

Technology Adoption among Microentrepreneurs in Bogotá: An Application of the Technology Acceptance Model (TAM)

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Abstract

The adoption of digital technologies is a relevant factor for the competitiveness, sustainability, and adaptability of microenterprises, particularly in contexts characterized by limited resources and technological capabilities. This study aimed to analyze technology adoption among microentrepreneurs in Bogotá using the Technology Acceptance Model (TAM), considering perceived usefulness, perceived ease of use, attitude toward technology, and technology adoption. A quantitative, non-experimental, cross-sectional study was conducted with a sample of 79 microentrepreneurs involved in business support programs. Structural equation modeling (SEM) was employed to examine the relationships among the constructs. The model conceptualized attitude toward technology as a construct comprising perceived usefulness, perceived ease of use, attitude toward innovation, and the perceived usefulness of technology for the business, whereas technology adoption was represented by indicators related to the level of technology use, adoption following the training process, and the implementation of technological systems or tools. The results show an estimated positive association between attitude toward technology and technology adoption. However, given the characteristics of the available statistical information, this result is interpreted as exploratory. The findings highlight the importance of microentrepreneurs' perceptions and attitudes in digital technology adoption processes and suggest that strategies aimed at promoting digital transformation should consider not only access to technological tools but also their perceived usefulness, ease of use, and applicability to business activities.

Keywords: *Technology Adoption, Technology Acceptance Model, Microenterprises, Digital Transformation.*

Introduction

Digital transformation has significantly changed the management, marketing, and stakeholder engagement dynamics of organizations, creating new opportunities to improve productivity, expand markets, and strengthen decision-making processes. However, the effective adoption of digital technologies varies according to organizational size, available resources, and technological capabilities. In the case of microenterprises, these differences are particularly relevant because financial, technical, and knowledge-related constraints may condition the adoption and sustained use of new technological tools.

One of the most widely used models for studying this phenomenon is the Technology Acceptance Model (TAM), developed by Davis (1989). This approach proposes two fundamental variables for understanding technology acceptance: perceived usefulness, defined as the degree to which a person believes that using a particular technology can improve their performance, and perceived ease of use, which refers to the degree to which its use is perceived as requiring little effort.

Early evidence from the TAM showed that both perceived usefulness and perceived ease of use were associated with the use of technological systems, although perceived usefulness exhibited a particularly relevant association with usage behavior. Davis (1989) also proposed that perceived ease of use may act as an antecedent of perceived usefulness, indicating that perceptions associated with a technology may be interrelated before translating into actual use. Subsequently, Davis, Bagozzi, and Warshaw (1989) also found that perceived usefulness played an important role in the intention to use technological systems.

From this perspective, perceptions of usefulness and ease of use may contribute to shaping individuals' attitudes toward technology and subsequently facilitate or hinder its adoption. This relationship is

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particularly relevant in microenterprises, where decisions regarding technology adoption are often closely linked to those of the owner or manager and to their assessment of the benefits that a technological tool may provide to business activities.

Attitude toward technology is another relevant component for understanding the adoption process. A favorable evaluation of technology may facilitate its incorporation into business activities, whereas negative perceptions related to complexity, limited usefulness, or difficulties in use may become barriers to its adoption. In microenterprises, this dimension is particularly important because the incorporation of new tools may depend directly on the owner's perceptions, knowledge, and experience.

The microentrepreneurs included in this study participated in business support processes that incorporated activities aimed at strengthening technological competencies. This context provides a relevant setting for examining the perceptions and attitudes developed toward technology and their relationship with subsequent adoption behaviors.

Although the TAM has been widely used to study technology acceptance, its application to microenterprises makes it possible to examine the particular characteristics of organizations with small administrative structures, limited resources, and a close relationship between owners' decisions and business practices. In these organizations, understanding the mechanisms associated with technology acceptance may contribute to designing digital transformation strategies that are better aligned with entrepreneurs' needs and capabilities.

