





Factors Affecting Technological Readiness and Acceptance of Induction Stoves: A Pilot Project

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Abstract

In 2022, through the state electricity company, the Indonesian government launched a pilot experiment to cut imports of liquefied petroleum gas by giving program packages to 1,000 families in five districts in Surakarta. *Objectives:* Using the technology readiness and acceptance model (TRAM), this study examined the elements influencing the readiness and acceptability of the induction stove program in Surakarta. *Method/Analysis:* The empirical findings from a 389-responder survey showed that the program's public acceptance was supported by favorable technological preparedness, including elements like innovation and optimism. *Findings:* Perceived use, enjoyment, usefulness, cost level, and confirmation were all factors that affected participants' happiness and willingness to continue using induction stoves and participating in the program. Interestingly, acceptability, general contentment, and the willingness to use induction stoves were not always affected by issues like discomfort and insecurity. Additionally, this research emphasized how crucial the social context is for successfully implementing a program and embracing new technologies. *Novelty:* This is the first study that concurrently identifies, assesses, and analyzes the integration of factors impacting technology readiness and acceptance (TRAM) into the community's intention to continue participating in the induction stove conversion program. These empirical results offer practical guidance for stakeholders in induction stove conversion projects, particularly in developing nations, and also add to a theoretical understanding of TRAM factors.

Keywords:

Community Perception;
Conversion;
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1- Introduction

Energy subsidy reform is a goal of the Indonesian National Medium-Term Development Plan (RPJMN) for 2020–2024 [1, 2]. Distribution of 3-kg liquefied petroleum gas (LPG) canisters to low-income households and small- and medium-sized businesses is governed by one of Indonesia's current energy subsidy schemes. This policy was established as part of the kerosene-to-LPG conversion effort in 2007 [2, 3] and was initially deemed effective by the Indonesia National Oil Company (PERTAMINA), saving IDR 21.38 trillion (USD 1.4 billion) in state subsidies from January 2007 to August 2010. In comparison with options that were widely utilized at the time, such as firewood, charcoal, and kerosene, LPG was judged to be the most effective fuel [1]. According to the Organization for Economic Co-operation and Development, this policy was successful in lowering kerosene subsidies by more than 93% between 2008 and 2018 [1]. When domestic production was unable to satisfy national demands, PERTAMINA imported

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propane and butane as raw materials for LPG to assure the program's continuous execution [3, 4]. However, the Indonesia State Revenue and Expenditure Budget (APBN) has been under pressure as a result of these energy subsidies [5]. For instance, energy subsidies totaled IDR 136.9 trillion (USD 9.7 billion) in 2019, accounting for around 6% of all government spending [6]. In order to limit LPG imports, the Indonesian government adopted a number of measures, including substituting dimethyl ether (DME) and switching LPG burners for electric induction stoves [7]. According to the first approach, the government has expanded the urban gas network program and launched DME coal gasification to deliver liquefied natural gas. These programs are seen as long-term solutions because they have not yet attained a large enough scale [1].

The next move is to switch out LPG stoves for induction stoves. An analysis by the Agency for the Assessment and Application of Technology (BPPT) in 2020 reported that this approach is the most viable choice for Indonesians [1], for the following reasons. First, Indonesia has surplus electricity reserves of more than 30% from various power sources, particularly Java Island, which are anticipated to rise with the activation of new renewable energy sources [1]. Second, induction stoves have an efficiency rating of 85%, which is significantly higher than that of LPG stoves (45% efficiency); if households were to replace an LPG stove with an induction stove, BPPT predicted that Indonesia could reduce LPG imports by approximately 330,000–515,000 thousand kilograms [2]. The third reason is that, in the long term, cooking with induction stoves aids in reducing carbon emissions, particularly when the source of electricity is derived from new renewable energy, which the state electricity company (PT PLN) plans to implement [3, 7]. Fourth, apart from being more effective, induction stoves provide various benefits over other fuel sources, including wood, charcoal, and LPG.

Several studies and scientific experiments in various countries, including India [8–11], Ecuador [12–14], Ethiopia [15], South Korea [16], and Canada [17], have proven that induction stoves are more efficient, hygienic, practical, and safe and do not generally affect the taste of the food. However, the execution of this induction stove replacement approach in different nations has shown several difficulties, including increased usage of electricity, expenditures on stoves, and the requirement of particular cooking utensils constructed from ferromagnetic materials [5]. Furthermore, designing an induction stove with a glass layer may not be suitable for certain Asian cuisines, which require unique cookware or ceramics [17]. Similarly, Indian and Mexican traditional dishes such as *chulhad* and *tortillas* require particular utensils, rendering induction stoves impractical in these situations [18].

In Indonesia, to promote induction stoves as a replacement for LPG stoves, the government implemented a pilot program in Denpasar and Surakarta in Bali and Central Java, respectively. Regarding this program, PT PLN provided complimentary induction stoves and utensils to 1,000 inhabitants in each of these areas, promoting them to use this technology. To examine the factors influencing the readiness and acceptance of Indonesian communities toward induction stove technology, this study conducts a case study in Surakarta, utilizing the technology readiness and acceptance model (TRAM) with the partial least squares structural equation modeling (PLS-SEM) method.

Several earlier studies have explored the use of induction stove technology to replace LPG gas burners. The majority of researchers examine the implementation of induction stoves from a technological and environmental perspective, such as a comparison of energy efficiency [14, 15], electrical systems [15], air pollution and carbon emissions, and technology comparisons for cooking ingredients [14]. The experimental design strategy is frequently employed by these scientists. Furthermore, researchers also analyzed the marketing and satisfaction of using an induction stove [4, 16].

Several researchers have taken an economic point of view in implementing induction stoves, including Hakam et al. [2] and Al Irsyad et al. [3]. Both of them analyzed the feasibility study with a long-term business and economic approach for the Indonesian government for the induction stove transition program. Kim et al. [16] investigated the willingness of the South Korean people to pay for induction stoves and their electricity if a switch from LPG gas stoves to induction stoves was made. In the country of Ecuador, an economic study of the transition of induction stoves was carried out by Martínez-Gómez et al. [14]. Cost-benefit analysis is an analytical technique that has been widely used by these researchers.

Furthermore, in the social field, Banerjee et al. [8] conducted an analysis of the transformation of conventional stoves (LPG gas, firewood) to induction stoves in India. The survey approach was conducted with 1,000 Indian community members who participated in the energy transformation initiative. An in-depth study using a descriptive analysis approach was used to explore whether this energy transformation activity was able to influence the cooking behavior of the Indian community. The findings of this study shed light on the fact that the community is generally unable to rapidly transform cooking with an induction cooker, which has the potential to only be implemented in urban areas with enough electricity. A similar program was also launched in Ecuador in 2014, which was analyzed by Gould et al. [13]. The satisfaction survey of the people participating in the induction stove conversion program was examined by 383 respondents. As a result, during the 3 years of program implementation, people's satisfaction with the program was low, and only 17% of the people used induction stoves. The exploration of documents, literature, interviews, and FGDs is used as a research methodology.

Various points of view have been used by previous researchers to study induction stoves and their implementation, namely, from a technological, environmental, economic, and social perspective. Each researcher studied with a methodological approach appropriate to the setting of the study, including laboratory experiments, economic analyses, surveys, and interviews. Of the various previous studies, studies in the field of social acceptance of induction stove technology are relatively rare (e.g., [8, 13]). Previous studies, apart from being confined to descriptive research, have not examined what aspects or factors correlate with each other and influence the readiness and acceptance of induction stove technology to be implemented in society. On the other hand, it is very important to prepare for the implementation of induction stove technology in a sustainable manner. Constructive models of technology acceptance and community readiness are crucial to be formulated to identify factors that correlate with the sustainability of the conversion program and the use of induction stoves. A socio-technological analysis approach with statistical multivariate correlation methods is important to fill this gap and complement the findings of previous studies.

The findings of this study can provide new perspectives from a socio-technological perspective, which gives stakeholders or decision-makers practically, especially in developing countries, a comprehensive overview of the factors influencing the community's readiness and acceptance of the induction stove conversion program. The results can serve as a basis to deploy electricity-based clean technology by converting LPG to contemporary stoves in a developing nation, which is known for its diverse culinary traditions and distinctive social cooking practices [19–21]. This aspect would be presented in the practical implications section. Additionally, the social context based on the empirical results offers the theory of TRAM some implications that differ from the conceptual model. These interesting findings would be discussed further in the theoretical implications discussion section.

This study is presented in seven sections. Section 1 provides the background and study objectives, while Section 2 presents the literature used as the basis for analysis. The conceptual model and research hypotheses are presented in Section 3. Section 4 outlines the research method. The data results are reported in Section 5, while the discussion of the study findings and their theoretical and practical ramifications is presented in Section 6. Finally, Section 7 focuses on the limitations and opportunities for further studies and concludes the study.

2- Literature Review

2-1-Induction Stove

An induction stove is a type of contemporary cooking technology that uses electrical energy to produce heat through the propagation of electromagnetic waves [8]. It is considered a clean cooking technology, differentiating it from traditional electric stoves [15, 22]. Although electric and induction stoves use electricity, induction stoves are operated using distinct principles; the heating system of an induction stove consists of an alternating current (AC) generator, an induction coil, and a magnetic material for heating [9, 22]. The AC produced by the generator flows through the induction coil [22], creating an alternating magnetic field with a frequency range of 20–50 kHz in the cooking area [8]. This magnetic field penetrates iron cookware (magnetic material), such as stainless steel pots and pans, generating eddy currents capable of heating the base; the heat is then transferred to the contents [15, 23]. Heat generation stops when the stove is turned off or when the cookware is removed [8].

Induction stoves have the advantage of contactless energy transfer with adjustable heating levels [14, 22], leading to a safer and cleaner system [14, 22, 24] that produces zero emissions [25, 26]. Induction cooking is more efficient [8, 14, 16] and produces healthier food [16, 24] due to its stable heating capabilities [8, 24]. This technology seeks to replace traditional gas burners in homes to advance a sustainable future [22, 24].

Although induction stoves offer numerous benefits, some users may find them challenging to use because of the complex system [14]. The stove surface is prone to dents and breaks, making it more brittle [23]. It also requires special cooking utensils made from stainless steel, which tend to increase the perceived cost [13, 25]. Some consumers may find induction stoves unsuitable for traditional regional specialties that require conventional cookware made of materials such as clay or wood [15, 18].

2-2-Challenges in Implementing Induction Stoves

Several developing countries, such as Ecuador, have initiated programs to convert from LPG to induction stoves [12-14, 27]; in Ecuador, 90% of the population used LPG gas burners before the initiative. Like Indonesia, the Ecuadorian government provided subsidies to alleviate reliance on LPG, and the rise in LPG prices strained the state budget for almost three decades [13, 25]. The Ecuador conversion initiative is scheduled to run from 2016 to 2032; it is expected to reduce energy demand for LPG by 20 million gigajoules (GJ) and lower greenhouse gas emissions by 40.8 billion kg [14].

A survey conducted in Ecuador revealed that the adoption rate of induction stoves for daily cooking was extremely low, with only 1% of the 383 houses examined using stoves from the program. People were unsatisfied with induction stoves; those in rural areas preferred to use firewood for cooking due to the scarcity of LPG [13]. A study by the Ecuador Ministry of Electricity and Renewable Energy revealed that the program failed due to a lack of publicity and

insufficient support for beneficiary homes, resulting in them leaving the initiative after obtaining the induction stove and cookware [13]. Nevertheless, the program demonstrated the resilience of electrical infrastructure in meeting new demands [13, 14].

