contextual assumptions embedded within innovation adoption and resistance theories. The strong emphasis on innovation, progress, and change in Western economies may have created a positivity bias that treats innovation adoption as inherently desirable and non-adoption as problematic. Similar contextual explanations may apply to other vulnerable consumer groups, including elderly consumers, individuals experiencing economic insecurity, or communities facing social exclusion. Exploring these alternative contexts—economic, social, political, and technological—may contribute to a more nuanced and context-sensitive understanding of innovation resistance behavior. A sample research question addressing this issue could be: "In what way and to what extent do contextual characteristics inhibit innovation adoption by vulnerable consumers, and how can these barriers be alleviated?".

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Appendix A

In the first qualitative step, we aimed to identify and operationalize context antecedents to PIR in BoP settings. Several datasets comprising BoP market/consumer literature, analyses of case studies outlining the launch of pro-poor innovations (n = 5), and transcripts of focus group discussions with participants in Zambia (six participants each in two rounds) were gathered in a multiple triangulation approach [96], which encourages several methods to collect data and multiple research participants with varied expertise [97]. Phase I of the study focused on synthesizing literature-based findings to establish a substantiated list of general BoP market and consumer characteristics. The second phase involved discussion of five pro-poor innovation case studies with Zambian experts (n = 6) to identify antecedents in the social context. In the third phase, focus groups discussions were conducted using projection techniques to gather further insight into antecedents of BoP consumer reactions to the products and services in the case study. The final phase included a workshop to feedback findings. Each research method exposed one aspect of reality [96] and yielded a layered inspection of the social context [97].

Table A1. (**a**) Steps in the development of construct and measurement items of BoP social context antecedents to PIR. (**b**) List of general BoP market and BoP consumer characteristics.

(**a**)

	Action	Data type	Sources/ Examples/ Participants	Output
Step 1	Synthesize extant BoP literature	Academic articles and books	See below for full list	List of general BoP market and BoP consumer characteristics.
Step 2	Analysis of case studies: launch of financial services within BoP settings	Published case studies, company sites, student reports (Masters' theses)	MTN Airtime (Nigeria) MPESA (Kenya) Kilimo Salama (Kenya) Finca village loans (Zambia) Airtel Money (Zambia) Musoni Mobile Micro Credit (Kenya)	List of barriers to launch and marketing measures taken to overcome these.
Step 3	Online focus group discussion of case studies	Transcript of each discussion	Zambian participants with knowledge of BoP institutional context and the financial services in the cases.	Coded data.
Step 4	Triangulation of findings to define constructs and formulate items	All previous outputs	Main researcher and two Zambian researcher assistants	Proposed list of constructs and measurement items for BoP context antecedents to PIR.
Step 5	Feedback and review per email	Proposed list of constructs and measurement items	Round 1: Focus group participants Round 2: Academic experts	Revised list of constructs and measurement items for BoP context antecedents to PIR.

(**b**)

BOP market characteristics	BoP consumer behavior
Resource limitations (tangible, characterized by low incomes, sporadic incomes, no access to buffer from financial services)	Avoid large or expensive purchases. Spend the majority of income on necessities. Value conscious behavior. Perceive risk in switching because of low margin for error. Pay a "poverty penalty" for smaller-size servings. Purchase decisions are complex and take more time because of low income. Frequent, small purchases of perishable goods due to lack of storage space or refrigeration capacity. Reliance on non-perishable food items. Reliance on social network to supplement missing resources (e.g., water). Prioritization of group (family) over individual needs in purchase decisions.

Table A1. *Cont.*

Resource limitations (characterized by low levels of formal education, high levels of illiteracy, low levels of consumer knowledge)	Limited processing of marketing information. Unable to understand the benefits (short- or long-term) of complex offerings. Limited understanding of features of a product or service (depending on complexity) Rely heavily on one-to-one communication for product/consumer information. Purchase from places/people where a relationship exists. Reliance on visual cues for information. Rely on word-of-mouth communication. Feelings of loss of control because of inability to cognitively process. Display vulnerabilities such as feelings of lack of control and inability to cope with tempting consumer marketing.
Institutional voids/distrust of formal institutions	
Characterized by lack of public infrastructure, systems, lack of social security, lack of functioning formal markets, abundance of informal markets, political and economic instability, unreliable systems	Preference for local retail (mostly informal). Dependence on local retail for product information and recommendations. Preference for non-market solutions. Feelings of exclusion due to lack of access to markets—particularly in rural areas. Distrust of public systems based on experience, leading to becoming self-sufficient. Consume to escape deprivation (in spite of other, more pressing needs).
Practices	
Predominance of non-market practices (characterized by high degrees of social embeddedness, bricolage, muddling through, reliance on social network, including extended family)	Social network provides information and support, e.g., advice on purchasing, consumer information, financial help when needed. Trust in extended family supersedes the need to individually prepare for future needs or rely on state systems. Focus on today's needs and wants and underestimate the long-term positive impact of new products and services. Reliance on cheaper, non-market sources to fulfil daily needs—non-consumption. Creative approaches to solving daily challenges informally e.g., private savings clubs, bartering, etc.

Sources: [4,7,8,22,39,40,43–45,49,93,98–110].

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