In this context, the objective of this study is to analyze technology adoption among microentrepreneurs in Bogotá using the Technology Acceptance Model (TAM), with particular emphasis on the relationship between attitude toward technology and technology adoption, as well as the role of perceived usefulness and perceived ease of use in shaping such attitudes.

This study seeks to contribute in two areas. From a theoretical perspective, it examines the application of the TAM within the specific context of microenterprises and analyzes the role of technology-related perceptions and attitudes. From a practical perspective, the findings may help identify factors that should be considered when designing strategies and programs aimed at promoting the effective adoption of digital tools among microentrepreneurs.

Theoretical Framework

Technology Adoption in Microenterprises

Technology adoption is a process through which individuals and organizations incorporate technological tools, systems, and resources into their activities to improve processes, facilitate decision-making, and respond to changes in the environment. In the business context, this process has become increasingly relevant due to the advancement of digitalization and the growing need to use technologies to enhance productivity, communication, marketing, and information management.

De León Sigg et al. (2014) specifically address the adoption of information technologies in small businesses, while Mero et al. (2020) highlight the opportunities arising from the incorporation of new technologies into business processes. Along the same lines, Remedi-Rumi and Arzuaga-Williams (2024) analyze the relationship between dynamic capabilities, technology adoption, and performance in SMEs. Taken together, these studies show that technology adoption is a process linked both to the characteristics of technological tools and to organizations' capabilities to incorporate them into their activities.

These conditions may influence the speed and extent to which technologies are incorporated into business activities. Recent literature shows that digital adoption in small businesses depends on technological and organizational factors, as well as on the perceptions and capabilities of decision-makers (Clemente-Almendros et al., 2024; Gutiérrez Navas et al., 2025).

Recent research has also examined the digitalization of small businesses across different technologies and organizational contexts. Amoah et al. (2023) studied social media adoption in SMEs from a business sustainability perspective, while Duran and Castillo (2023) examined factors related to the adoption of information and communication technologies in Colombian small businesses. Omrani et al. (2024), in turn, analyzed the drivers of digital transformation in SMEs. Taken together, these studies indicate that technology adoption is a multidimensional phenomenon involving individual, technological, and organizational factors.

Recent empirical evidence confirms the relevance of examining these processes from a technology acceptance perspective. For example, studies conducted in microenterprises have used the Technology Acceptance Model to analyze the adoption of digital marketing tools through structural equation modeling, identifying relationships among knowledge sources, perceived usefulness, and perceived ease of use (Buvár & Gáti, 2023). Digital technology adoption in small and medium-sized enterprises has also been examined from the perspective of sustainability and the use of digital platforms. Amoah et al. (2023) show that social media adoption in SMEs is associated with factors that support its use as a tool for strengthening business sustainability and performance. These findings reinforce the importance of analyzing technology adoption not only in terms of the availability of technological tools but also in terms of the perceptions and conditions that facilitate their appropriation.

Technology Acceptance Model

The Technology Acceptance Model (TAM) is one of the main theoretical frameworks used to explain individuals' acceptance and use of technology. Davis (1989) developed and validated scales for two fundamental variables: perceived usefulness (PU) and perceived ease of use (PEOU).

Davis's (1989) seminal study found positive associations between perceived usefulness, perceived ease of use, and the use of technological systems. Perceived usefulness also showed a stronger association with usage behavior than perceived ease of use. The findings further suggested that perceived ease of use may act as an antecedent of perceived usefulness.

Subsequently, Davis, Bagozzi, and Warshaw (1989) analyzed technology acceptance by jointly considering attitudes, intentions, perceived usefulness, and perceived ease of use. Their findings showed that perceived usefulness played a particularly important role in the intention to use technological systems.

The applicability of the TAM has subsequently been examined across different contexts and populations. Using multigroup analysis, Teo et al. (2009) examined technology-use intentions based on the TAM, contributing to evidence of its usefulness for analyzing technology acceptance processes across different groups of users. These findings support the use of the model as a theoretical foundation for examining perceptions and attitudes associated with technology adoption.