Ethiopia has joined the group of developing nations promoting induction stoves to implement clean cooking technology; however, the adoption process has faced challenges related to policies and strategies. Lessons learned from Ethiopia include the need for creating laws and strategies for clean cooking, ensuring gender empowerment, putting quality standards for cooking technology, and enhancing supply and demand. These factors are critical for policies encouraging the adoption of efficient, clean, and safe induction stoves in Ethiopia [15]. Ghana has started an induction stove program, although the technology's usage in the country remains limited. Most Ghanaians continue to rely on wood and coal cooking stoves (76%). Therefore, the government has actively promoted clean cooking technology, including electric and induction stoves; however, LPG and ethanol stoves remain the preferred options for most people. Findings from studies show that the operational use of induction stoves is a big challenge for many Ghanaians, with most users finding it difficult and time-consuming [28].

A study in India reported that induction stoves were introduced to nearly 4,000 rural households in Himachal Pradesh. A survey of 1,000 households showed that 15% of homes severely relied on LPG for cooking before the project. Following the implementation, this number decreased significantly, with only 5% using LPG as their primary cooking fuel and 10% switching to electricity. Notably, most homes (84%) using LPG as a backup cooking fuel moved to induction stoves; only 8% continued to use LPG as secondary fuel. These results imply that the program successfully lowered LPG consumption in India; however, some areas in India lack adequate electrical infrastructure [8]; additional investment in infrastructure development is required to solve this problem.

2-3- Technology Readiness and Acceptance

Uren and Edwards [29] found that considering the readiness of the region is crucial for new technology to be effectively adopted and implemented. This is crucial for technology involving human connection [29], as some well-intentioned technologies were not properly employed in the past [30]. Therefore, the public's perception of new technology must be measured, predicted, and analyzed to develop appropriate strategies for its acceptance and implementation [30, 31].

Parasuraman [32] stated that when people deal with new technology, they tend to have different attitudes, beliefs, perceptions, emotions, and motivations that impact their technology readiness. Readiness emerges from four personality dimensions—optimism, innovation, discomfort, and insecurity. Optimism and creativity work as mental enablers, whereas discomfort and insecurity operate as mental barriers to acceptance of new technology [31, 33]. Optimism pertains to a positive belief in the ability of technology to increase efficiency and ensure flexibility in everyday life and society, while innovation reflects the propensity to become pioneers of technology, with respect to products and services [33-35]. Discomfort denotes a perception of lacking control and confidence when utilizing technology, while insecurity refers to a mistrust of technology stemming from skepticism about its functioning and the potentially negative effects of using it [31, 33, 36]. Therefore, the technology readiness factor measures optimism, innovation, discomfort, and insecurity [33].

Similar to increasingly revolutionary products and technologies such as e-commerce, social media, and cloud computing, the assessment indicator items of technology readiness were adapted and developed into Technology Readiness 2.0 [31]. This model, based on user perceptions, is extensively applied in studying new products, including food delivery robots in restaurants [37], electric vehicles [38], solar photovoltaic technology [39], and artificial intelligence [29]. Furthermore, certain studies propose that adopting new technology is intimately related to the decision-making process influenced by community approval [40]. Approaches used to analyze this phenomenon include the theory of reasoned action (TRA) [41], the theory of planned behavior (TPB) [42], the innovative diffusion model [43], and the technology acceptance model (TAM) [44-46].

Earlier studies have reported that many theoretical and model techniques help understand people's acceptance of different technologies [47]. These studies reported that the TAM approach was the most comprehensive and concise model explaining the process of technology acceptance [40]. TAM is rooted in psychology-based theories, such as TRA and TPB [48]. It evaluates an individual's acceptance and motivation to use technology based on two factors—perceived usefulness and ease of use [40, 48]. Perceived usefulness refers to the subjective belief of an individual in the successful application of a certain technology or work process, while perceived ease of use is related to how simple it is to utilize the new technology; it can also be described as the ability to use a new system or technology without difficulty [49].

Initially, TAM was largely used to evaluate an individual's preparedness to adopt information technology [46, 49]. Over time, TAM has been adapted and expanded based on preliminary studies, leading to the development of TAM 2 [50], which broadly uses additional factors and variables to explain predictors of core TAM elements [48]. The TAM 2 predictor variable emphasizes that individual views or perceptions are related to the usability of technology and are

influenced by personal cognitive thinking, including subjective norms, perceived images, output quality, and other cognitive metrics [50, 51]. TAM 3 was later developed on the basis that perceived ease of use and usefulness can be enhanced through the experiences of individuals with technology [51]. TAM is continuously updated and modified to incorporate new variables and contemporary applications of technology based on the respective study objectives. These applications include social media [52], agricultural sensor technology [53], autonomous and battery electric vehicles [54], electric vehicle charging [55, 56], mobile learning technology [57], intelligent information technology [58], electric vehicles [46, 59], digital transformation in hospitals [60], and virtual reality [47].

Readiness for usage is inadequate to ensure continuous use of technology in society. Technology must also be accepted by society as a whole [61]; however, community acceptance is insufficient for successful deployment, which indicates that people are not ready to use or comfortable with technology [35, 62]. TAM emphasizes the influence of individual cognitive aspects, such as perceived usefulness and ease of use [50, 51], leading to the development of TRAM to assess sustainable implementation of new technology. TRAM emphasizes the significance of prior knowledge and experience, especially readiness and acceptance, in successfully using and deploying technology [35]. TRAM is a theoretical approach that seeks to explain and predict the adoption and use of new technologies by individuals or organizations. TRAM includes two models: the TAM by Davis (1989) [49] and the readiness for technology adoption index (TRI) model by Parasuraman [32]. The TRAM concept proposes that individuals go through various stages of readiness before they fully accept and adopt a new technology [35].

The fundamental TRAM model created by Lin et al. [35] consists of four aspects of technology readiness (optimism, innovativeness, discomfort, insecurity) and two factors of technology acceptance (perceived usefulness and perceived ease of use). Technology readiness was theorized to be a causal antecedent of both perceived usefulness and perceived ease of use, which subsequently affect individual intentions to use the new technology. Lin et al. [35] also stated that TRAM explains why people with high technological readiness do not always accept high-tech or new technology and vice versa, because system qualities such as usability and ease of use perception also dominate the adoption behavior decision-making process.

Several studies employed TRAM to predict the public's intention to use new technology. Silva et al. [61] used TRAM to assess the viability of the Portuguese community utilizing food delivery service applications during COVID-19 from a health standpoint. Buyle et al. [62] used it to investigate data applications for smart cities. In the retail sector, TRAM was utilized to examine the attitudes of citizens in Taiwan regarding 24-hour convenience stores [63]. Furthermore, TRAM was used in the context of mobile applications for student health and wellness in the United Arab Emirates [41], mobile self-scanning applications in Portugal [64], and health and wellness applications in South Korea [36].

Additionally, TRAM has been integrated with various other models, such as the norm activation model, to determine the intention of people to use electric scooters in Taiwan [65]. Some studies have developed TRAM by incorporating variables such as perceived enjoyment of health and fitness entertainment to support their analysis of the influence of behavior on the usage of health applications [41]. Similarly, others created a successful TRAM to assess individuals' intent to utilize self-scanning software in retail establishments. These studies were based on previous studies that reported a strong correlation between technology readiness, technology acceptance, and satisfaction, which affects the sustainability of using technology products [64].

Based on the literature, TRAM has been created and frequently used to analyze intention to utilize technology in diverse circumstances and nations. Given that this study aims to analyze the intention of Indonesians toward replacing LPG stoves with induction stoves, TRAM may be a useful approach to analyze the data. This strategy would increase the use of TRAM in induction stove technology, especially in developing nations.

3- Development of Research Hypotheses

TRAM, which integrates technology readiness and acceptance, is suitable for this study for two reasons. First, the context of this study refers to introducing induction stoves in Indonesia as a pilot initiative in Surakarta. Induction stoves are a new cooking technology, and most of the targeted community in Surakarta has been accustomed to cooking with 3-kg LPG stoves. For this conversion program, the community received 3 months of socialization, instruction, and help on how to use an induction stove. To successfully analyze the sustainable use of an induction stove, examining the perceptions and opinions of the community regarding their readiness to use and acceptance of this new technology is essential.

Another argument for using TRAM is the change in energy sources due to implementing induction stove technology. The community previously used subsidized 3-kg LPG as an energy source for their gas stoves. However, for an induction stove, subsidized power is used instead. The community must understand the basic principles of electric applications to operate an induction stove effectively. The readiness and acceptance of the community

regarding this change in energy sources is thus an important component of the study and needs to be investigated using TRAM, which is well suited to accommodate these aspects.

The model used in this study is a variation of TRAM developed by Chen et al. [66], which combines technology readiness with the expectation–confirmation model along with the TAM intrinsic motivation variables, namely, perceived enjoyment [36, 67, 68] and cost [58, 67, 69]. The conceptual model in Figure 1 shows the modified form of TRAM employed in this work.

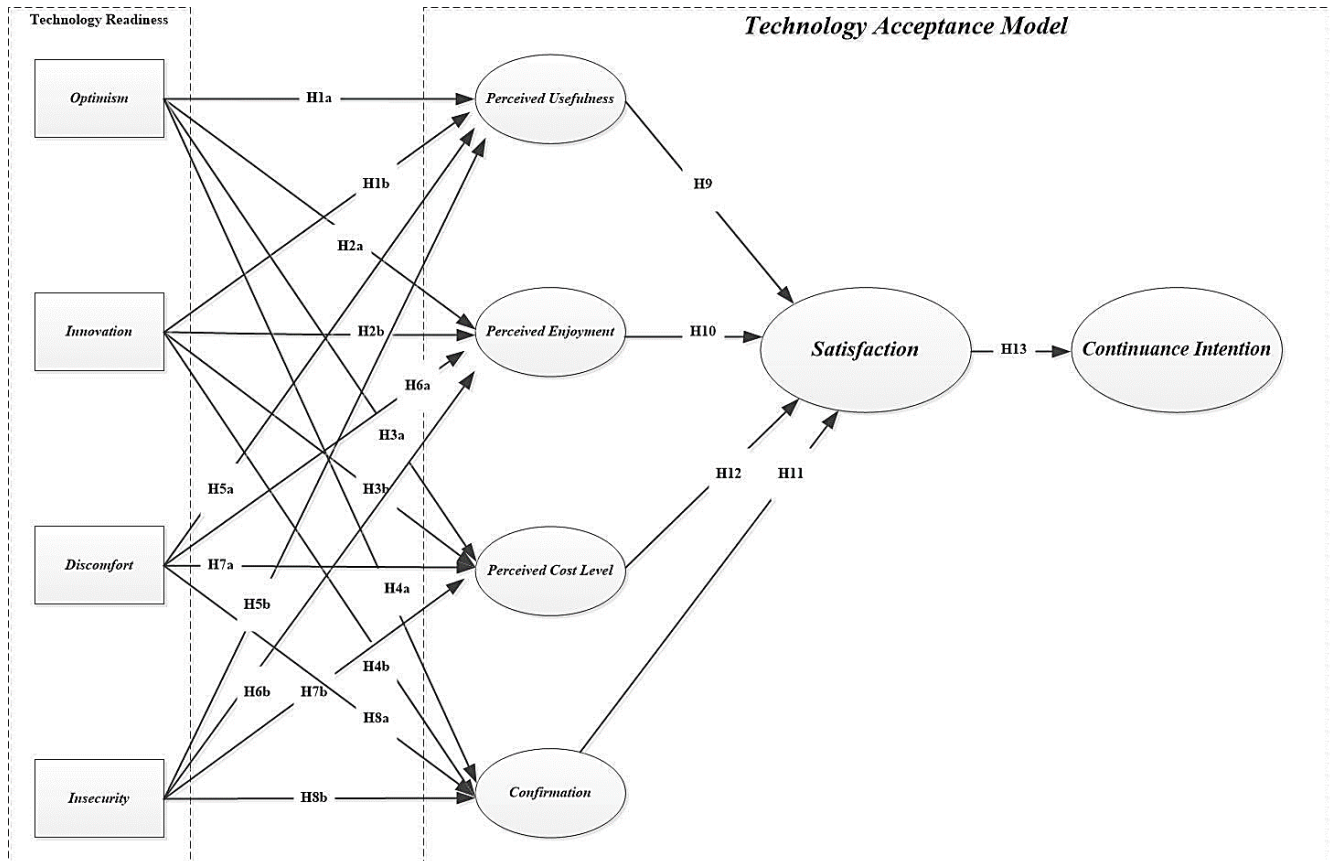


Figure 1. Induction stove program readiness and acceptance model

As discussed in Section 2.3, technology readiness comprises two enablers—optimism and innovation—that motivate users to adopt new technology [35, 40]. Conversely, two other perceptions—discomfort and insecurity—tend to prevent users from adopting new technologies [41]. This perception of technology readiness has been consistently applied to analyze the acceptance of its implementation in various contexts [61–63, 65].