The TAM is particularly relevant for studying technology adoption in microenterprises because it enables the phenomenon to be examined from the entrepreneur's perspective. More recent studies continue to apply this framework in business and entrepreneurial contexts, demonstrating its continued relevance for analyzing different digitalization processes.

Perceived Usefulness

Perceived usefulness is one of the fundamental components of the TAM. Davis (1989) defines it in terms of an individual's belief that using a particular system can improve their performance. In his original study, perceived usefulness showed important associations with both reported use and expectations of future use of technological systems. The technology acceptance literature continues to emphasize perceived usefulness as a relevant variable for understanding decisions related to technology use. In the context of microenterprises, this perception becomes particularly important when entrepreneurs identify concrete benefits arising from the incorporation of digital tools.

In the present study, perceived usefulness is part of the Attitude Toward Technology (ATT) construct and represents microentrepreneurs' assessment of the benefits derived from using technology in their business activities.

Perceived Ease of Use

Perceived ease of use refers to an individual's assessment of the effort required to learn and use a particular technology. A tool perceived as understandable and relatively easy to use may present fewer barriers to acceptance, whereas perceived complexity may hinder its adoption. Davis (1989) found a positive relationship between perceived ease of use and technology use, although this relationship was weaker than that observed for perceived usefulness. His analyses also suggested that ease of use could indirectly influence technology acceptance by increasing the perceived usefulness of the system.

In microenterprises, perceived ease of use may be particularly relevant. Owners and managers often perform multiple functions simultaneously; therefore, the time and effort required to learn a technology may become important factors in deciding whether to use it.

In the present study, perceived ease of use forms part of the operationalization of the Attitude Toward Technology construct and represents microentrepreneurs' assessment of the conditions required to learn and use technological tools.

Attitude Toward Technology

Attitude toward technology represents an individual's favorable or unfavorable evaluation of the use of technological tools. Within technology acceptance models, attitudes help explain how beliefs and perceptions may be related to subsequent decisions regarding technology use. Davis, Bagozzi, and Warshaw (1989) explicitly analyzed the relationships among perceived usefulness, perceived ease of use, attitude, intention, and usage behavior. Their findings showed that technology-related perceptions contribute to explaining users' intentions and behaviors, although the relationships among these elements may vary depending on the context and stage of technology use.

In this study, the Attitude Toward Technology (ATT) construct was operationalized through four components:

- perceived usefulness of technology;
- perceived ease of use of technology;
- attitude toward innovation;
- perceived usefulness of technology for the business.

This operationalization represents technology attitude as a multidimensional assessment combining perceptions of the benefits of technology, the conditions required for its use, and the entrepreneur's disposition toward innovation.

Technology Adoption

Technology adoption refers to the effective incorporation and use of technological tools in business activities. Unlike intention to use, adoption involves actual manifestations related to the use or implementation of technology.

In this study, the Technology Adoption (ADOPT) construct was operationalized through three indicators:

- level of technology use;

- technology adoption following the training process;
- implementation of technological systems or tools.

This operationalization provides an approximation of adoption behavior through different manifestations of technology use observed among the microentrepreneurs studied.

The incorporation of digital technologies can also change how businesses interact with consumers and conduct their commercial activities. In this regard, Zuniarti et al. (2021) analyzed the effect of e-commerce presence on consumer purchasing decisions, highlighting the growing importance of digital platforms in business–market relationships.

Relationship Between Attitude Toward Technology and Technology Adoption

The relationship between individuals' evaluations of technology and its subsequent use is one of the foundations of technology acceptance models. Perceptions of usefulness and ease of use contribute to explaining individuals' disposition toward a technology and may subsequently influence their intentions and usage behavior. The TAM provides a theoretical basis for considering that positive perceptions of technology favor its acceptance. Davis (1989) found associations among perceived usefulness, perceived ease of use, and technology use, while Davis, Bagozzi, and Warshaw (1989) demonstrated the importance of attitudes and intentions within the acceptance process.

More recent evidence from small businesses continues to demonstrate the relevance of jointly examining perceptual variables and adoption behaviors. Studies on ICT and digital marketing adoption in MSMEs have employed the TAM and structural equation models to investigate these mechanisms (Buvár & Gáti, 2023).

In the context of microentrepreneurs, a favorable attitude toward technology may reflect recognition of its benefits for the business, a positive perception of its ease of use, and a greater disposition toward innovation. These conditions may subsequently facilitate the incorporation of technological tools into business activities. Based on this theoretical foundation, the following hypothesis is proposed:

H1. Attitude toward technology is positively related to technology adoption among microentrepreneurs.

Conceptual Model of the Study

The proposed conceptual model considers Attitude Toward Technology (ATT) as the construct integrating microentrepreneurs' technological perceptions and evaluations, and Technology Adoption (ADOPT) as the behavior associated with the incorporation and use of technology.

The conceptual structure can be represented as follows:

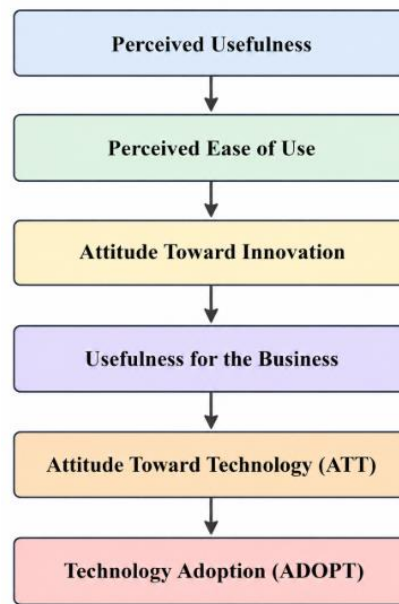


Figure 1. Conceptual Model of Attitude Toward Technology and Technology Adoption among Microentrepreneurs

Source: Authors' own elaboration based on Davis (1989) and Davis, Bagozzi, and Warshaw (1989).

Methodology

Research Approach and Design

The study adopted a quantitative approach using a non-experimental, cross-sectional design aimed at analyzing the relationship between attitude toward technology and technology adoption among microentrepreneurs in Bogotá. The non-experimental nature of the study reflects the fact that the variables were analyzed without deliberately manipulating their conditions, while the cross-sectional design involved the use of information collected during a specific period. The analysis focused on examining the relationships among the constructs included in the technology acceptance model.

To evaluate the relationships among the variables, Structural Equation Modeling (SEM) was employed. This technique made it possible to simultaneously represent latent constructs and observed indicators and to estimate the structural relationship between attitude toward technology and technology adoption.

Participants

The reference population consisted of microentrepreneurs involved in business support programs in Bogotá. The sample used for the analysis comprised 79 microentrepreneurs. The participants had taken part in support activities that included components aimed at strengthening technological competencies and promoting the use of digital tools applicable to their business activities. The unit of analysis was the microentrepreneur, considering their perceptions and behaviors related to the use and adoption of technology in the development of their business activities.

Variables and Operationalization

Two main constructs were considered in the analysis: Attitude Toward Technology (ATT) and Technology Adoption (ADOPT).

Attitude Toward Technology (ATT) represents the microentrepreneur's evaluation of the use of technology in business activities. This construct was operationalized through four indicators: perceived

usefulness of technology, perceived ease of use of technology, attitude toward innovation, and perceived usefulness of technology for the business.

Technology Adoption (ADOPT) represents the incorporation and use of technological tools in business activities. This construct was operationalized through three indicators: level of technology use, technology adoption following the training process, and implementation of technological systems or tools. Table 1 presents the operationalization of the constructs included in the model.

Table 1. Operationalization of the Constructs

Construct	Code	Indicators
Attitude Toward Technology	ATT	Perceived usefulness of technology
		Perceived ease of use of technology
		Attitude toward innovation
		Perceived usefulness of technology for the business
Technology Adoption	ADOPT	Level of technology use
		Technology adoption following the training process
		Implementation of technological systems or tools

Source: Authors' own elaboration.

This operationalization made it possible to represent the two constructs included in the structural model through observed variables.