Several empirical studies have reported that individual perceptions of innovation greatly support the perceived utility of new technology [30, 62, 70, 71]. Similarly, perceptions of optimism have been proven to positively impact perceived usefulness [30, 71]. People with creative and upbeat viewpoints are likely to see the implemented technology as useful. These concepts as basis for formulating the following hypotheses:

H1a: Optimism positively influences perceived usefulness of induction stoves.

H1b: Innovation positively influences perceived usefulness of induction stoves.

According to preliminary studies, innovation and optimism strongly influence the perception that implementing new technology can make the life of the individual more enjoyable (perceived enjoyment). These results were discussed in various contexts, including health and fitness applications [36], satellite digital multimedia transmission [67], and communication device brand applications [68]. Therefore, the following hypotheses are proposed:

H2a: Optimism positively influences perceived enjoyment from using an induction stove.

H2b: Innovation positively influences perceived enjoyment from using an induction stove.

The perceived cost often hinders individuals from adopting new technology or products [58, 67]; however, individuals with high levels of technology readiness, such as creativity and optimism, are more likely to have a favorable view of the cost required to implement the technology. This concept has been applied in various contexts,

including the digitalization of information technology [58], blockchain technology [72], integrated self-service technology [73], and smart tourism applications [74]. According to earlier research, a high perception of innovation and optimism toward the induction stove pilot project are important elements, leading to the following hypotheses:

H3a: Optimism positively influences the perceived cost of using an induction stove.

H3b: Innovation positively influences the perceived cost of using an induction stove.

Optimistic and innovative individuals tend to have positive expectations toward implementing new technology [66]. This expectation is based on expectation–confirmation theory (ECT), which is frequently used to examine consumer behavior concerning satisfaction, the desire to use items again, and regular usage of technological products [69]. ECT has been empirically applied in various fields, such as sports and health equipment [75, 76], information technology [77], digital payments [78], and mobile services [66]. Therefore, optimism and creativity are related to societal willingness and acceptance to continue utilizing induction stoves, as viewed through their cognitive standpoint. As a result, the following hypotheses were proposed:

H4a: Optimism positively influences confirmed use of an induction stove.

H4b: Innovation positively influences confirmed use of induction stoves.

The perceptions of discomfort and uneasiness might function as barriers to acceptance of new technology, despite the widely held notions that innovation and optimism increase technological readiness [32, 64, 75]. Discomfort arises from a fear of losing control due to the new technology [44], which can lead to a lack of confidence in its use [61, 63–65]. Insecurity is characterized by a distrust of technology and doubt about its usefulness [35]. Previous studies have reported that discomfort and insecurity can negatively impact individuals' perceptions of the usefulness of technology [30, 41, 62] as well as aspects of insecurity of the new technology application [36, 41, 61]. Consequently, those who feel uneasy and insecurity about the pilot project for induction stove technology may think it as less useful, leading to the following hypotheses:

H5a: Discomfort negatively influences perceived usefulness in using induction stoves.

H5b: Insecurity negatively influences perceived usefulness in using induction stoves.

Several studies have reported that experiencing discomfort and insecurity can impede an individual's enjoyment and willingness to adopt new technology [36, 75, 79], often caused by worry and distrust toward technology, as reported by Silva et al. [61] and Lin et al. [35]. Thus, this investigation proposes the following hypotheses:

H6a: Discomfort negatively influences perceived enjoyment from using induction stoves.

H6b: Insecurity negatively influences perceived enjoyment from using induction stoves.

Discomfort and insecurity also negatively affect perceived cost. As individuals experience increased levels of discomfort and insecurity toward new technology, they become less willing to forego the expense of the product [73]. Ultimately, the reluctance to invest in the product hinders the adoption and acceptance of technology [67, 79, 80]. These results led to the development of the following hypotheses:

H7a: Discomfort negatively influences the perceived cost of induction stoves.

H7b: Insecurity negatively influences the perceived cost of induction stoves.

Individual perception of confirmation while using technology negatively correlates with discomfort and insecurity [61, 66]. In other words, individuals show some sign of discomfort and insecurity toward new technology or its application, they are unlikely to adopt it and may have a dim view of its advantages, and vice versa. Therefore, in the conversion program, the hypotheses developed regarding discomfort and insecurity emphasize the role of confirmation as follows:

H8a: Discomfort negatively influences confirmed use of induction stoves.

H8b: Insecurity negatively influences confirmed use of induction stoves.

The following justification explains the impact of technology acceptance criteria on the community's satisfactory and frequent use of the induction stove. Several studies have empirically proven that perceived usefulness positively correlates with individual satisfaction and acceptance of new technology [81, 82]. Similarly, higher perceived enjoyment of a product or technology leads to greater satisfaction [83, 84]. The variable confirmation of expectations positively correlates with satisfaction, indicating that the more individuals have positive experiences and confirmation of the technology, the greater their satisfaction level will be. This relationship has been proven in previous research

related to various topics, including mobile services [66], travel applications [84], online private tutoring [85], and financial technology applications [86].

Conversely, several empirical studies reported that the individual perception of costs has a negative correlation with satisfaction [87-89]. These studies cover those related to mobile applications [88], biogas stove technology [90], solar energy technology [91], payment applications [87], and mobile business applications [92].

Numerous studies in technology programs have consistently reported that individual satisfaction positively affects continued use of technology. For instance, Restianto et al. [93] claimed that satisfaction with a learning management system application has a positive impact on its continued usage. Similarly, Pinem et al. [94] and Maduku & Thusi [95] reported a positive relationship between satisfaction and continued use of online business and mobile shopping applications. Regarding education, the satisfaction of individuals with technology has been shown to support the continuous acceptance and usage of information technology applications [85, 96, 97].

Previous studies have identified several factors associated with the acceptance of new technology. These theories are suggested as the basis of the following hypotheses:

H9: Perceived usefulness positively influences satisfaction with the induction stove program.

H10: Perceived enjoyment positively influences satisfaction with the induction stove program.

H11: Confirmation positively influences satisfaction with the induction stove program.

H12: Perceived cost negatively influences satisfaction with the induction stove program.

H13: Satisfaction has a positive influence on the continued intention to use induction stoves.

4- Research Method

The earlier section of this article discussed the challenges and the conceptual model technique used to evaluate the readiness and acceptance of the induction stove program. The next study is an empirical study to obtain field data that is processed using the PLS-SEM method approach. The process of model measurement and data analysis follows empirical studies to find factors of readiness and acceptance of technology that affect people to continue following the program and using induction stove. A brief description of the entire research work is shown in Figure 2.

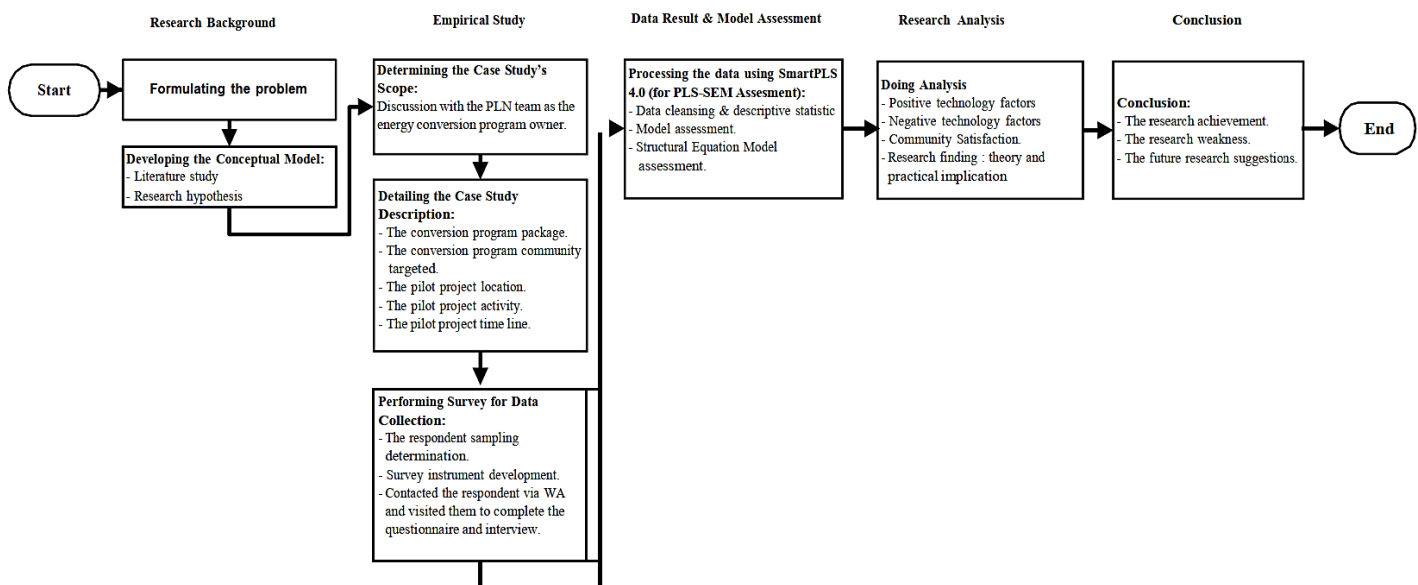


Figure 2. The research methodology flowchart

4-1- Case Description

This study examines the readiness and acceptance of the conversion program from LPG to induction stoves by Indonesians. Thus, comprehending the programs initiated by the government in 2022, executed by the PT PLN, is essential. The research team conducted extensive discussions with PT PLN to ensure that the approach and analysis aligned with the program's context. These in-depth discussions were used as a qualitative data collection strategy, serving as a means to reach mutual understanding and agreement [98, 99].

During the debate, information was learned about the conversion program in Indonesia (i.e., LPG to induction stoves). This initiative was launched in 2022 through a pilot project by PT PLN in two regions, namely, Surakarta in Central Java and Denpasar in Bali. The target participants for the PT PLN community pilot project were residents using LPG burners with 3-kg canister and electric power of 450–900 Volt-Ampere (VA). PT PLN organized a program offering free induction stoves and iron-based cooking utensils to participants. Two-burner induction stoves were distributed, each with a power range of 800–1000 VA. PT PLN offered to increase the power to 2200 VA at a subsidized rate from the government, along with special electrical installations to support the participants' electricity needs. The program primarily aimed to persuade the community to use induction stoves by offering incentives such as free stoves and discounted electricity improvements. By meeting electrical standards, the program aimed to increase the acceptance of induction stoves and eventually transition people from gas to induction stoves. These rewards encouraged the use of induction stoves in the Indonesian program [2-4].