Instrument and Data Collection

The information used in the study was obtained through an instrument administered to the participating microentrepreneurs. For the analysis conducted in this article, items specifically related to perceptions of technology and technology adoption behaviors were selected.

The indicators corresponding to attitude toward technology collected information related to the perceived usefulness of technology, perceived ease of use, disposition toward innovation, and perceived usefulness for business activities. The technology adoption indicators, in turn, made it possible to identify the level of technology use and its subsequent incorporation into business activities.

Model Specification

The measurement model consisted of the latent constructs ATT and ADOPT and their respective observed indicators. Attitude Toward Technology was specified as follows:

$ATT = \text{perceived usefulness} + \text{perceived ease of use} + \text{attitude toward innovation} + \text{usefulness for the business}$

Technology Adoption was specified as follows:

$ADOPT = \text{level of technology use} + \text{adoption following the training process} + \text{implementation of technological systems or tools}$

The structural relationship of interest was established between attitude toward technology and technology adoption, in accordance with the hypothesis proposed in the theoretical framework.

The structural model can be expressed in simplified form through the following equation:

$$\text{ADOPT} = \beta_0 + \beta_1(\text{ATT}) + \varepsilon \quad (1)$$

where ADOPT represents technology adoption; ATT represents attitude toward technology; β_0 is the intercept; β_1 represents the coefficient associated with attitude toward technology; and ε represents the error term.

The expected relationship between the constructs is expressed as:

$$\text{ATT} \rightarrow \text{ADOPT}$$

in accordance with the hypothesis that a more favorable attitude toward technology is positively related to higher levels of technology adoption.

Statistical Analysis

Data processing and analysis were conducted using JASP, employing Structural Equation Modeling (SEM). The analysis comprised two components. First, the measurement model was examined to establish the relationships between the latent constructs and their respective observed indicators. Second, the structural model was evaluated to estimate the relationship between attitude toward technology and technology adoption. The available estimates correspond to unstandardized coefficients. Consequently, their interpretation focused primarily on the sign and direction of the estimated relationships, avoiding direct comparisons of the magnitude of indicators measured on different scales.

Because the available statistical output does not provide complete information on standard errors, test statistics, *p*-values, confidence intervals, and standardized coefficients for all structural relationships, the model results were interpreted as exploratory. Therefore, the estimates allow the direction of the observed associations to be examined but are not used to establish causal relationships or make inferential claims unsupported by the available statistical information.

Results

Structural equation modeling made it possible to examine the measurement model for the Attitude Toward Technology (ATT) and Technology Adoption (ADOPT) constructs and to estimate the structural relationship between them. The results are presented first in terms of the indicators comprising each construct and subsequently through the estimated relationship between attitude toward technology and technology adoption.

4.1. Measurement Model

The Technology Adoption (ADOPT) construct was represented by three indicators: level of technology use, technology adoption following the training process, and implementation of technological systems or tools.

The unstandardized estimates obtained were 1.000 for level of technology use, 0.371 for technology adoption following the training process, and 0.012 for implementation of technological systems or tools.

Table 2. Measurement Model Estimates

Construct	Indicator	Unstandardized Estimate
ADOPT	Level of technology use	1.000*
ADOPT	Technology adoption following the training process	0.371
ADOPT	Implementation of technological systems or tools	0.012
ATT	Perceived usefulness of technology	1.000*

Construct	Indicator	Unstandardized Estimate
ATT	Perceived ease of use	0.492
ATT	Attitude toward innovation	4.463
ATT	Perceived usefulness for the business	3.134

Note. *Indicator fixed as the reference indicator to establish the scale of the construct. Estimates correspond to unstandardized coefficients.

Source: Authors' own elaboration based on the results obtained in JASP.

For ATT, the construct comprised perceived usefulness of technology, perceived ease of use, attitude toward innovation, and perceived usefulness for the business. The unstandardized estimates were 1.000, 0.492, 4.463, and 3.134, respectively.

The value of 1.000 observed for the first indicator of each construct corresponds to the parameter fixed as a reference to establish the scale of the latent variable. Therefore, it should not be interpreted as a perfect factor loading or as evidence that this indicator has the greatest relative importance within the construct.