Following discussions with PT PLN, the study focused on evaluating the pilot project in the Surakarta region of Central Java, introducing 1,000 families to induction stoves between July and September 2022. The initiative included several activities, including socialization, education on clean energy conversion, distribution of program packages, fixing unique electrical installations for induction stoves, and provision of community assistance in using this technology. These activities were conducted in five sub-districts in Surakarta; from August to October 2022, the community started to utilize induction stoves for their daily culinary requirements.

4-2-Research Strategy

A survey was employed to analyze the conceptual model developed for this study. Surveys effectively gather data on individual opinions across issues. While questionnaires are the most commonly used instrument in survey strategies, if they are not well designed and appropriately distributed, the data and information can be biased. Several processes must be implemented to reduce bias during data collection and obtain reliable findings from questionnaire surveys tracking individual perspectives [100-102]. First, it is essential that the target respondents clearly understand the purpose of the survey and know the individual conducting the study, which helps to ensure that respondents are willing to provide honest opinions and perspectives. Second, the community should be open to participate in the poll and have their perceptions evaluated. Finally, social interaction between the individual conducting the study and respondents [100] is crucial, particularly in developing countries where people may be unfamiliar with online questionnaire surveys. These processes imply the requirement for in-person interviews based on the created questionnaire [102].

Considering the sociocultural conditions of the Javanese people, who prioritize interpersonal relationships and require repeated social approaches, a questionnaire-based survey strategy with a face-to-face mechanism was deemed suitable. The study was conducted in five areas in Surakarta; this approach was expected to make community members more comfortable during interactions. Additionally, this approach allowed a deeper comprehension of the factors behind public perceptions of the pilot project.

4-3-Respondent Selection and Sampling Strategy

A pilot project was initiated in Surakarta to introduce 1000 families to an induction stove. To gauge the residents' impressions regarding technological preparedness, acceptance, and desire to engage in the program and use induction stoves, the targeted families were contacted through *WhatsApp* application. Of the 998 families reached, within 2 weeks, 419 residents expressed their willingness to participate as respondents, while the others declined for several reasons, such as being out of town, not being interested in giving their opinion, or being too busy.

Nonprobability or convenience sampling was used to reach community members who were beneficiaries of the program and were willing to participate. This sampling technique is based on the availability and the ease of obtaining participants [103, 104]. It was deemed appropriate given the circumstances of the beneficiaries, who had uncertain commitments and were difficult to reach for questionnaire completion or interviews.

4-4-Data Collection Method

The data were collected through questionnaires, followed by interviews with the respondents. A questionnaire was created based on theoretical conceptual models and modified statement items from the literature [30, 66, 68]. As the questionnaire was intended for Indonesian respondents, it was crucial to translate the question items carefully and comply with standard language procedures [105].

A two-way translation process was employed to prevent ambiguities in translating the English variables into Indonesian. The translation process involved at least two individuals fluent in both languages [106], adhered to the operational procedures described by Marin and Marin [107], and followed the guidelines proposed by Brislin [108]. Once the translation process was completed, the outcomes were gathered into a preliminary questionnaire. To ensure the questionnaire's validity, reliability, and acceptability, a pilot study was conducted before administering it to actual respondents [109]. Thirty pilot subjects were involved in testing the initial iteration of the questionnaire, and its reliability was gauged using Cronbach's alpha. Items with a Cronbach's alpha of at least 0.7 were considered acceptable to measure the intended variables and were retained in the instrument [109]. The dependability value between 0.7 and 0.9 was in satisfactory to good category [110-114]. If the value is less than this point, the attribute is not enough as indicator variables as the construct is not reflected, and if it is above, many attribute items will be dropped that impacted the variables and were also potentially eliminated from the model. Table 1 displays the questionnaire's operational definitions of variables and item attributes.

The questionnaire comprises two parts; the first part records the respondents' demographic data. The second part consists of close-ended questions using a five-point Likert scale, where 1 indicates strongly disagree and 5 indicates strongly agree. The five-point Likert scale was chosen because the original study found that the target respondents had low education, notably junior secondary education, and limited capacity to distinguish between replies. Moreover, the questionnaire was followed up with interviews to explore the respondents' background, conditions, and behavior. The five-point Likert scale is advised when respondents have limited cognitive capacities [115] and when filling time is restricted [116] while still providing sufficient answer choices [115, 117]. The final version of the questionnaire is presented in Appendix I.

The researchers visited the respondents' homes to assist them in completing the questionnaire and provide technical explanations as needed. Along with the questionnaire, the researchers conducted interviews to get detailed information based on the respondents' opinions and perspectives regarding the conversion program and their cooking routines and behaviors. The interview approach is a method that obtains in-depth information [118] and is often used to complement quantitative surveys [119]. Data collection using surveys and interviews occurred 3 months after the target respondents started to utilize induction stoves for their everyday cooking needs.

4-5-Analysis Approach Selection

The correlation principle could be used as an analytical approach to explore the factors of technology readiness and acceptance that influence the community's intention to adopt induction stoves. TRAM, which is utilized in this study, integrates several construct variables of technology readiness and acceptance, which have implications for intricate inter-factor connections; however, only 41.9% (419 from 1000) of the Surakarta program beneficiaries were willing to participate as respondents. Given the investigation's parameters, the analytical approach chosen was PLS-SEM, which operates based on multiple linear regression correlation principles and is appropriate for exploratory studies. PLS-SEM is appropriate for exploring the explanation of the main target variants with various complex explanatory constructs. It is applied for relatively small datasets with a sample size of fewer than 50% of the population [110, 111].

5- Data Analysis and Result

5-1-Descriptive Analysis

Of the 419 respondent targeted, this study successfully reached 389 families who received induction stoves, residing in 5 districts in Surakarta, with 62% being women and 38% being men. The respondents were between 20 and 70 years old, with most (60%) being between 35 and 55. The educational backgrounds of the respondents varied, with 89.7% having graduated from elementary to high school level. Additionally, 71% of the respondents reported having three to five family members. Regarding cooking habits, most (81%) reported cooking once a day from 4:00 am to 8:00 pm; the peak time was in the morning from 4:00 am to 9:00 am (80%).

Before utilizing an induction stove, 21% of respondents used two canisters of 3-kg LPG per month for cooking activity, 16% spend four LPG canisters, 13% spend a canister, and 12% use more than five canisters per month. After the induction stove program package was delivered, the respondents began to try to utilize the induction stove for cooking. However, the respondents did not directly and thoroughly switch from LPG burners to induction stoves. The majority of respondent (66%) experienced a decline using 3-kg LPG, with an average reduction of one to two canisters per month. The level of intention to receive program package (79%) and intention to try induction stove (80%) is relatively high. However, in this early stage, respondent's intention is to carry out substitution of LPG stove to induction stove only 60%. This showed that the level of respondent's resistance in adopting induction stove is still quite high (40 %).

Table 1. Research operational definitions

Variable	Sub variable	Operational definition	Item attributes	Code	Adapted from reference	Cronbach's alpha
Technology Readiness: the tendency for people to use new technology to achieve goals in life [31, 32].	Optimism	The perception of the community that the induction stove conversion program offered by PT PLN supports progress, modernization, ease of cooking, and flexibility in daily life	The induction stove is safer	OP1	[30, 66, 68, 71, 72]	0.746
			An induction stove is more adaptable	OP2		
			The induction stove is easier to control and operate	OP3		
Definitions in this study include the propensity of the community to implement conversion initiatives and utilize induction stoves for daily cooking.	Innovation	The tendency of the community to be a technology pioneer and an inspiration for new emerging technology	Respondents perceive their ability to offer references for the induction stove program and technology	INN1	[36, 66-68, 71]	0.778
			Respondents are among the first to recognize and use an induction stove in their circle of friends/communities	INN2		
			Respondents are enthusiastic about the program and new induction stove technologies	INN3		
			Respondents are interested in the program's challenges and new induction stove technologies	INN4		
	Discomfort	Lack of control over the conversion program and induction stove technology burdened respondents' perceptions of feeling	The operating instructions for using an induction stove are difficult to understand	DIS1	[30, 41, 62, 66, 68, 71]	0.908
			Uncomfortable with difficult induction stove electrical installation	DIS2		
			Induction stoves are not designed for ordinary people	DIS3		
			When the stove breaks, it is not easy to repair it independently	DIS4		
			Uncomfortable with the continuity of induction stove conversion program, such as electricity tax	DIS5		
	Insecurity	The level of distrust of conversion programs and technology and concerns about the dangers of its use	Induction stoves may pose a potential health or safety risk	INS1	[41, 61, 66, 68, 71]	0.794
			Induction stoves must be used carefully because they are easily damaged	INS2		
			Concerns that complaints on obstacles are not responded to properly	INS3		
Technology Acceptance: Individual acceptance of technology is related to the factors influencing it [49, 50].	Perceived usefulness	The perception of induction stoves that can facilitate cooking activities	The induction stove improves cooking ability	PU1	[30, 61, 68, 70, 71, 81, 82, 120]	0.745
			Induction stoves are more efficient	PU2		
			Induction stoves are faster in the cooking process	PU3		
			The choice of the cooking menu becomes more varied	PU4		
Definitions in this study: Individual or family acceptance of the conversion program to use an induction stove	Perceived enjoyment	The perception of pleasure experience in using induction stoves	Induction stoves are simpler to use	PU5	[36, 54, 57, 83]	0.762
			Respondents felt happier or more enthusiastic about cooking with an induction stove	PE1		
			Induction stoves support cooking activities that are possible in parallel with other tasks	PE2		
			Induction stoves are child friendly	PE3		
			Respondents felt competent in using induction stoves	PE4		

Perceived cost level	The perception of comparing the costs with what will be obtained from using induction stoves	The perception of special induction stove utensilprices	PCL1	[72, 87, 90]	0.763
		The perception of higher electricity tariffs forinduction stoves	PCL2		
		Perception of the suitability of the electricity tariff policy for the induction stove program	PCL3		
Confirmation	Verify the advantages of participating in the conversion program and utilizing induction stoves	The benefits of the induction stove program exceeded expectations	CON1	66,69,75-76,84-86]	0.704
		Assistance response support during the induction stove conversion program	CON2		
		Potential beneficial positive changes in cooking habits and behavior	CON3		
Satisfaction: user satisfaction after using technology [66] Definitions in this study: respondent satisfaction with the conversion program and induction stove use.	-	Tangibles: Satisfaction with the physical appearance, performance, and features of inductionstoves and staff communication that support the conversion program	TAN1	[75, 121, 122]	0.903
			TAN2		
			TAN3		
			TAN4		
		Reliability: Satisfaction with the program, which consists of reliable products and services such as performance, security, effectiveness, efficiency, installation, network, and utensil support	REL1		
			REL2		
			REL3		
			REL4		
			REL5		
		Responsiveness: Satisfaction with the response, speed, and accuracy of the induction stove conversion program service	RES1		
			RES2		
			RES3		
			RES4		
		Assurance: Satisfaction related to the promised trust in PT PLN's product and service guarantees inthe conversion program	ASS1		
			ASS2		
			ASS3		
			ASS4		
		Empathy: Satisfaction with the awareness and attention given by PT PLN to the program participant	EMP1		
			EMP2		
			EMP3		
Continuance intention: individual intention to keep using technology [66, 86]. Definitions in this study: respondent's intention to continue following the conversion program and using an induction stove for daily cooking	-	Intention to continue following the conversion program by using an induction stove to cook daily	CI1	[64,75, 76, 88, 93]	0.805
		Intention to continue using the induction stovewhen there is a policy change	CI2		
		Intention to consider an induction stove as the choice equipment for daily cooking	CI3		

5-2- Model Assessment

The model measurement process began with data cleansing to identify missing values and remove outliers, followed by a verification process to evaluate the validity and reliability of the model. This investigation used the reflective PLS-SEM model; the measurement model comprised internal consistency reliability (composite reliability [CR]), convergent validity (factor loading and average variance extracted [AVE]), and discriminant validity (Heterotrait–Monotrait [HTMI]) [112]. SmartPLS 4.0 software [123] was utilized to facilitate the measurement. Table 2 presents the model measurement results.

Table 2. Measurement model resume

Construct	Item	Factor loadings	CR	AVE	VIF
Optimism	OP1	0.809	0.855	0.663	1.506
	OP2	0.817			1.485
	OP3	0.817			1.471
Innovation	INN1	0.772	0.857	0.599	1.613
	INN2	0.747			1.599
	INN3	0.779			1.511
	INN4	0.796			1.580
Discomfort	DIS1	0.858	0.932	0.731	2.695
	DIS2	0.881			2.955
	DIS3	0.869			2.703
	DIS4	0.821			2.275
	DIS5	0.845			2.261
Insecurity	INS1	0.707	0.614	0.512	1.827
	INS2	0.704			1.859
	INS3	0.503			1.034
Perceived usefulness	PU1	0.735	0.827	0.540	1.387
	PU2	0.762			1.501
	PU3	0.605			1.398
	PU4	0.676			1.397
	PU5	0.710			1.432
Perceived enjoyment	PE1	0.819	0.849	0.585	1.668
	PE2	0.726			1.696
	PE3	0.678			1.415
	PE4	0.735			1.286
Perceived cost level	PCL1	0.822	0.863	0.677	1.586
	PCL2	0.815			1.627
	PCL3	0.832			1.465
Confirmation	CON1	0.843	0.834	0.628	1.479
	CON2	0.832			1.504
	CON3	0.704			1.254
Satisfaction tangible	TAN1	0.715	0.907	0.529	2.080
	TAN2	0.613			1.673
	TAN3	0.684			2.018
	TAN4	0.701			1.822
Reliability	REL1	0.628			1.570
	REL2	0.736			2.404
	REL3	0.746			2.696
	REL4	0.746			2.199
	REL5	0.721			2.155
Responsiveness	RES1	0.797			2.736
	RES2	0.781			2.548
	RES3	0.782			2.543
	RES4	0.792			2.648

Assurance	ASS1	0.750			2.204
	ASS2	0.723			2.089
	ASS3	0.725			2.078
	ASS4	0.761			2.228
Empathy	EMP1	0.693			1.967
	EMP2	0.700			1.927
	EMP3	0.725			2.065
Continuance intention	CI1	0.837			1.479
	CI2	0.877	0.885	0.720	1.504
	CI3	0.830			1.254

Presented in Table 2, the generated model exhibits adequate and satisfactory dependability based on the CR values, which assess the internal consistency of items in the model construct, with most being greater than 0.60 but less than 0.95. A CR value of 0.60 is acceptable in an exploratory study, while a value of 0.95 is undesirable as it suggests that all indicator items measure the same phenomenon and are unlikely to be valid construct measures [112]. One indicator, INS3s, had a value below 0.60, yet it was retained in the construct model. According to Hair et al. [111], an item with an outer loading between 0.40 and 0.70 may not necessarily be eliminated from the construct; nevertheless, it is crucial to consider the content validity and its effect on internal reliability. In circumstances where the removal of the item does not increase internal reliability and the content validity of the construct is not represented, then it is maintained in the model [110, 111].

The model's validity is adequate based on convergent and discriminant validity results using AVE and HTMI, respectively. AVE values of the indicator items for each construct exceed 0.50, indicating that the model constructs explain more than half of the indicator variants [112]. The HTMI values in Table 3 demonstrate that the model has appropriate discriminant validity, as the values between constructs do not surpass the threshold of 0.85 [124]

Table 3. HTMI for discriminant validity

Construct	1	2	3	4	5	6	7	8	9	10
1. Optimism										
2. Innovation	0.815									
3. Discomfort	0.404	0.288								
4. Insecurity	0.432	0.257	0.814							
5. Perceived usefulness	0.781	0.768	0.388	0.347						
6. Perceived enjoyment	0.810	0.707	0.387	0.416	0.843					
7. Perceived cost	0.713	0.775	0.285	0.249	0.831	0.805				
8. Confirmation	0.827	0.708	0.411	0.395	0.842	0.762	0.790			
9. Satisfaction	0.780	0.628	0.274	0.326	0.785	0.849	0.742	0.809		
10. Continuation intention	0.694	0.714	0.237	0.252	0.830	0.833	0.759	0.841	0.844	

5-3- Structural Equation Modeling Assessment

After validating the model, the next step is to take measurements on the PLS-SEM structural model. The measurement outcomes of the PLS-SEM structural model [123] include collinearity, significance, applicability of the connections in the model, coefficient of determination (R^2), and effect size (f^2), as well as the relevance of model predictions (Q^2) and the exogenous construct's contribution (q^2) [112, 113]. The SmartPLS 4.0 software [123] was used to conduct all structural model measurements in this study.

The collinearity result is based on the predictive value of the tolerance variation inflation factor (VIF). Table 3 shows the VIF values of the model indicator variables; there is no sign of collinearity because all VIF values are less than 5 [112]. The significance and relevance of the previously hypothesized model relationships were examined through bootstrapping using 5,000 samples as the default setting in SmartPLS 4.0. This study utilized standard P and t values to assess the significance of the model, with a significance level of 10% commonly used in exploratory investigations [112, 122]; therefore, the P and t values are less than and greater than 0.1 (10%) and 1.65, respectively [116, 123]; hypothesis cannot be rejected. This value is based on the degree of confidence for exploratory research study context, which is 90 % [113]. This path model may potentially be different if the set of values for the degree of confidence is different, but for the characteristics of the research conducted in this study, a set below this number leads to a drop in the validity of the model. However, set above to this value, apart from not being in accordance with the characteristics of this research (social exploration), has an impact on the many variables that become insignificant. The

P and t values shown in Table 4 illustrate the importance of the association between variables, which have implications for the model hypothesis.

Table 4. Path analysis output

Hypothesis	Path	Standard deviation	t value	P value	Result
H1a	OP→PU	0.056	6.574*	0.000*	Supported
H1b	IN→PU	0.055	6.298*	0.000*	Supported
H2a	OP→PE	0.057	7.166*	0.000*	Supported
H2b	IN→PE	0.056	4.794*	0.000*	Supported
H3a	OP→PCL	0.054	4.664*	0.000*	Supported
H3b	IN→PCL	0.051	8.550*	0.000*	Supported
H4a	OP→CON	0.055	7.396*	0.000*	Supported
H4b	IN→CON	0.059	4.057*	0.000*	Supported
H5a	DIS→PU	0.055	3.555*	0.000*	Supported
H5b	INS→PU	0.049	1.113	0.266	Not supported
H6a	DIS→PE	0.058	3.008*	0.003*	Supported
H6b	INS→PE	0.049	1.258	0.208	Not supported
H7a	DIS→PCL	0.063	1.322	0.186	Not supported
H7b	INS→PCL	0.060	0.698	0.485	Not supported
H8a	DIS→CON	0.066	3.370	0.001*	Supported
H8b	INS→CON	0.072	1.657	0.098	Not supported
H9	PU→SAT	0.051	3.066*	0.002*	Supported
H10	PE→SAT	0.052	4.548*	0.000*	Supported
H11	CON→SAT	0.044	8.603*	0.000*	Supported
H12	PCL→SAT	0.038	4.655*	0.000*	Supported
H13	SAT→CI	0.027	27.255*	0.000*	Supported

Note: *t value, >1.645; p value, <0.10; significant

The model assessment results show (Table 4) that the 16 hypotheses tested in the structural measurement show correlation statistical significance, while 5 paths are not significance. Five factors that are not correlated with each other (P value > 0.05) are Insecurity (INS) and Perceived Usefulness (PU) (P Value = 0.266), Insecurity (INS) and Perceived Enjoyment (PE) (P Value = 0.208), Insecurity (INS) and Perceived Cost Level (PCL) (P Value = 0.485), Insecurity (INS) and Continuation Intention (CI) (P Value = 0.098), Discomfort(DIS) and Perceived Cost Level (PCL) (P Value = 0.185)).

These results can be interpreted that the insecurity factor relative does not have any effect on the acceptance factor of the conversion program and induction cooker technology. This means that when the respondent community feels insecure or not, it will not affect perceived usefulness, enjoyment, cost level, and continuation intention. Furthermore, the discomfort factor does not correlate with the cost level. This demonstrates that the comfort (and discomfort) of the respondents to the program and the use of induction stove do not affect their perception of costs. They still perceive the potential for increased costs with the conversion and transformation program from LPG gas stoves to induction stoves.

The predictive power of the model is high, as indicated by the coefficient of determination (R^2) of the endogenous variables in the model (perceived usefulness, perceived enjoyment, perceived cost, confirmation, satisfaction, and continuation intention), with values ranging from 0.405 to 0.676 (Figure. 2). Consumer behavior-related studies focusing on satisfaction and its effects commonly consider a model as having high predictive power when R^2 exceeds 0.20 [112].

Apart from R^2 values, the accuracy of forecasting endogenous variables was assessed using Q^2 values. In this study, the Q^2 value for all variables is greater than zero. The confirmation and continuance intention components had the lowest and highest Q^2 values of 0.263 and 0.392, respectively. According to Hair et al. [113], Q^2 must be greater than zero for the endogenous construct to demonstrate the predictive accuracy of the structural model. The Q^2 values above 0.00, 0.25 and 0.5, respectively, show the PLS path model's small, medium, and large predictive importance as benchmarks [113]. Therefore, this study model has a moderate predictive level, meaning that each construct has sufficient accuracy for prediction.

Effect size (f^2) is used to evaluate the measurement of external variables. Hair et al. [112] provided a rule of thumb related to effect sizes, namely, small (0.02), medium (0.15), and high (0.35). Innovation (IN) has a small effect size on confirmation (CON: 0.063) and medium effect sizes on perceived enjoyment (PE: 0.193), perceived usefulness (PU: 0.182), and perceived cost (PCL: 0.154). Optimism (OP) has a medium effect size on confirmation (CON: 0.151), perceived enjoyment (PE: 0.15), and perceived usefulness (PU: 0.152) and a small effect size on perceived cost (PCL: 0.060). Perceived enjoyment (PE: 0.066), perceived usefulness (PU: 0.022), and perceived cost (PCL: 0.055) have small effect sizes on satisfaction (SAT). Finally, satisfaction (SAT) has a high effect size on continuation intention (CI: 1.221). In this study, the effect sizes between variables are diverse, and this is appropriate due to the social perception survey involving numerous aspects that impact human behavior. Figure 3 shows the path analysis model.