Likewise, differences in the magnitude of the unstandardized estimates do not allow the relative importance of the indicators to be directly established. Such comparisons would require standardized factor loadings.

Relationship Between Attitude Toward Technology and Technology Adoption

Once the measurement model had been specified, the structural relationship between attitude toward technology and technology adoption was examined. This relationship corresponds to the central hypothesis proposed in the study.

The unstandardized estimate obtained for the ATT → ADOPT relationship was 6.146.

Table 3. Structural Relationship Between Attitude Toward Technology and Technology Adoption

Predictor	Dependent Variable	Unstandardized Estimate
Attitude Toward Technology (ATT)	Technology Adoption (ADOPT)	6.146

Source: Authors' own elaboration based on the results obtained in JASP.

The positive sign of the estimate indicates that higher values of the Attitude Toward Technology construct are associated with higher values of the Technology Adoption construct. In terms of direction, this result is consistent with the relationship proposed in the research hypothesis.

However, the available statistical information does not provide complete information on the standard error, test statistic, *p*-value, confidence interval, or standardized coefficient corresponding to this relationship. Therefore, the coefficient of 6.146 should be interpreted as an unstandardized estimate with a positive direction, rather than as sufficient evidence, by itself, to conclude that the relationship is statistically significant. Consequently, the hypothesis:

H1. Attitude toward technology is positively related to technology adoption among microentrepreneurs

Is supported with respect to the positive direction of the estimated association. However, definitive inferential testing of this hypothesis would require the additional statistics from the structural model.

Residual Variances

As part of the evaluation of the measurement model, the residual variances of the indicators were analyzed. These represent the variability of each observed variable that is not accounted for by the corresponding latent construct. The results are presented in Table 4.

Table 4. Residual Variances of the Indicators

Construct	Indicator	Residual Variance
ADOPT	Level of technology use	0.216
ADOPT	Technology adoption following the training process	0.892
ADOPT	Implementation of technological systems or tools	1.000
ATT	Perceived usefulness of technology	0.997
ATT	Perceived ease of use	0.999
ATT	Attitude toward innovation	0.944
ATT	Perceived usefulness for the business	0.973

Source: Authors' own elaboration based on the results obtained in JASP.

Among the indicators corresponding to ADOPT, level of technology use showed the lowest residual variance (0.216). In contrast, technology adoption following the training process had a residual variance of 0.892, while implementation of technological systems or tools reached 1.000.

For the ATT indicators, high residual variances were observed: 0.997 for perceived usefulness, 0.999 for perceived ease of use, 0.944 for attitude toward innovation, and 0.973 for perceived usefulness for the business.

These results indicate that a substantial proportion of the variability in several indicators remains unexplained by the specified latent constructs.

Summary of Results

Overall, the analysis indicates a positive direction in the estimated relationship between attitude toward technology and technology adoption. This result is consistent with the conceptual proposition that a favorable evaluation of technology may be associated with a greater disposition to incorporate it into business activities.

However, given the characteristics of the measurement model and the absence of some inferential statistics in the available outputs, the findings should be regarded as exploratory evidence. In particular, the high residual variances observed for several indicators highlight the need to strengthen construct measurement and evaluate alternative model specifications in future research.

Discussion

The findings provide an opportunity to examine technology adoption among microentrepreneurs from a perspective centered on the perceptions and attitudes they develop toward the use of digital tools. The positive direction observed in the relationship between Attitude Toward Technology (ATT) and Technology Adoption (ADOPT) is consistent with the foundations of the Technology Acceptance Model, according to which favorable user evaluations play an important role in technology acceptance and use.

This finding is supported by the original framework proposed by Davis (1989), who identified perceived usefulness and perceived ease of use as fundamental variables for understanding technology acceptance.

From this perspective, the decision to use a technology depends not only on its availability but also on users' assessment of the benefits they may obtain and the effort required to use it.

This interpretation is consistent with Davis (1989), who found a particularly relevant association between perceived usefulness and technology usage behavior.