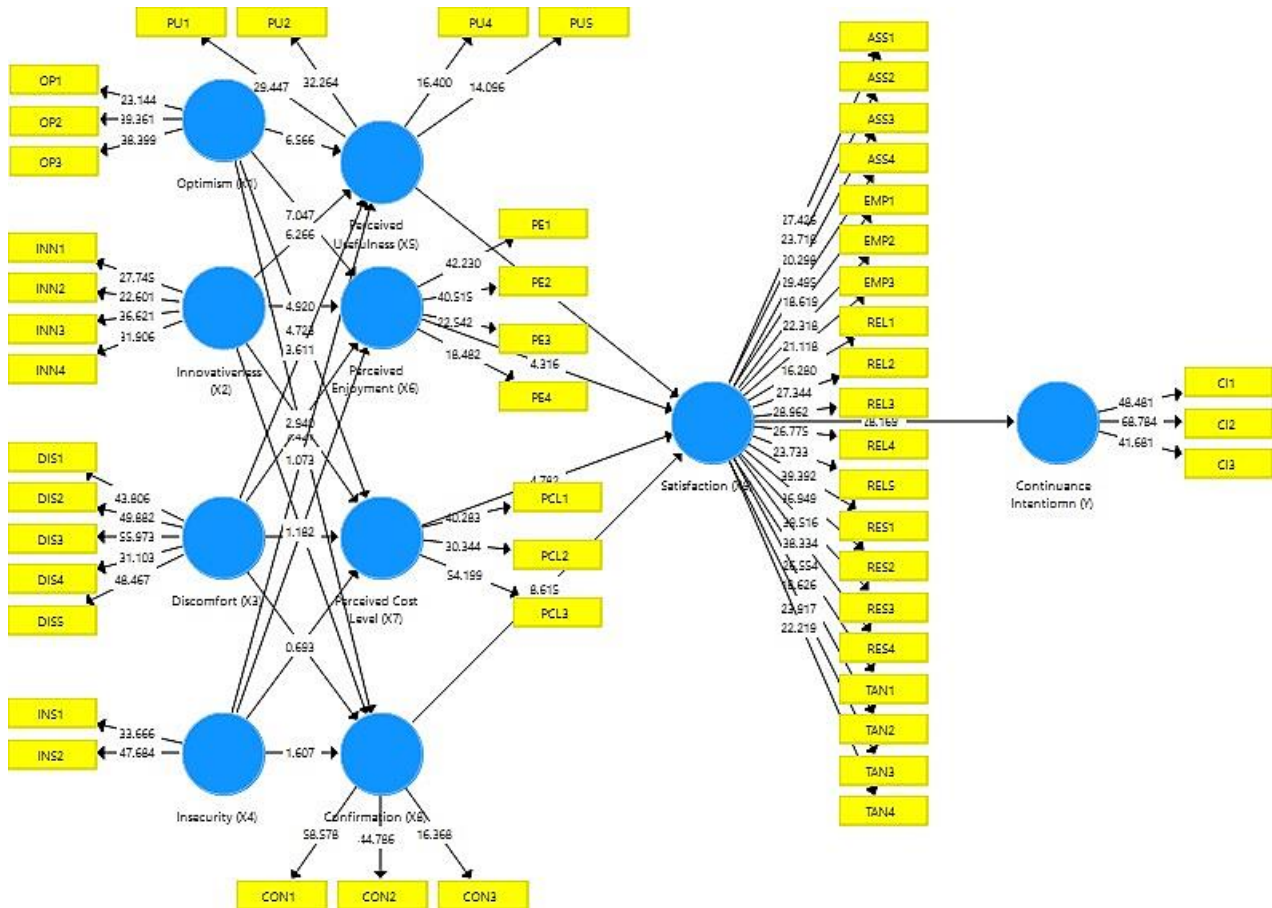


Figure 3. Path analysis model

6- Research Analysis and Discussion

Exploring community readiness and acceptance of Surakarta's induction stove conversion program yielded interesting findings that have theoretical and practical implications for TRAM and provide useful information to the project's stakeholders about the elements that must be considered for successful implementation in developing nations. This study aimed to examine the factors that influence the readiness and acceptance of induction stove technology using the TRAM model. The findings are summarized as follows.

6-1-Positive Technology Readiness Toward Induction Stove Program Acceptance

Readiness to employ technology consists of the optimism and creativity factors. These factors were identified as significantly affecting public acceptance of the induction stove conversion program (Hypothesis 1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b). Acceptance of this program can be assessed using four factors—perceived usefulness (benefits), enjoyment (the pleasure of cooking), positive views regarding incurred costs, and confirmation of use.

The findings revealed that 57% of the respondents expressed optimism about the safety and flexibility provided by induction stoves because they do not require 3-kg LPG canister. Additionally, the community demonstrated trust in using this modern cooking method. It is promising to see such positive perceptions of induction stoves, which offer benefits such as efficiency, faster cooking, and easier maintenance than traditional LPG stoves.

Additionally, the community had a favorable innovative perception, portraying themselves as trailblazers in using induction stoves in the region. They can serve as a reference point for individuals or other communities seeking information about this technology. While realizing that using induction stoves may require modifications and present possible impediments, given their novelty, the community remains excited adopting them, and they were eager to tackle the problems associated with the project. It is noteworthy that 53% of the respondents expressed this perception.

This study's findings have important ramifications toward accepting the conversion program in the community. The respondents stated that induction stoves are easier to use, more economical, and more efficient, offering creative and diverse menu opportunities. Additionally, they mentioned feeling more comfortable using the induction stove because of child-friendly features including a child lock button.

The results are notable, as the respondents suggest that positive and forward-thinking perceptions of the people influenced their views on the cost of electricity and cooking utensils offered by the conversion program. Specifically, 51% of the respondents thought the prices appropriate, and over half (53%) agreed that the subsidy tariff for induction stove electricity was rather affordable.

The prevailing optimistic and innovative context in the community has led to positive changes, as reported by 78.6% of respondents who found the induction stove to be user-friendly, easy to clean, and encouraging children to participate in cooking. Respondents also expressed a desire to experiment with new menus; however, because the conversion program is still in its early stages, it is yet to be determined whether the level of support provided regarding response and assistance for long-term use and benefits would exceed the users' expectations.

The findings align with the original theory and other research, showing that upbeat and creative attitudes greatly facilitate the acceptance of new technologies. Therefore, creating an environment that encourages users to adopt an optimistic and innovative mindset is crucial toward positively affecting their readiness to accept new technology [45, 125]. Surakarta's induction stove conversion campaign used a robust social strategy to promote positive and creative impressions. This approach involved various activities, including program socialization through community leaders and regional stakeholders in the target areas. The activity started with socialization in the sub districts, followed by door-to-door surveys to inform the public to the induction stove initiative. Additionally, various social engagement events were held in different sub districts of Surakarta, such as demonstrations and cooking competitions using this technology.

Active community participation plays an essential role in the success of new government projects or programs, as shown by the adoption of renewable technologies in Pakistan [126], forest restoration programs in Mexico [127], government initiatives in Bangladesh [128], and other programs [44, 129, 130]. It is crucial to consider the local wisdom, norms, and culture of the region to foster an optimistic and innovative perception during the implementation of a project [131-133].

Throughout the project, the PLN team visited community members' homes as part of the social approach. The team was divided into several groups to socialize and assist in using induction stoves. This home visit approach aligns with Moslem Javanese society's *silaturahmi* culture, especially in Surakarta. *Silaturahmi* is a localized Islamic concept in Indonesia that is derived from what God and the Prophet Muhammad said about keeping ties between communities [134]. Moreover, during the socialization process, the group used the Javanese language to explain the software and how to operate the induction stove. This approach positively affected the acceptance of the conversion program in Surakarta.

Additionally, the project team established active communication with the community through a *WhatsApp Group* (WAG), enabling the PT PLN team to quickly handle any operational concerns with the conversion program or using the stoves. The project team actively participated in exchanging information on the daily dishes made by the respondents through the platform.

Cooking is a common chore for women in Indonesia [135], especially in Javanese society, which adheres to a patriarchal cultural structure [136, 137], evidenced by the fact that 90% of the respondents utilizing the induction stove are female. Feelings of enjoyment on using electric household appliances tend to be dominated by women [138]. Sharing culinary experiences through the WAG has made respondents (mainly women) feel acknowledged for their everyday responsibilities. Such experiences foster optimism and contribute to progress through innovation, resulting in a greater acceptance of new technology.

The findings of this study are slightly different from studies on the development of induction stoves in India and Ecuador. In these regions, it was explained that the electrical infrastructure in the project area did not fully support the implementation of induction stove [8, 12], so it would be difficult to continue if the infrastructure conditions were still like when the research was reported. This is slightly different from the circumstances of the pilot project in Surakarta, where electricity is adequate and able to support the use of the respondents' induction stove, so that from the infrastructure aspect, the program participants feel optimistic that they can use induction stove for regular cooking.

The pilot project study in Surakarta reported that there was technical preparation and a social approach. This promotes program satisfaction and sustainability of implementation. The PLN team carried out the electrical installation and provided a special induction stove utensil to the respondent community; although a small number of installation issues also occurred, gradual fixes were still made (although it took time). Social interventions were also attempted by the PLN team to persuade people to use induction cookers. These tasks were not done by the project team in Ecuador, where electrical installations were not installed, stove damage was not addressed, and there were worries about rising electricity prices [12].

6-2-Negative Technology Readiness Toward Induction Stove Program Acceptance

Negative technology readiness involves discomfort and insecurity that people experience toward accepting and using technology (Hypothesis 5a, 5b, 6a, 6b, 7a, 7b, 8a, 8b). Earlier studies have reported that these elements are inversely correlated with perceived usefulness, enjoyment, and cost [61, 96, 125]; however, several empirical studies have reported that those aspects are not always entirely negative, resulting in low acceptance of technology [62, 68, 71].

Discomfort and insecurity reflect the unpreparedness of society to absorb new technology. This study reported that these factors do not always lead to lack of readiness for technology implementation. Oddly, only discomfort substantially negatively impacted perceived use and enjoyment, including confirmation. Perceived cost level did not correlate with discomfort, while insecurity did not affect perceived use, enjoyment, or cost.

Discomfort associated with using induction stoves includes issues in comprehending its usage, poor electrical installation, worries about repairs in case of mistakes, and skepticism about the program's viability, particularly regarding the power rate subsidies. These factors negatively affected acceptance of the conversion program, as respondents felt that the stoves were not useful enough, uninteresting to use, and difficult to adapt to and that support from PT PLN was lacking. This is a typical response considering that respondents are still in the early stages of the conversion program and are adjusting to utilizing induction stoves because it necessitates habituation and adaptation to new technology. Preliminary studies such as Kar et al. [139], Toufaily et al. [140] and Jahng & Park [43] have also reported that users and society need time to accept and adapt to new technology.

Contrarily, the discomfort component does not significantly change perceived cost level, indicating that respondents' discomfort concerning induction stoves did not affect their opinions on energy rates, tax laws, or additional expenses for cooking utensils. The interviews revealed that discomfort, because the electricity tariffs and subsidies were perceived as reasonable, and the availability of support for cooking equipment, specifically for the induction stove, were not a burden for the respondents.

The study reported that insecurity did not negatively correlate with preparedness to participate in the conversion program; however, some respondents (15.6%) reported potential safety or health risks associated with the conversion program and induction stove technology. There were also concerns about the longevity and functionality of the induction stove technology (17%). Some of them (37%) expressed concerns about the response of PT PLN in the event of future obstacles related to the conversion program. Despite these concerns, the respondents deemed induction stoves useful and were willing to use them.

This study reported that implementing the induction stove program in Surakarta, Indonesia, was affected by contextual factors that potentially caused negative readiness toward technology adoption. These include poor comprehension of the technology and its marketing [80], mandatory organizational programs enforcing technology adoption [141], and individual standards related to responsibility and consequences [65]. A more detailed investigation revealed that these aspects contributed to the challenges encountered during the implementation process. Respondents allegedly expressed concern about the consistency of the program because it was in the testing stage; however, because it was a government initiative, respondents were eager to participate, as they felt obligated to transition. The respondents felt rude (*Ewuh Pakewuh*) or uncomfortable declining the program, primarily because it was offered free of charge by the government through PT PLN. "*Ewuh Pakewuh*" is a Javanese cultural norm related to the reluctance to express attitudes or truth and is associated with inconvenience and nontransparent behavior [142].

The findings highlight the significance of anticipating discomfort in conversion programs, as it can greatly reduce community readiness and acceptance. Although in this study, insecurity did not affect program readiness, efforts are needed to create a secure context for the community. Even though it is a relatively little issue, many are apprehensive, and presumptions left unanswered could prevent the conversion program's continuity in the future. These efforts are critical because individuals with insecure perceptions tend to be skeptical of new initiatives [31, 74, 141, 143].

Several strategies can be used to reduce discomfort and ambiguity surrounding technology, such as mentoring and training [44]. In this program, the project team provided door-to-door assistance to the respondents. Additionally, efforts were made to address user concerns regarding new technologies [80], such as program sustainability and electricity pricing, by persistent outreach and rigorous communication through the WAG. Stakeholders can also align

with user needs [143] by providing feedback to induction stove manufacturers to redesign features similar to those of LPG stoves, facilitating the migration of these individuals to induction stoves.

Until now, the project team in Surakarta is still continuing their approach to the community to provide oversight and encouragement for the community participating in the program to continue to use induction stove. Promotional support and activities with the theme of induction stove continue to be carried out by the PLN team, which are still narrow and local in scope. This is similar to what happened in Ecuador, where Gould et al. [12] reported that the program team had not made any significant strides toward implementing social interventions in changing people's habits about using induction stoves, even though this program had been operating for 3 years. The implication is that 40% of community conversion program participants in Ecuador do not use their induction cooktops, because they still feel discomfort using induction hobs. It is said that the use of an induction stove will make tariffs more expensive and an induction cooker will be more brittle if it is used frequently. Learning from Ecuador, the project team in Surakarta Indonesia must have a structured, measurable, and sustainable strategy to condition the understanding and assistance of the program and induction stove to the community participating in the program to reduce discomfort and insecurity factors.

6-3-Induction Stove Program Acceptance Toward Community Satisfaction

Previous studies have shown the possible effects of technology adoption on its users [52, 68, 87, 96]. These results were consistent with the findings of the study (Hypothesis 9; 10; 11; 12). Acceptance of induction stove technology and the conversion program was assessed based on four criteria—perceived usefulness, enjoyment, cost level, and confirmation—all of which had a favorable and significant impact on community satisfaction. Satisfaction was reflected in five quality dimensions: tangible, reliability, responsiveness, assurance, and empathy [33, 144, 145].

Communities who think new technology has specific benefits to provide tend to have a favorable impression or are usually satisfied [61, 81, 146]. In this study, 51% of the respondents believed that the conversion program with induction technology offered certain benefits, such as improving their cooking skills, being more effective and efficient, and providing a varied menu of dishes. This correlates with the perceptions of the user community regarding satisfaction with the design and features of the stove, its safety and usability, and the service package programs offered, such as guarantees, usage support, care, and responsiveness of the project team.

Community satisfaction is positively associated with enjoyment in participating in the conversion program and using induction stove technology. This is consistent with earlier research on technology acceptance in various fields [79, 146], including smart retailing technology [74, 84], smart tourism [64, 88], and mobile applications [57, 83, 87].

The findings revealed that the users of induction stoves significantly emphasized the benefits associated with its use. This was discovered to be positively correlated with community satisfaction, which is consistent with other research in new technology adoption [66, 87, 89]. Additionally, the study reported that 55% of the participants expressed an interest in continuing to use induction stoves for daily cooking, which was positively associated with the confirmation of benefits. These findings align with earlier research on numerous technical fields [69, 83, 86].

Perceived cost levels negatively influenced public acceptance of induction stove conversion, which is consistent with previous studies related to technology acceptance and cost levels [87-88, 90-92]. In-depth interviews conducted as part of the study indicate that the respondent community tended to protest to any costs involved with the conversion effort; however, some participants stated that the electricity subsidy tariff proposed by the government was acceptable and not burdensome. Approximately 55% of respondents expressed satisfaction with the financing system and indicated that they intended to continue participating in the program and use induction stoves, if the regulatory guidelines and minimum cost facilities remained unchanged. Conversely, participants expressed dissatisfaction and reluctance to participate in the program, in case additional costs would be incurred. The user community emphasized the need for a financial strategy that does not burden the community.

In resume, the community participating in the pilot project program in Surakarta had relatively high satisfaction (>50%), due to the facilities and program packages as well as the promotion of induction stove being relatively accepted by the target community. The findings of the correlation demonstrate that high acceptance ensures the contentment of program participants, and vice versa. In a study of the implementation of the induction stove program in Ecuador, the community basically accepted this technology; however, user satisfaction is still low because the electrical infrastructures and induction stove design are weak [13]. These results indicate that the preparation of facilities and infrastructure is critical in the success of the induction stove conversion program in a sustainable manner.

6-4-Community Satisfaction Toward Continuance Intention

The respondents were generally pleased with the conversion program and their experience using an induction stove (Hypothesis 13). A significant proportion (80%) expressed satisfaction with the program's reliability, including the services provided by the project team and PT PLN officers during electrical installations and program assistance. The

respondents were also generally happy (83%) with the performance of the induction stove. The responsiveness of the project team to the needs of the respondents was positively evaluated, with 86% expressing satisfaction. Additionally, the respondents deemed the empathy and concern shown by the project team during socialization and mentoring satisfactory (86%). Being satisfied with these aspects of the program was positively correlated with the willingness of the respondents to continue participating in the program.

According to the study, 80% of respondents stated their intention to continue using induction stoves and participate in the conversion program. Furthermore, 70% of the respondents said they would consider using an induction stove for cooking daily, particularly when LPG is scarce and difficult to obtain. The respondents claimed that they would continue to use the induction stoves even when there were changes in the policy, such as tariffs, as long as these changes did not burden them. These findings agree with previous studies in various domains, including information technology [69, 77, 83], travel applications [84], health and fitness device applications [75], mobile applications [64, 88, 95], payment platform applications [78, 86, 87], online government services [94], and online educational technology and its applications [57, 66, 85, 96, 97].

However, the intention to continue in the program and use induction cookers in a sustainable manner for the pilot project in Surakarta still needs to be determined in the future. This aspect is needed considering the fact that several developing countries that have implemented induction stove conversion programs have not been fully successful in carrying out this transformation. In India, Banerjee et al. [8] report, after 1 year the program has been placed, the average use of induction stove by the community is 86 KWH, still below 100 KWH per month. Furthermore, in Ecuador, after 3 years of program implementation, 40% of program participants did not use induction stove anymore [12]. Thorough exploration is needed to reveal the core cause, which can be used as a lesson for Indonesia.

6-5- Theoretical Implications

This study reported several noteworthy findings that enhance the discourse on implementing the theoretical adoption of new technology in society. Most of the hypotheses expressed per the TRAM conceptual model were supported by actual data in the context of an induction stove conversion initiative in Surakarta, Indonesia.

The perception of technology readiness and community acceptance of the induction stove program is supported by optimism and innovation. Theoretically, when people view technology with optimism and creativity, it leads to higher perceived usefulness, enjoyment, cost, and confirmation. This influences acceptance and satisfaction, motivating people to continue following the program and using induction stoves. An empirical study stated that technological readiness favorably influences acceptance and user intention to keep using technology.

There were discrepancies found in the theoretical concept, particularly negative technology readiness. The results show that discomfort only partially corresponds to the idea. The higher the level of discomfort, the lower the perceived usefulness, enjoyment, and confirmation, which decreases satisfaction and the intention to continue using the induction stove program; however, the discomfort did not impact the perceived cost level.

The findings indicate that insecurity does not significantly affect public acceptance of programs or technology. This result agrees with earlier studies that noted comparable results, particularly concerning mandated programs or government projects; however, this implies that programs or technology with certain characteristics, even under coerced conditions, may not evoke discomfort among users or the public due to external factors mediating the situation. Investigating the variables that contribute to intervening in readiness and acceptance of technology adoption would be beneficial [51], such as the sociocultural approach [58], background motivation [147, 148], knowledge management ideas [149, 150], technology implementation leadership [151, 152], social responsibility considerations [153], and availability of supportive infrastructure and ecosystems [154-156].

6-6- Practical Implications

This study's findings offer valuable insights concerning implementing new programs and technology in developing countries such as Indonesia, particularly the transition from LPG to induction stoves. This kind of energy transition program, with the goal of low-carbon technology, is being intensified in various nations for environmental and planet sustainability [157]. From this study, empirical analysis indicates that it is crucial to prioritize positive community perceptions to ensure acceptance, satisfaction, and long-term sustainability of such programs. Therefore, stakeholders should create a positive environment during all phases of the program, from conception and planning to execution (including socialization and program delivery) and assessment.

Effective communication is vital for successful policy implementation, particularly when dealing with complex issues; therefore, communicating information clearly and efficiently through various media and social channels while considering the social and cultural norms of the local community is essential. It is equally important to ensure that information is presented in a manner that is easily comprehensible for everyone, including those without a background

in technology. Even though the program is mandatory in its administration by the government, building a favorable built environment can help lessen unfavorable public impressions such as discomfort and insecurity.

The study emphasized the significance of intensive and repetitive socialization, coaching, and assistance in implementing technology that directly interacts with everyday people who may have little knowledge of its usage. This series of activities requires the participation of local community leaders or groups. These include trusted religious figures, local stakeholders, and the national government, which is one of the critical factors in the success of the readiness and acceptance of the conversion program in Indonesia. Such participation is essential to guarantee stakeholders' adherence to regulations affecting community acceptance and the program's long-term viability.

The results offer insight into the essential infrastructure required for initiating a conversion program that replaces LPG with induction stoves in Indonesia; however, the third practical aspect is the need for stakeholders to establish an integrated media and communication strategy to handle community input and challenges during the pilot project phase. This system guarantees a seamless implementation of the conversion program, promoting community acceptance and eventual adoption of the induction stove. Additionally, as altering daily cooking habits requires time and work, community feedback and concerns must be addressed to ensure the effectiveness of the program.

7- Conclusions

The study successfully contributes to the literature by offering theoretical and practical perspectives on implementing the LPG energy conversion program and induction-based electronic equipment in Indonesia, a developing country with unique sociocultural contexts. Through comprehensive empirical studies and debates, this study sheds light on the difficulties associated with introducing new technology while complementing previous TRAM-related literature. Overall, the findings are expected to enrich the knowledge base and improve the understanding of the public's readiness for and acceptance of innovative technology in developing countries.

Additionally, this study builds upon existing models by utilizing TRAM. It agrees with previous studies that positive perceptions, such as innovation and optimism, contribute to program readiness and acceptance of new technology. Variables such as perceived usefulness, enjoyment, cost level, and confirmation also play a crucial role in shaping public happiness and the intention to keep using the new technology.

Perceptions of discomfort and insecurity, referred to as negative preparedness, only partially impact the acceptance of new programs and technology. Section 6 examines the contextual factors behind this discovery. These significant results can serve as a basis for further exploration using the theoretical approaches outlined in Section 6.5.