Perceived ease of use represents another component of this evaluation. Microenterprises often operate with small administrative structures, and their owners may simultaneously perform multiple functions within the business. Under these conditions, the time and effort required to learn and use a new technology may become relevant factors in its acceptance. A tool perceived as understandable and compatible with the entrepreneur's capabilities may present fewer barriers to adoption.

The findings should also be interpreted considering that attitude toward technology was operationalized as a multidimensional construct, comprising perceived usefulness, perceived ease of use, attitude toward innovation, and the perceived usefulness of technology for the business. Consequently, the estimated positive association between ATT and ADOPT cannot be attributed exclusively to any single component but rather to the overall evaluation represented by the construct.

From a practical perspective, the findings suggest that strategies aimed at promoting the digitalization of microenterprises should not be limited to facilitating access to devices, software, or digital tools. Although access to technology is an important condition, its effective adoption may also depend on entrepreneurs recognizing concrete benefits from its use and perceiving that these tools can be reasonably integrated into their routine business activities.

Attitude toward innovation is also a relevant component of the construct analyzed. Technology adoption often involves modifying established procedures, acquiring new knowledge, and engaging in learning processes. Therefore, a greater disposition toward innovation may facilitate experimentation with new tools and encourage their incorporation into business activities.

Nevertheless, the findings should be interpreted in light of the identified statistical limitations. Although the estimate corresponding to the ATT → ADOPT relationship was positive, the available information does not provide complete standard errors, *p*-values, confidence intervals, or standardized coefficients required to establish statistical significance and appropriately compare effect sizes. Therefore, the finding should be understood as exploratory evidence of a positive association.

Furthermore, because of the cross-sectional and non-experimental nature of the study, the identified relationships do not allow causal conclusions to be drawn. The positive association between attitude toward technology and technology adoption does not imply that one variable necessarily causes the other; rather, it indicates that they are related within the estimated model.

Overall, the findings show that the study of digital transformation in microenterprises requires consideration not only of the technological resources available but also of the perceptions and attitudes of those responsible for business decisions. Technology may be available, but its effective adoption also depends on whether entrepreneurs perceive it as useful, understandable, and applicable to the specific needs of their businesses.

Conclusions

This study analyzed technology adoption among microentrepreneurs in Bogotá using the Technology Acceptance Model (TAM), considering attitude toward technology as a construct comprising perceived usefulness, perceived ease of use, attitude toward innovation, and the perceived usefulness of technology for the business. The results obtained through structural equation modeling indicate an estimated positive association between attitude toward technology and technology adoption.

This finding provides exploratory evidence regarding the potential importance of microentrepreneurs' perceptions and attitudes in the adoption of technological tools. Technology adoption does not appear to depend solely on the availability of technology but also on entrepreneurs' assessments of its usefulness, ease of use, and applicability to their business activities.

The high residual variances observed for several indicators suggest the need to review the specification of the measurement model and evaluate alternative approaches that may represent the constructs more accurately. Future research could also examine perceived usefulness and perceived ease of use as separate constructs, following a specification more closely aligned with the traditional structure of the TAM.

The conclusions should be interpreted in light of the study's limitations. The sample consisted of 79 microentrepreneurs, and therefore the findings cannot be automatically generalized to the broader population of microenterprises in Bogotá. In addition, the cross-sectional and non-experimental nature of the study allows associations to be identified but does not permit causal relationships to be established. The absence of some inferential statistics in the available model outputs also requires the findings to be interpreted as exploratory.

Future research could increase the size and diversity of the sample, include microentrepreneurs from different economic sectors, and test models that independently examine the relationships among perceived ease of use, perceived usefulness, attitude toward technology, and technology adoption. It would also be relevant to incorporate variables related to digital capabilities, resource availability, technological experience, and organizational characteristics.

Overall, the study supports the relevance of the Technology Acceptance Model as a conceptual framework for examining the digitalization of microenterprises and highlights the importance of considering entrepreneurs' perceptions and attitudes when designing strategies aimed at strengthening technology adoption.

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