The practical implications of this study highlight important factors that key stakeholders should consider in LPG energy conversion initiatives, particularly those involving induction stove technology—three important points aid in boosting the program's success. First, fostering a favorable view of the program and technology concerning history and advantages, supported by unambiguous regulatory guidelines, is essential for the success of the program. This perception should be initiated from the planning stage through the finalization of the program. Second, the local context, including sociocultural factors such as cooking customs and regional food, should be considered to enable successful implementation. Finally, in addition to ensuring electricity to support the needs of induction stoves, the program should be supported by a robust communication system infrastructure that allows for community feedback from stakeholders. This system can efficiently monitor, assess, and enhance program implementation and technology application.

The study has certain limitations. First, it was conducted for only 3 months after implementing the pilot project, during which the participants from Surakarta tried using induction stoves, meaning that the analysis is based primarily on the program's initial phase. This implies that the results could be biased initially due to the participant's enthusiasm. Although in-depth interviews with several respondents supplemented the perception data, the cross-sectional study would not have fully captured changes in the participant's cooking habits and daily difficulties with the technology. Therefore, it would be interesting to conduct further studies to analyze acceptance and satisfaction in the middle of the implementation phase to examine the program's long-term sustainability. A longitudinal method, reinforced by an ethnographic study, would provide a chance to examine community readiness and acceptance regarding the conversion program from LPG to induction stoves over an extended period.

Another limitation of this study is that it solely analyzes the implementation phase of the program without delving into the detailed activities of previous stages, such as initiation and socialization. Capturing the views and behaviors of community preparedness and acceptance could be the subject of future research to examine the changes in each program phase. Future studies must employ a retrospective analysis approach alongside a longitudinal strategy to examine technology implementation to address this limitation and gain a comprehensive understanding of community readiness and acceptance from the program's inception.

8- Declarations

8-1-Author Contributions

Conceptualization, R.W.D. and D.L.R; methodology, R.W.D. and N.A.E.E.; software, H.S.; validation, R.W.D., P.W.L. and D.L.R; formal analysis, R.W.D., H.S., and P.W.L.; investigation, D.L.R and N.A.E.E.; resources, R.W.D. and H.S.; data curation, R.W.D. and P.W.L.; writing—original draft preparation, R.W.D. and D.L.R; writing—review and editing, R.W.D.; visualization, H.S.; supervision, R.W.D.; project administration, R.W.D. and H.S.; funding acquisition, R.W.D. and H.S. All authors have read and agreed to the published version of the manuscript.

8-2-Data Availability Statement

The data presented in this study are available on request from the corresponding author.

8-3-Funding

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8-5-Institutional Review Board Statement

Not applicable.

8-6-Informed Consent Statement

Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

8-7-Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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Appendix I: Questionnaire

A. Respondent Profile and Demographics:

Name: Address: Mobile Phone:
 Gender: Age: Education:
 Work: Income (*IDR):

B. Statement of Respondent about Readiness and Acceptance:

This section contains statement items to measure community **readiness** and **acceptance** of the program package which consists of: a two-burner induction stove, 1 cooking utensil set, induction stove electrical installation, and a special electrical tariff for an induction stove usage.

This section uses a Likert scale of 1-5:

1 = Strongly Disagree; 2= Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Technology Readiness: used to measure a person's general beliefs and thoughts about the implementation program and technology used. **Technology Readiness** consists of 4 (four) variables namely **Optimism**, **Innovativeness**, **Discomfort**, and **Insecurity**.

Construct	Definition	Statement	1	2	3	4	5
How much do you agree with the following statements:							
Optimism	The tendency to believe that technology offered supports modernization, tool control, and flexibility in everyday life.	<ul style="list-style-type: none"> - This program package (<i>induction stove, electrical installation, and cookware</i>) is a safe technology. - Induction stove has high flexibility for everyday usage? (<i>*because: easier to move, does not require LPG gas, does not require hose connections or LPG gas rubber seals</i>). - This program package (<i>induction stove, electrical installation, and cookware</i>) uses modern technology that is easy to operate. 					
Innovativeness	Tendency to be a technology pioneer and inspiration for new emerging technology	<ul style="list-style-type: none"> - I can be a reference for people when asked for advice about this program package (<i>induction stove, electrical installation, special electricity tariffs, and cooking utensils</i>). - Among my friends, I was the first to receive and use the program package (<i>induction stove, cooking utensils, electrical installation, and special electricity tariffs</i>). - I am enthusiastic about this program package (<i>induction stove technology, cooking utensils, electrical installation, and special electricity tariffs</i>). - Even though this is something new, I am still interested in the challenge of participating in this program package (<i>induction stove, cookware, electrical installation, and special electricity tariffs</i>). 					
Discomfort	Perceived level of lack of control over technology and feelings of burden	<ul style="list-style-type: none"> - I am uncomfortable with this program due to the technical instructions for operating an induction stove in the manual are difficult to understand. - I am uncomfortable with this program because of the electrical installation instructions (MCB, Socket, etc.) induction stove difficult to understand and operated. - I am uncomfortable because of induction stove and cooking utensils exclusively designed for use by certain people only (<i>*eg people with high incomes, highly educated, etc.</i>). - I am uncomfortable with this program package because I can't repair induction stove and its electricity if there is a problem/damage? (<i>*don't know the workshop/repair center/service center</i>). - I am uncomfortable because I am not sure about its sustainability of this program (<i>*for example, with regard to special rates for induction stove</i>). 					
Insecurity	Degree of distrust of technology and concern about the dangers of use	<ul style="list-style-type: none"> - I feel that this program package is unsafe (<i>induction stove, cookware, electrical installation</i>) because it has potential health and/or safety risks. - This program package is not safe, so when using induction stove, cooking utensils, to the electricity, I feel worried and must extra be careful. - If there are problems with induction stove, I prefer to make complaints by talking to personnel (<i>customer service</i>) rather than with the machine. 					

Technology Acceptance: used to explain and predict user acceptance of technology. **Technology Acceptance** consists of 6 (five) variables, namely **Perceived Usefulness, Perceived Enjoyment, Perceived Cost Level, Confirmation, Satisfaction, and Intention to Use.**

Construct	Definition	Statement	1	2	3	4	5
How much do you agree with the following statements:							
<ul style="list-style-type: none"> - In general, this <i>program</i> package provides benefits - Cooking using an induction stove is more efficient - Cooking using an induction stove becomes faster 							
Perceived Usefulness	A person's perception of a technology that can facilitate his/her work.	<ul style="list-style-type: none"> - Menu choices that are more varied and have specific functions (<i>for example: specific menus for boiling, steaming and frying</i>) on induction stove have the potential to improve cooking abilities. - Using an induction stove makes cooking activities easier because of its advantages (<i>for example: stove is easier to clean, cooking utensils don't blacken/burn, and there are timer and temperature controls</i>). 					
Perceived Enjoyment	Feeling happy and enjoying the experience of using technology	<ul style="list-style-type: none"> - Cooking is made fun by using an induction stove (<i>partly because it looks more attractive and looks modern</i>). - I enjoy the experience of using an induction stove when cooking, because you can do other activities besides cooking (<i>there is a timer so you don't worry about forgetting to turn off stove</i>). - Induction stove is child-friendly because it doesn't get hot when touched when in use and there is a <i>lock function</i> which prevents accidental shifting of buttons. - When using an induction stove, I felt that it didn't take long to become skilled. 					
Perceived Cost Level	Consumer assessment of the comparison of the amount of sacrifice with what will be obtained from technology products	<ul style="list-style-type: none"> - With the advantages and benefits of this program package, I don't mind using an induction stove even though it requires special cooking utensils (<i>Stainless Steel</i>). - As long as it's affordable and not burdensome, I am willing to pay higher electricity rates to use an induction stove, because of its high advantages and benefits. - The current electricity tariff policy for induction stove program is appropriate. 					
Confirmation	Confirm the benefits that have been felt after using technology	<ul style="list-style-type: none"> - Based on experience, using an induction stove exceeds the expectations, because an induction stove is really useful and very convenient. - I received useful assistance from induction stove service team during the implementation of this program. - After using an induction stove, there is the potential for good changes that are beneficial to the habits behaviors (<i>for example being more diligent in cooking, being interested in exploring other dishes with induction stove menu, and have a business idea from cooking</i>). 					
Satisfaction	User satisfaction after using technology. This variable uses the <i>ServQual</i> dimension which consists of 5 (five) sub-variables, namely <i>tangibles, reliability, responsiveness, assurance, and empathy</i>	<p>Sub-variable Tangibles: qualities that are judged by physical appearance</p> <ul style="list-style-type: none"> - I am satisfied with the appearance of a modern induction stove. - I am satisfied with the display of informative induction stove features making it easy to operate. - I am satisfied, because the installation of electrical installations by the team/officers was carried out neatly and according to safety standards. - I am satisfied with the appearance of the team/officers who wore standard uniforms and clear identities when visiting program participant. 					
		<p>Sub-variable reliability: the quality that is assessed from the ability of this program to provide services in accordance with the promises offered</p> <ul style="list-style-type: none"> - I am satisfied, because induction stove menu (boiling, frying, steaming, low heat) can be used to cook various foods - I am satisfied, because the house's electrical power installation is suitable for cooking with an induction stove. - I am satisfied, because the electrical installation of induction stove has been installed according to the cooking area (*kitchen). - I am satisfied, because the cooking utensils from this program can be used cooks well on an induction hob. - I am satisfied because of the supply electricity to the house is maintained so I can cook with an induction stove properly without worrying about power outages. <p>The responsiveness sub-variable is the quality that is assessed from the response or alertness of the program team in helping and providing fast and responsive services.</p>					

- I am satisfied with **the quick response from** the team/officers when **answering questions** related to the program package (*induction stove, cookware, tariffs, and electrical installation*).

- I am satisfied with **their promptness** the program team **responded complaints** when there are **problems** related to the use of induction stove (**electricity, functions of stove and cooking utensils*).

- I am satisfied with **the speed** of the team/officers when **dealing with obstacles/problems** related to induction stove program. (**electricity, function of stove and cookware*).

- I am satisfied with **the performance of the team/officers** in providing **the right solution** when **dealing with complaints/obstacles** using an induction stove (**electricity, function of stove and cooking utensils*).

Sub-variable *assurance* namely the quality assessed from **the guarantee of this program** with regard to credibility, competence, and courtesy

- I am satisfied, because the team/officers **have the knowledge** to explain this program clearly (**tariffs, electricity, induction stove, and cooking utensils*).

- I am satisfied with **the politeness and friendliness** of the team/officers during the implementation of this program.

- I am satisfied with PLN's **credibility / reputation** for the guarantee of **the seriousness of this program**. (**including regulation and sustainability*).

- I am satisfied with **the service guarantee** for this induction stove program (**repair/replacement of stove, adjustment of MCB location, assistance visit, etc*).

Sub-variable *empathy* : the quality that is assessed from efforts **to understand** the community (including its **difficulties** and background) and the efforts made to meet the needs:

- I am satisfied with the way the team/officers **delivered patiently and informative** regarding this program (**rates, how to use stove, cooking utensils, etc.*).

- I am satisfied, because PT.PLN has followed up this program by holding **activities to support** understanding of the use of induction stove (**mentoring, video competitions, cooking competitions, etc.*).

- I am satisfied because the team/officers **sympathized and understood** the things community experienced while participating in the program (**Community's concerns, community's lack of understanding, etc.*).

Construct	Definition	Statement	1	2	3	4	5
How much do you agree with the following statements:							
Continuance Intention	Individual intention to continue using technology.	- After participating in this program and using an induction stove, I intend to continue using an induction stove to cook their daily needs.					
		- If there is a change in policy , as long as it is acceptable and not burdensome , I am still intending to continue to participate in this program and use induction stove .					
		- If there are other stove options, I will still take induction stove as a consideration mainly for <u>cooking</u> .					